

APRIL 1977 35p

# hi-fi news & record review

BEETHOVEN'S  
EMPIRE OF  
THE MIND

Pickup  
Musicality

Hi-Fi Sound  
From TV

America's  
Alternative  
Audio Press



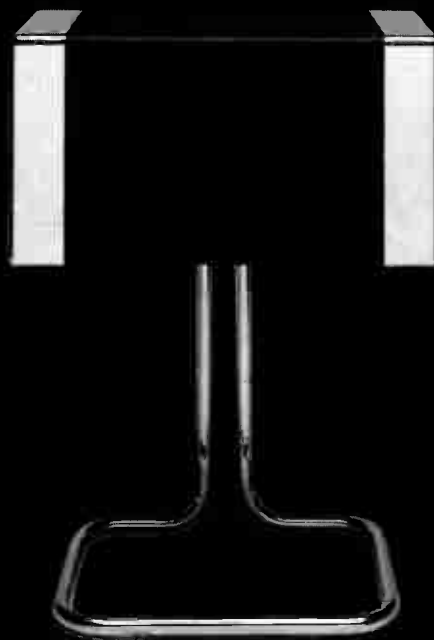
# 9 out of 10 people who read this ad shouldn't buy this speaker

If you own a receiver or amplifier of less than 40 watts per channel the Gale 401 loudspeaker is not for you!

If your system is just for background music to create a pleasant atmosphere, not for serious listening, the Gale 401 loudspeaker is not for you!

However, if you demand the best from your audio equipment  
... insist on hearing everything that's on the record or tape you're playing  
... insist on having your sound without distortion when it's very loud or very soft  
... insist on a speaker system capable of safely handling 200 watts ...

Then consider the Gale 401 loudspeaker.



# Gale

GALE ELECTRONICS & DESIGN LTD. 23 BRUTON PLACE LONDON W1

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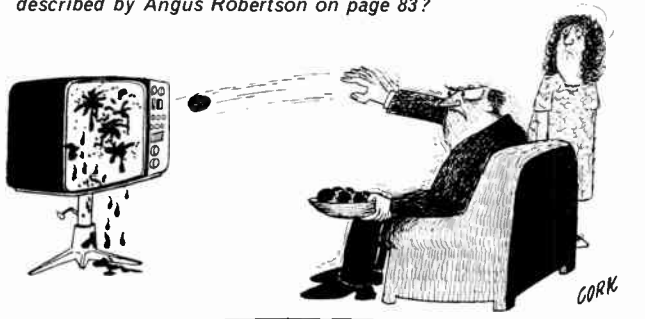
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## COVER PICTURE

Beethoven as seen by Waldmüller in 1823 is poised here (by artist Chris Yates) between the ordered perspectives of man-made architecture and the turbulent mysteries of cloud and sunlight—between classical restraint and romantic freedom. Beethoven's music enshrines forever the classic/romantic tension, a set of feelings rooted in his views on life, literature, morality, politics and religion—a vital spiritual world which he called an 'empire of the mind'. John Crabbe writes on this 'inner' Beethoven on page 121, while Christopher Breunig discusses a basic record collection on page 125—both commemorating the 150th anniversary of Beethoven's death in 1827.

*Rather than throw tomatoes at your TV when its lo-fi sound annoys you, why not build the device described by Angus Robertson on page 83?*



Britain's largest circulation journal devoted equally to records and hi-fi, with an audited average net sale of 52,495 copies per issue at the last count (January–December 1976).

Technical articles of full page length or over appearing in *Hi-Fi News & Record Review* are detailed in the British Technology Index.

ABC

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BUREAU OF CIRCULATIONS

# Classical Record Index

John Atkinson, Trevor Attewell, Peter Branscombe, Christopher Breunig, John Crabbe, Stephen Daw, Kenneth Dommert, Colin Evans, Iain Fenlon, John Freestone, Peter Gammond, Christopher Grier, Arthur Jacobs, Geoff Jeanes, Peter le Huray, Victor McAloon, Hugh Ottaway, Benedict Sarnaker, Humphrey Searle, Isla Tait, Leon Thompson, Peter Turner, B. J. Webb

<b>ALWYN</b>		<b>HANDEL</b>		<b>PROKOFIEV</b>		<b>WEBER</b>	
132 Symphony 1 (Alwyn)		136 'Messiah'—highlights (Beecham)		141 Classical symphony (Giulini)		149 Piano concertos 1 & 2 / Variations / etc (Andreae)	
		136 Opera and oratorio arias (Bakker)					
<b>J. S. BACH</b>		<b>HAYDN</b>		<b>PUCCINI</b>		151 <b>DEJA VU</b> reissues reviewed by	
132 Violin sonatas (Laredo)		136 Symphonies 88 & 96 (Previn)		143 Sour Angelica (Maazel)		155 <b>CLASSICAL CASSETTES</b>	
132 Well-Tempered Clavier (Kempff)		137 Symphonies 88 & 99 (Davis)				reviewed by Peter Gammond	
132 Organ works (Weir)		137 8 Nocturnes (Hacker)		<b>RACHMANINOV</b>		157 <b>ROCK</b> reviewed by Fred Dellar	
133 Cantatas for Easter (Richter)		137 String quartets, Op. 64 (Medici Qt)		143 Piano concerto 3 (Gavrilov)		159 <b>FOLK</b> reviewed by Paul Oliver	
		137 Piano sonatas, Vol. 4 (McCabe)		<b>RAVEL</b>		161 <b>JAZZ</b> reviewed by Ken Hyder	
<b>BALAKIREV</b>		137 Piano sonatas (Kalish)		143 Bolera / La Valse / etc (Lombard)		161 <b>LIGHT</b> reviewed by Peter Gammond	
133 Piano concerto in f (Zhukov)							
<b>BARTOK</b>		<b>IRELAND</b>		<b>RAWSTHORNE</b>			
133 Piano concertos 1 & 2 (Rogé)		137 Piano music, Vol. 2 (Parkin)		143 Symphony 1 / Symphonic studies (Pritchard)			
<b>BEETHOVEN</b>		<b>LISZT</b>		<b>RUBBRA</b>			
133 Septet / Fugue (Vienna Ens.)		138 Piano music (Gillespie)		143 Symphony 10 / etc (Schönzeler)			
<b>BERKELEY</b>		<b>MAHLER</b>		<b>SAINT-SAENS</b>			
133 Cello duo (Lloyd Webber)		138 Symphony 9 (Guilini)		135 Violin concerto 3 (Stern)			
<b>BLOCH</b>		<b>MCCABE</b>		<b>SCARLATTI</b>			
133 Schelomo (Rostropovich)		133 Cello partita (Lloyd Webber)		143 Harpsichord sonatas (Verlet)			
<b>BOCCHERINI</b>		<b>MEDTNER</b>		143 Harpsichord sonatas (Sgrizzi)			
135 Symphonies in d & c (Scimone)		133 Piano Concerto 1 (Zhukov)		<b>SCHUBERT</b>			
<b>BRAHMS</b>		<b>MENDELSSOHN</b>		145 Violin sonatas (Mathieu)			
135 Deutsche Volkslieder (Mathis)		138 Piano music (Alpenheim)		145 Piano sonata 17 / etc (Ashkenazy)			
<b>BRIDGE</b>		<b>MESSIAEN</b>		<b>SCHUMANN</b>			
135 Phantasm (Braithwaite)		138 Orchestral works (Constant)		145 Piano sonata 3 (Horowitz)			
<b>CHAUSSON</b>		<b>MOERAN</b>		133 Cello concerto in a (Rostropovich)			
135 Poème (Barenboim)		135 Piano rhapsody (Braithwaite)		145 Piano sonatas (Berman)			
<b>DALBY</b>		<b>MONTEVERDI</b>		<b>SCOTT</b>			
133 Cello variations (Lloyd Webber)		141 Madrigals (Corboz)		145 Piano concerto 2 / etc (Ogdon/Herrmann)			
<b>DOWLAND</b>		<b>MOZART</b>		<b>SCRIABIN</b>			
135 Lute music (Bream)		138 Serenades / Piano concerto 21 (Suitner)		145 Piano sonata 5 (Horowitz)			
<b>ELGAR</b>		138 Piano concertos 21 & 9 (Perahia)		<b>SIBELIUS</b>			
135 Symphony 1 (Boult)		141 Mozart soirée (Quartets) (various)		145 Symphony 2 (Davis)			
<b>FAURÉ</b>		<b>MUSSORGSKY</b>		145 Finlandia / Karelia / etc (Kord)			
135 Berceuse (Barenboim)		141 Pictures at an Exhibition (Giulini)		<b>J. STRAUSS II</b>			
<b>FINZI</b>		<b>NICOLAI</b>		147 Overtures and Waltzes (Bernstein)			
136 Clarinet concerto / etc (Handley)		131 'Die lustigen Weiber von Windsor' (Klee)		<b>STRAVINSKY</b>			
<b>FRANCK</b>		<b>OFFENBACH</b>		147 Firebird (Dorati)			
136 Symphony / Symphonic variations (Rogé/Maazel)		131 'La Grande Duchesse de Gêrolstein' (Plasson)		<b>TELEMANN</b>			
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133 Cello sonata (Lloyd Webber)		141 Organ concerto / Concert champêtre (Alain/Lacroix/Martinon)		147 Overtures (Marriner)			
				<b>VIVALDI</b>			
				147 La Cetra (Scimone)			
				149 La Stravaganza (Scimone)			
				149 Il Cimento dell'Armonia e dell'Invenzione (Scimone)			
				149 L'Estro Armonico (Scimone)			
				149 6 Flute sonatas (Preston)			

## Collections

### INSTRUMENTAL

138 Medieval Paris (Burgess)

### SOLO

136 Guitar Music of the Twentieth Century (Yepes)

141 Piano Moods (Vered) (Liszt; Satie; Debussy; etc)

132 Maurice André Trumpet Recital (Albinoni; Clarke; etc)

### WIND GROUPS

138 A Little Music for a Few Friends (Hallé Wind Quintet)

147 Trade Winds: Light Music for Wind Quintet (Hallé Wind, etc)

147 Trumpet Music (André) (Gervaise; Purcell; Bach; etc)

### VOCAL

135 Montserrat Caballé Recital (Catalani; Giordano; Verdi; etc)

### ORGAN

141 American Music from Southwark Cathedral (Hillsman)

141 The Organ in Hull City Hall (Goodman)

## Reissues

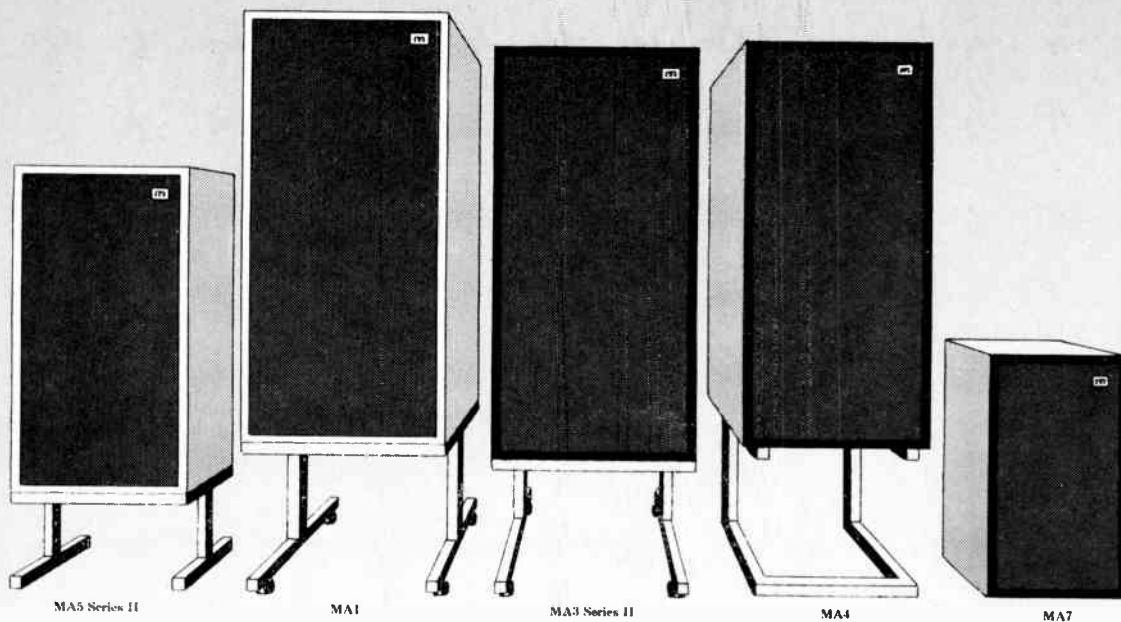
151 **ORCHESTRAL/SYMPHONIC**—music by Beethoven, Enescu, Khachaturian, Liszt, Mozart, Mussorgsky, Offenbach, Prokofiev, Schubert, Shostakovich, Wagner.

151 **CHAMBER/CONCERTOS**—music by Brahms, Chopin, Dvorak, Handel, Prokofiev, Schubert.

151 **VOCAL/OPERATIC**—music by Bach, Donizetti, Mozart, Mussorgsky, Puccini, Tippett, Verdi, Walton; and Gerard Souzay sings.

153 **THE OTHERS**—music by Walter Carlos, Mendelssohn, Mozart, Rachmaninov; two orchestral collections; four orchestral/operatic collections; and an operatic collection.

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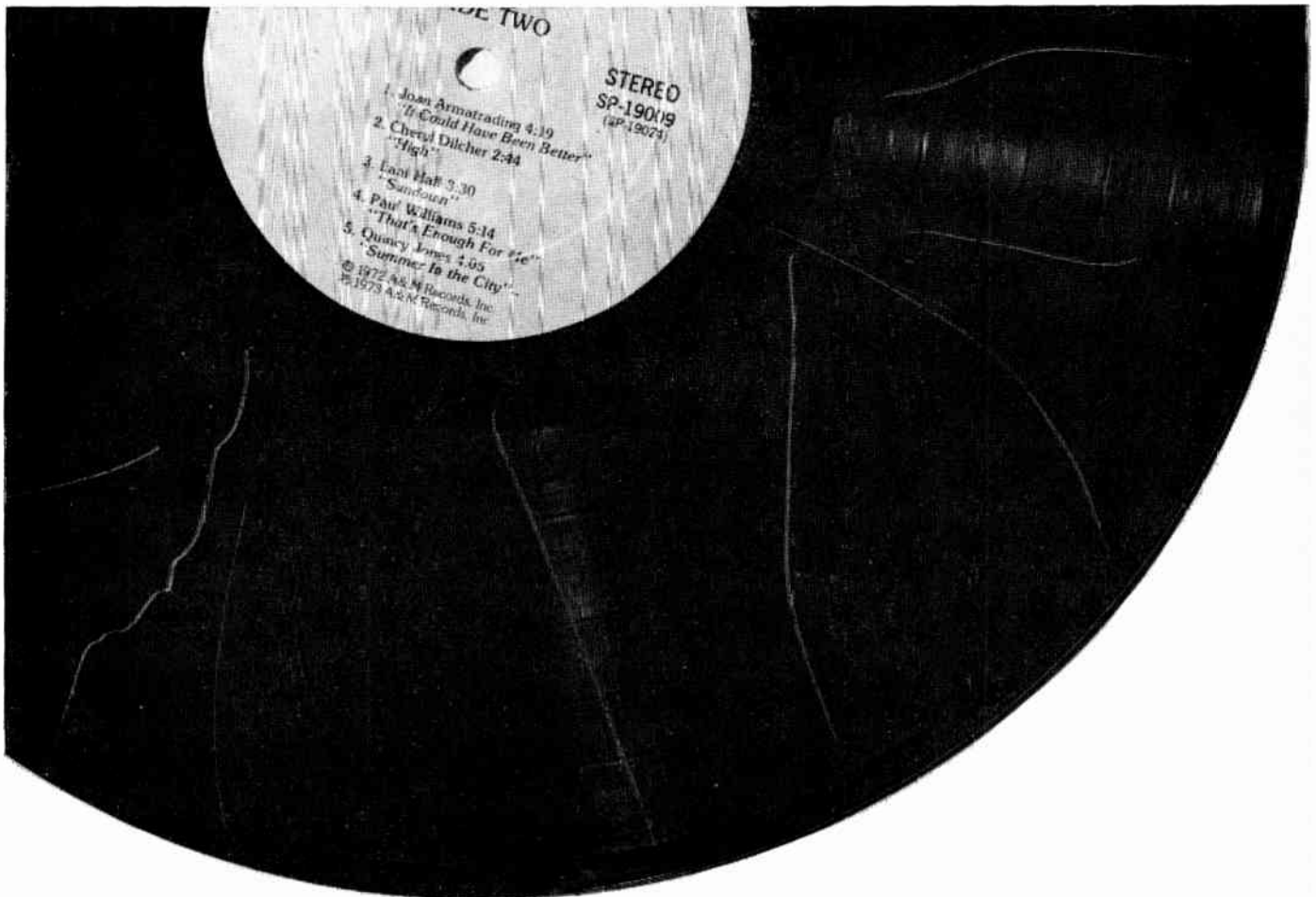
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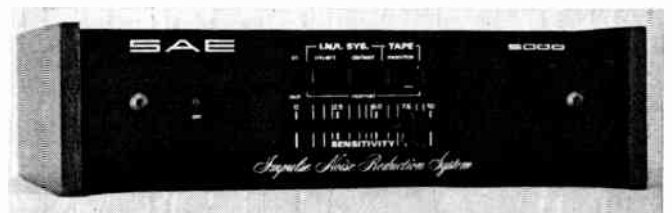
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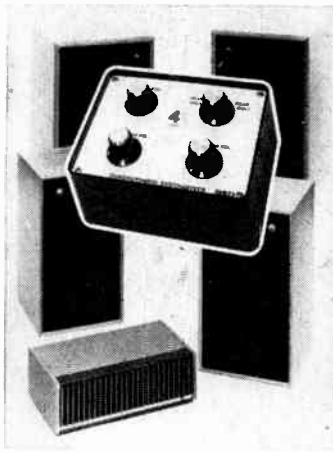


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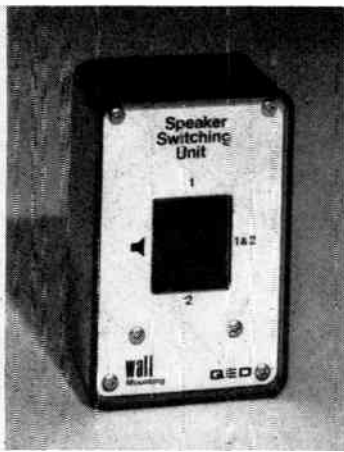
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1: Surround Sound



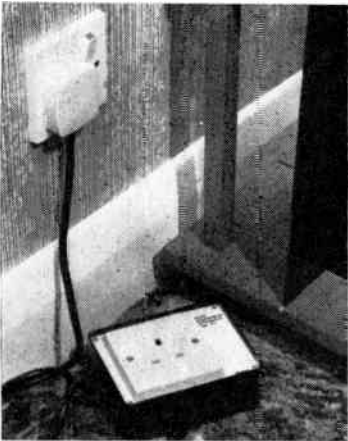
2: Connecting and controlling additional pairs of speakers



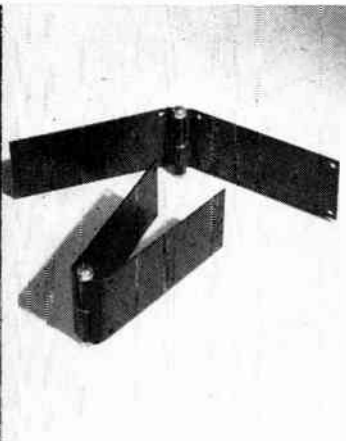
3: Connecting up to three tape recorders



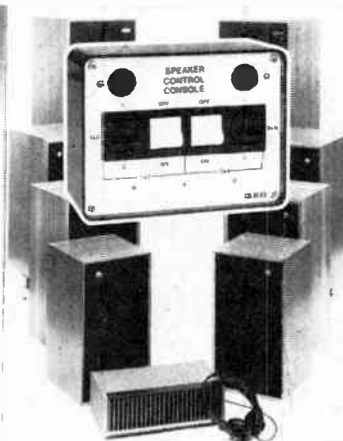
4: Connecting and controlling additional pairs of speakers



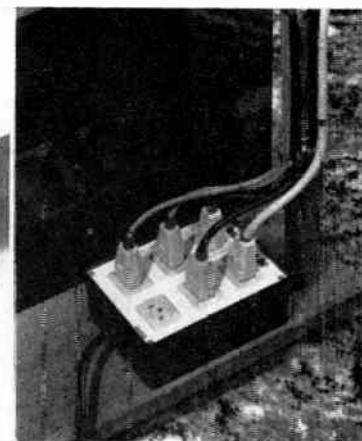
6: Interference suppression



7: Wall mounting speakers



8: Connecting and controlling additional pairs of speakers



9: Mains distribution

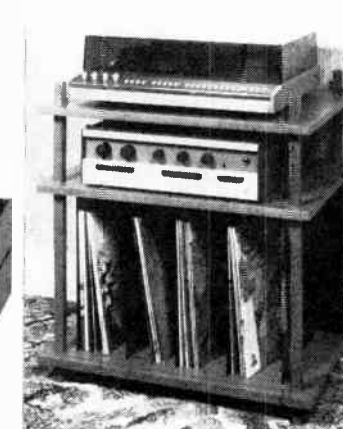


10: Connecting two record player decks

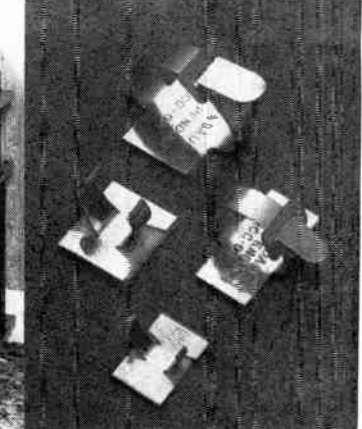


11: Hi-Fi equipment comparisons

**TRADE ONLY**



12 Designcraft—\*Hi-Fi furniture



13: Cable clips and accessories

\* Available Spring/Summer '77

## THE NEW QED 24 PAGE CATALOGUE

PROVIDES ESSENTIAL INFORMATION ON THE ABOVE SUBJECTS

We would like to thank the following manufacturers for providing equipment for use in some of the above photographs: B.S.R., Castle Acoustics, Celef Audio, Ferrograph, Fons, Goodmans, N.E.A.L., Sugden and the Acoustical Manufacturing Co. (Quad)

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RA1312 amp. ..	£268-00
RA1412 amp. ..	£350-00
RT224 .. ..	£62-00
RT324 tuner ..	£79-00
RT724 tuner ..	£94-00
RT824 tuner ..	£147-00
RT1024 tuner ..	£257-00
RR152 receiver ..	£94-00
RR202 receiver ..	£107-00
RR402 receiver ..	£143-00
RR602 receiver ..	£188-00
RR802 receiver ..	£237-00
RR7707 receiver ..	£163-00
RR1603 receiver ..	£515-00
RD20 cass. deck ..	£145-00
RD12F cass. deck ..	£156-00
RP900 t/table ..	£59-00
RP1500 t/table ..	£66-00
RP3000 t/table ..	£115-00
RM5010 music centre .. ..	£299-00

### AKAI

AM2200 amp. ..	£79-00
AM2400 amp. ..	£119-00
AT2200 tuner ..	£80-00
AT2400 tuner ..	£124-00
AA1010 receiver ..	£123-00
AA1020 receiver ..	£152-00
AA1030 receiver ..	£169-00
AA1050 receiver ..	£273-00
GX34D cass. deck ..	£99-00
GX39D cass. deck ..	£138-00
GX310D cass. deck ..	£166-00
GX705D cass. deck ..	£134-00
GX707D cass. deck ..	£167-00
GX710D cass. deck ..	£215-00
GX740D cass. deck ..	£310-00
GX760D cass. deck ..	£390-00
4000DS reel-to-reel ..	£144-00
4000DB reel-to-reel ..	£198-00
GX265D reel-to-reel ..	£327-00
AP003 t/table ..	£95-00
AP006 t/table ..	£172-00

### AIWA

TPR910 Rec./Cass. ..	C.A.H.
TPR930 Rec./Cass. ..	C.A.H.
AD1250 Cassette ..	C.A.H.
AD1600 Cassette ..	C.A.H.
AD1800 Cassette ..	C.A.H.
AD6300 Cassette ..	C.A.H.
AD6500 Cassette ..	C.A.H.
A7500 Tun./Amp. ...	C.A.H.

AF3060 Tun./Amp./C. C.A.H.  
AF5080 Music Centre C.A.H.  
AF5050 Music Centre C.A.H.

### NATIONAL

SG1060L Music Centre .. ..	C.A.H.
SG1070L Music Centre .. ..	C.A.H.
SG2070L Music Centre .. ..	C.A.H.
SG2080L Music Centre (Dolby) ..	C.A.H.
SG3090L Music Centre (Dolby) ..	C.A.H.
TC361GM CTV 13" ..	C.A.H.
TC48G CTV 14" ..	C.A.H.
TC86G CTV 18" ..	C.A.H.
TC261G CTV 20" ..	C.A.H.

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TA70 amp. ..	£50-00
TA1630 amp. ..	£81-00
TA2650 amp. ..	£108-00
TA3650 amp. ..	£150-00
TA5650 amp. ..	£231-00
TA8650 amp. ..	£553-00
ST70 tuner ..	£50-00
ST2950 tuner ..	£98-00
ST3950 tuner ..	£143-00
STR7015 receiver ..	£125-00
STR7025 receiver ..	£146-00
STR7035 receiver ..	£166-00
STR4800 receiver ..	£206-00
STR5800 receiver ..	£258-00
STR6800 receiver ..	£306-00
PS1700 t/table ..	£78-00
PS3300 t/table ..	£115-00
PS4300 t/table ..	£143-00
TC118 cass. deck ..	£98-00
TC135 cass. deck ..	£123-00
TC136 cass. deck ..	£139-00
TC138 cass. deck ..	£176-00
TC153 cass. deck ..	£182-00
TC177 cass. deck ..	£403-00
TC186 cass. deck ..	£133-00
TC204 cass. deck ..	£159-00
TC206 cass. deck ..	£177-00
TC209 cass. deck ..	£254-00
TC377 reel-to-reel ..	£163-00
HMK40 music centre .. ..	£254-00
HMK70 music centre .. ..	£375-00

### HITACHI

SDT2690 Music Centre .. ..	C.A.H.
SR302 .. ..	£119-00
SR502 .. ..	£135-00
SR802 .. ..	£190-00
SR6100 .. ..	£126-00
FT920 .. ..	£125-00

### REVOX

1102, 1104—From stock	
Other models on application	

## THIS MONTHS SUPER SAVERS

### PIONEER

SA5300 amp. ..	£65-00
SA6300 amp. ..	£80-00
SA7300 amp. ..	£124-00
SA7500 amp. ..	£181-00
SA8500 amp. ..	£206-00
SA9500 amp. ..	£278-00
TX5300 tuner ..	£73-00
TX7500 tuner ..	£145-00
TX9500 tuner ..	£199-00
SX450 receiver ..	£115-00
SX550 receiver ..	£141-00
SX650 receiver ..	£206-00
SX750 receiver ..	£246-00
SX850 receiver ..	£328-00
SX950 receiver ..	£376-00
SL2900 receiver ..	£578-00
PL112D t/table ..	£55-00
PL115D t/table ..	£68-00
PL117D t/table ..	£102-00
PL510D t/table ..	£105-00
PL530D t/table ..	£164-00
PL550D t/table ..	£194-00
CTF2121 cass. deck ..	£134-00
CTF6060 cass. deck ..	£172-00
CTF7070 cass. deck ..	£186-00
CTF8080 cass. deck ..	£241-00
CTF9191 cass. deck ..	£285-00
M6500 music centre ..	£275-00
Speakers .. ..	P.O.A.

### J.V.C.

JLA15 Turntable ..	C.A.H.
JLA45 Turntable ..	C.A.H.
JRS100 Tun./Amp. ..	C.A.H.
JRS200 Tun./Amp. ..	C.A.H.
JAS11 Amplifier ..	C.A.H.
JAS31 Amplifier ..	C.A.H.
JTV31 Tuner ..	C.A.H.
CD5200 Cassette ..	C.A.H.
CD1740 Cassette ..	C.A.H.
KD21 Cassette (Dolby) .. ..	C.A.H.

Other models on application

### TRIO

KA1500 .. ..	£69-95
KA3500 .. ..	£109-50
KA7100 .. ..	£195-00
KT5300 .. ..	£89-95
KT7300 .. ..	£199-95
KT8300 .. ..	£285-00
KR2600 .. ..	£109-50
KR3600 .. ..	£172-00
KR4600 .. ..	£215-00
KR5600 .. ..	£250-00
KX520 .. ..	£132-00
KX620 .. ..	£155-00

Other models on application

Rotel 152 Receiver ..	£74-00
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DECK**



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**CS-34D  
STEREO  
CASSETTE  
DECK**



Dolby noise reduction system eliminator tape hiss · Piano type controls feature direct function change · Over-level recording prevented with limited circuit · High Frequency response extended by 2000 Hz with chromium dioxide tape · Full release automatic stop and tape end safety feature · Expanded scale VU meters · Tape run indicator · Self-lock pause button · Pro slide type recording level controls · Recording indicator lamp · Index counter with reset button · Connection cords · Operators manual.

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The Ka-5500 retains the styling concept of the larger KA-8300 and offers a host of professional facilities: 2 x 55 W RMS at 8 ohms, both channels driven, from 20 Hz - 20 KHz, distortion less than 0.1% · Direct coupled amplifier stages · OCL complementary push pull power output stage · Negative feedback bass and treble controls · Precision volume control with 32 steps · Attenuator switch to reduce audio output by -20 dB · Power output meters calibrated in watts · Low filter at 12 dB/octave · Facilities for two tape recorders with A-B A dubbing and tape through circuit.



### KD-1030 TURNTABLE

Without doubt, one of the best value turntables on the market today, supplied complete with cartridge, the KD-1033 offers exceptional performance at a realistic price · Belt drive synchronous motor using a specially developed polyurethane belt · Wow and flutter less than 0.08% · Resonance free tone arm, stylus pressure adjustable from 0 - 3 grammes in 0.5 grammes graduations · Magnetic cartridge and diamond stylus frequency response 20 Hz - 20 KHz · Removable acrylic dust cover.



### KA-1500 AMPLIFIER

The KA-1500 is, a breakthrough in terms of cost related to power output and facilities offered · 2 x 25 W RMS at 8 ohms, both channels driven, from 20 Hz - 20 KHz, distortion less than 0.1% · Direct coupled amplifier stages · Negative feedback bass and treble controls · Loudness control · Facilities for 2 tape recorders · Circuit protection and delay start circuit.



### KR-6600 TUNER AMPLIFIER

2 x 60 W RMS at 8 ohms, both channels driven, from 20 Hz - 20 KHz, distortion less than 0.3% · Direct coupled amplifier stages · with fully complementary power output stage · DLOA (Dual Line Operational Amplifier) system · Negative feedback bass and treble controls · Acoustic controls provide +6 dB at 50 Hz and 800 Hz · Loudness control · High and low filters · Input facilities for two tape recorders with A-B dubbing and tape through circuit · Sound inject circuit · Double protection circuits and delay start circuitry.

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### AD-1050

New functional design of 20 degrees top panel inclination for easiest operation and maximum visibility · Dolby noise reduction system · Dolby MPX filter interlocking switch · Independent 3 step bias and equalizer switches (LH, CrO2, Fe-Cr) · Oil damped cassette ejection · Peak level indicator (+5 dB) · Smoked plastic dust cover · Full automatic stop mechanism, cue/review, pause facility, output level controls · 3 digit tape counter.



### AD-6300

Beautifully styled front loading dolby cassette deck · Built into it's small proportions are a host of advanced design features for the tape recording enthusiast · Control switches for LH, CrO2 and Fe-Cr tapes · Head: Permalloy Solid Head · Motor: DC Servo motor · Wow and flutter: 0.09% (WRMS) · S/N ratio: 60 dB (Fe-Cr tape, Dolby on) · Frequency response (Din): 30-16,000 Hz (CrO2 tape).



### AD-1800

The challenger to open reel superiority · Double noise reduction dolby and DNL · VU meters, calibrated from -20 dB to -6 dB · 2 step peak indicators · Three step independent bias and equalization tape selector · Frequency response: 30-17,000 Hz (CrO2 tape) 30-18,000 Hz (Fe-Cr tape) · S/N ratio: 65 dB (dolby and DNL on, CrO2 tape) · Wow and flutter: 0.05% (WRMS) · Motor: AC Hysteretic synchronous motor · Head: Ferrite Guard Head (FGH) · with dust cover.



### AF-5050

#### MUSIC SYSTEM

Three Hi-Fi components - 4 band receiver, cassette deck, semi-automatic turntable - integrated in one unit · Continuous power output, 17W + 17W (1 KHz, 4 ohms, 1% total harmonic distortion) · turntable-cassette deck synchronized operation featuring direct stereo recording from turntable · Dolby noise reduction system · Oil-damped cassette ejection mechanism · 3 step tape selector (normal, CrO2, Fe-Cr) · Full automatic stop mechanism · Pause facility · Tuning meter · 2 UV meter · Loudness control · AFC · Cuing · Inside force canceller · Bass and treble tone controls.

### AF-3060

Stereo dolby cassette with tuner/amp · Dolby noise reduction circuitry · Quick cue/review controls · FM/MW/SW/LW/FM stereo re-receiver with cassette deck · FM frequency response: 20-15,000 Hz · Cassette frequency response: 13-16,000 Hz (30-15,000 Hz) (CrO2 tape) · SN ratio: 60 dB (dolby on CrO2 tape) · Wow and flutter: 0.1% (WRMS) · Head: Ultra Hard Permalloy Head · Motor: DC Servo motor.



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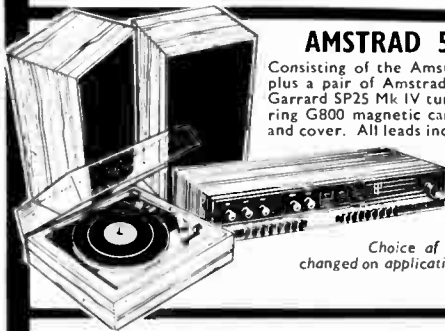
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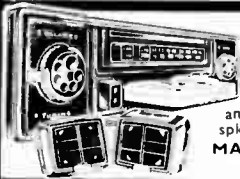
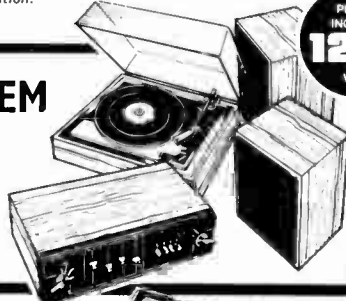
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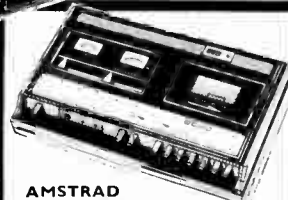


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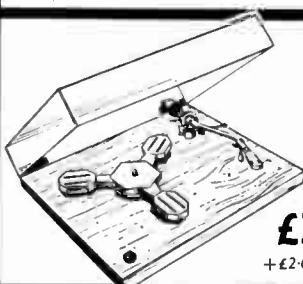
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Another first from Sanyo a magnificent Hi-Fi Dolby Music Centre featuring LW/MW/FM stereo radio, Dolby cassette recorder with CR02 normal tape facility, plus 2 speed precision turntable and tonearm, and anti-skating device.

**Our Price**  
**£235.95**

**SONY HMK40A**  
A superb mini sound studio with belt drive turntable. Auto Stereo deck. VHF and AM Radio. 10 watts per channel. Cassette player and high quality two way speakers.

**Our Price**  
**£189.95**  
**TREMENDOUS VALUE**

**SHARP 315**  
Magnificent NEW music centre featuring 2 speed rim driven record deck, 4-track, 2 channel tape deck with low W&F. LW/MW/SW/FM/FM/STEREO 4 band stereo receiver.

## CASSETTES

**SHARP 8080**

New battery/mini stereo radio cassette recorder. Features fast forward rewind, built-in mikes, digital tape counter and LW/MW/FM stereo. Auto Programme Search System.

**Our Price**  
**£109.95**

**GRUNDIG C6000**  
A superb Radio/Cassette from a world famous maker. 5 band radio with combined high quality cassette recorder. Battery mains portable. Beautiful sound.

**Our Price**  
**£129.95**

**SONY 560**  
Truly magnificent battery/mains portable STEREO cassette radio with VHF stereo/LW/SW. 2 W per channel, built-in cond. mike, normal CR02 tape selector, auto stop and headphone socket.

**FREE MUSIC STAND** All Music Centres supplied with free stand worth £7.95

**Our Price**  
**£259.95**

**PIONEER 6500**  
Usual Pioneer high quality is maintained in this compact Hi-Fi system featuring a sensitive receiver, automatic turntable and a Hi-Fi stereo cassette deck.

Ferguson 3471 124.95  
GEC 2817 172.95  
Hitachi 2480 POA  
Hitachi 2690 POA  
ITT 5040 172.95  
National 1020 POA  
National 1070 POA  
National 2070 POA  
National 2080 POA  
Hacker M6000 309.95  
Sanyo 2711K 214.95  
Sanyo 2311 112.95  
Sony EXIK 177.95

Sony EX2K 199.95  
Sony HMK 70 POA  
Toshiba SM 3100 POA  
Toshiba SM 3900 POA  
Telefunken 2514 209.95  
Sharp 220 189.95  
Hitachi ST 7620 POA  
Sharp 400 289.95  
Aiwa 5080/5050 POA  
JVC 1845 POA  
Rotel 5010 319.95  
National 1060 POA  
Hitachi 2370 POA

## Battery Mains

Philips 2215 39.95  
Ferguson 3276 26.95  
National 305 P.O.A.  
Hitachi 295 36.95  
ITT CX 75 33.95  
ITT SL 58 28.95  
National 309 POA  
Philips 2208 22.95  
Philips 2214 31.95  
Sanyo 2246 31.95  
Sharp RD 600 24.95  
Sony TC 63 30.95  
Sony TC 150 87.95  
Sony TC 207 52.95

## Battery Mains/Radios

Aiwa TPR300 216 P.O.A.  
Ferguson 3283 44.95  
GEC 900 42.95  
Grundig 4100 76.95  
Grundig C6200 155.95  
Hitachi TRK 5000 74.95  
Hitachi TRK 5220 58.95  
Hitachi 5111 44.95  
Hitachi 5110 39.95  
Hitachi 5030 62.95  
JVC 9201S POA  
National 514/546 POA  
National 443 POA  
National 554 P.O.A.

Philips AR 170 44.95  
Sanyo 2422 54.95  
Sanyo 2444 59.95  
Sharp GF 6000 87.95  
Sony CF 440 90.95  
Sony CF140 57.95  
Sony 210 65.95  
Toshiba 2300 POA  
**Stereo Recorders/ Battery Mains**  
Grundig 431 63.95  
ITT 720 59.95  
JVC 1635 POA  
Sony TC 525 118.95  
Sony 153 177.95

## IN-CAR

**Our Price**  
**£43.95**

**PYE 2263 STEREO CAR CASSETTE PLAYER**  
With Auto Reverse Music all the way with this stereo cassette player. 12V neg pos earth, autochange, volume tone balance controls.

**Our Price**  
**£68.95**

**AMSTRAD 9050**  
Superb new stereo car cassette player with AM/FM stereo radio. Fast forward and auto reverse. Tremendous value which includes speakers and FREE AERIAL.

**Our Price**  
**£163.95**

**PHILIPS AC 860**  
Superior 3 band stereo radio/stereo cassette player. LW/MW/FM stereo radio with turnlock button which allows tuning in permanently to six stations. Fast forward and rewind on cassette.

**Our Price**  
**£64.95**

**SHARP 5300-STEREO CAR CASSETTE PLAYER**  
Take your favourite music with you with our latest 3 wave band stereo radio/cassette player. 7 watts per channel, rewind and forward wind, auto eject.

**STEREO PLAYBACK**  
Aiwa 1050 P.O.A.  
Hitachi CS 270 61.95  
Hitachi CS 224 47.95  
Selmar CCP4 27.95  
Harry Moss 329 34.95  
National 1131 P.O.A.  
National 141 P.O.A.  
Pioneer i51 P.O.A.  
Radiomobile 321 35.95  
Sanyo FT4020 38.95  
Pye 2272 31.95  
Pye 2273 47.95  
The above with free speakers worth £7.95  
Hitachi 220 42.95

**STEREO & RADIO**  
Hitachi 227 73.95  
Radiomobile 309 79.95  
Philips 342 59.95  
Radiomobile 315 88.95  
Pye 2259 59.95  
Taiyo CX55 42.95  
The above with free speakers worth £7.95  
Philips AC 460 89.95  
National 440 P.O.A.  
Pioneer 4400 P.O.A.

**STEREO & RADIO**  
Amstrad 9000 49.95  
Aiwa 2020 P.O.A.  
Sonix 103 39.95  
National 840 P.O.A.  
Hitachi CSK4191 39.95  
Pioneer 4300 P.O.A.  
Pioneer 4000 P.O.A.  
Pioneer 8300 P.O.A.  
Pioneer 8000 P.O.A.  
Pye 2256 66.95  
Sharp 5200 59.95  
Sony TC24F 67.95  
Taiyo CX 808 44.95

## DOLBY DECKS

**Our Price**  
**£129.95**

**PIONEER 2121**  
Hi-Fi front loading Dolby Cassette Deck. Exceptional specification for its price.

**AMSTRAD 7050**  
Slimline stereo dolby cassette deck featuring twin VU level meters, record level sliders, auto stop, tape counter, pause, CR02 indicator, Phono, DIN headphone sockets. W & F 0.1%

**SONY TC186 SD**  
Superb value front loading Dolby Cassette deck. Bias/equalisation switching. Normal or chrome tapes. Record level limiter. Wow & Flutter only 0.9%

**Our Price**  
**£72.95**

**SANYO RD 4055G**  
High performance, high quality Dolby cassette deck. Chrome/Normal tapes. Low wow - flutter and F.R. 30-16000 (CR02). S/N 58dB.

Amstrad 7070 87.95  
Aiwa 1250 P.O.A.  
Aiwa 6300/6500 P.O.A.  
Akai 3250 242.95  
Akai 390 129.95  
Akai 7400 306.95  
Ferguson 3280 66.95  
Hitachi 2330 72.95  
Technics RS640 —  
Technics RS 630 —  
JVC 200/1770 P.O.A.

JVC 1740 P.O.A.  
National 269 P.O.A.  
National 263 P.O.A.  
Hitachi 0440 94.95  
Sharp 3500 121.95  
Sharp 2000 78.95  
Sansui 2000 146.95  
Philips 2511 115.95  
Hitachi 2360 89.95  
Sony TC 138 169.95  
Sony TC 204 149.95  
Sony ELCASSET in Stock

Sony TC 209 249.95  
Sony 177 392.95  
Tandberg 310 P.O.A.  
Tandberg 330 P.O.A.  
Teac 170 P.O.A.  
Trio KX 620 154.95  
Yamaha 800 P.O.A.  
Toshiba PC3060 P.O.A.  
Sanyo 5500 149.95  
Nakamichi 600 P.O.A.  
Yamaha TC511 P.O.A.

## Stereo Radio Cassette Battery Mains

**CAVENDISH OFFER YOU THESE EXCEPTIONAL MODELS AT AMAZING PRICES.**

**Battery/Mains Stereo Radio**  
Aiwa 910 POA  
Aiwa 930 POA  
Aiwa 940 POA  
Hitachi TRK 5190 109.95  
JVC 9475 POA  
National 460 POA  
National 451 POA  
Sharp GF8080 109.95  
Sanyo 9980 115.95  
Sony CF 560S 129.95  
Sony CF 580 219.95

## PIONEER Super Buys

**LATEST RANGE AT TREMENDOUS SAVINGS!**

**Receivers**  
SX 450 112.95  
SX 550 139.95  
SX 650 203.95  
SX 750 243.95  
SX 850 322.95  
SX 950 368.95  
PL 1170 99.95  
PL 510A 103.95  
PL 550 189.95  
**Cassette decks.**  
CTF 6060 167.95  
CTF 7070 183.95  
CTF 8080 236.95  
CTF 9191 276.95

## Save on cassette tapes

**FREE head cleaner with 10**

	PHILIPS	BASF	AGFA	SONY	MAXELL LN	MEMO REX	BASF SM	TDK D	SONY HF
C60	60p	60p	45p	60p	60p	75p	90p	63p	80p
C90	80p	80p	65p	80p	75p	1.10p	1.15p	83p	1.00p
C120	1.10p	1.10p	90p	1.10p	95p	1.25p	1.50p	1.10p	1.40p

**SPECIAL OFFER!**  
**PHILIPS VIDEO C60 TAPES**  
AT ONLY **£17.95**

**SPECIAL OFFER ON SHURE CARTRIDGES**  
SHURE 75 ED 13.95  
SHURE 75 EJ 11.95  
SHURE 95 ED 17.95  
SHURE 95 EJ 12.95  
SHURE M55E 8.50  
SHURE VIS 43.95

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Tel: 01-247 3453 24 Hour Answering Service  
Right next door to Whitechapel Underground Station  
Open 9am - 6pm Mon-Sat

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Phone your Access/Barclaycard no. over with your order for prompt delivery





# SAVE £££s ON HI-FI at CAVENDISH

FANTASTIC DISCOUNTS ON FAMOUS MAKES

## AMPLIFIERS



**Our Price Only**  
**£63.95**

**PIONEER 5300**  
High performance equalizer stereo amplifier with ICs. Produces 10w per channel. RMS 40 Hz to 20 kHz, 0.8% total harmonic distortion. Input/output selection.



**Our Price**  
**£78.95**

**SONY TA 1630 STEREO AMPLIFIER**  
22w per channel RMS. Frequency response 20-20,000 Hz. Max harmonic distortion 0.5% at 22w. Inputs for Phono, Tuner, Aux and 2 Tapes. Presence and Loudness control switches.

AMPLIFIERS	£
Amstrad 2000	41.95
JVC JAS 11	P.O.A.
JVC JAS 31	P.O.A.
Pioneer SA7300	124.95
Pioneer SA 6300	79.95
Rotel 712	103.95
Sansui AU 2900	72.95
Sansui AU3900	101.95
Sony 2650	106.95
Sony TA 3650	145.95
Technics SU 7200	—
Technics SU 7600	—
Trio KA 1500	68.95
Yamaha CA 410	P.O.A.
Yamaha CA 610	P.O.A.

## TUNER AMPLIFIERS



**Our Price**  
**£112.95**

**PIONEER SX 450**  
High performance FM/AM Stereo Receiver. 15 watts per channel. Less than 0.5% total harmonic distortion. Phono equaliser. Facilities for connection of 2 sets of speaker systems. Stereo tape deck input/output circuit.



**Our Price**  
**£107.95**

**SANSUI 331 FM/AM Receiver**  
An exceptional Hi-Fi stereo FM/AM receiver at an amazingly low price. 15W per channel RMS. Spec. includes Loudness and Tape Monitor controls and head phone socket.

TUNER AMPLIFIERS	P.O.A.
Aiwa AX 7500	P.O.A.
Amstrad 5050	84.95
JVC JRS 100-500	P.O.A.
Pioneer SX750	243.95
Pioneer SX 550	139.95
Rotel 202	106.95
Sony STA 4800	199.95
Sony 7025	144.95
Tandberg TR 200	P.O.A.
Technics SA 5060	—
Toshiba SA 320	P.O.A.
Trio 2600	108.95
Trio KR 3600	174.95
Yamaha CR20N/800	P.O.A.

## STEREO TUNERS



**Our Price**  
**£41.95**

**AMSTRAD 3000 (tuner)**  
Hi-Fi AM/FM Stereo tuner. Highly sensitive FM cover plus LW and Mw. Stereo separator. 44dB. Signal/Noise 63 db on Stereo. Built-in AM Ferrite aerial. Fine tuning meter and push button selection.



**Our Price**  
**£93.95**

**SONY 2950**  
Superbly designed stereo tuner featuring LW/MW/ SW/VHF, phase locked loop decoder, uniphase filters, tuning and signal meters, easily readable linear, dial scale. Amazing value for such a high performance tuner.

STEREO TUNERS	P.O.A.
JVC J7U 31	P.O.A.
National ST2300	P.O.A.
Pioneer TX 9500	180.95
Pioneer TX 5300	70.95
Pioneer TX 7500	140.95
Rotel 224	61.95
Rotel 724	93.95
Sony 3950	142.95
Trio KT 5300	98.95
Technics ST 7200	—
Technics ST 7600	—
Yamaha CT 410	P.O.A.
Yamaha CT 610	P.O.A.

## TURNTABLES



**Our Price**  
**£67.95**

**PIONEER PL112D**  
Superb 2 speed belt drive turntable. Fitted with 4-pole synchronous Motor producing 63dB of S/N, 0.07% W & F max. Also has anti-skating device, lateral balancer and 'S' shaped pipe arm. Walnut grain finish.



**Our Price**  
**£58.95**

**SANSUI SR222**  
Two speed belt drive turntable with a W & F of less than 0.07%. S/N 54db. Statically-balanced S-shaped tubular tone arm. Frequency range 20 to 20,000 Hz.

TURNTABLES	£
Garrard 86	66.95
Garrard DD75	96.95
JVC JL A45	P.O.A.
JVC JLA 15	57.95
Rotel RP 1500	69.95
Sony PS 3300I	115.95
Pioneer PL117D	99.95
Sansui SR 1080	79.95
Sony 4300	139.95
Technics SL23/150	—
Technics SL1300/1700	—
Trio KD 1033	53.95
Yamaha YP 211	P.O.A.

## SPEAKERS

ARI 4XA	P.O.A.
ARI 7/12/14/16	P.O.A.
Leak 3020	82.95
Leak 3050	152.95

Celestion UL6/8/10	P.O.A.
Celestion DIT15	88.95
Castle Richmond	62.95
KEF Complete range	P.O.A.

Technics S8102	—
Wharfedenton XP	41.95
Wharfedenton XP	57.95
Sony 2050	112.95

# CAVENDISH Sales

CASSETTE CENTRE

279/283 WHITECHAPEL RD., LONDON E1  
Tel: 01-247 3453 24 Hour Answering Service  
Right next door to Whitechapel Underground Station  
Open 9am-6pm Mon-Sat

All Prices INCLUDE VAT

Phone your Access/Barclaycard No over with your order for prompt delivery P & P add £1

# Formula 4<sup>®</sup>

The best sounding universal tone arm  
PROFESSIONAL LABORATORY  
Silicone Damped Pick-up Arm



"Only Viscous Pivot Damping with variable low effective mass can ensure natural sound without 'listening fatigue' enabling all cartridges to reach their 'Linear Region' of best performance, absolutely essential for perfect Stereo and Quadraphonic transcription due to the suppression of instantaneous tracking force extremes which reduce record wear and high frequency playback distortion. Viscous pivot damping means better tracking especially of warped records, the sound having exceptionally good definition; rich, full and clean bass with dramatically improved solid stereo image and near pin-point localisation".  
*Leaflet on request.*

MAYWARE LTD. (Dept. HFN4)

15 Heather Walk, Edgware, Middlesex HA8 9TS, England.

# HI-FI IN SCOTLAND

Get a fair deal from Vennal A.V.



★ Up to THREE years guarantee on most makes.

FONS TURNTABLE £88-00  
SME 3009 Series II. Improved non-detachable shell, £47-00  
SHURE V15 III Cartridge, £51-80

Tandberg, National Panasonic, Sony, J.V.C., Yamaha, Pioneer, Fons, Technics, Bang and Olufsen, Akai, Marantz, Nakamichi, Armstrong, Leak, Quad, Rotel, Acoustic Research, Kef, Wharfedale, J. R. Speakers, Bose, Shure, etc.

- ★ Prices on application
- ★ Credit terms to callers
- ★ Comparative Demonstrations

## Vennal A.V.

115 High St, Central Arcade, Ayr KA7 1QL.  
Telephone: 0292-64124

also at  
49 The Foregate, Kilmarnock  
Telephone 34826



PHILIPS

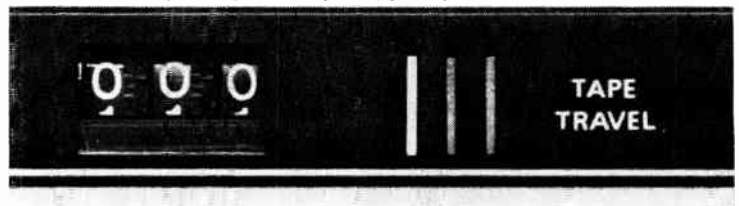


# Philips present the best thing that's happened to the cassette since we invented it.

Fourteen years ago, Philips invented the cassette. Since then, tape technology has developed into a competitive, modern industry.

Philips new N2511 cassette deck makes the most of today's, and tomorrow's, tape technology. It can handle both ferric and chrome tape by automatically adjusting to whichever is in use.

If your cassette deck doesn't have this refinement, perhaps you'd better read the rest of this advertisement.



We've made the controls very simple and convenient to use. The N2511 has large, illuminated recording level meters and a three digit counter that can be reset at the push of a button.

We've designed a tape travel indicator to show you when the tape is moving. We've also fitted an automatic device that stops the tape and releases the buttons when it's finished playing.

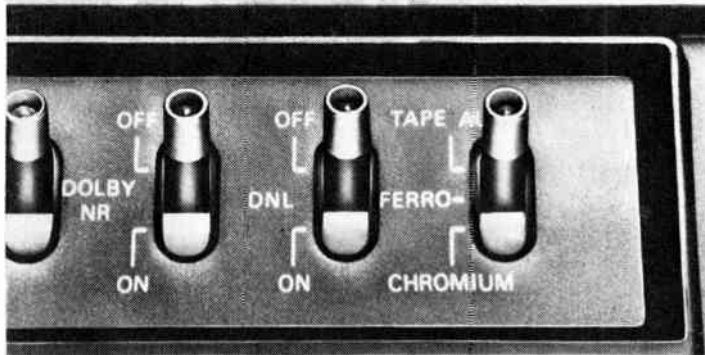
You needn't worry about changing worn out heads. The long-life ferrite erase head and the 'FSX' record/playback head will last for years without wearing out.

So your new Philips N2511 cassette deck will sound much better, much longer.



Simply years ahead.

\*Trademark of Dolby Laboratories Inc.



## The cassette deck that's as convenient as the cassette

When Philips developed the cassette for convenience, we never dreamed we'd develop a deck as convenient as this.

We've used all our electronic know-how to refine its design and operation. The result is a powerful, precision deck that integrates well with the most advanced hi-fi equipment.

Even though it's compact, we have fitted the N2511 with a host of special refinements.

It has a Dynamic Noise Limiter. A special system developed by Philips to reduce the background noise you get during quiet passages of music. It also has the Dolby\* B system.

I like the sound of the new Philips N2511 cassette deck. Please tell me more.

Name \_\_\_\_\_

Address \_\_\_\_\_

Philips Electrical Ltd.,  
Dept. SP, P.O. Box 3,  
Horley, Surrey.

HFN 10

# Dollonds

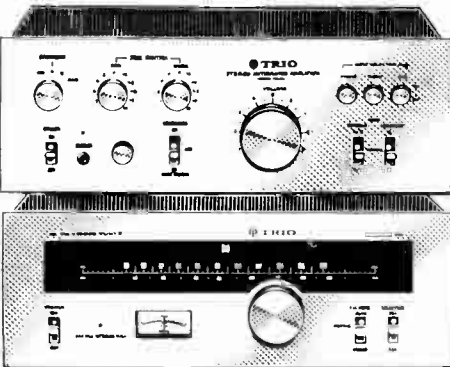
## HI-FI CENTRES

AIWA · AR · ARMSTRONG ·  
 AUDIOMASTER · DUAL · GALE ·  
 MONITOR AUDIO · MORDAUNT  
 SHORT · NATIONAL PANASONIC ·  
 QUAD · SENNHEISER · SHURE ·  
 SME · SONY · TEAC · TECHNICS  
 TRIO · VIDEOTONE · etc.

### AMPLIFIERS & TUNERS

**KA-3500 Stereo Amplifier** (Illustrated)  
 Rated at 40 watts per channel and having many fine control features, the KA 3500 must surely be one of the best value for money amplifiers on the market today.

**KT-5300AM / FM Stereo Tuner** (Illustrated)  
 Designed to match KA-5500, KA-3500 and KA-1500 amplifiers, the KT-5300 represents outstanding value for money.

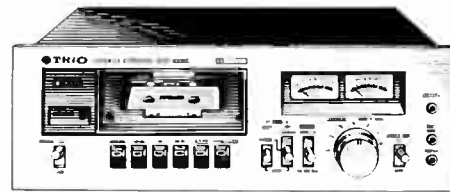


### CASSETTE DECKS

**THE SUPERB KX-620**  
 Front-Loading · Dolby · Cassette Deck A sensibly styled model especially suited to stacking or console mounting. Features include Dolby-B noise reduction system, switchable bias, switchable equalisation, digital tape counter, input selector, headphone monitor socket, twin VU meters etc.

**£166.00** £56.08 DOWN & 12 Monthly  
 Payments of £9.16 INTEREST FREE

MODEL	INTEREST-FREE CREDIT		
	PRICE	DEPOSIT	MONTHLY PAYMENTS
KX-720 Dolby	£198.20	£66.26	18 of £7.33
KX-920 Dolby	£235.70	£78.74	18 of £8.72



### TURNTABLES

**KD-1033** (Illustrated)  
 Without doubt, one of the best value turntables available. Supplied complete with cartridge Belt-drive, 4-pole hysteresis synchronous motor for speed consistency. Wow and flutter less than 0.08%. Detachable hinged dust cover.

**OUR PRICE £59.95**

**The Magnificent KD-500**  
 A superb Direct-Drive unit with electronic regulation. Wow and flutter less than 0.05%. Heavy, resonance-free plinth system. Supplied complete with SME Arm, but less cartridge.

**£238.95** £80.91 DOWN & 18 Monthly  
 Payments of £8.78 INTEREST FREE



MODEL	INTEREST FREE CREDIT		
	PRICE	DEPOSIT	MONTHLY PAYMENTS
KA-1500	£74.95	£40.00	12 of £6.50
KA-3500	£118.00	£68.55	12 of £11.25
KA-5500	£203.55	£89.93	18 of £9.89
KA-7300	£267.95	£196.32	18 of £21.83
KA-600	£589.26		
<b>TUNERS</b>			
KT-5300	£96.38		
KT-7300	£214.22	£72.20	18 of £7.89
KT-600T	£530.33	£180.41	18 of £19.44

### RECEIVERS

MODEL	INTEREST FREE CREDIT		
	PRICE	DEPOSIT	MONTHLY PAYMENTS
KR-2600	£117.32	£39.32	12 of £6.50
KR-3600	£184.25	£62.36	12 of £10.16
KR-5600	£267.83	£89.99	18 of £9.88
KR-6600	£353.55	£118.65	18 of £13.05
KR-9600	£616.00	£206.14	18 of £22.77

DOLLONDS ARE TRIO 'CLASS A' DEALERS — We normally carry the complete range of TRIO in stock.



### MS-100 MUSIC CENTRE STAND

A new and attractive trolley stand suitable for music centres. The framework is black steel with teak top, base and cassette storage drawer. Includes record/magazine rack and glass shelf.

**£29.95**

**TUNER ST-2300**  
 This excellent tuner features superb sensitivity and selectivity on both the AM and FM bands, with tuning meter, large tuning control and FM muting circuitry.



**AMPLIFIER SU-2300**  
 This model has a power output of 2 x 20w RMS into 4 ohms. There is a large 41-step volume control, separate bass and treble, and balance controls.

**TURNTABLES L-18**  
 This model features auto return, belt-drive operation and an F.G. (Frequency Generator) servo DC motor for precise speeds, and high performance magnetic cartridge.

**SPEAKERS SB-60**  
 The model SB-60 speaker system is a bass reflex system which reproduces a wide range of the audio spectrum, from deep lows to clear treble, with superb fidelity.

**COMPLETE SYSTEM PRICE £268.00** Complete with all leads and plugs

**OR ON INTEREST FREE CREDIT £89.98** DOWN, with 18 Monthly Payments of £9.89

Although shown as a System, all these models are available separately.



## National Panasonic

### COMPACT HI-FI SYSTEM



### RS-269USD STEREO CASSETTE DECK

**Hi-Fi Features at Budget Price**

- Dolby-B noise reduction system.
- CR0; Normal tape selector.
- Super Permalloy Head for long life and high quality reproduction.
- Electronic speed control of motor for stable tape drive.
- Twin VU meters.
- Auto-stop mechanism.
- Lockable pause button.
- 3-digit tape counter.

**£99.95**

# Dollonds

## GIVE UP TO

# 18 months FREE credit\*

Pay just 1/3rd of the Price as a Deposit and the rest over 8, 12 or 18 Months WITH NO INTEREST CHARGES!  
\*On Equipment with a Retail Value of £100 and over.

## ARMSTRONG

BRITISH-MADE EQUIPMENT OF HIGH QUALITY!



MODEL 626



MODEL 623



MODEL 621

### ARMSTRONG 621 AMPLIFIER

Five years in development (with a host of additions and improvements since its launch in 1973), this superb amplifier has an output power of 40 watts RMS per Channel, with negligible distortion and a wide frequency range. Facilities include two treble filters (with a slope control providing a choice of four characteristics), two choices of disc sensitivity and adjustable tape recording outputs. Headphones and two pairs of speakers can be used simultaneously or enjoyed independently.

**£132.00** £44.04 DOWN & 12 Monthly Payments of £7.33 INTEREST FREE

### ARMSTRONG 623 AM/FM STEREO TUNER

With this tuner, Armstrong have achieved a specification very close to the theoretical performance limits of the FM broadcasting system. Almost unmeasurable distortion due to Bandpass filtering, dual gate FET's, varicap diode tuning, ceramic I.F. filters, integrated circuits and a phase-locked loop stereo decoder. The AM section is hardly less impressive due to the use of the latest communication receiver techniques. Three FM and three AM stations can be pre-set.

**£140.00** £47.00 DOWN & 12 Monthly Payments of £7.75 INTEREST FREE

MODEL 624 — With a similar specification to the 623 Stereo Tuner, but without AM section.

**£109.00** £37.00 DOWN & 12 Monthly Payments of £6.00 INTEREST FREE

### ARMSTRONG RECEIVERS

MODEL 626 — With a similar specification to the 621 Amplifier and 623 Tuner combined.

**£232.00** £78.10 DOWN & 18 Monthly Payments of £8.55 INTEREST FREE

MODEL 625 — As model 626, but without AM Receiver Section.

**£198.00** £66.06 DOWN & 18 Monthly Payments of £7.33 INTEREST FREE

## SPEAKERS

All prices quoted per pair

MODEL	PRICE	DEPOSIT	MONTHLY PAYMENTS
<b>ACOUSTIC RESEARCH</b>			
AR-16	£156.38	£52.34	12 of £8.57
AR-14	£227.25	£76.23	18 of £8.39
AR-11	£408.38	£138.38	18 of £15.00
<b>AUDIO-MASTER</b>			
IMAGE-2	£119.90	£40.94	12 of £6.58
LS3/5A			
BBC MONITOR	£168.75	£56.79	12 of £9.33
<b>MORDAUNT-SHORT</b>			
CARNIVAL Ser II	£79.50	—	—
FESTIVAL Ser II	£99.00	—	—
PAGEANT Ser II	£157.50	£52.50	12 of £8.75
<b>VIDEOTONE</b>			
MINIMAX II	£49.50	—	—
SAPHIR I	£60.75	—	—
SAPHIR II	£60.75	—	—
<b>MONITOR AUDIO</b>			
MA-7	£98.91	—	—
MA-5/2	£155.25	£52.29	12 of £8.58
MA-4	£195.50	£65.54	12 of £10.83
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MODEL	PRICE	DEPOSIT	MONTHLY PAYMENTS
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AD-1600	£243.00	£81.00	18 of £9.00
AD-1800	£289.00	£98.94	18 of £10.67
AD-6300	£175.00	£58.96	12 of £9.67
AD-6500	£252.00	£84.06	18 of £9.33

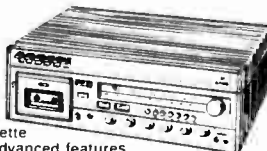


AD-1250

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Videotone Encyclopaedia	£36.00 a
Videotone Super Max	£108.00 c
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Eagle AA28	*£95.50
Goodmans Module 90	£135.00
Goodmans Module 120	£156.00
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Onkyo Y3A	*£103.50
Pioneer 5X300, 5X450, 5X550, etc.	P.O.A.
Tandberg	P.O.A.
Trio KR2400, KR3400, KR440	P.O.A.

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Carriage, £2.50

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Cambridge Audio P80	P.O.A.
Goodmans 40-40	£85.00
Leson	P.O.A.

Pioneer 5A5300, 5A7300, etc.	P.O.A.
Quad 33, 303, 405	Callers only
Rogers A75/II	£128.00
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Sugden A48/II, A21, P51, CS1	P.O.A.
Tandberg TA300M	P.O.A.
Trio KAI200, KA3500, etc.	P.O.A.

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Carriage, £2.50

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Cambridge Audio T55	P.O.A.
Motion Electronics (TV)	P.O.A.
Pioneer TX5300, TX7500, TX9500	POA
Quad FM3	Callers only
Rogers T75 II	£92.00
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Connoisseur BD2 P & C	£43.00
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Thorens TD166C	£83.00
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Colton MC101	£20.00
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SME 3009 Detachable head	£46.50
Transcriptors Fluid	£27.00

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ADC XPM II	Cart-ridge only	£25.00	£11.25

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Philips GP412VE	£28.75	£12.50
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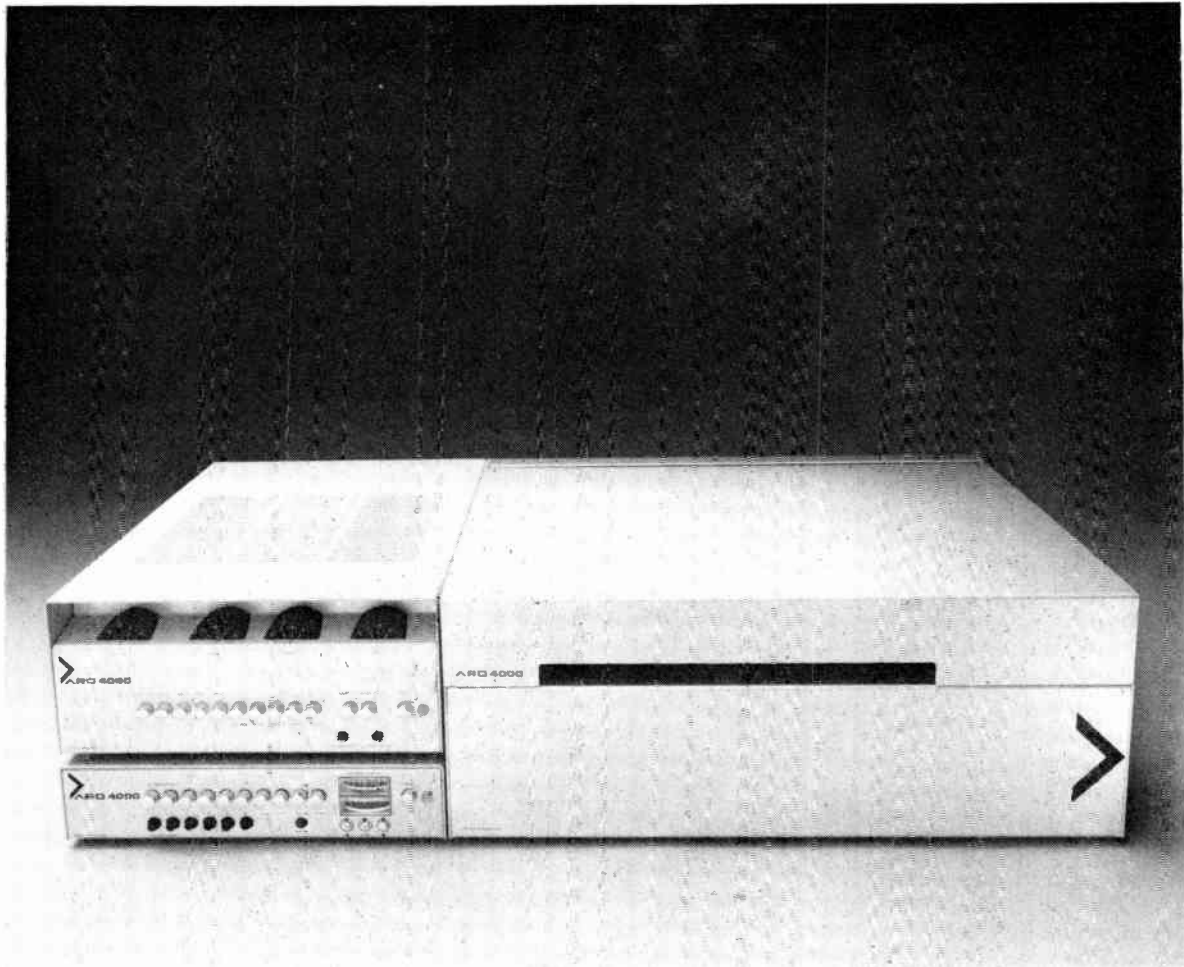
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The 4000 series is of three units, amplifier, tuner, and record player housing, dimensionally and electronically designed to combine as amplifier alone, as amplifier and player, or as amplifier, tuner, and player.

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**Tuner:** vhf stereo decoder with six adjustable pre-set stations, and frequency meters for accurate tuning; an infinitely variable electronic scanner which transfers tuning to three touch controls travelling left, right with a central hold mode to fix station; other facilities include afc, mono/stereo, and mute.

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Dimensions	width	depth	height	feet
amplifier	260mm	352mm	112mm	+8mm
tuner	260mm	352mm	56mm	+8mm
player	452mm	352mm	176mm	+8mm

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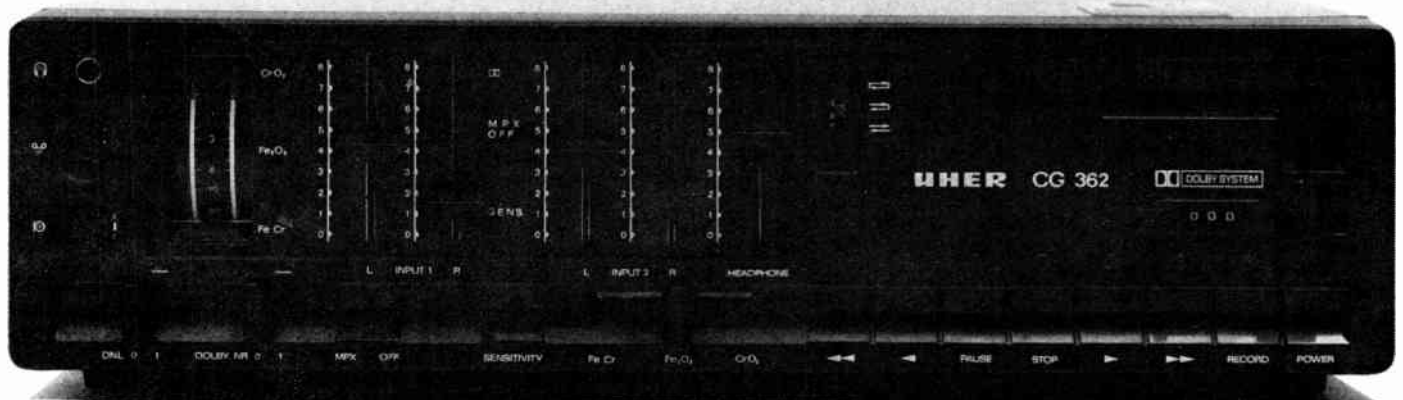
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## CG 362

A worthy addition to any fine hi-fi installation, this compact, easy to use, cassette deck has all operating controls, including the unusual tape insert slot on the front panel allowing the deck to be "stacked" if required. Easy access microphone, headphone and dubbing sockets are located on the front panel, whilst an unrivalled range of connections for static use are located at the rear.

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Full logic tape transport mechanism, 3 motor drive system. Programmable replay: one side, auto reverse and continuous play.

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The smallest portable hi-fi stereo cassette recorder in the world.

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A high quality, low cost cassette deck with Dolby B noise reduction circuitry.

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The first, professional standard 10½" spool recorder for home use, to operate without conventional pinch roller. Uher's revolutionary OMEGA DRIVE, developed from video techniques, utilises a fourth motor to form a tape looping drive system designed to protect valuable tapes. New "motionless" tape tension regulators prevent any excessive increase in tape tension and wow and flutter, therefore, is reduced to an unparalleled 0.04%. With a

### OTHER UHER OPEN REEL RECORDERS

#### UHER SG510

An ideal base to any sound system, 4 track operation, self contained stereo amplifier and loudspeakers.

#### UHER SG520

The ideal machine for all enthusiasts not requiring trick recording but demanding top hi-fi stereo quality.

#### UHER SG560

A leader in its class : wow and flutter less than 0.05%, with a full range of professional recording facilities.

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Ultra reliable, rugged, portable recorders used by professionals the world over, mono, 2 and 4 track models.

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John Lewis, Oxford St, W1  
Peter Jones, Sloane Sq, SW1  
John Barnes, Finchley Rd, NW3  
Jones Bros, Holloway Rd, N7  
Pratts, High Rd, Streatham, SW16  
John Lewis & Co. Ltd, Brent Cross Shopping Centre, NW4  
Studio 99, Swiss Cottage, NW6  
Graham Electrical, Pentonville Rd, N1

## BERKSHIRE

Reading Cassette, 6 Harris Arcade, Friar St, Reading  
Heelas, (John Lewis Shop), Broad St, Reading

## ESSEX

Chew & Osborne, Epping  
Chew & Osborne, 26 King St, Saffron Walden

## HAMPSHIRE

Tyrrell & Green, (John Lewis Shop), Above Bar, Southampton  
R. J. Parker, 11 West End Rd, Bitterne, Southampton  
Hamilton Electronics, Southampton  
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## HERTFORDSHIRE

F. D. Bailey, Watford  
Herts Hi-Fi, Watford  
The Record Shop, Hitchin  
Trewins, Queens Rd, Watford

## MIDDLESEX

Daytronic, 119 High St, Teddington  
Haven Hi-Fi, Sunbury-on-Thames  
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Leonard Booth, South St, Eastbourne  
Complete Audio Systems, Grove Rd, Eastbourne  
John Rees Hi-Fi, High St, East Grinstead  
The Music Shop, Uckfield  
Sounds Supreme, Portland Rd, Hove  
Malwyn Bowden Assoc., Edward St, Brighton  
Malcolm Studio, 12 South St, Chichester  
L. C. Down, Three Bridges, Nr Crawley

## KENT

Woods & Porter, 23 East Hill, Dartford  
Sound Systems, Bromley  
Sloman & Pettitt, Pudding Lane, Maidstone

## OXFORDSHIRE

Horns of Oxford, Six South Parade, Oxford

## WEST MIDLANDS

R.S.C. Hi-Fi, 17 Shelton Sq, Coventry  
Electronics Centre, 33 City Arcade, Coventry  
Griffin Radio, 94 Bristol Rd, Birmingham  
Hocken Sound, 1195 Pershore Rd, Stirchley, Birmingham  
Cine Equipment, Dale End, Birmingham  
Five Ways, Islington Row, Birmingham

## MERSEYSIDE

Fairs Bros, Dacre Hill, Rock Ferry, Birkenhead  
James McKenzie, (Northern Discounts), Grange Rd, Birkenhead

## STAFFORDSHIRE

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Tom Reekie, Tudor House, Bridge St, Stafford  
Millwards, Salop St, Wolverhampton  
James Beattie, Wolverhampton  
M. R. Warner, 26 Chaple Ash, Wolverhampton  
Hi-Fi Studio, Lonsdale St, Hanley, Stoke-on-Trent  
Newcastle Hi-Fi, Market Arcade, Newcastle-under-Lyme  
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Taylors Pianos, 119 Abbey St, Nuneaton  
R.A.C. Automation, 19 Freemantle Rd, Rugby

### WORCESTERSHIRE

David Waring, High St, Worcester

### SOUTH WALES

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Electroponic, 10 Forge Rd, Port Talbot

### CHESHIRE

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Charlsworths, 112 Foregate St, Chester  
Hodgsons Radio & TV, Chestergate, Macclesfield,  
Hi-Fi Centre, Green Lane, Wilmslow  
Sight & Sound, 164 Ashley Rd, Hale  
Sound Centre, 2 Bold St, Altrincham  
Van Bek Electronics, 10 Market St, Altrincham  
Cheshire Sound & Vision, 6 Witton Walk, Northwich  
Fairbotham, 58-62 Lower Hillgate, Stockport  
Swift of Wilmslow, 5 Swann St, Wilmslow  
Fairs Bros, Dacre Hill, Rock Ferry, Birkenhead  
Laiders the Chemist, 26 Marina Walk, Ellesmere Port

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Derhams, Kent St, Kendal  
J. P. Dias, 149 Bothergate, Carlisle  
H. L. Elliott, 29 Lowther St, Whitehaven

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Lloyd Paton McGlynn, 34 Moorfield Walk, Urmston, Manchester  
J. Koczur, 185 Yorkshire St, Rochdale  
Southport Hi-Fi, 6 Princes St, Southport  
Boothroyds, Lord St, Southport  
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Realsound, 156 Bradshawgate, Bolton  
H. Plumb & Son, 52 Standishgate, Wigan  
Ace Audio, Liverpool  
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Mathers Photographic Ltd., 15 Bradshawgate, Bolton  
George Henry Lee, Basnett St, Liverpool  
Swanns of Manchester, 84 Oldham St, Manchester  
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Sound Services, 26 Bury New Rd, Prestwich, Manchester

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A. E. Parsons Ltd, 19-21 Cavendish St, Chesterfield  
Micron Audio, 135 Sheffield Rd, Chesterfield  
Victor Buckland Ltd., 41-49 London Rd, Derby

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Gregsons, Cutram St, Sutton in Ashfield  
Pearsons, Long Row, Nottingham  
Peter Anson Ltd, Bobbers Hill, Nottingham  
Nick Dakin, Radford Rd, Nottingham  
Brentnalls, 3 Market Street, Nottingham  
Jessops (John Lewis Shop), Victoria Centre, Nottingham

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Tilley Television Electrical Services, 109-111 Queen Rd, Leicester  
Clarendon Electrical, 84 Sparkenhoe St, Leicester

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H. Kirby, 11 Ashwell St, Lough  
Les Wright, 101 Mary St, Scunthorpe  
Fotosound, 19 Dolphin Lane, Boston  
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Richard Reeves, 174 Kettering Rd, Northampton

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McKenna & Brown, 11 Bondgate, Darlington  
Gilson Audio, 76a Skinnergate, Darlington

### CLEVELAND

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McKenna & Brown, The Precinct, Stockton-on-Tees  
McKenna & Brown, 135 High St, Redcar  
Gilson Audio Ltd, 234 Linthorpe Rd, Middlesbrough  
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Red Radio Shop, 11 Olive St, Sunderland  
Turners Audio Visual, New Precinct, Newcastle upon Tyne  
J. G. Windows, 3-7 Central Arcade, Newcastle upon Tyne  
Bainbridge & Co. (John Lewis Shop), Market St, Newcastle upon Tyne

### CAMBRIDGE

Campkins Audio, 31 Market St, Cambridge  
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Keighley Camera & Hi-Fi Centre, 40 Cavendish St, Keighley  
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Audio Projects, 10 Blenheim Terrace, Leeds  
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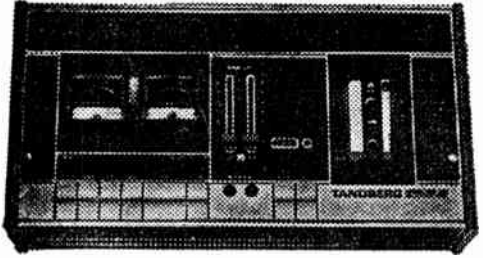
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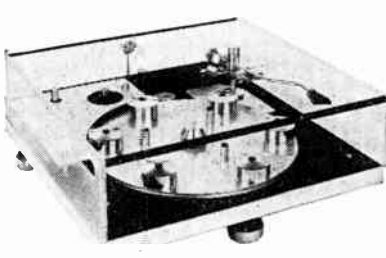
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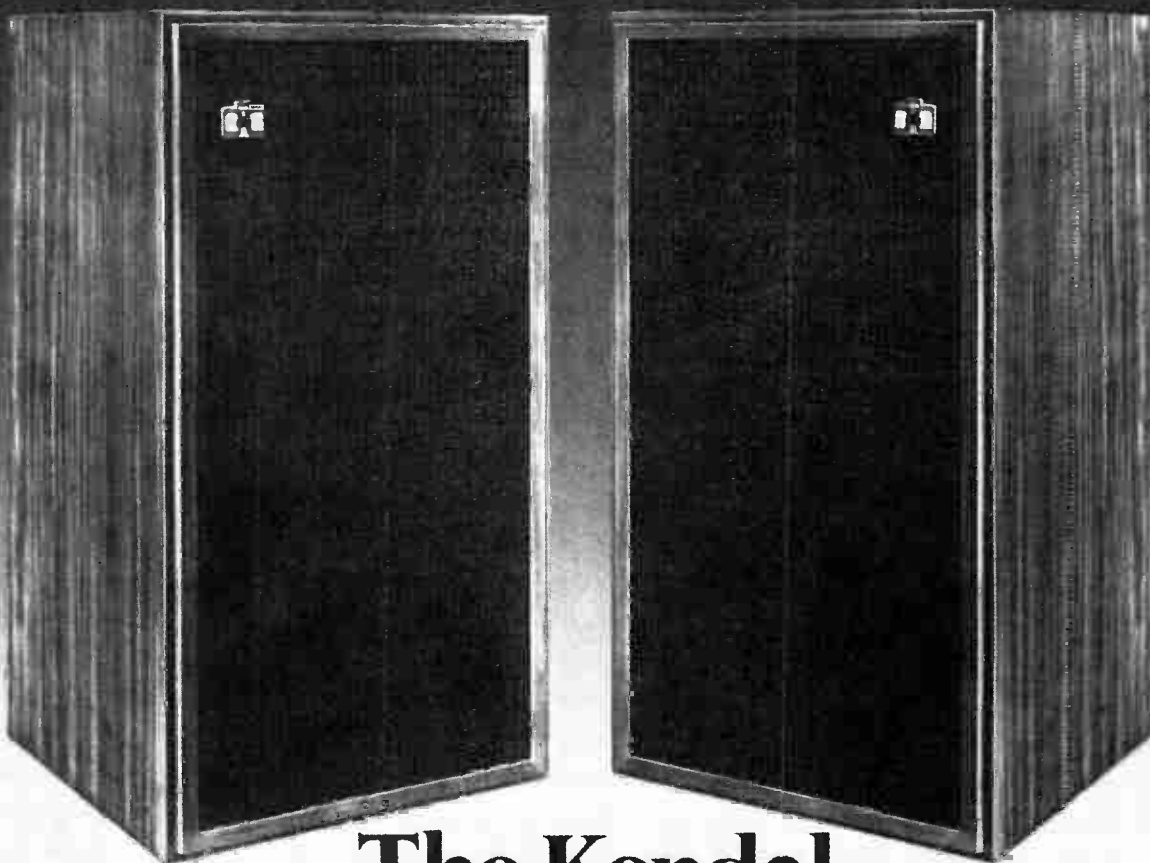
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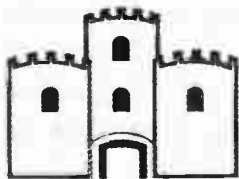
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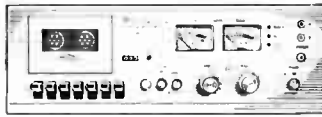
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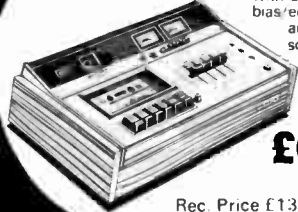
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Output		78.94
GOODMANS Module 90		134.50
GOODMANS Module 120		146.90
GOODMANS Module 150		212.50
LEAK 3200	225.65	159.50
LEAK 3400	282.74	199.50
MARANTZ 4240	493.49	244.90
MARANTZ 4400	986.97	819.90
MARANTZ 2325	750.11	619.50
MARANTZ 2275	650.09	539.50
MARANTZ 2250B	523.64	434.50
MARANTZ 2235B	401.69	229.50
MARANTZ 2225	252.78	209.50
MARANTZ 2220BL	205.27	169.90
MARANTZ 2216	184.28	152.50
MARANTZ 2215B	150.89	124.90
SUPERSCOPE R1240 by MARANTZ	205.27	109.50
SUPERSCOPE R1270 by MARANTZ	240.00	133.50
PHILIPS RH651 AM FM MPX tuner amp stereo cassette deck, ONL. with two speakers		168.50
PIONEER SX300	104.90	76.90
PIONEER SX450	161.40	117.50
PIONEER SX550	199.37	144.50
PIONEER SX650	271.26	214.50
PIONEER SX750	322.80	253.90
PIONEER SX850	430.45	336.90
ROTEL RX1C2 Mk 2	120.45	84.50
ROTEL RX1S2 Mk 2	137.00	95.50
ROTEL RX202 Mk 2	156.75	104.90
ROTEL RX402	207.90	138.90
ROTEL RX602	273.90	191.90
SANSUI 221	141.62	77.90
SANSUI 331	155.76	104.50
SANSUI 551	209.21	129.94
SANSUI 661	268.14	167.94
SANSUI 505C	268.14	179.50
SANSUI 6060	322.05	219.50
SANSUI 7070	436.26	294.50
SANYO OCX 1850		84.94
SANYO OCX 7000		112.94
SANYO OCX 4000		129.94
SANYO OCX 6000		139.94
SANYO OCX 8000		149.94
TRIO KR 2600	149.95	109.50
TRIO KR 3600	197.50	172.00
TRIO KR 4600	247.50	215.00
TRIO KR 5600	287.50	250.00
TRIO KR 6600	380.00	330.00

LEAK 3900A	371.78	259.50
MARANTZ 1030	96.47	79.90
MARANTZ 1040	174.38	143.90
MARANTZ 1060	150.90	124.90
MARANTZ 1200B	518.83	294.90
MARANTZ 1070	218.24	179.50
MARANTZ 1150	398.09	333.90
MARANTZ 11500	495.70	419.90
MARANTZ 3800 pre amp	778.64	648.90
MARANTZ 5100 pow amp	1,065.97	889.90
MARANTZ 3200 pre amp	193.20	162.50
MARANTZ 140 pow amp	289.51	238.90
PIONEER SA 5300	85.86	66.54
PIONEER SA 6300	105.71	79.94
PIONEER SA 7300	162.62	128.94
PIONEER SA 7500	238.14	184.54
PIONEER SA 8500	271.22	199.54
PIONEER SA 9500	363.80	259.54
ROTEL RA 212	82.35	57.54
ROTEL RA 312	97.10	67.50
ROTEL RA 412	125.30	87.90
ROTEL RA 712	152.00	99.50
ROTEL RA 812	217.55	154.90
SANSUI AU 2900	100.01	68.50
SANSUI AU 3900	143.06	97.50
SANSUI AU 4900	173.38	118.50
SANSUI AU 5900	246.53	168.50
SOLAVOX 20	45.53	24.54
SOLAVOX 30	53.46	29.54
TRIO KA 1500	79.95	69.95
TRIO KA 3500	125.00	109.50
TRIO KA 5500	218.50	190.00
TRIO KA 7300	287.50	250.00
TRIO MOO 600	635.00	550.00

## TUNERS

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AKAI AT 2400	181.00	129.90
ALBA UA 800 A		54.50
AMSTRAD 3000 Mk II		42.50
MARANTZ 104	110.06	99.90
MARANTZ 112	209.79	174.50
MARANTZ 150	502.27	414.50
PIONEER TX 5300	96.40	74.54
PIONEER TX 7500	189.42	144.54
PIONEER TX 9500	261.87	198.90
ROTEL RT 224	90.30	59.50
ROTEL RT 324	114.85	79.50
ROTEL RT 724	136.70	96.50
ROTEL RT 824	214.65	149.90
SANSUI TU 3900	151.89	102.50
SANSUI TU 5900	223.84	149.50
TRIO KT 5300	105.00	89.95
TRIO KT 7300	230.00	199.95
TRIO MOO 600 T	575.00	495.00

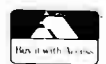
## TURNTABLES

AKAI AP 003 inc. b and c and AT 11 Cart	137.50	94.50
AMSTRAD TP 120 inc. b and c		45.50
CONNOISSEUR B02 inc. b and c	57.38	34.90
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PIONEER PL 530 Direct Drive inc b and c	231 35	169.90
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SANSUI SR 525 Direct Drive inc b and c	188 40	129.50
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GARRARD 125 SB with Shure M75 6 SM	73 46	49.50
GARRARD 86 SB Mk II with Shure M75 6 SM	104 23	62.50
GARRARD GT 55 P with Shure M75D	149 57	97.50
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McDONALD BDS 80 TPD Belt Drive with ADC K7E	59 06	30.94
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TRIO KD 2055 inc p and c	99 50	86.00
TRIO KD 500 inc p and c less arm	210 00	180.00
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LEAK 3030	157 50	114.50
LEAK 3050	218 00	157.50
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MARANTZ 5G	124 67	98.90
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MARANTZ HD 66	311 45	259.90
MARANTZ HD 77	447 44	369.50
MARANTZ HD 88	644 22	538.90
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SANSUI ES 200	221 36	144.94
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SDLAVOX TK 30	64 71	42.50

SDLAVOX TK 45	120 06	78.50
SDLAVOX Speaker Stands (pair)	16 99	12.25
TRIO LS 202 A	89 50	75.00
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WHARFEDALE Denton 2 XP	59 15	41.50
WHARFEDALE Linton 3 XP	84 62	59.50
WHARFEDALE Glendale 3 X <sup>2</sup>	115 16	81.50
WHARFEDALE Dovedale SP	197 24	138.90

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AKAI GXC 39 D Dolb deck	201 20	129.50
AKAI CS 705 D Dolby deck front load	194 40	136.50
AKAI CS 707 D Dolby deck front load	242 00	169.50
AKAI GXC 310 D Dolby deck two capstans	241 50	142.50
AKAI GXC 325 D Dolby deck two capstans three heads	355 50	229.50
AKAI GXC 710 D Dolby deck front load	311 45	217.90
AMSTRAD 7050 Dolby deck		78.90
AMSTRAD 7070 Dolby deck front load		89.50
BUSH BT 8503 deck	77 51	38.94
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FERGUSON 3280 Dolby deck	89 95	68.90
GARRARD GC 300 Dolby deck	157 44	102.90
GARRARD GC 350 Dolby deck front load	193 44	123.95
H L / PHOENIX CR11 deck	79 95	36.94
MARANTZ 5220 Dolby deck front load	229 42	189.90
MARANTZ 5420 Dolby deck	293 90	244.50
MARANTZ 5120 Dolby deck	217 35	179.50
MARANTZ 5200 Dolby deck front load	205 27	169.50
PHILIPS N 2511 Dolby, DNL deck		121.50
PHILIPS N 2412 stereo recorder inc two loudspeakers		86.90
PIONEER CTF 2121 Dolby front load	181 59	134.90
PIONEER CTF 6060 Dolby front load	242 56	176.90
PIONEER CTF 7070 Dolby front load	263 10	189.90
PIONEER CTF 8080 Dolby deck front load	317 03	249.90
PIONEER CTF 9191 Dolby front load	374 13	289.90
PIONEER CT 4141 A Dolby deck	135 82	98.50
PIONEER CT 5151 Dolby deck	154 22	112.50
ROTEL RD 20 Dolby stereo deck	226 90	119.50
SANSUI SC 2000 Dolby deck front load	206 55	146.50
SANSUI SC 2002 Dolby deck front load	232 86	159.50
SANSUI SC 3000 3003 Dolby deck front load	261 13	184.50
SANYO RD 4260 Dolby deck		99.50
SANYO RD 4080 Dolby deck		119.50
SANYO RD 4600 Dolby deck auto rewind and repeat		169.90
TRIO KX 620 Dolby front load	199 95	155.00
TRIO KX 720 Dolby deck	220 00	185.00
TRIO KX 920 Dolby deck	250 00	220.00

## HOW TO CALCULATE VAT

All McOmny prices include VAT at the current rates (12% electronics, 8% blank tapes and Schreiber Furniture) but should a change in VAT be announced in the Chancellor's Budget (and assuming that it takes effect immediately) you can easily calculate the new McOmny prices to include a revised rate of VAT by multiplying the McOmny price listed here by the relevant constant listed below.

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17% VAT:	x 1.04444	x 1.08796
20% VAT:	x 1.06666	x 1.11111
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### PLEASE NOTE

There are no longer Recommended Retail Prices on some brands of Hi-Fi equipment consequently some Recommended Prices shown are prices recommended prior to the end of September 1976. These are left for your information to assist you in evaluating your purchase.

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MANCHESTER	Mailborough Mill, Poplar Street, Failssworth	Tel 061-682 6016
MANCHESTER	Kwik Save Centre, Past Tesco Hyper-Market, Fairhills Road, Irlam	Tel 061-775 6666
NEWHAVEN	Avis Way, Newhaven	Tel 07912 5081
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Our Price

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**£117.50**

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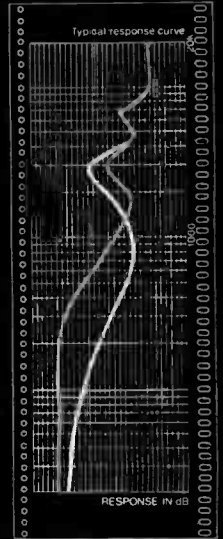
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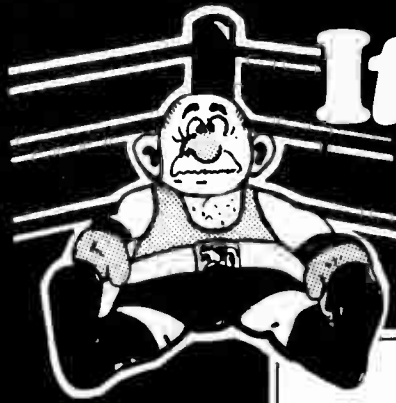
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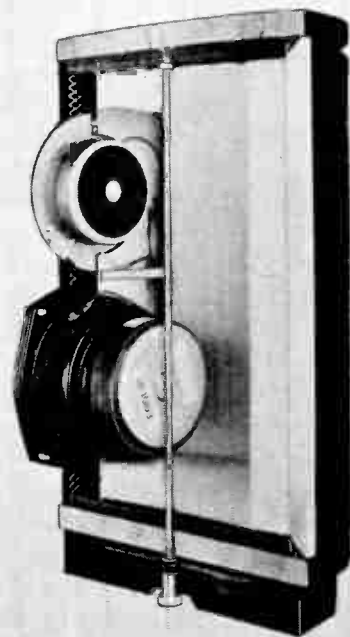
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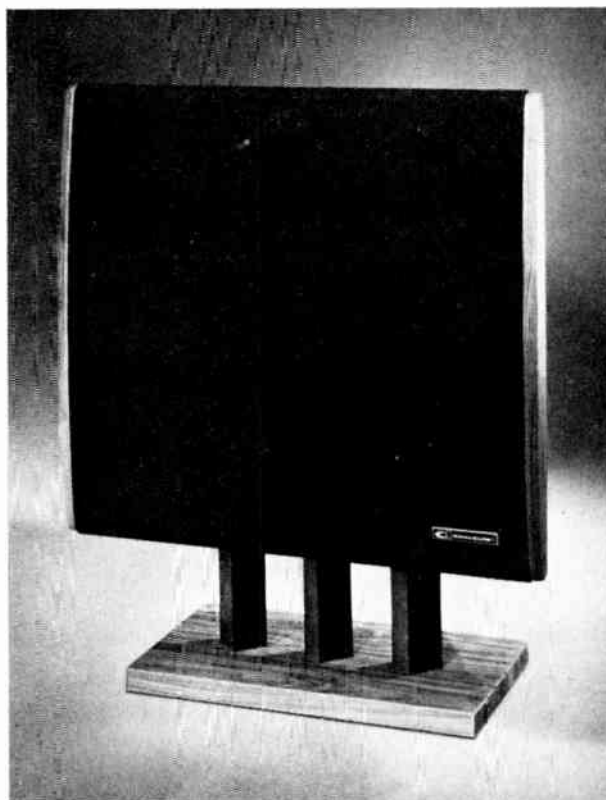
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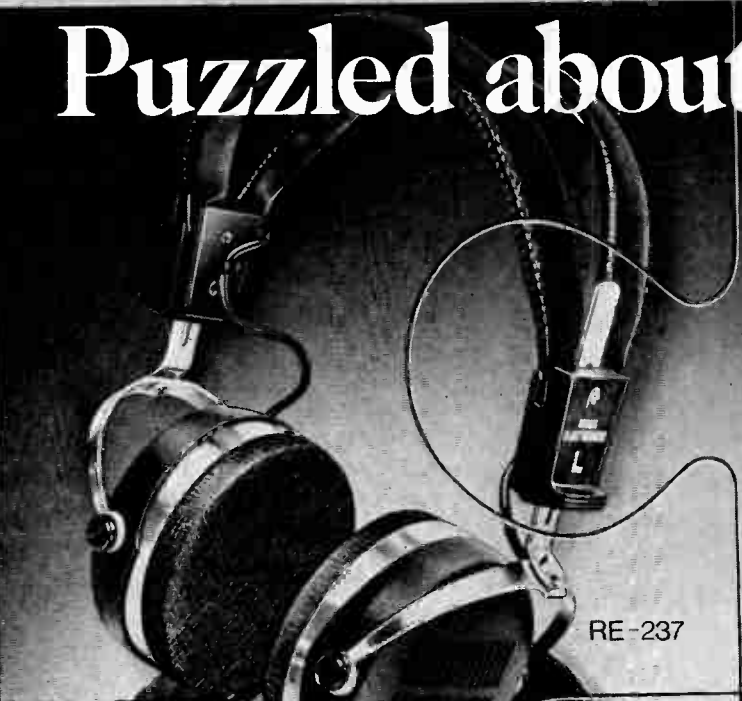
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RE-237



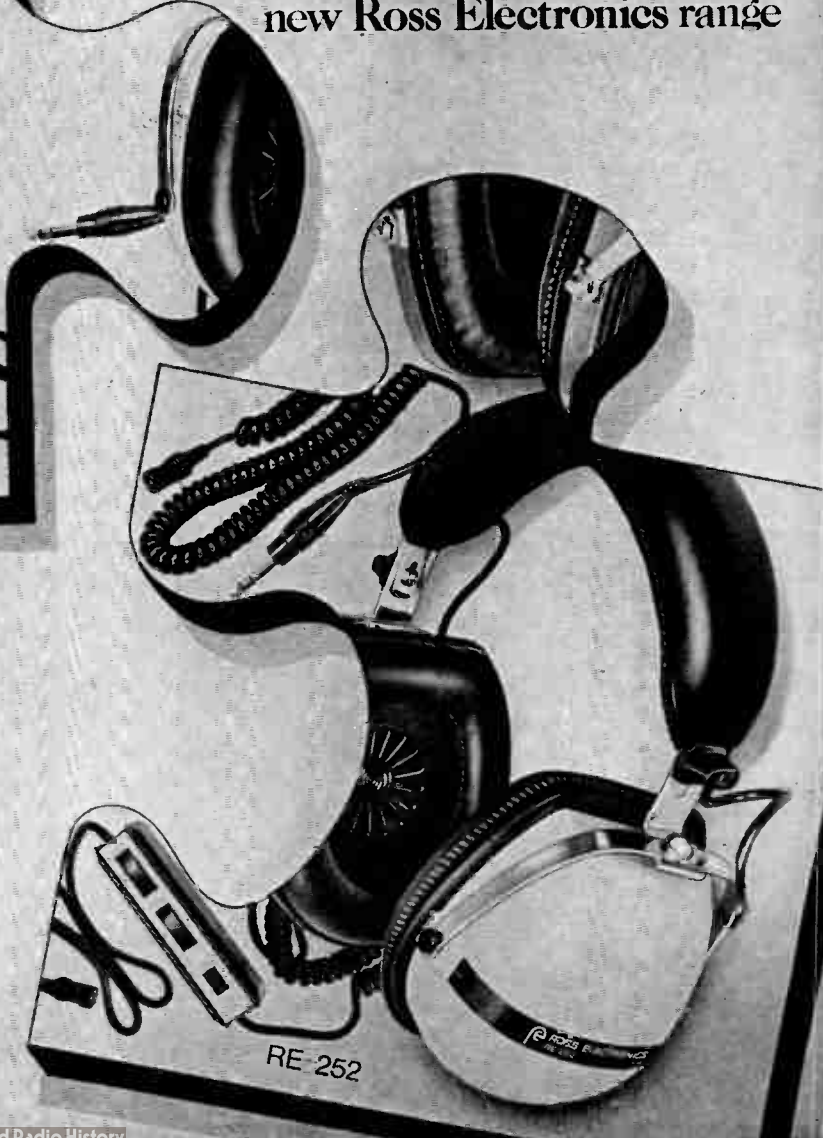
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RE-270

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**There's one cut out just for you in the new Ross Electronics range**



RE-252

RE-237. Extended range Reflex (15-22000 Hz). RRP £10.60 + VAT.

RE-252. Interchangeable remote volume control and stereo / mono switch. RRP £12.30 + VAT.

RE-260. Two-way stereo headphone. Mylar cone tweeter and woofer. RRP £15.47 + VAT.

RE-270. Electret Condenser, *direct connection* type £25.32 + VAT.

These are just four of the thirteen stereo headphones in the complete Ross Electronics range. See them at your dealer or write for information.



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# AMSTRAD

give highest level  
technical excellence at  
lowest level costing

## IC2000

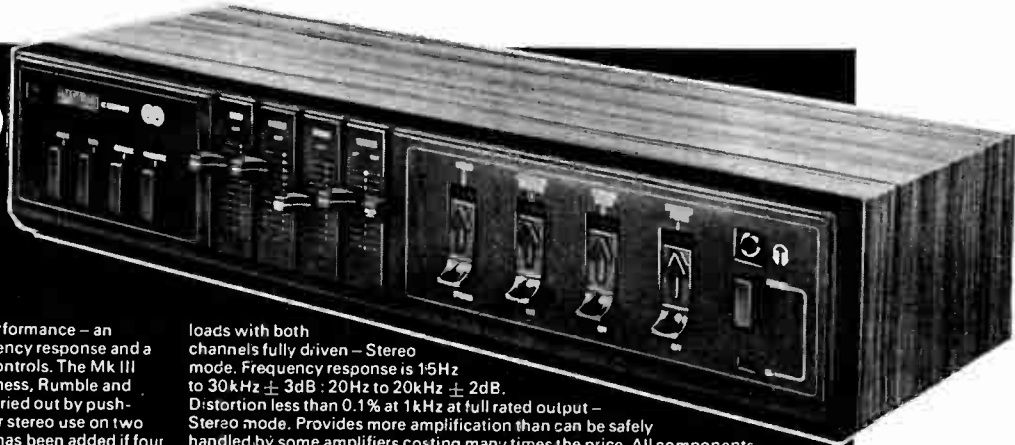
Mk III

### STEREO AMPLIFIER

100 WATTS · 25 WATTS R.M.S. PER  
CHANNEL INTO 8 OHMS

The IC2000 Mk III, completely new in both looks and performance – an increased power handling and output with a wider frequency response and a lower distortion factor with slide potentiometers for all controls. The Mk III has new style fingertip switches for Stereo/Mono, Loudness, Rumble and Scratch filters, and interlocking of all other facilities is carried out by push-button selectors. The amplifier is designed specifically for stereo use on two loudspeakers but the additional facility of Quadrosound has been added if four speaker reproduction is required. These advanced technical refinements have been enclosed in a teak effect cabinet, with black fascia and black function buttons.

The IC2000 Mk III performs with a powerful 25 watts per channel into 8 ohm



loads with both channels fully driven – Stereo mode. Frequency response is 15Hz to 30kHz  $\pm$  3dB : 20Hz to 20kHz  $\pm$  2dB. Distortion less than 0.1% at 1kHz at full rated output – Stereo mode. Provides more amplification than can be safely handled by most amplifiers costing many times the price. All components are mounted on printed circuit boards. Employed in the IC2000 Mk III is a regulated power supply to ensure maximum performance in output and minimum distortion at high listening levels.  
Size : 44mm x 168mm x 92mm.



## 3000

Mk II TUNER

LW/MW/FM

WITH INBUILT AUTOMATIC  
STEREO MPX DECODER  
2 $\mu$ V FM SENSITIVITY – MUTING  
CONTROL – AFC CONTROL

The 3000 Mk II is a quality Tuner in the Amstrad tradition, incorporating not only an excellent Very High Frequency F.M. receiver section complete with it's phase locked loop decoder, but also including an AM radio section which provides reception on long and medium waves. The built-in ferrite rod aerial operates on medium and long waves, giving strong powerful reception over the wide waveband spectrum – AFC being provided on

the FM section to positively lock on and hold the frequency from drift. The FM section is linked to a stereo beacon which is automatically activated when stereo broadcasts are being transmitted. The 3000 Mk II is compatible with virtually any amplifier, Tape Deck and Recorder, and will perform with most stereo systems. The cabinet is teak effect finish with contrasting black console and amber illuminated pointer, lime green tuning scale, and green illuminated tuning meter.  
Size : 365mm x 155mm x 95mm.



## 8000

Mk III STEREO  
AMPLIFIER

40 WATTS :  
10 WATTS R.M.S. PER  
CHANNEL INTO 8 OHMS

Amstrad 8000 Mk. III the stereo Amplifier built for qualitative sound reproduction, and long term reliability. The comprehensive and attractively furnished console is designed for instantaneous adjustment. The manifold characteristics include : Slider Bass and Treble controls, individual Volume Controls, a unique loudness switch for widespread listening ; rumble and scratch Filter switches ; frontal jack socket for stereo headphones ; ceramic, magnetic, tape and radio inputs, and output for tape, four rearset outputs for normal stereo or quadrosound listening. All this and much more besides in a beautiful teak finished unit.  
Size 330mm wide x 197mm deep x 78mm high



# AMSTRAD

# the top deck

## 7050

### NEW IMPROVED TOP-LOADING DOLBY STEREO CASSETTE DECK

After months of development and experience gained from our previous model 7000, we now proudly present the new, improved 7050. Now designed with a seven key, high quality precision TAPE TRANSPORT MECHANISM and incorporating a new integrated circuit "Dolby System". Features include:

- Fast Forward, Rewind ■ Stop ■ Pause
  - Eject ■ Improved Autostop, incorporating a Micro drag Reed Sensor System
  - Facility for CRO<sup>2</sup> tape ■ Twin VU Meters
  - Microphone Inputs ■ Variable output, making playback possible on most amplifiers and hi-fi units
  - Twin Record Level slider controls, for accurate recordings from most hi-fi systems
  - Improved life azimuth matched Record/Playback Heads
  - Headphone output socket. Now included is a special Tape Monitor feature for amplifiers with tape monitor facility
  - Tape Digit Counter
  - Lower harmonic distortion of 0.8%
  - Improved Wow & Flutter and Frequency Response
- Neatly styled in an ultra slim, low profile cabinet with matt black trim, and professional beige colour VU Meters. Size: 370mm wide, 220mm deep, 85mm high.



## TP12D

### TURNTABLE

**BELT DRIVE · SOLID DIE CAST PLATTER RUMBLE -47dB · WOW & FLUTTER 0.1%**

The TP12D Turntable has taken a decade to develop, and although contemporary in looks, its design is principally functional and of prime importance. The tri-lateral peripherally weighted platter produces an equiponderate tangential counterbalancing force - the platter being solid die-cast, combines to permit it to revolve at more constant speed, thereby limiting wow and flutter to a minimum. The drive is by a 16-pole synchronous motor with belt drive minimising rumble. The tone arm is of 'S' shape and specifically designed for minimum tracking error, and employs a lightweight detachable headshell thus reducing wear on the sides of the record groove. The arm is counterbalanced by an adjustable weight and has a low friction precision bearing and bias compensator and damped Cue control.

The TP12D is mounted on a teak finished solid mount with low profile Perspex cover, complete with power cord and 5-pin DIN audiolead ready to connect and play. Size: 445mm x 356mm x 140mm.

see over



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- Amstrad IC2010 Mk III
- Amstrad 3000 Mk II
- Amstrad 8000 Mk III
- Amstrad 7050
- Amstrad TP12D

Name \_\_\_\_\_

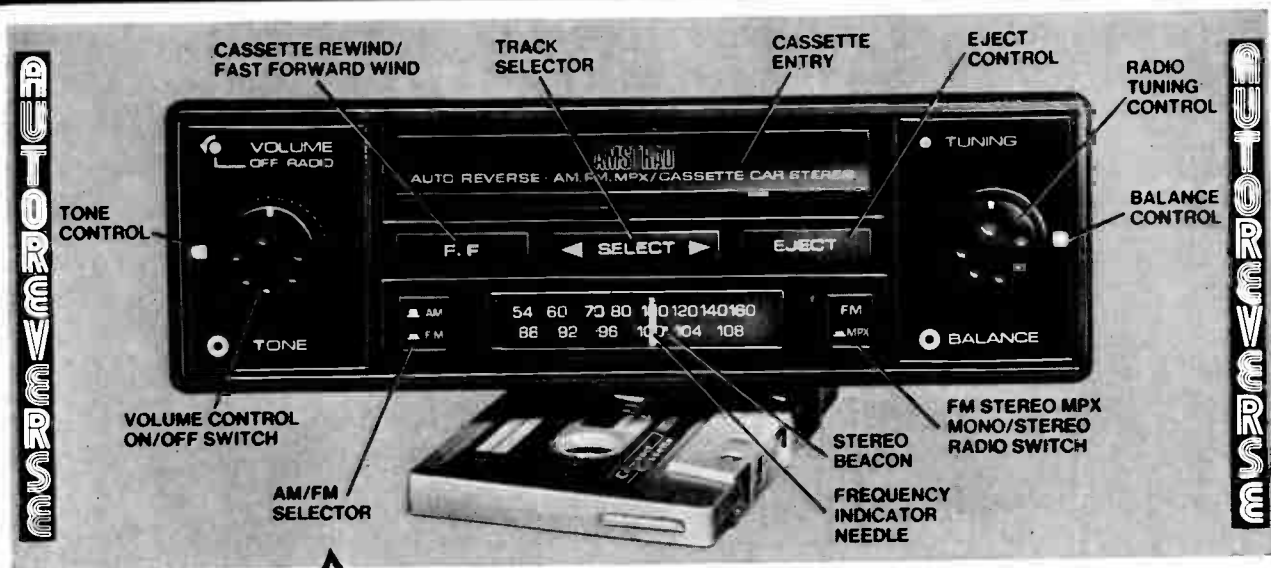
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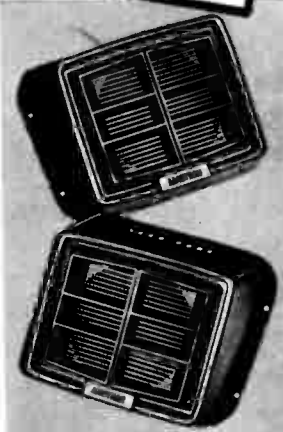
# AMSTRAD in car



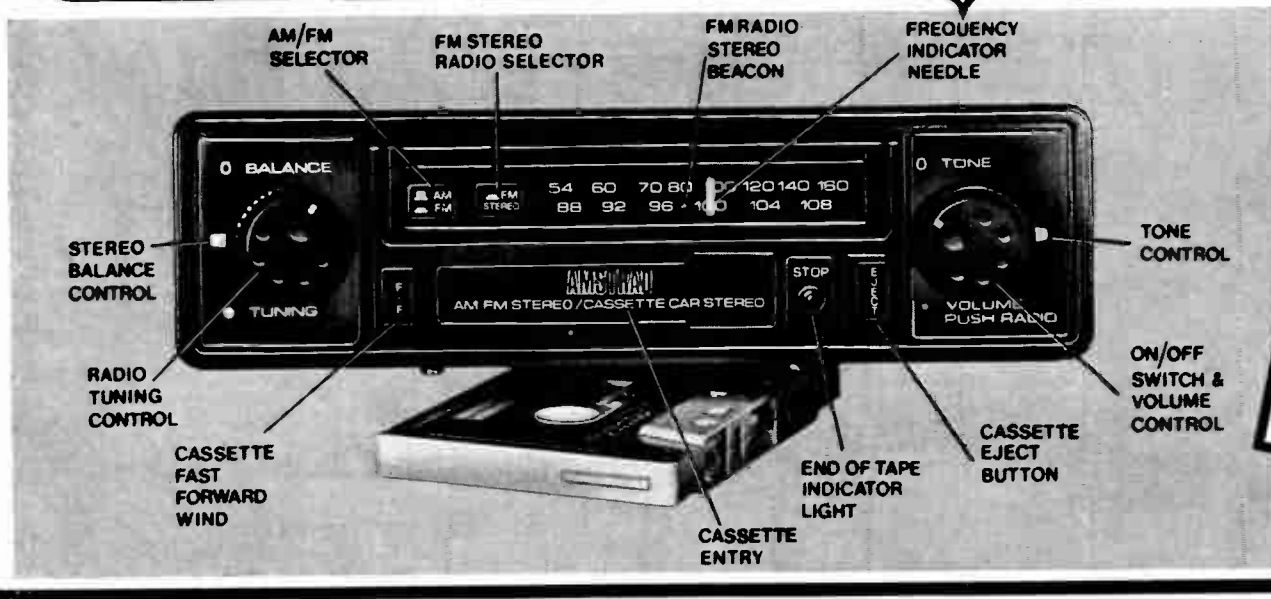
**MODEL 9050**  
**AROUND**  
**£78**  
 Rec. Retail Price  
 £102.08

**9050** AM/FM (FM STEREO MPX)  
**IN DASH FITTING CAR RADIO STEREO CASSETTE PLAYER with AUTOREVERSE**  
 20 WATTS:- 5 WATTS R.M.S. PER CHANNEL INTO 4 OHMS Suitable for most Negative earth cars.  
 No longer do you have to change the tape from side to side. The machine just keeps on playing until the end of the track, and then changes to the other track; it will carry on doing this until the Stop/Eject button is activated.  
 Features Include: \*FM (STEREO) RADIO \*MW MEDIUM WAVE RADIO \*TRACK SELECTOR \*REWIND/FAST FORWARD Button \*MONO/STEREO SWITCH for FM RADIO \*BALANCE CONTROL \*TONE CONTROL  
 This unit is supplied complete with a pair of shelf mounting loudspeakers and radio mounting bracket.

**9000** AM/FM (FM STEREO MPX)  
**IN DASH CAR STEREO RADIO AND CASSETTE PLAYER**  
 16 WATTS:- 4 WATTS R.M.S. PER CHANNEL INTO 4 OHMS Suitable for most Negative earth cars.  
 In dash fitting Car Radio Stereo Cassette Player FM (Stereo) Radio Reception and MW Medium Wave. Features include: \*FAST FORWARD CONTROL MONO/STEREO SWITCH for Stereo Radio \*TONE CONTROL \*EJECT CONTROL \*BALANCE CONTROL \*AUTOSTOP LIGHT  
 Included with this unit is a pair of shelf mounting loudspeakers and a fixing bracket for the main radio unit.



**SPEAKERS**  
 Large 10.5cm cone, heavy magnet. Shelf mounting, finished in black. Size: 105mm x 185mm x 150mm



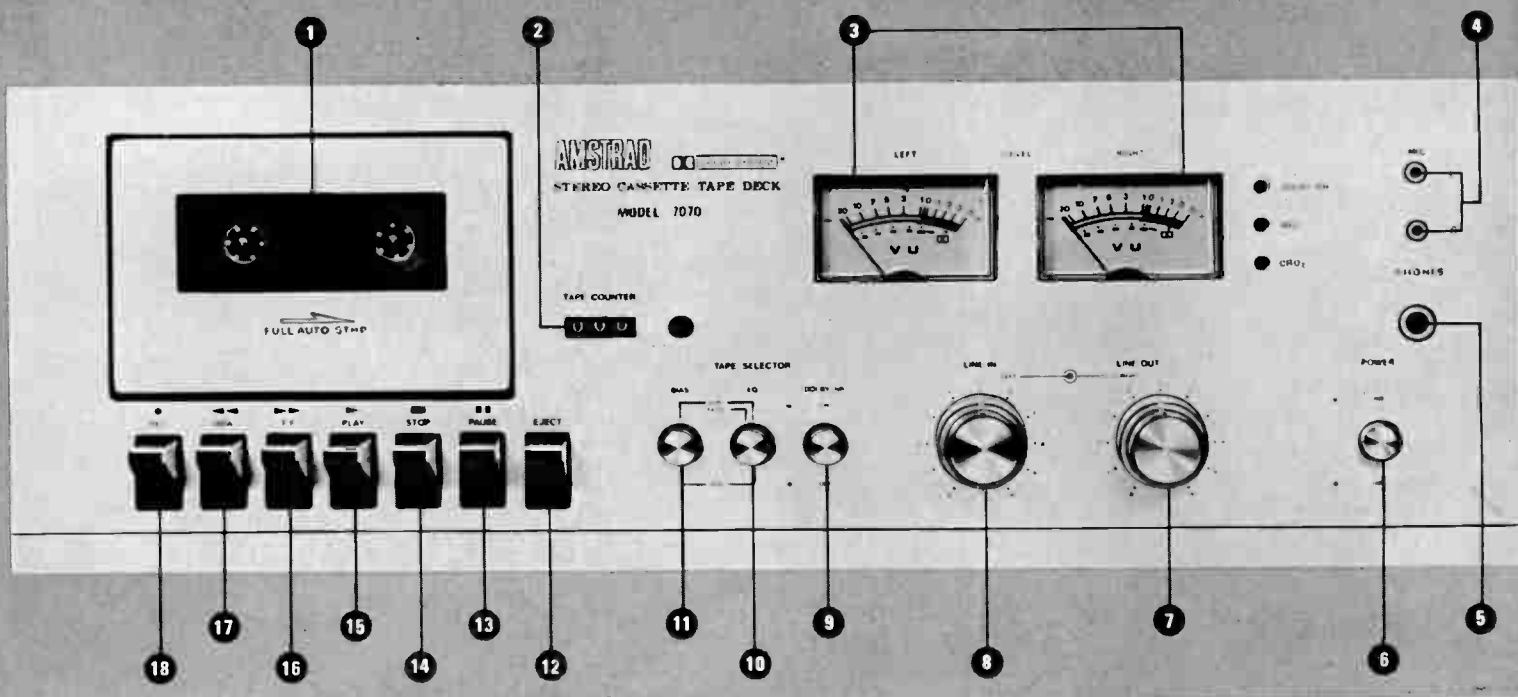
**MODEL 9000**  
**AROUND**  
**£59**  
 Rec. Retail Price  
 £77.42

# AMSTRAD

\* **DOLBY SYSTEM**

# 7070

## Front Loading Cassette Deck



Amstrad introduce you to the Front Loading 7070 Dolby System Cassette Machine. A black finish, anti-hum metal cabinet sets of the brush grained silver-finish Front Panel which carries the Cassette Door and all the controls. This unit is suitable for use with most Amplifiers and Hi-Fi Systems on the market. It has a variable output from 0 – 1000mV, and it's design is such that it enables you to stack other units in your system on top, giving easy access to the cassette machine. Other features include :

- FULL AUTO STOP
- Frequency Response 25Hz – 17,000 Hz
- Wow and Flutter 0.08%
- Chromium Dioxide and Ferric Chrome Tape Facility.

Size : 420mm x 145mm x 255mm

- 1 Front Loading Cassette Door
- 2 Tape Digit Counter
- 3 VU Meters
- 4 Microphone Inputs
- 5 Headphone Socket
- 6 Power Switch
- 7 Line Out – Left and Right
- 8 Line In – Left and Right
- 9 Dolby In Switch
- 10 CRO<sub>2</sub> & Fe Cr<sub>2</sub> Switch
- 11 Bias Switch
- 12 Eject Button
- 13 Pause Button
- 14 Stop Button
- 15 Play Button
- 16 Fast Forward Button
- 17 Rewind Button
- 18 Record Button



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Amstrad 9050 Name \_\_\_\_\_  
 Amstrad 9000 Address \_\_\_\_\_  
 Amstrad 7070 \_\_\_\_\_

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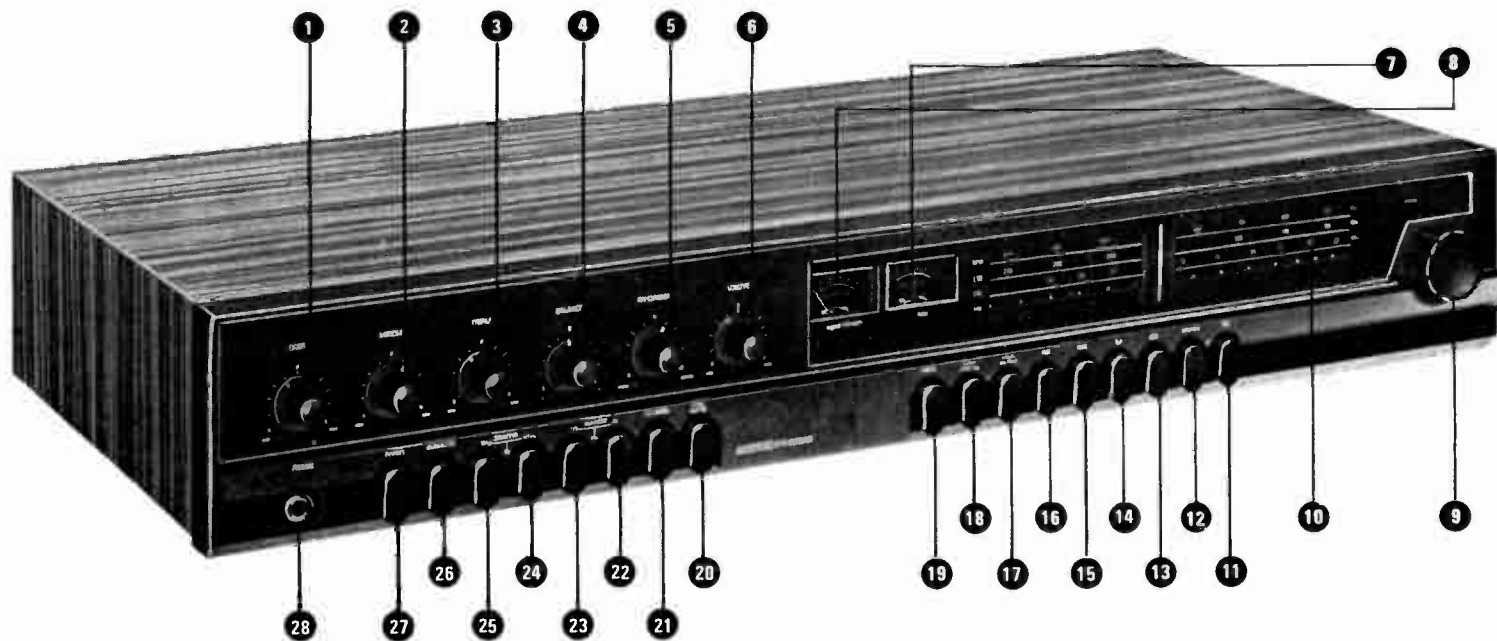
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Get

# AMSTRAD



into your system



## 5050 Stereo Receiver

**100 WATTS: 25 WATTS RMS PER CHANNEL INTO 8 OHMS**  
**2µV FM Sensitivity • FM/MW/LW**

The new Amstrad 5050 Tuner Amplifier is designed with all the facilities we could possibly imagine to put on a Receiver. Such items as Panorama, High Blend and Quietness controls only to be found on units costing double the price. Other features include:  
\*Wide Frequency Response of 15Hz - 30kHz ±3dB  
\*Distortion of the Amplifier section of 0.05% THD  
\*Magnetic Cartridge Turntable, and Auxiliary input  
\*Inputs for Tape In and Out, together with variable controls enabling you to easily match to virtually any

Tape or Cassette Machine \*In-built MPX Stereo Decoder \*Medium and Long Wave radio bands.

The unit has a matt black face plate with Grey and White printing; the dial scale is a multi coloured "Blackout" back illuminated type, complimenting the sheerline teak effect Cabinet.

BRITISH MADE

Size: 660mm x 110mm x 280mm

- |                          |                             |                        |                     |
|--------------------------|-----------------------------|------------------------|---------------------|
| 1 Bass Control           | 8 Signal Strength Meter     | 15 Medium Wave Button  | 22 Rumble Filter 2  |
| 2 Middle Control         | 9 Radio Tuning Knob         | 16 Long Wave Button    | 23 Rumble Filter 1  |
| 3 Treble Control         | 10 3 Wave Band Tuning Scale | 17 Tape Monitor Button | 24 Scratch Filter 2 |
| 4 Stereo Balance Control | 11 FM (AFC) Button          | 18 Tape Correct Button | 25 Scratch Filter 1 |
| 5 Panorama Control       | 12 Phono Pickup Button      | 19 FM Muting Button    | 26 Quietness Button |
| 6 Volume Control         | 13 Aux. Input Button        | 20 High Blend Button   | 27 Power Button     |
| 7 FM Tuning Meter        | 14 FM Radio Button          | 21 Loudness Button     | 28 Headphone Jack   |

# AMSTRAD

## AMSTRAD

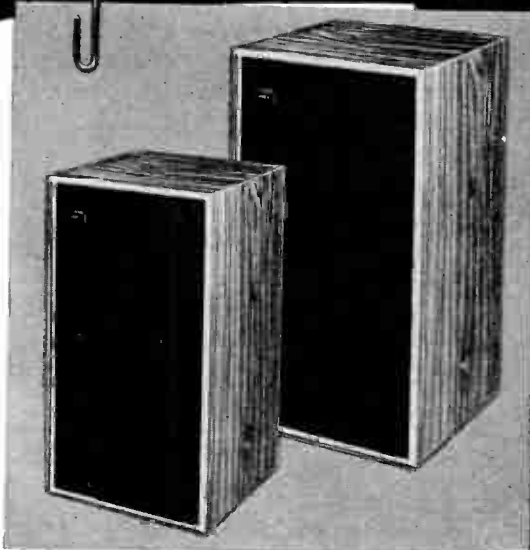
### ACOUSTRA SPEAKERS

- UNIQUE IN DESIGN
- SUPERB IN PERFORMANCE

Ideal for horizontal or vertical Floor or Shelf mounting  
Beautifully finished teak effect enclosures and exclusive flat black front panel

#### ACOUSTRA 2500

Power handling - 25 watts RMS.  
Frequency response - 35, 17,000Hz.  
8" Long throw bass unit, cone made of a rigid paper with a foam roll surround. 3 3/8" mid-range treble unit. Speakers are front mounted to reduce tunnelling effects. Also employed is a crossover unit consisting of highly accurate wound coils and electrolytic capacitors. Dimensions 488mm x 253mm x 241mm



Both units have a sunken back plate which allows a connection to either Din plug leads or Bare wire leads. The construction of the cabinets is such that they are air tight and the insides are padded with special acoustic wadding.

#### ACOUSTRA 1500

Power Handling - 15 watts RMS.  
Frequency response - 45, 17,000Hz.  
Enclosure Type - Acoustic Suspension.  
Impedance - 8 ohms. 6 1/2" Long throw bass unit, cone made of a rigid paper with a foam roll surround. 3 3/8" mid-range treble unit. Speakers are front mounted to reduce tunnelling effects. Also employed is a crossover unit consisting of highly accurate wound coils and electrolytic capacitors. Dimensions 368mm x 260mm x 222mm deep.

## AMSTRAD

### HPS6A STEREO HEADPHONES

The well proven HPS6A Stereophones are designed for the discerning listener, providing remarkably faithful reproduction across a wide frequency range. The headphones exhibit exceptional holding properties between bass and mid range bands and have features often only included on more expensive units and have features often construction ■ Separate volume controls on each earpiece ■ Frequency Response 20Hz - 25kHz ■ 8 ohm nominal impedance ■ Cord extends to 4 metres ■ Suitable for most Amplifiers, Tape Decks and Hi-Fi Systems ■ Special Mylar Cone for wider frequency response. Finished in matt black with soft black cushioned earpieces.



## hearing is believing

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## AMSTRAD 6000 STEREO CASSETTE TAPE DECK

The Amstrad 6000 Stereo Cassette Deck features: ■ Autostop ■ Fast Forward, Rewind ■ Stop/Eject ■ Noise Reduction ■ Circuit Switch ■ CRO: Switch for use with CRO tapes ■ Slider Controls which control both Recording Level and Output Level, making this machine suitable for most amplifiers and hi-fi systems ■ Tape Digit Counter ■ Headphone Output Socket ■ Twin Microphone Inputs ■ Two large illuminated VU Meters ■ Excellent Wow & Flutter figures together with wide Frequency Response.

Finished in teak colour cabinet with silver and black trim on the top face. Size: 314mm wide, 231mm deep, 111mm high.

Please send illustrated literature and address of nearest stockist

Amstrad Acoustra Name \_\_\_\_\_

Amstrad 6000 Address \_\_\_\_\_

Amstrad HPS6A \_\_\_\_\_

Amstrad 5050 \_\_\_\_\_

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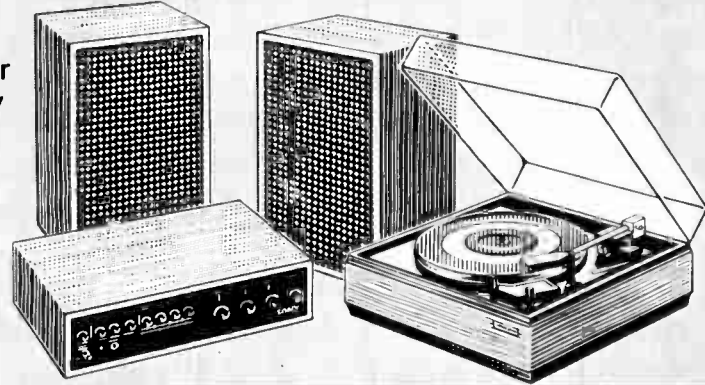
Carriage prices Mainland only. Prices correct at time of going to press but subject to change without notice.

### SYSTEM 1

Sony TA70 Amplifier  
Garrard SP25 Mk IV  
2x Sony SS70  
Speakers

TELETAPE PRICE  
**£105.00**

Carriage £3.95



### SYSTEM 2

Technics SU7200  
Amplifier  
JVC JLA-15 Record  
Player  
2x AR7 Speakers

TELETAPE PRICE  
**£209.00**

Carriage £4.50



### SYSTEM 3

Sony HMK 70 Music  
Centre  
with Dolby Cassette  
complete with Speakers

TELETAPE PRICE  
**£339.00**

Carriage £4.95



### SYSTEM 4

JVC JRS-200L  
Tuner/Amplifier with  
S.E.A. Controls  
Aiwa AD6300 Cassette Deck  
2x Technics SB202  
Speakers

TELETAPE PRICE  
**£429.00**

Carriage £4.95





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# CELEF

MAKERS OF HIGH QUALITY LOUDSPEAKERS

---

This year CELEF will be demonstrating two models of loudspeaker, the well established Celef Monitor in its improved form, and the new Mini Professional S.M., a high efficiency, high power handling monitor.

A well organised variety of classical and popular music will demonstrate the accuracy and clarity often praised in these speakers.

This year, in Room 1042, will be the ProAc loudspeaker. This is a highly advanced five-unit hybrid system offering superb performance equalled by none, including electrostatic units. Why not drop in and listen to classical music with clarity and depth never experienced before in box loudspeakers, and pop music played at realistic levels without listening fatigue.

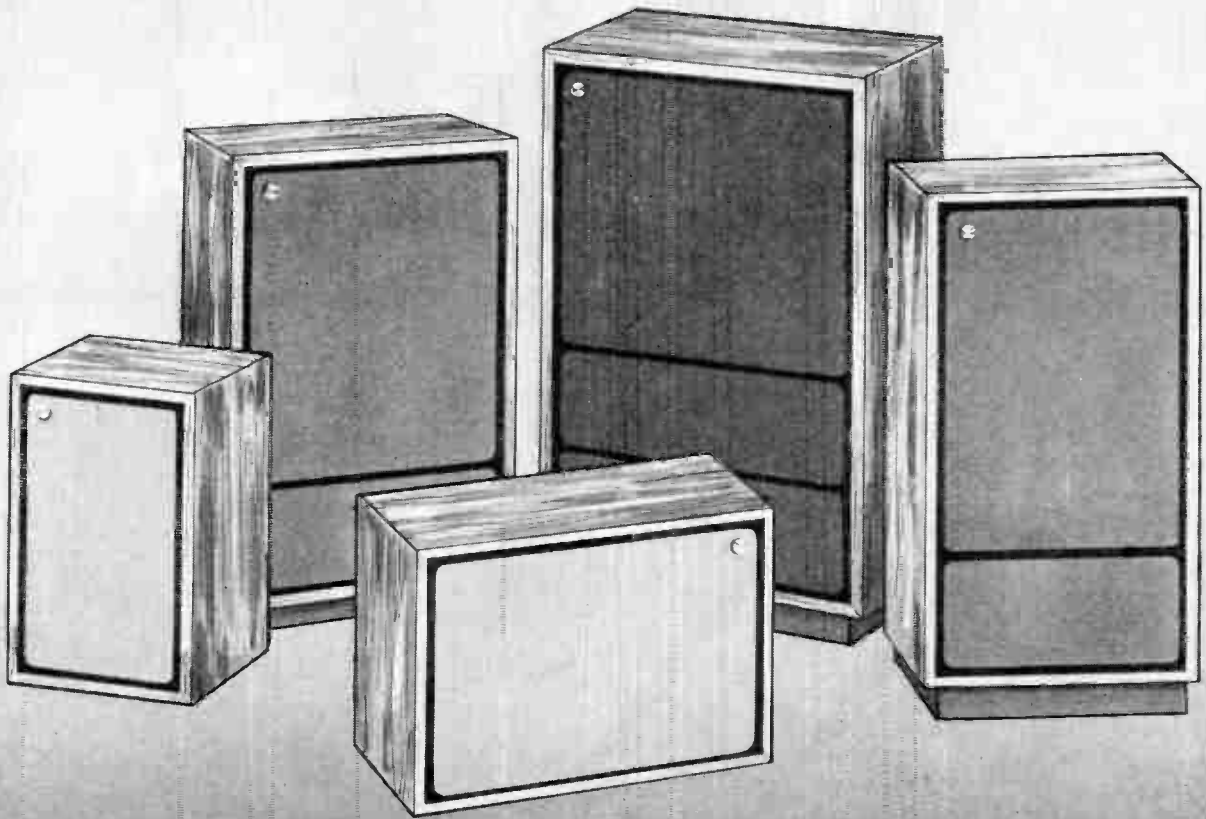
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# P r o A c

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**SEE AND HEAR CELEF AND PROAC IN ROOM 1042 AT THE HIGH FIDELITY 77' SHOW AT THE HEATHROW HOTEL, LONDON. TRADE APRIL 19th to 21st, PUBLIC 22nd to 24th**



# TANNOY®

## AT THE CENTRE OF SOUND

The Centre of Sound, where the discerning buyer can come to listen to the accuracy and quality of Tannoy loudspeakers. At the Centre of Sound you will find top quality hi-fi equipment backed by first-class service, a winning combination rarely encountered nowadays.

Illustrated above are

**The Arden:** The HPD385A integrated loudspeaker system's outstanding performance characteristics are completely realised by this, the largest model of the range.

**The Berkeley:** High power handling capacity and sensitivity in a floor-standing enclosure.

**The Cheviot:** This system achieves remarkably solid bass and extended treble response more usually associated with professional equipment.

**The Devon:** Its performance has led to its selection as a mobile studio monitor by major recording and broadcasting authorities throughout the world.

**The Eaton:** The HPD 295A drive unit and the enclosure's careful construction combine to give the Eaton a response out of all proportion to its size.

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120, Notting Hill Gate, W.11 Tel. 727 0511 (Few yards from Underground)

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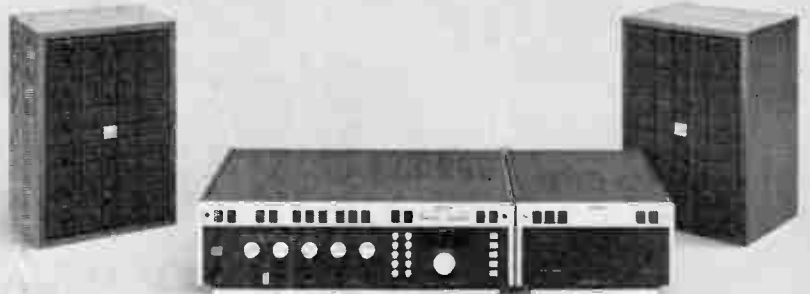


# Revox A700 Stereo Tape Recorder

The 'big machine' from Revox which bridges the gap between top ranking amateur recorders and full-blown professional studio equipment.

Two separately adjustable stereo channels with a total of 4 inputs are available, and large VU-meters with additional fast responding peak level indicators make accurate modulation control an easy task. Step-type tone controls for listening via headphones or with a remote switchable power amplifier, built-in phono pre-amplification for magnetic pick-ups and other features, such as stereo echo and variable tape speed (via an accessory unit) open up entirely new possibilities. All this makes the A700 suitable, not only for serious recording work, but also for the audiophile, with high standards of technical quality and operating convenience.

These and the many other outstanding features built into this unique equipment make the A700 probably the finest recorder on the market today. Your Revox dealer can arrange for a demonstration or you can send the coupon for full information on the A700.



Please send me detailed information on the Revox A700 recorder and on the full range of Revox hi-fi equipment.

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**STUDER REVOX** HFN 4.77  
World Radio History

# WE SAID OUR PL-12D TURNTABLE WOULD NEVER BE BEATEN. IT TURNS OUT WE WERE WRONG.

To be fair, we weren't the only ones who considered the Pioneer PL-12D was probably the best value for money you were ever likely to expect.

The experts all concurred. And the PL-12D became something of a legend.

But we've been proved wrong. All of us. Now there is a turntable offering even better value for money.

The PL-112D. Made, not surprisingly, by Pioneer.

Like its predecessor, the 112D features an S-shaped tone-arm for precision tracking capability and improved tonal quality.

But unlike the 12D, both arm and platter are isolated from the main plinth. So you don't have to hold your breath when operating the cueing device.

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Because the PL-112D combines practicality with style.

Even the walnut grain cabinet is specially designed to reduce external vibrations.

So it's beautiful. But functional.

After all, you don't beat a turntable like the 12D just by looking good.

Please send Name \_\_\_\_\_  
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The PL-112D specifications sheet  The Pioneer Colour Catalogue

Please tick boxes as required then post to: Shiro (UK) Ltd., Shiro House, The Ridgeway, Iver, Bucks, SL0 9JL.

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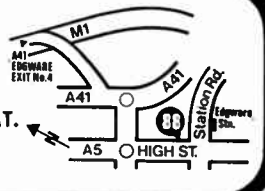


PIONEER

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**SERVICE** Service is our keynote and has been since we were founded in the 1950's. We guarantee to provide parts and labour absolutely free of charge for 12 months on any item purchased from Planet and returned to us as faulty. We only sell goods that we consider to be reliable and backed by reputable manufacturers. All prices quoted are for cash or cheques backed by cheque card. We will be pleased to accept ACCESS or BARCLAYCARD. **SATISFACTION GUARANTEED**

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Yamaha CA410	P.O.A.
Yamaha CA610	P.O.A.
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Yamaha CA1000 Mk II	P.O.A.

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Aiwa 5080A Music Centre	P.O.A.
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Akai AA 1030	£161.75
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Yamaha CR400	P.O.A.
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Yamaha CR800	P.O.A.
Yamaha CR1000	P.O.A.

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KEF B110	£11.25
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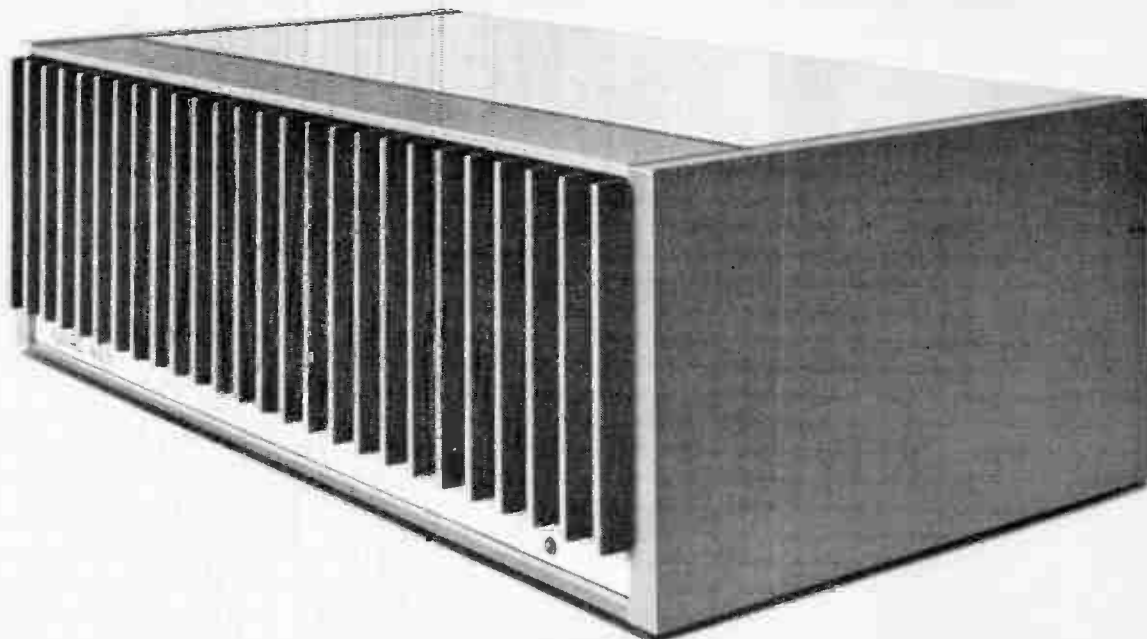
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Current dumping successfully overcomes many of the problems associated with high power amplifiers, crossover, thermal tracking and matching of components, added to which the complete absence of adjustments or alignment requirements, ensures that performance will be consistently maintained.

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**Design Council  
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## QUAD

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*QUAD is a Registered Trade Mark*

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*The 3400 receiver from the new Leak 3000 series 3200, 3400*



It is the aim of every manufacturer of stereo receivers to minimise the drift between channels, at the same time keeping amplification both accurate and strong.

Using advanced digital circuitry (more usually found in computers) we have attained a remarkable new consistency of sound reproduction.

The results are the new Leak 3000 receivers.

They are robust in construction, elegant in design, and precisely engineered in every detail, even down to the unusually smooth control action.

Their performance achievement is an ability to reproduce any sound to be virtually indistinguishable from the original—whether it be an FM signal before transmission, or the subtle qualities of your finest records.

This has been achieved by the combination of the most stringent quality control with comprehensive specifications, in keeping with the Leak tradition.

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These have been replaced with the most advanced integrated circuits, including a phase lock loop circuit in digital form.

In the amplifier, the noise level has been so reduced that even in headphone listening background sound is minimal.

This, combined with a split power supply generous enough to handle even major musical peaks on both channels without clipping the sound means that you will hear a dramatic difference.

The Leak receivers have an unusual "sweetness" and "spaciousness."

You will not listen *to* Leak receivers, but *through* them, directly to what is being transmitted.

They achieve a new truth in sound reproduction.

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# THE AR-17

## A GREAT NEW SPEAKER

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at a price you can afford . . .

When AR engineers developed acoustic suspension, hemispherical midrange units and dome tweeters, it just didn't stop there. By utilising space-age technology, a magnetic fluid in our latest 32mm tweeter has given a greater control over midrange frequencies and a smoother treble response.

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Please send details of the AR-17  
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# LUXMAN 1050

## Enough to turn anybody's head



But its qualities are not just skin deep. Have a look at the specifications: **Power Output:** 55 watts minimum continuous per channel, both channels driven into 8-ohm loads, from 20Hz to 20,000Hz with no more than 0.05% total harmonic distortion. **Rated I.M.:** no more than 0.05% (8-ohm, both ch driven). **Frequency Response:** 10Hz — 50KHz (-1dB) **Input Sensitivity:** 2.5mV (phono) 150mV (aux., monitor) **Phono Overload Voltage:** 150mV (1KHz) **S/N Ratio:** 66dB (phono) 86dB (aux., monitor) **Residual Noise:** no more than 0.7mV **Damping Factor:** no less than 60 (8-ohm) **Tone Control:** Bass  $\pm$  10dB at 100Hz Treble  $\pm$  10dB at 10KHz **Filters:** High Cut... 7KHz (6dB/oct.) Low Cut... 70Hz (6dB/oct.) **Crosstalk at 1KHz:** -65dB (aux., monitor) **Peak Indicators:** 0, -6, -9, -12, -15, -18dB.

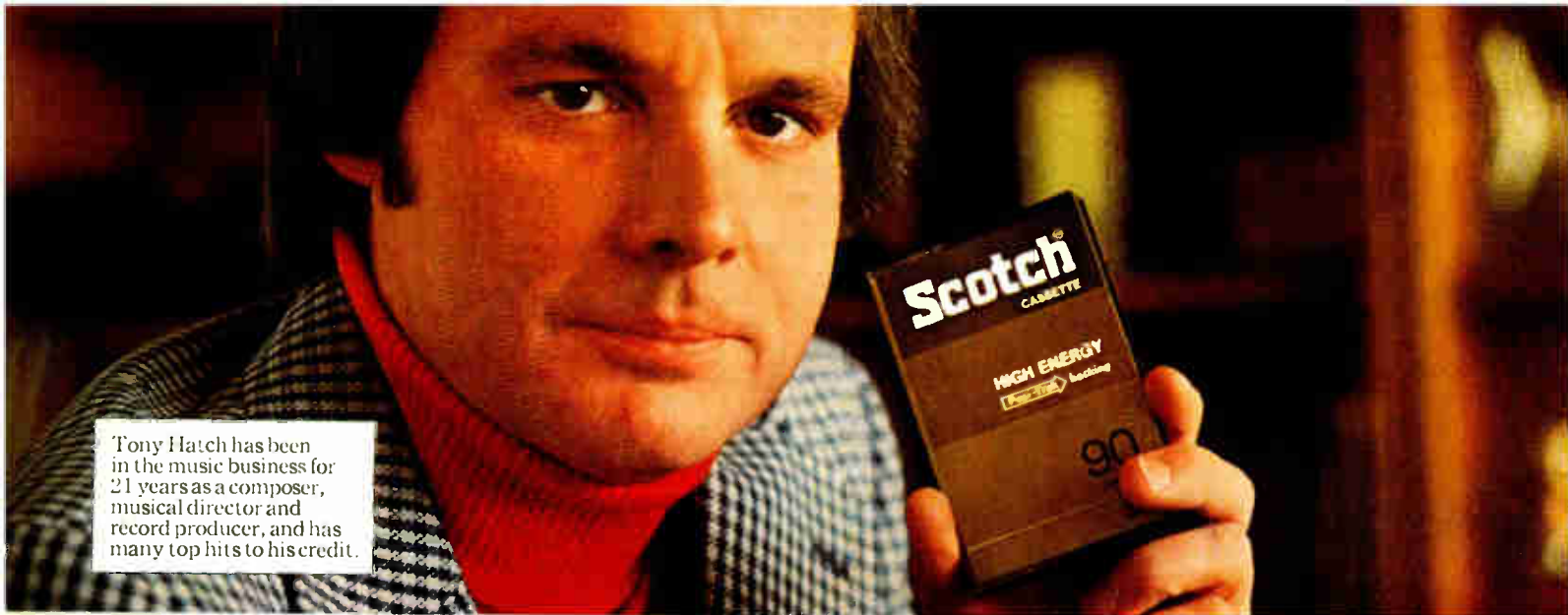
#### FM SECTION (IEEE/IHF Standard)

**Usable Sensitivity:** mono 10.3dBf (1.8 $\mu$ V) stereo 18.2dBf (4.6 $\mu$ V) 46dB  
**Quieting Sensitivity:** 50 $\mu$ S mono 14.1dBf (2.8 $\mu$ V) stereo 37.4dBf (40 $\mu$ V). **Signal-**

**to-noise Ratio at 65dBf:** mono 74dB stereo 70dB **Muting Threshold:** mono 8.8dBf (1.5 $\mu$ V) stereo 8.8dBf (1.5 $\mu$ V). **Frequency Response 30Hz to 15KHz:** mono +0.5, -1.5dB stereo +0.5, -1.5dB. **Distortion at 65dBf:** 100Hz mono 0.1% stereo 0.2% 1KHz mono 0.1% stereo 0.2% 6KHz mono 0.3% stereo 0.4% **Intermodulation Distortion:** mono 0.1% stereo 0.2% **Capture Ratio at 65dBf:** mono 1.3dB **Alternate Channel Selectivity:** mono 70dB **Spurious Response Ratio:** mono 90dB **Image Response Ratio:** mono 80dB **IF Response Ratio:** mono 85dB **AM Suppression Ratio:** mono 52dB **Stereo Separation:** 1KHz stereo 45dB **Subcarrier Product Ratio:** stereo 60dB.

For the ultimate experience ask your specialised Lux dealer to demonstrate the 1050. A list of Lux dealers is included with the illustrated colour brochure which can be obtained from the sole UK Distributors:

Howland-West Ltd., 3-5 Eden Grove, London N7 8EQ.  
Tel: 01-609 0293/4/5.



Tony Hatch has been in the music business for 21 years as a composer, musical director and record producer, and has many top hits to his credit.

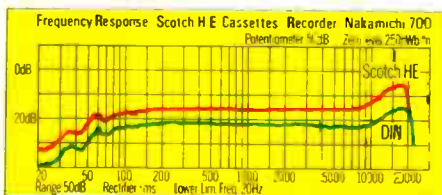
## “When I send a cassette off to a record company, the person at the other end has got to hear what I want him to hear. That’s why I use Scotch High Energy Cassettes.”

(Tony Hatch)

“When young hopefuls send me demo cassettes on poor quality tapes they’re starting out with a disadvantage. Here’s why I recommend Scotch High Energy Cassettes.”

### Treble and bass, and no ‘drop-outs’.

“Scotch High Energy Cassettes have the sensitivity to record any sound from a piccolo to a double bass with complete faithfulness. You get all the treble and bass you need, and there’s none of the hissing you find on inferior tapes.”



Sound test you can see. Frequency trace reveals the consistently higher output of Scotch High Energy Cassettes.

“High Energy isn’t liable to ‘drop-outs’ like the other cassettes around,

because they make the cassette as dust-proof as it’s possible to make it.”

### Super Ferric Coating

“The recording surface of the tape is made with smaller Gamma Ferric particles than ordinary low-noise tapes, so High Energy gives a better quality sound. It’s also got a special back coating which helps the tape spool perfectly.”



Highly polished tape – less fouling of the heads.

### Lasts longer

“It’s a tape that lasts longer than most other makes. There are some High Energy cassettes I’ve used over and over again, and they still give amazingly faithful sound reproduction. But the cheap ones, they start off O.K. and then deteriorate all at once.”

“I recommend High Energy to anyone who takes music seriously”

### Scotch High Energy Tape Facts

- \* High Energy cassettes have an excellent signal to noise ratio. (+57dB dynamic range in test conditions.) This means you hear more music, less back-ground hiss.
- \* High Energy performs better at low frequencies (distortion is – 37dB at 315 Hz), and gives better reproduction of instruments like bass drums. They are also better in the higher frequencies. Flutes, violins, cymbals, trumpets all sound crystal clear. The test of a good tape.
- \* High Energy is a very sensitive tape and picks up sounds that other tapes miss.
- \* High Energy cassettes are made under strict quality control conditions. Each one is covered by an unconditional replacement guarantee.
- \* You can record at higher levels with High Energy. This ensures loud, clear reproduction (+2dB at 315 Hz).

### Free booklet

Write for informative Casette Recording Guide, 46 pages of recording tips. Recording Materials Division (Dept. HN/4/77), 3M United Kingdom Ltd., 3M House, Wigmore Street, London W1A 1ET.



## Scotch recording tapes - for people who take sound seriously.



Scotch is a trademark of 3M.

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## BINDERS

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THE LINK HOUSE GROUP

**THE MICROPHONE—THE TERROR OF THE STUDIOS.** This is the legend on a poster hanging on the editor's dining room wall. It advertised the magazine *Photoplay* in 1929, when 'the talkies' were starting a revolution in the cinema. A frightened actress is shown facing her first microphone, with all that this implied for a change in histrionic style—let alone the threat that her voice may not prove to be as popular as her face or figure. Nearly half a century later those terrors are all forgotten: sound is now simply a part of film-making to be taken in its stride. There are recurrent problems, arising in the main from a need to keep microphones out of sight, but the techniques of audio/visual work in the studio are now employed according to generally accepted conventions—so that's that. Or is it?

This month we publish an article by Angus Robertson on a topic of perennial interest: obtaining hi-fi sound from a television receiver. TV sound can indeed be of very high quality, although we sometimes wonder whether the studios have become so obsessed with modern gadgets that sound suffers for the sake of visual convenience. In such a dual art there must, of course, be some give and take, but not a bland assumption that sonic subtleties may be abandoned because vision is supposed to dominate.

We have in mind the ubiquitous radio microphone—or, for that matter, any mike obscured on the user's body—used to 'solve' the age-old visibility problem. All too frequently a speaker is allowed to wander back and forth, near or far, in this acoustic or that, with little or no change in loudness of voice or nature of ambience. Talking men walk down long corridors away from the camera, or run across a large building site, but the sound stays fixed. In one recent TV commercial the viewer looks down a garden path as a man opens up the back of a car and delves in to arrange some luggage, while a commentary extols the virtues of this latest wonder of private transport. However, the real wonder comes when it transpires that the voice is that of the man in the car, who leaves it to walk through the gate and up the path, getting steadily nearer until his face fills the screen—with absolutely no change of voice quality, which has been close and 'dead' all the time. This is an extreme example which one colleague jokingly suggested might almost qualify as a false trade description ('You can hear your husband speaking in our car without getting in yourself'), but it is symptomatic of an amateurish trend in microphone techniques which has the ring of sheer laziness.

Compromise there must be. We wouldn't argue, for instance, that relative sound levels should always relate absolutely to apparent visual distances, as this would make for an unacceptably wide dynamic range. But there should at least be a reasonable sonic *suggestion* of recession as a voice goes back. And if our charge of amateurism be rejected on the ground that the object of a TV advert is to communicate, not to satisfy hi-fi purists, we can only say that communications which are anomalous and unrealistic enough to distract one from the 'message' are not very effective. After all, sound is supposed to complement vision, not contradict it.

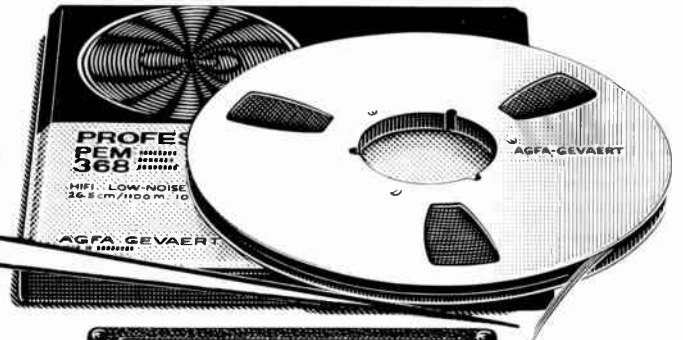
That 1929 poster also carried a bold headline saying: 'You Can't Get Away with it in Hollywood'. This referred to the acting fraternity, who would have to reveal their voices, but there now seem to be many TV production teams who are allowed to get away with it too frequently by revealing their sonic ignorance.

Another sort of ignorance is that implied by experiments combining TV vision and stereo sound. We find these irritating and unreal, with their clash between instrumentalists seen close-up on a small screen and the sound of a widely spread set-back orchestra. It can work with opera, provided all the singers are miked for centre-mono presentation, with the orchestra left in full stereo, but for orchestral music the two art forms are incompatible.

# Each one has something different to say for itself

## Agfa PEM Series

The professional tape with a matt black coating for firm, even winding and a ferric oxide layer which gives a better high-frequency performance, lower HF distortion and 40% less tape hiss than conventional low-noise tape.



## New Agfa Carat Ferrum + Chrom

The new high-quality cassette based on dual-layer technology that gives an unsurpassed performance: an upper chromium layer with optimum properties for recording high and highest frequencies and a lower layer of iron oxide for first-rate reproduction of low frequencies.



## Agfa Stereo -Chrom

The chromium dioxide cassette that offers faithful reproduction, greater purity of acoustic overtones, clear rendering of orchestral sound and unadulterated reproduction of speech — altogether a superior high-frequency performance.



## Agfa Super Ferro Dynamic

Improved output at the right price — the SFD Cassette brings out new levels of performance from your machine. Its highly refined high-density iron oxide records with lower noise and better results; and the special built-in tape guidance mechanism means SFD Cassettes have the reliability to match their performance.



## New Agfa Super Color

High dynamics at low cost — a higher density of iron oxide gives recording level control and frequency response that are better than ever before, even on the simplest machines. With exclusive color coding for easy reference in your cassette library and a thumbslot for easier opening.



## There's a lot to be said for Agfa



JOIN THE  
AGFA SOUND  
IMPROVEMENT  
MOVEMENT

## Sound 77 at Wembley

This year's Association of Public Address Engineers Sound and Communications Exhibition shows promise of being an outstanding gathering as the venue is now the Wembley Conference Centre and will include an additional exhibition of Audio-Visual equipment. The dates are 19-21 April.

Participating firms include: AKG, Calrec, Electrovoice, Gramplan, Hayden, Rola Celestion, Shure and many others from the professional audio field.

Tickets are available from P.A. Dealers, or APAE Ltd., 47 Windsor Road, Slough, Berks.

## Digital Audio

Donald Reid, of the BBC Research Dept, gave the AES lecture on January 18th, surveying all aspects of the problems and techniques associated with coding, transmission and re-creation of high quality audio signals via quantising systems. Such processing offers indefinite signal relay without degradation of quality, together with high noise immunity, at the expense of having to use a large bandwidth to obviate the audible effects arising from sampling rate and discontinuities.

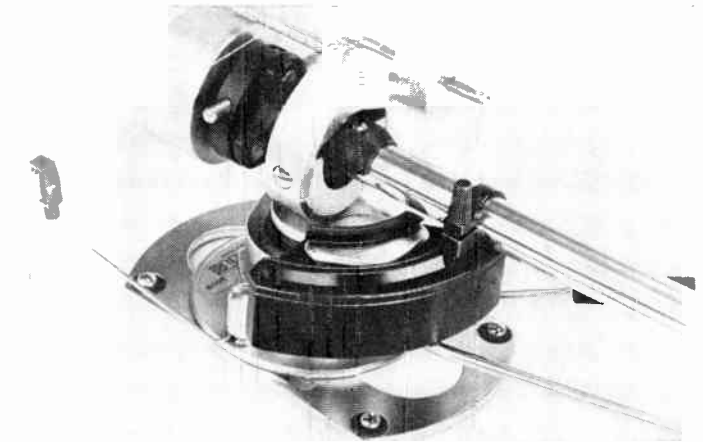
The subject is more complicated than might at first be assumed, and the lecturer commenced with some audio demonstrations. These, of male speech, were sampled at rates of 4, 8, 16 and 32 kHz, giving results ranging from unrecognisable, through very distorted to acceptable, and very clean, respectively. Non-linear sampling processes must add some quantising noise and the theoretical p-p signal/p-p noise ratio obtainable is  $2^n$ , where n is the number of binary samples (also called digits or bits) and it was shown that the maximum r.m.s. signal to r.m.s. noise ratio was  $6.02n + 1.8$  dB. Further demonstrations showed that the character of the residual noise was a function of the actual signal level. Piano reproduction using only 6 digits was distorted, with complete fade-out at low levels, 7 only slightly better, 8 better but with near fade out, 9 similar with only a hint of fade out, while 10 and 11 gave acceptably low distortion. It was emphasised that

coding accuracy was vital and could be affected by component tolerances in the encoding and/or decoding equipment, which are further aggravated by the thermal environment, etc. Superior results were obtainable using a ramp counter system, in which each sample is generated in 31.25 microseconds, whilst a dual slope conversion, using one slope for the 7 most significant bits and another at 1/64 rate for the 6 least significant was even better. The BBC use 13 bits plus 1 error bit at a rate of 3.66 Mbits/sec.

It was demonstrated that normal sampling gave a low but variable noise level, using piano, but the addition of a 'dither' signal to the input gave an almost constant noise. Alternative techniques could be used, including 'near instantaneous' quantising, in which the sampling level is modified according to the signal level itself, using a compander circuit. This offers some 9 dB improvement in the ultimate S/N ratio and comparisons on programme showed that digitally companded 7 bits/sample could equal the performance of linearly coded 13 bits/sample. Further demonstrations showed the improvements using a parity bit to reduce errors at error rates of 1 in  $10^5$ ,  $10^4$  and  $10^3$ —the protected transmission was clean in all cases, but interference without varied from noticeable to intolerable with complete loss of intelligibility in some cases. A further demonstration showed that wow in recording could be very effectively nullified by digital correction techniques.

Further developments were thought to include the all digital studio, requiring fast microprocessors, and direct digital broadcasting, an extension of the PCM (pulse code modulation) links already used for programme distribution throughout the country. There was also a possibility that high rate sampling could be used to transmit the changes in the audio signal.

Questions during the discussion period centred around the application of digital coding to sound mixing consoles, master tapes and sound in syncs in the TV waveform. Internationally, it has been agreed that a 32 kHz sampling rate be adopted and it is likely that 2.048 Mbits/sec. links will come into use.



## SME Dampener

An add-on dampener will soon be available to owners of SME arms. It consists of a paddle-in-dashpot mechanism situated near the pivot and can be simply disconnected if

not required. The main use would seem to be to enable cartridges with low internal damping at low frequencies to be used without distress.

## Harwood Loudspeaker

Dudley Harwood was for many years a member and leader of the BBC's research team in acoustics. His published work has an authority few can approach in this field, and has laid the technical foundation which underpins many of today's successful British loudspeaker designs. He has now left the BBC and is starting to manufacture a loudspeaker design with several interesting features.

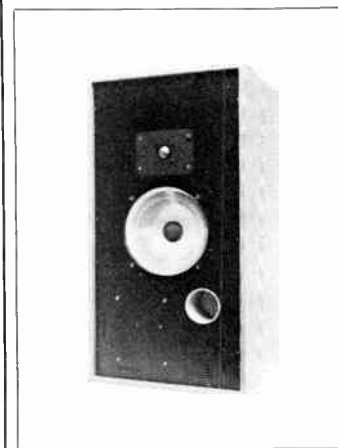
Despite his position as 'father of Bextrene', the design features a cone of an entirely different plastic, which does not require application of damping compounds, and thus preserves light weight and efficiency. This enables the speaker to produce a

sound pressure level of 107 dBA (1 m) which is a significant improvement over comparable designs. Power handling is 100 watts programme and frequency response 50 Hz-25 kHz  $\pm 3$  dB.

The tweeter is the 1 in. Son-Audax soft dome unit which is being used by Celef and the Spondor SA1 with some success. There is also an unusual application of mechanical damping to the birch ply cabinet. Other aspects of the design are accepted 'BBC' style: 24x13x12 ins. vented enclosure; iron-cored inductors and polyester capacitors in the crossover;  $\pm 1/2$  dB unit sensitivity matching with auto transformer; and foam acoustic damping.

Mr. Harwood claims that the new drive unit gives lower coloration as well as higher sensitivity than Bextrene, and suggests that this is the 'new generation' material, as far advanced on Bextrene as the latter was on paper. When one takes into account the commercial success and influence of the BBC LS 3/6 and LS 3/5A designs, plus the importance of other ex-BBC designs at Spondor and Chartwell, to name but two, it is plain that Mr. Harwood's decision to go into manufacturing is of great interest and significance.

Price is expected to be about £240 plus VAT per pair, and the factory address is 2a Nova Road, West Croydon CR0 2TL.





Hitachi HA 610 Amplifier. 100 + 100 watts RMS (4Ω). 60 + 60 watts RMS (8Ω). 20 Hz - 20 KHz.

# IF YOU'RE NOT CAREFUL THEY'LL TAKE OVER.

Our separates are very keen on self-preservation. Witness the latest example of Hitachi hi-fi technology, our HA 610 amplifier. It's powerful enough to cope with the biggest systems around. But it knows when it's had enough. If it's pushed too hard, the overload shut-out comes into play. The circuit protects against overload, temperature rise and offset voltage rise across the loudspeakers. You may never need its help. But it's comforting to know your amplifier has its own interests at heart. Our FT 920 tuner is a free thinker too. It's got its

own ideas about precision FM station tuning. When the tuning knob is released, the auto-lock tuning mechanism takes over and automatically homes in to the optimum frequency. One feature on Hitachi separates isn't so easy to pick up. It's called reliability. And it's standard on all our equipment. So is the Hitachi 2-year guarantee. If you're interested in hi-fi that keeps on sounding good, give us a fair hearing at your local Hitachi dealer. Or fill in the coupon for the full colour Hitachi hi-fi brochure.

To: Hitachi Sales (UK) Ltd., Hitachi House, Station Road, Hayes, Middlesex UB3 4DR. I'd like a copy of the Hitachi hi-fi brochure and a list of Hitachi dealers.

Name \_\_\_\_\_ Address \_\_\_\_\_





## Naim News

When visiting the Salisbury works of Naim Audio (see Subj. Sounds p. 103) we were shown some interesting new developments in this highly respected range.

The NAC12 pre-amp is being replaced by two models, the NAC 22 and NAC32. The '22' will be mounted in a case to match the NAP 120 power amp and is simpler and more easily constructed than the '12', which will forestall an otherwise inevitable price increase. According to the designer, Julian Vereker, the change in sound quality is very marginal indeed. The '32' will use similar circuits and may be sonically superior to the '12' while incorporating additional facilities for equipment interconnection.

The 'booster' amp for moving-coil cartridges which is marketed

by Linn Products to complement the Supex cartridges has been redesigned somewhat and a mains powered version is now available; this results in the very worthwhile improvement of 7 dB in S/N ratio.

The prototype of an active filter unit is also undergoing development and may be demonstrated at Hi-Fi '77, and a pet project for the future is a no-compromise power amp capable of 30 watts per channel and costing about £1000! The first batch of these is already 'sold' before the design work is complete, such is the reputation of this radical young company. There is also the possibility of a 'mini' loudspeaker design seeing the light of day before too long, and a strange electrostatic device was seen lurking in a corner.

## Doram TV Tuner Kits

D.B.C. of Eastleigh, Hants wrote to Crossover in February asking for details of manufacturers of TV Sound tuner kits. We have since received details of the Doram range of electronic kits which, as well as a four-channel TV sound-only tuner costing £36.95 plus VAT, contains domestic and car accessories and photographic and audio kits. Doram are the retail outlet for Radiospares products and publish a detailed electronic components catalogue—fascinating reading for those who prefer reading about resistors rather than Rachmaninov. The components catalogue costs 60p and the kit brochure 25p but both, if ordered together, can be obtained from Doram Electronics Ltd., P.O. Box TR8, Wellington Road Industrial Estate, Leeds LS12 2UF, for a combined price of 70p for which you also get two 25p vouchers to use on orders over £5.

## B & O

B & O, financially going from strength to strength, have announced several new models, with the promise of more to come during the next few months. These include a top-of-the-range receiver (the 4400, rated at 2 × 75 watts into 4 ohms and costing about £380 inc VAT); the 2200 receiver; the 1902 record playing unit; the model 400 (five drive unit) loudspeaker, and some headphones with adjustable earpieces, enabling them to be 'preset' to the shape of the user's head and easily accommodate spectacles.

B & O have succeeded in

increasing productivity by using sophisticated machinery and 'plug-in modules' which may serve for more than one model. Their philosophy is to achieve a realistic balance in the performance of different stages in the chain, creating no weak links but avoiding overdesigning at (and hence overcharging for) any stage. In addition, their careful attention to design and ergonomics makes them especially notable and must offer significant advantages for the family man. For example, the 1902 turntable is most effectively isolated against external shock, and the use of an integral lightweight arm and cartridge enables the latter to have a very high vertical compliance; this helps to prevent damage by allowing the cantilever to retreat into a protective groove, and also prevents scratching by enabling the stylus to 'track across the grooves!'

## Stolen Mikes

A reader has had a brown suitcase, containing microphones, cables, plugs and stands, stolen. The accessories will be hard to trace, but the microphones will be quite recognisable. They are two AKG C412 condenser mikes (with special 6 pin XLR connectors), serial numbers 246 and 261; two AKG D202 dynamic mikes, serial numbers 55377 and 55389, and two AKG D12 dynamic mikes (the ones with the distinctive boxy shape) in one container (no serial number). If anyone comes across these microphones and accessories would they please contact P. J. Furner, 4 Pittville Gardens, London SE25 4DJ, Tel: 01-653 7356 (home) or 01-686 0621 ext. 4676 (business).

## Chicago Show

The Winter Consumer Electronics Show was held in January in Chicago during the unexpected cold snap. Although it seems that most American manufacturers wait until the summer to launch their new products, there were a smattering of goodies to be found, especially in the field of add-on units and loudspeakers.

Burwen, which joined the KLH group last year, were demonstrating a new one-way noise reduction unit—Model DNF 1201A which has a variable bandwidth determined by the input signal. This generates a DC control voltage and with no signal input the attenuation starts at about 400 Hz. As the input increases, the bandwidth widens until it is flat to 20 kHz. Dynamic range is 96 dB and sharp transients can extend the bandwidth to full response in as little as 600 microseconds. Decay time depends on the incoming signal and varies in the range from 50 milliseconds to as high as 1.5 seconds.

Cerwin-Vega were demonstrating a new graphic equalizer, the GE-2 which follows the present trend of using purely electronic gyrator circuits instead of inductors. There are 13 frequency bands but only those above 250 Hz are single-octave: the others are half-octave with ranges centred on 31.5, 45, 63, 90, 125 and 180 Hz leading to an increased efficiency at dealing with room standing waves and so on. Another important feature is the 12 dB/octave sub-sonic filter which rolls-off from 20 Hz. Many of the newer loudspeakers use a passive radiator of one kind or another and the driven cone has little very control at frequencies below about 30 Hz—hence the danger of intermodulation. Distortion of the Cerwin-Vega equalizer is claimed to be less than 0.05% and for special effects, e.g. earthquake simulations, it may be ordered with an additional band at 22.4 Hz.

Loudspeakers there were aplenty, amongst which was the US made SSU-4000 from Sony. This is a four feet high floor-standing model. Bass speaker is a 10 in. model, the midrange is a 3½ in. cone unit and the high frequencies are handled by a one inch tweeter using a titanium dome. At the bottom of the enclosure there is a flat 14 × 9 in. passive radiator. Some control of sub-sonic cone excursions is obtained by the use of a perforated baffle board placed between the woofer and the 'slave'. Sound quality was excellent, with a full, solid bass, but I must admit I was

not at all impressed with the story that the speaker cones owed their efficiency to 'pulp mixed with spring water from Mount Fuji...'. But probably the most interesting system was a prototype bass drive demonstrated by ESS. It was devised by Dr. Heil and consisted of five small plastic diaphragms vertically stacked about three inches apart and connected together by a double ladder arrangement made of four carbon fibre rods. At the top of the 'ladder' is a large magnet structure and a two inch speech coil, and the whole unit is enclosed in a transparent tube of about six or seven inches in diameter and eighteen inches long. The total area of the five diaphragms is equivalent to that of a twelve inch cone and angled baffle plates are placed in between them. This incredible looking affair was mounted in a slot in a 4½ feet baffle board with a large standard Heil speaker unit fixed to the top. Crossover is 1 kHz and radiation is dipolar, so these systems have to be placed several feet from the wall. Overall sound was clean and remarkably uncoloured with a well-defined bass, free from hangover.

George Tillet

## Badger Again

We have received a letter from Badger Sound Services Ltd., following the item 'Badger Bits' in last month's HFN/RR, pointing out that the components mentioned in their catalogue are supplied, not in bits, but in sets!

### CROSSWORD WINNERS

- S. A. Somers**,  
140 Street Lane, Leeds, LS8 2BW.
- M. Webb**,  
'Wheelhouse', Colthall Lane,  
St. Saiths, Norwich, NR10 3HU.
- L. Willy**,  
45 Madeley Road, Ealing, London, W5.
- A. Guthrie**,  
Thale Cottage, Thornton-Le-Beans,  
Northallerton, N. Yorks.
- R. M. Ring**,  
4 Bridge Close, Burseldon,  
Southampton.

C	A	S	A	L	S	S	G	A	
U	R		R	I	N	A	L	D	O
A	D	D	I	C	T	L	D	E	
I	C	A	V	I	E	L	L	E	
K	O	C	H	T	I	E	R	I	
		T	E	R	C	N			
G	R	I	E	G		P	A	V	A
E	R	S	I	N					
C	L		T	A	G	T	A	P	E
W	I	L	B	Y	E	O	I	A	
T	A	R		R	E	C	I	T	E
R	A	I	N	I	E	R	L	T	
L	D	O		P	R	E	V	I	N

# And now, a message for anyone trading in his unit audio.

Enough of austerity.

Throw caution to the winds, and examine the Micro Seiki DDX-1000.

It's called a turntable for want of a better word.

It has direct drive, of course.

The power supply and featherlight touch controls are integrated in a separate unit. Hum is conspicuous by its absence.

The neon strobe lamp is driven by an internal 45 Hz oscillator (hence its total lack of regard for mains frequencies).

Speeds are infinitely adjustable  $\pm 6\%$  – a full octave. Wow and flutter are less than 0.025%, the signal/noise ratio more than 63 dB.

Uniquely, the DDX-1000 is equipped for operation with up to three pickup arms simultaneously. This, and the turntable's own neutrality, makes it the ideal cartridge comparator.

The mount supplied accepts, among others, the superb dynamic balance Micro Seiki MA-505 pickup arm. A special SME arm mount is also available.

The DDX-1000 will set you back about £360, without pickup arm. If that sounds a little too much for your pocket, you'll be pleased to know that Micro Seiki turntables start at around £70.

For further information, contact Tannoy Products Limited at St. John's Road, Tylers Green, High Wycombe, Bucks. HP10 8HR. Telephone: Penn (049 481) 5221.

To sell the unit audio, try your local paper.



# Letters...

## ... about old photos and new records

**From: Professor P. B. Fellgett, Dept. of Engineering and Cybernetics, University of Reading, 3 Earley Gate, Whiteknights, Reading RG6 2AL.**

Dear Sir, History can sometimes shed light on current problems, and it is instructive to recall some of the early history of *visual* recording techniques. The invention of stereo (scopy) may be dated from the 1830s. It began to be the subject of regular experiment early in the '40s, making its main impact in the market a decade later when it came very much to the forefront of attention. Studio techniques had by then become highly sophisticated. Editing was widely practised to remove blemishes, and different takes were freely combined, especially for the purpose of adding a suitable background to material highlighted by being 'recorded' at close range. Firms specialising in studio equipment widely advertised editing and mixing facilities, and accessories to create special effects.

There was indeed some criticism voiced of these artificial techniques, but they were vigorously defended and those who opposed them dismissed as old fogies. The technical requirements of the photographic process tended to produce a stiffness of performance which had to be corrected, it was argued, by creative manipulation of the medium. Nevertheless some of the best equipped studios used real means whenever possible, including in one notable case not only the pianoforte but even the Persian carpet on the floor.

Not only was it quite usual to place a person to be pictured in front of a suitable backing, but sometimes he might even be asked to put his head through an aperture for special effect. Children were treated in an idealised convention which made them particularly liable to this treatment, and they might also be required to wear wings fastened to their backs in order to create an illusion. Widely used backgrounds included interior and theatrical effects, land and sea scapes, staircases and colonnades.

There were of course those who refused to follow these false conventions, and concentrated instead on putting the persons to be photographed at their ease, so as to bring out their true and best personality. One who did this superbly was Julia M. Cameron, who is remembered today not for her occasional and perhaps not too serious flirtations with theatrical effects, but for her naturalistic and penetrating records of Sir John Herschel, Charles Darwin and other great Victorians. Mrs. Cameron has many worthy successors up to the present day.

This outline of studio technique in the middle years of the nineteenth century was

inspired by Mr. Tony Faulkner's comparison of sound recording with photography in your February issue (page 45). Much of the information was gleaned from *A Hundred Years of Photography* by Lucia Moholy (Penguin Books 1939). It confirms that the temptations to over-exploit a new technical medium have not really changed much since the days of those solemn figures we laugh at today in old photographs, posed in costume against property pillars and against a painted alpine landscape. It could perhaps be described as an epoch of progress in studio technique, 1840 to 1970.

Yours faithfully

## ... about turntable evaluation

**From: Ivor S. Tiefenbrun, Director, Linn Products Ltd., 235 Drakemire Drive, Castle-milk, Glasgow G45 9SZ.**

Dear Sir, In the February Editorial in your magazine you discuss the difficulty in making comparisons between products. You also raise the valid point that many people on many occasions have failed to distinguish between the real thing and the very poor imitation which was the subject of comparison. Nevertheless, I am sure you would concede that unless one makes an unsatisfactory comparison between the equipment and the real thing there is no scope for improvement.

With respect to comparing turntables, it surprises me that people find the notion so preposterous. At our works, we spend days comparing our own products in order to evaluate the benefits of very minor modifications, or alterations to a single component, such as a motor mounting gasket or a belt ground .005in. thicker or thinner. Small differences in bearing clearances, suspension rates, platter mass distribution, etc, make clear and distinct audible differences. As you rightly point out, the hard bit is not hearing if there is a difference, but ensuring that subjective preference correlates with improved reproduction and accuracy. Whilst we have in excess of £20,000 worth of B&K test equipment, Woelke wow and flutter meters, etc, which we use in conjunction with records specially cut to enable all kinds of tests to be performed revealing distortion information not normally considered or evaluated with respect to turntables, we find that it is normally impossible to get a clear indication of the merit of a change unless one first uses one's subjective assessment to pinpoint the area of useful examination for subsequent tests. Then a fleeting glimpse of the objective can be caught by the storage scope or the pen-recorder.

I naturally find the elusive nature of many aspects of turntable performance frustrating, but I fail to be discouraged and press on, aware, as I am sure you are, that in the end it is only the educated subjective assessment that matters. At the end of the day, if no difference can be heard, then it is either non-existent or inconsequential, at least for the

subject concerned. It is to avoid arrogantly suggesting that our product is superior or universally applicable that we request all our retailers to sell our product only after an A/B comparison. I hope that this endeavour to be fair, objective and avoid hard-sell gibberish is not misconstrued by yourselves to mean that we are attempting the exact opposite.

I am sure you will appreciate that this approach is dependent absolutely upon the integrity of our retailers, and consequently we take great care in their selection, and have, as is common knowledge in the trade, only a quarter of the outlets who have actively sought to handle our product.

Yours faithfully

**Note:** We thank Mr. Tiefenbrun for clarifying his company's position, but we remain sceptical about the ability even of selected dealers (or anyone else for that matter) to make a genuinely fair comparison between turntables without running into insurmountable difficulties with unwanted variables of the sort briefly mentioned in our February comments—Ed.

## ... about backward Chinese vibrations

**From: J. W. Whitehead, 73 Orchard Way, Thorpe Willoughby, Selby, N. Yorks, YO8 9NE.**

Dear Sir, I have read with interest the contributions concerning the history of recorded sound in your February issue, and am reminded of an article by the late Free Grid which appeared in *Wireless World* in the middle 1930s.

Free Grid provided 'evidence' that the Chinese made good use of recorded sound several thousand years ago. He described how, while on a visit to China, he had been shown round an ancient temple and had been surprised to note that whenever his guide opened a door a voice said, in Chinese: 'Close the door please', and as each door was closed the same voice said: 'Thank you'.

Unable to contain his curiosity, Free Grid hung back from the guide and examined one of the doors. He discovered that at the bottom of the door at the edge remote from the hinge there was a sharpened piece of bamboo, the point of which ran in a groove in the floor as the door was opened and closed. As the door was opened, the passage of the bamboo spike in the groove produced the request for the closure of the door; and a move in the reverse direction produced the Chinese equivalent of 'Thank you'.

Greatly puzzled, Free Grid re-joined the guide and requested an explanation. The guide revealed that the groove in the floor was in fact a sound track and that the door, via the bamboo spike, acted as a diaphragm to amplify the vibrations in the 'needle'. He further revealed that if one says 'Close the door' backwards in Chinese, the result, also in Chinese, is 'Thank you'.

Yours faithfully

Letters for publication to: The Editor, Hi-Fi News & Record Review, Link House, Dingwall Avenue, Croydon, CR9 2TA.



# First we want you to read the truth, then we want you to hear it.

Over the past couple of years there have been a lot of incredible claims made about cassette tape.

So, since we invented recording tape in the first place, we'd like to set the record straight.

Here are the facts.

You can't get a better high frequency recording from any other tape than a Chromium Dioxide.

It's as simple as that.

For instance, compared to high quality ferric oxide tapes BASF Chromium Dioxide has a significant increase in high frequency output. As a result the signal-to-noise ratio - especially in the high frequency range - is increased up to 8dB.

In fact, most leading cassette machines manufactured today are pre-adjusted to our BASF Chromium Dioxide.

And another thing. Lately there have been a lot of rumours about CrO2 causing head wear. So here are some more facts. We spent a lot of time researching our CrO2 before it came anywhere near your recording heads. And we came up with one or two interesting conclusions.

For one thing, we found that head wear is simply a matter of the coating formulation on the tape. That's why we've given our tape its own special Chrome formulation. We haven't simply borrowed someone else's.

And when we compared the head wear from our CrO2 with the rest of our BASF tapes, we found absolutely no difference.

Need we add that BASF tapes already enjoy an

excellent reputation for long head-life performance.

That's why a BASF Chromium Dioxide cassette gives you the most sensitive and reliable performance of any CrO2 cassette. And gives you unsurpassed high frequency performance, particularly when used on a CrO2 biased machine.

And that's the truth.

Now that you've read it, hear it. Send us £1.25 and we'll post you a BASF Chromium Dioxide cassette. **BASF - You've been listening to us for years.**



I want to hear the truth. Please send me one of your BASF Chromium Dioxide pre-recorded demonstration cassettes, as indicated below.

Jazz  Light music  Classical

Name \_\_\_\_\_ Address \_\_\_\_\_

HFN 4C

BASF United Kingdom Ltd. Haddon House, 2/4 Fitzroy Street, London W1P 5AD. Tel. 01-637 8971.



# Hi-Fi Recommendations...

By Subscription only · Eli Sammett

**This 'American Letter' describes the U.S. phenomenon of Underground Hi-Fi publishing. While not an avocation to worsen the balance of payments, addresses and subscription details are included for completeness. Time alone will tell whether the trend will spread to the UK, as the circumstances are very different, but American media trends have often done so in the past.**

THE 'underground' hi-fi press in the USA is alive and growing. Why is it referred to as underground when there is certainly nothing secretive about it? One reason is that while each of these publications started with a definite schedule, usually quarterly, the schedules have not been maintained, not even to the point of producing a total of four issues within a year. Another reason for the appellation is that in almost every case the publication was started on a shoe-string budget by such publishers without benefit of advertising in order to call the shots without fear or favour.

One explanation for the stimulus that accounts for the increasing number and circulation of these subscription-only audiophile-supported magazines is historically linked to Julius Caesar: 'All Gaul is divided into three parts'. So too are audiophiles: those who enjoy the most sophisticated systems available; those who are planning to upgrade their hi-fi equipment; and those who wish to be kept aware of the state-of-art so that they will be ready to place their order as soon as their ship comes in.

But how does one know what is the best in hi-fi components when there are so many choices and competing claims? 'Ay, there's the rub.' Is the price tag an indication of quality? How about comparing curves and specs? This is difficult because the parameters adopted by the makers cannot be matched in all cases. And this is where the golden-eared critics come into their own with the question 'Never mind the specs, how does it sound?' So that's what the following magazines aim to discover and explain, by using words such as tight bass, hollow mid-range, silky top, lack of definition, grainy, fuzzy, fat, coloured, transparent, and—less frequently—accurate:

## Sound Advice

*Sound Advice* entered the underground audio press in 1975 with a first issue that reviewed 19 amplifiers and 17 cartridges; included were square wave response curves as well as frequency curves for cartridges. This was in keeping with Editor/Publisher Edward Wodenjak's aim to 'communicate accurate information about the sound quality of high-end components.' As part of this

aim, SA describes details and comparative advantages of the testing methods, including the names and models of test instruments.

How long such a volume approach to equipment can be maintained has yet to be answered, since SA's third issue (Summer 1976) presents reviews of three amps (\$1,200, \$2,100, \$2,500) seven preamps (\$110 to \$850) and eight cartridges (\$100-\$325).

The bigger the name or the price tag, the harder the manufacturer may fall under the critical views of SA, which plainly advises subscribers (and free-loading readers) not to be beguiled by the number of knobs, switches, LEDs, push buttons and meters; the sound is all.

The lead article of issue 3 claims that a better sound can be obtained by connecting the amps out of phase (the system remains in phase). The writer is Trevor G. Lees, whose name appears again further along.

SA's recommendations appear as 'Cream of the Crop' and are in the following five categories: AA—State of the Art; A—Approaching State of the Art; B—Exceptional Performance; C—Good Though Not Exceptional; D—Good Value For The Money.

**Circulation:** 5000, including most foreign countries.

**Subscription Rate:** Overseas (Air Mail only) \$13.50 for 4 issues.

**Dimensions:** 8½" x 11"; latest issue runs 31 pages.

**Address:** Sound Advice, 225 Kearny Street, San Francisco, California 94108, USA

## the absolute sound

*The Absolute Sound* merits honours in at least two departments—its number of pages and its humour. Instead of a masthead there is a cast of characters, each with the respective sign of the zodiac. A credit line is given to the legal adviser and accountant as well as to the designer, typographer and printer. Page count for the summer/fall '76 issue is 127.

Taking a leaf from G. B. Shaw, who wrote a pound's worth of introduction to a shilling's worth of play, *TAS* Editor/Publisher Harry Pearson whets the reader's appetite

with 10 pages of 'Viewpoints', including a five-letter-word that would never have got past the copy editor of the newspaper from which he recently resigned, to devote himself full-time to *TAS* in order to put four issues in the mail each year.

The review of the Thaedra preamp in the current issue shows *TAS*'s approach. A 1½ page review by critic No. 1 is followed by equal space given to manufacturer's comments followed by a terse agreement with critic No. 1 by critic No. 2, succeeded by a 1½ page rebuttal to mfr. by critic No. 1 and a final comment by the Editor, who states that he will report on a new (newer?) unit subsequently.

Some 35 components are reviewed in this particular issue in varying degrees of depth. Included are: KEF 104 and Gale 401 Speakers; Formula 4 and Grace 707 Arms; B & O 3000, Fidelity Research MK II, Sonus Blue and EMT Cartridges; Dayton-Wright SPS, Luxman CL-35 MK III, Dyna PAT-5, Levinson JC-2 Preamps. A short but catholic list of records and tapes are also reviewed and a list of 'great recordings' is provided.

Equipment is placed in 'Recommended Categories' as follows: State-of-the-art (2 tuners are the sole occupants); Class I; Class II; Class III; Class IV; Special—components that provide superior performance at comparatively low cost.

**Circulation:** 12,000 (54 foreign countries)

**Subscription Rate:** overseas (air mail) \$16.00 for 4 issues.

**Dimensions:** 5¾" x 8½"

**Address:** Box 5, Northport, New York, 11786

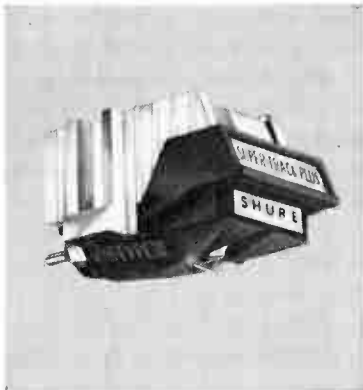
## THE B.A.S. SPEAKER

*The BAS Speaker* is a monthly newsletter published by the Boston Audio Society, 'the largest audiophile-supported organization in the western hemisphere.' Although the *Speaker* reviews and discusses audio equipment and musical subjects it 'does not endorse or criticize products, dealers or services.' Opinions reflect the views of the authors and are for the information of the members.

What a member reads could be a test



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report, consisting of written opinions of a group (6 to 12 or more) regarding the performance of a component. Sometimes the component has been demonstrated by the maker at one of the monthly meetings. In addition, the *Speaker* provides a literature survey, giving the titles of articles appearing in the major audio and electronic journals and magazines.

Other types of reviews are prepared by single authors: a comparison of cassette decks vs portable open reel stereo recorders for field use (two makes for each category) for example.

**BAS membership** is worldwide, includes 12 issues of *The Speaker* (October through September) and costs \$25.00. Overseas copies are air mailed.

**Dimensions:** 8½" x 11" Oct '76 issue, 16 pages.

**Address:** The Boston Audio Society, P.O. Box 7, Boston, Massachusetts 02215, USA

## STEREOPUS

*Stereopus* is a verbal version of an electronic probe. As an electrical engineer with a keen ear, Editor/Publisher Thomas J. Norton describes the pluses and minuses of components and also analyses the cause(s) of problem areas.

One major difference offered by *Stereopus*, uniquely, is a 'Constructor's Course' aimed at do-it-yourselfers. In issue 2 this feature involves the building of the Webb (BJ) Transmission Line Speaker System. Readily admitted is the fact that the detailed plans were previously published in *The Audio Amateur*; what *Stereopus* provides is supplemental data and enclosure-building tips, based on the Editor's experience in actually building a pair of these TLSs—the brand names of the recommended particle board, for example. The finished speakers are reviewed as a separate feature in the same issue.

*Stereopus* also relies heavily on the subjective review. Editor Norton states that there is as yet no foolproof way to make a direct comparison between live music (the accepted standard) and the reproduced sound. Manufacturers are accorded the opportunity to comment in advance on test reports that are usually based on two evaluations.

Conceived in Jan '72 and born in Apr '75, *Stereopus* suffers from the same chronic illness as some of its relatives—the quarterly schedule is not quarterly. Vol 2 will consist of two issues of the magazine plus two intermediate newsletters, the Editor promises.

Heading the modest number of records reviewed is Holst's *The Planets*. Three versions are dissected by guest reviewer Roland Norton (no relative to Editor Norton): London CS 6734, EMI ASD 3002 and ASD 2301.

Components reviewed in issue 2 include: Phase Linear 4000, Soundcraftsmen PE 2217, and Luxman C-1000 Preamps; Dahlquist DQ-10, and Allison One Speakers; Fidelity Research FR1 MK II, Denon 103,

103S Cartridges; Citation 16, Luxman 4000 and Sony TA 4650 Amps.

### Subscription

**Rate:** Overseas (Air Mail) \$16.00 for 2 magazines and 3 newsletters.

**Dimensions:** 5½" x 8½". Vol. 1 No. 2 contains 67 pages.

**Address:** Stereopus, P.O. Box 509, Shalimar, Florida 32579, USA

## THE SENSIBLE SOUND

*The Sensible Sound* is 'the only audio publication with a "Best sound for the money" philosophy.' Editor/Publisher John A. Horan continues, 'we exist because of our frustration with the other esoteric publications.'

This frustration is due to 'the cost of chasing a state-of-the-art illusion . . . about \$10,000 a year.' TSS represents the audiophile of medium income who has given up the commercial publications because of 'their say-nothing equipment tests'. By medium, it is assumed that TSS means the median, which is approximately \$14,000 for a family of four in the US.

Having taken up the cudgels on behalf of the median man, TSS shows flexibility by providing a 'limited audition report' of a pair of \$1800 speakers. Regardless of whether the reviews are full length or limited, the reader does not have to read between the lines; the opinions are all out in the open, Socko.

TSS recommendations that, heaven forbid, include Receivers and Automatic Record Changers, are listed by price categories: speakers up to \$900/pr; receivers to \$700 and turntables to \$400. These prices are the 'suggested list' that keen shoppers seldom pay. Since the first issue of TSS, scheduled as a quarterly, appeared in Nov '76, several categories remain to be filled.

The main focus of record reviews is on domestic discs. TSS suggests that subscribers return all defective records to the manufacturers to make the current low-quality product unprofitable for them. Among the items reviewed in Issue 1, are: JBL Decade L36, Dahlquist DQ-10 and B & W DM4 Speakers; Nakamichi 610 Preamp and technics SL 1350 Record Changer.

**Dimensions:** 5½" x 8½"

### Subscription

**Rate:** Overseas (Air Mail only) \$16 for 4 issues.

**Address:** The Sensible Sound, 403 Darwin Drive, Snyder, New York 14226, USA



*Mr Audio's Bimonthly*: 'is not another always-late equipment review quarterly.' Editor Tam Henderson, who was aiming issue

No. 1 for Jan '77, promises *no* reviews but discussions of the theories and design philosophy promulgated by Trevor G. Lees, an Australian electronics designer turned manufacturer and now publisher, who says that vacuum tubes, far from being finished, are about to retake the forefront in audio technology. To back up his views, Lees has introduced a tubed phono preamp and the 'cheapest and best pre-amp ever' based on a modified Dyna PAS-3X tubed chassis.

A detailed explanation of the whys and wherefores of connecting amplifiers out-of-phase will be one of the first features in a series of bimonthly issues. This is the magazine which asks the question, 'why can't we have a little fun with audio?' Why not, indeed?

### Subscription

**Rate:** Overseas (Air Mail) \$15.00 for 6 issues.

**Address:** Mr. Audio's Bimonthly, Box 77907, San Francisco, California 94107, USA

### THE AUDIO ADVISOR

## AUDIOGRAM

*The Audiogram* seeks to appeal to audiophiles who may also be anglophiles: 'where else can you find reviews of the LS3/5A, Spendor BC III, B & W DM6, Naim NAP 160 and NAC 12 N, Radford ZD 22, Lecson AP-3, Decca MK VI, Goldring G 900 SE . . . in addition to Audio Pulse, Polk Monitors, Acoustat X Speakers . . . etc?'

### Subscription

**Rate:** Overseas (Air Mail) \$15.00

**Address:** The Audio Advisor, P.O. Box 17202, Dulles International Airport, Washington D.C. 20041, USA

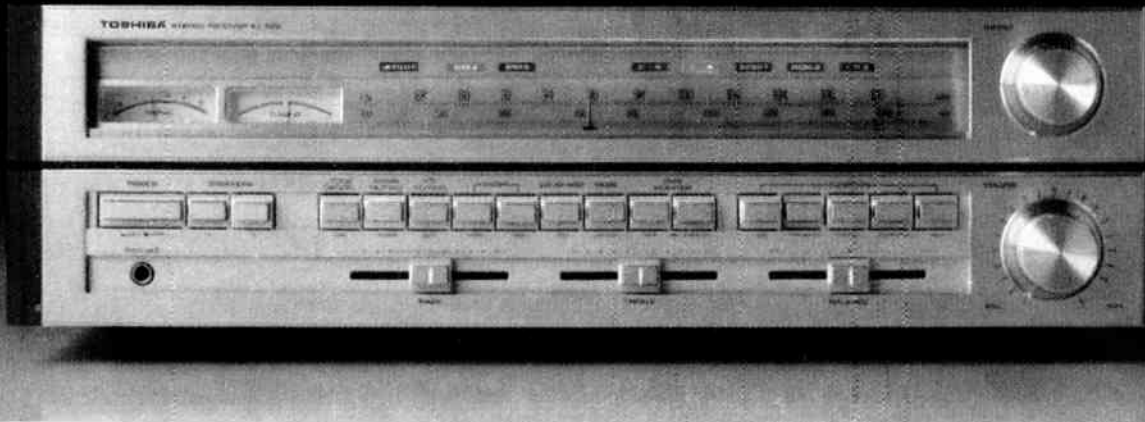
## The Audio Critic

*The Audio Critic*: 'will be the first regularly-published noncommercial review of high priced (exotic) audio equipment.' The schedule of six issues per year called for the first issue to be mailed the first week in Jan '77.

Apparently, the trend to higher-priced equipment has become a ground-swell, because the first issue of TAC will survey two dozen pre-amplifiers, each of which aspires to be state-of-the-art. Shorter articles on speakers and arms are also to be included in issue 1. All of these pre-amps were tested under the same roof for the same period of time, with switching facilities that permitted each unit to be instantly available for comparison in the listening room or the well-equipped laboratory. Subjective listening will predominate.

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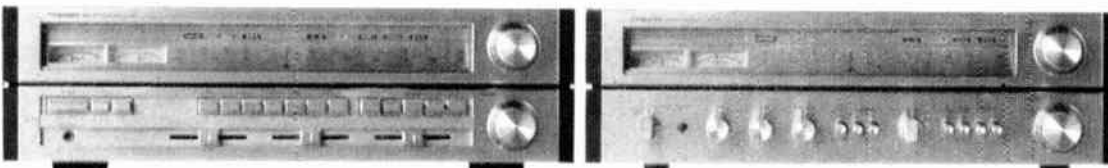
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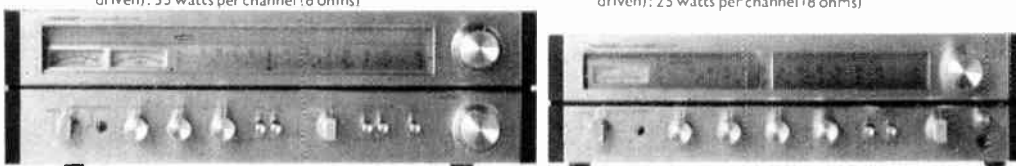
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**SA-220L** Continuous power output 7 watts per channel, min. RMS, at 8 ohms, both channels driven, with no more than 0.8% total harmonic distortion, from 40 Hz to 20,000 Hz. Continuous power output at 1,000 Hz (both channels driven): 11 watts per channel (8 ohms)

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# Audio Patents Adrian Hope

A PATENT has now been issued (BP1 545 514) on the fruits of some research work which was shown to the press during a recent open day at the Leak Wharfedale works in Bradford. As the patent explains, in a conventional moving-coil loudspeaker the cone is intended to move as a piston, and 'breakup' results when sound waves propagated on the cone material are reflected back by the edge surround to form standing waves. One theoretical solution is to make the cone surround 100% energy absorbent; but this is in practice impossible. Leak-Wharfedale, as a mortal manifestation of the Rank Organisation in whose name the patent stands, have used holographic techniques to track and freeze the break-up patterns on various types of cone. Using different types of surround they have come up with the suggestion that the cone should be damped internally in a new way, as well as at the edge. The plan is to perforate the cone with spiralling radial lines of holes, looking somewhat like the blades of a fan. These holes are filled with a compound having a high internal energy loss. In practice the whole cone surface is treated with a solution of the damping material, so that as the solvent evaporates the holes are left filled. No details are given of the type of

damping material regarded as suitable, other than a suggestion that the same materials as are used for treating conventional cone surrounds can be employed for filling the holes. A reasonable assumption would be that some materials are better than others, and the inventors are reluctant to give too much information away in a patent which is, of course, published to the world at large—and in this case also to any rival firms who are readers of HFN/RR.

The Sony Corporation, of Tokyo, has recently been granted several patents for circuitry which enables amateur singers or instrumental soloists to join in with professional recordings. There is, of course, no problem in mixing a live microphone signal in with a prerecorded stereo pair, to superimpose the live sound on the recorded. The Sony circuitry, however, seeks to separate the live from the recorded. Although this at first appears impossible, it is in fact fairly straightforward—at least once someone else has explained how. The simple algebra involved is especially interesting because it may suggest other avenues of experimentation to audio enthusiasts, for instance the modification of existing stereo recordings.

It is a characteristic of modern stereo

recording that the featured solo vocalist is almost without exception located at front centre. This is achieved by incorporating the vocal signal in each channel at all times at the same amplitude and in the same phase. Thus a stereo pair of channels (L and R) contains left-only (LO) centre (C) and right-only (RO) signals in the following relationship.

$$L = C + LO$$

$$\& R = C + RO$$

In BP 1448957, Sony propose that the signals L and R be added together to produce the sum signal as follows:  $L + R = 2C + LO + RO$ . If one half of this sum signal is now subtracted from the left channel only, the following equation results:  $L - \frac{1}{2}(L + R) = \frac{1}{2}(LO - RO)$ . If the latter signal,  $\frac{1}{2}(LO - RO)$ , is supplied to the left-hand channel of a stereo set-up, then no centre-front sound at all will be reproduced from that channel and the featured vocalist will be missing altogether from the left speaker. If the signal  $R = C + RO$  is applied to the right channel, then the centre-front vocal sound will appear adequately loud and clear from the right. All that is necessary now is to route the additional signal, for instance from a live singer's microphone, to the left channel only. The result will be the original recorded sound on the right, additional live sound on the left, and orchestral stereo spread between loudspeakers essentially as before (albeit with some phase discrepancies).

## Subscription

**Rate:** Overseas (Air Mail) \$33.00 for 6 issues.

**Address:** The Audio Critic, Box 392, Bronxville, New York, 10708, USA

[A copy of the first issue of TAC has just appeared in the office as we go to press, and very impressive it is too. Naturally one must be sceptical when considering the track record of many of these publications, but there are 48 full editorial pages of interesting, esoteric and contentious features. The jaunty journalism is irreverently readable and might be compared to the British motoring magazine *Car*. If they can keep up the bi-monthly schedule, this could become the *bête noire* of the American audio industry, which appears to be their intention.—dep. Ed.]

## the stereophile

The *Stereophile* is the original audio magazine to derive its main support from subscribers. J. Gordon Holt, 'Editor, Publisher, Staff Writer, Chief Tester and Drudge' brought out the first issue in Nov '62, after a five year stint with *High Fidelity*. Dedicated to 'the pursuit of perfection in the reproduction of music in the home, while attempting to maintain a certain degree of cost effectiveness . . .' *Stereophile* evaluates components almost entirely subjectively. For example, 'a moderately priced amplifier will be evaluated in the

reproduction of a variety of original and second generation tapes fed directly into it (no preamp) and feeding the best speaker system we know of; and also by using the best associated equipment that is likely to be used with it.'

As with most of the publications, an advance copy of a given test report is submitted to the manufacturer, a procedure that makes for lively give-and-take that adds to the readers' edification.

The current issue of *Stereophile*, Winter 1975/76 (sic) does not contain a listing of Recommended Equipment; however, future issues will present Recommended Systems in several categories to help overcome interfacing problems (see HFN/RR December 1976).

Records are reviewed and *Stereophile* is campaigning strongly to persuade US record makers to improve the quality of their recordings, particularly in the classical field.

The lead article in the current issue is called 'The All-Pass Filter,' and components evaluated include: Yamaha B1 Amp, C1 Preamp, and NS-1000 Speakers; Quad 405 Amp; Stax Preamp; GAS Thaedra Preamp; Audio Research 150 Amp; Otari MX-5050 Tape Recorder.

**Circulation** 8300 and worldwide except for countries behind the Iron Curtain and emerging African nations.

**Subscription Rate:** Overseas (Air Mail) \$18 for 4 issues.

**Address:** The *Stereophile*, Box 49 Elwyn, Pa. 19063, USA

## the Audio Amateur

The *Audio Amateur* is a 'show-and-tell' publication aimed at the craftsman who enjoys building his own equipment: a Direct Coupled Electrostatic Amplifier; a Seismic Platform To Reduce Mechanical Feedback To The Arm; a Vacuum System To Clean Records (borrowed from The *BAS Speaker*); a Synthesizer for \$900. In addition to drawings, photos and text, sources of supply are given. In most cases the equipment is built and tested before publication to make sure it works as claimed.

Editor/Publisher Edward T. Dell, Jr. is a former managing editor of a national monthly and acknowledges the help given by his family and friends in starting the publication (1970) in which the 24-page issues were filled by reprinting articles from the British audio press. Now a quarterly 48 page magazine, TAA plans 64 pages in '77.

**Circulation:** 6000, including subscribers in most foreign countries outside the Iron Curtain.

**Subscription Rate:** Europe, North Africa, (Air Mail) \$16.00 for 4 issues. South Africa, Asia, (Air Mail) \$17.50 for 4 issues.

**Address:** Box 176, Peterborough, New Hampshire 03458, USA. In the UK: Yellow Oak Cottage, Tillington, Hereford HR4 8LQ ●

# You get a free ADC cartridge when you buy this turntable, but we advise you to read all the small print.

It seems only fair to warn you that the BSR McDonald BDS95 is a tempting enough purchase as it is.

We made this belt-drive turntable with certain people in mind.

People who still have the turntable that came with their first hi-fi system.

And they've begun to notice the imperfections.

The BDS95 means you've not only moved up to a turntable that meets the most exacting standards of design and performance, but you still have a turntable you can really rely on.

So let's take a closer look by lifting the friction hinged lid, which stops at any angle on the slimline plinth.

Notice the 'S' shaped, low resonance,

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The counterbalance for primary weight adjustment, and micro-balance obtained by the ultra-fine rotary control.

Now let's get things in motion using the viscous cueing device, and discover the great combination of silent power transmission and ultra modern styling.

The discerning eye will spot features such as the bias compensator that equalises stylus pressure on both sides of the groove, and the special lightweight headshell.

And this of course is where the free cartridge comes in.

The ADC Q32 is a superb *Induced Magnet* cartridge with an elliptical stylus, worth

around £14.

If you should prefer the BDS80 turntable instead, we'll include an ADC Q30 cartridge in the price.

That's worth around £10.

Both these offers close on 31st July.

We're sorry if this leaves you with a feeling of deep dissatisfaction with your present turntable, but we did warn you.

If you are in any doubt about compatibility just write to Richard Jones at the address below.

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# Soundings

Donald Aldous

**M**EA CULPA. Amidst the praise for our *100 Years of Recorded Sound* supplement in the February issue, our knowledgeable and ever-vigilant readers have pointed out several errors in my chronology. 'The Lord's Prayer' was recorded by Berliner on a single-sided five-inch diameter disc, not on a cylinder in 1884. In my reference to the 1887 experiments of Berliner using glass coated with lamp-black: the etching must have been done with, say, hydrofluoric acid and not chromic acid. In fact it seems that chromic acid was used by him to etch a groove in a polished zinc plate covered with a thin layer of beeswax. The wax initially resisted attack by the acid, and finally the wax was scraped off to reveal the groove. Berliner demonstrated this instrument to the Franklin Institute, according to my researches.

My friend John Freestone assures me that the first Nellie Melba records were issued in 1904 and not 1902. Again, due to aberration or mis-typing, I gave the date of the first public demonstration of EMI Stereosonic tapes as 1951, when it should have been 1955/56. Sorry!

**ON MY PAGE** last month I referred to the remarkable SAE Model 5000 Impulse Noise Reduction system, and a sample of this product is now being tested for us by Reg Williamson. The circuitry of this device is the result of prolonged research by its inventor Jack Sacks into the problems of impulse noise.

Interestingly, a post-graduate student of University College London, whose name is Martin Sach—no relative—has designed a click or 'scratch' eliminator independently. His approach is to try to detect the scratch itself and remove the intrusive click, leaving the rest of the sounds intact. In order to give the circuit time to detect the scratch, a six millisecond delay is incorporated so that one is listening to the music a little after the groove has passed the stylus.

First, the scratch is detected by taking the difference between the two channels. This is because the difference signal corresponds to vertical movement, and scratches tend to be mostly vertical. Thus the scratch or click is selected and can be used to trigger the circuit which removes its effects.

By way of a crude explanation, the device works as follows. Normally we listen to the delayed signal, but when a scratch is detected it enters the delay channel, and, whilst the scratch signal is in this circuit, the music signal is faded across from the output of the delay to the input, thus missing out the scratch, which has been lost in the system. After this the circuit automatically fades back so that it is ready to remove any other clicks or scratches. A demonstration quickly con-

vinces one of the efficacy of these impulse deleting devices. This present unit is at the moment only in a prototype form.

**IT IS A** fairly safe bet, I think, that anyone interested in hi-fi will have heard of the terms Class-A and Class-B, when referring to amplifiers. During the Q & A session at an audio society meeting I addressed recently, one keen enthusiast said he knew what these terms meant, but wanted an explanation of Class-C, Class-D, and any other descriptions coming into use.

Class-C is an operating condition extensively used in RF power amplifiers, but not in audio applications, as such a circuit conducts for only a small part of the signal cycle, thus introducing heavy distortion.

Class-D amplification is a pulsed system, in which the output transistors act as switches (instead of being the usual linear types) in a single-ended push-pull circuit. There are many technical problems concerned with Class-D amplification, including the removal of ultrasonic pulses from the loudspeakers. The plus side of Class-D includes a very high efficiency: 90% or more from a smaller and cooler-running amplifier.

For a full explanation, I was able to recommend Gordon King's *Audio Handbook*, published in 1975 by Newnes-Butterworth. The last system I tried to explain (Class-G) is so new that it could not appear in Gordon's book. Class-G (originally called Class-E) is a development of the Hitachi laboratories, and, in simple terms, supplies extra power per channel for short periods of time. This additional power can handle musical peaks that could otherwise cause clipping distortion.

In Hitachi's production model of this design, SR 903, the output leaps from 75 watts 'RMS' per channel into 8 ohms, over a wide frequency range, with no more than 0.3% THD, instantly and automatically achieving 160 watts per channel within the specified distortion.

In effect the Class-G system employs a low-power and a high-power output circuit operating in conjunction in such a way as to ensure relatively high efficiency from each stage.

**TELEVISION** is not a medium this magazine exists to promote, but the sound aspects of a new series currently being transmitted throughout the ITV network on Saturday evenings are certainly exceptional as, indeed, are the programmes.

The series is called *All You Need Is Love*, and it treats in depth the story of popular—as opposed to 'Pop'—music. The magnitude of this project, running for 17 weeks from Feb. 12, can be better appreciated when you know that

EMI TV Productions and Polygram (TV division) are reputed to be spending two million pounds on the work.

Its creator and director, Tony Palmer, researched the musical areas involved in 41 countries over 18 months, shooting a million-and-a-half feet of film. For a TV production of this scale, it is the first to be recorded in stereo sound at Theatre Projects Studios Elstree, as well as having full Dolby-A noise reduction throughout. To gain the full impact of this sound track, FM 'simulcasting' is necessary on a stereo radio channel. In fact, the material was premiered in January in Norway in this TV/radio sound conjunction.

Tony Palmer recently talked to me at length about his high hopes for similar transmission facilities over the British TV network. At one time it seemed that LBC in London and Radio Clyde in Glasgow would radiate the stereo programmes. Alas, commercial and technical factors entered the exercise, much to the annoyance of Mr. Palmer, and the 'simulcasts' have been dropped.

The technical problems are interesting. The BBC, with its PCM distribution, could transmit stereo signals over its network, but ITV/ILR would have to use expensive Post Office stereo circuits (to avoid phase shifts, etc), or the remote station would have to get its own film print or video tape. This would have a stereo magnetic track or a multi-track audio tape, all costing considerably more. Hi-fi oriented professionals in the TV industry (yes, there are some, despite the Editor's grumbles on page 61) tell me that they want the day to come when TV sound is transmitted with pilot-tone stereo encoding so that audiophiles can use existing VHF sound demodulators with stereo decoders.

**SADLY**, every admirer of the pioneer companies in British audio will have heard of the long established name of Goldring going into the hands of a Receiver. Our condolences to founder Erwin Scharf, and his son Gerry Sharp (MD). Gerry, a few weeks ago, suffered another misfortune, resulting in his vision now being mono, instead of stereo, as he told me!

I'D like to pay tribute now to George Cooksey, who can best be described as plenipotentiary extraordinary for Mullard Ltd., over many years, who died, aged about 70, in mid-February. All—individuals or organisations—who came into contact with George will miss this generous man.

**LASTLY**, I would like to mention my own incapacity for a short time, following a car accident, leaving me with a fractured right wrist, but I sustain the fight!

# The Pioneer music centre.



# What the hi-fi experts say.

"With the advent of the Pioneer M 6500 we have an integrated audio system that adds up to no-compromise hi-fi."

"The quality of the various components, i.e. the belt-driven turntable, cassette deck, 3-band tuner/amp, is equal to that of Pioneer's separate units, so respected in the hi-fi enthusiast's opinion."

"The auto-return belt-driven turntable, with 4-pole synchronised motor, looks good.

Wow and flutter only < 0.08%, rumble > 63dB (DIN B), and frequency response 10Hz-25kHz. Remarkable.

Nice to see a PC 135 cartridge as well."

"Very versatile cassette deck, excellent wow and flutter of only < 0.13%, signal to noise ratio > 47dB.

CRO2 tape frequency response 30Hz-15kHz, LH tape 30Hz-12.5kHz.

The tape selector and counter are useful too."

"Superb tuner/amp. FM particularly impressive, with 35dB for stereo separation (1kHz), capture ratio 1.5dB and selectivity ( $\pm 400$ kHz) 60dB. I liked the frequency response too, 30Hz-15kHz.

MW and LW fine. Very low harmonic distortion, only < 0.1%. Output is ample with 2 x 18 watts per channel RMS."

"Since 1938, we've been treated to every hi-fi innovation imaginable from Pioneer.

Their number of best-sellers is quite astonishing, until you consider their philosophy of offering only reliable, high-performance units with genuine features.

They've never produced a mere gadget in their entire history."

"It's altogether a superb piece of equipment."

# What they actually mean.

"It's a hi-fi system all in one box."

"The turntable, cassette deck and tuner (radio)/amp are made to Pioneer's exacting specifications."

"Your records will sound marvellous."

"So will your tapes."

"The radio's superb."

"Pioneer have been making the best in hi-fi for almost 40 years."

"It's altogether a superb piece of equipment."

 **PIONEER®**  
We bring music to life.

# This is the safest place in the world to play your records.

We believe you should have as little as possible to do with the ADC Accutrac 4000.

So once you've placed your record on the turntable, and pressed a few buttons, you can leave the rest to the world's first computerised turntable.

The human errors that do a lot of damage to records are a thing of the past.

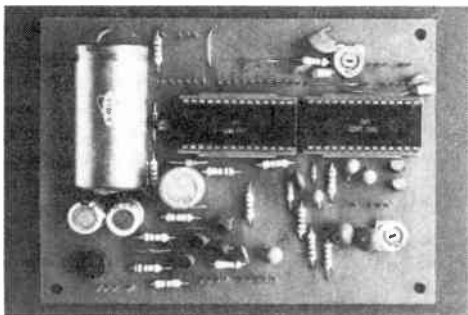
**You get more out of it, because we put less into it.**

It's a fact that when you compare the ADC Accutrac to other expensive turntables, the rest are made to look clumsy, complex and old-fashioned.

Truly superb sound reproduction can now be achieved in a much simpler way.

**The turntable with a memory.**

We started by replacing a lot of noisy mechanics with a neat little computer.



Out came standard components.

In went the latest breakthrough in MOS computer circuitry.

So all Accutrac's operations are controlled and programmed far more quickly and efficiently than any other automatic turntable.

The control panel is designed for you to select up to 13 tracks in any order you want to hear them, and a 24 selection memory bank allows for programmed repeats.

**The motor that keeps an eye on itself.**

We replaced the conventional belts, wheels and pulleys with an electronically controlled direct drive system that keeps wow and flutter to a completely inaudible .03% and rumble at -70dB.

The motor contains electronic speed-sensing circuits, which keep a constant eye on the accuracy of the massive 12 inch diecast turntable's speed, and instantly corrects any error.

There's also a speed tuning circuit that lets you vary the speed over 5%.

A glance through the stroboscope provides a reliable speed check.

**The tonearm you never touch.**

We did some more eliminating.

Out went the noisy linkages that power automatic arms from the main turntable drive



motor.

Out went velocity-sensing mechanical arm-trip mechanisms.

Out went all the clumsy cams and gears.

Instead, Accutrac's tonearm is moved by its own electro-optically controlled servo-motor.

It responds instantly and silently to your programme in the turntable's memory bank. Tracking error is minimised by the arm's 9 $\frac{2}{3}$  inch (237mm) effective length, and horizontal and vertical bearing friction has been reduced to the negligible level of 5-7mg, due to Accutrac's new ball race and pivot system. From the instant the stylus touches the record, the arm is totally decoupled from the servo-motor and controls, so it always tracks the groove with perfect freedom.

**The cartridge that knows where it's going.**

Accutrac has the most advanced cartridge in the world.

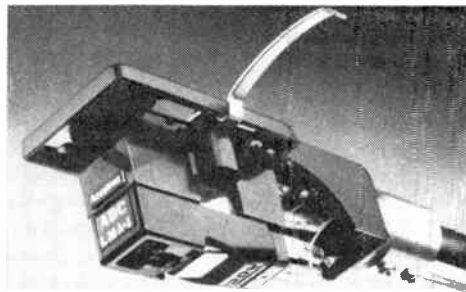
The ADC LMA-1.

It scans the surface of the record with a tiny beam of light from a solid-state infra-red generator.

When the beam is focused on the record, closely spaced grooves scatter the light, while the smooth surface between the tracks reflects the light back to a detector which triggers the arm mechanism.

This system ensures that the tonearm selects the right track quickly and smoothly, while accurately gauging where it begins and ends. The low mass cartridge with its elliptical stylus, features the *Induced Magnet* system on which ADC built its enviable reputation.

It combines a strong, accurate, signal output with a  $\frac{3}{4}$  to 1  $\frac{1}{2}$  gram tracking ability.



The integrated design of the tonearm and cartridge results in minimal arm mass and an ideal tonearm resonance between 8-10Hz.

**It's all at your command.**

As you see, Accutrac has some very intriguing features, quite apart from the turntable.



What looks like a pocket calculator is actually a cordless command module. So you have remote control.

The sculptured space-age object is the receiver for the turntable's memory bank. It's 'winking eye' tells you that your commands have been received.

Then you just sit back and enjoy what we hope you'll agree is the main attraction: the sheer excellence of the sound reproduction.



Distributed by BSR Limited,  
Powke Lane, Cradley Heath,  
Warley, West Midlands  
B64 5QH.

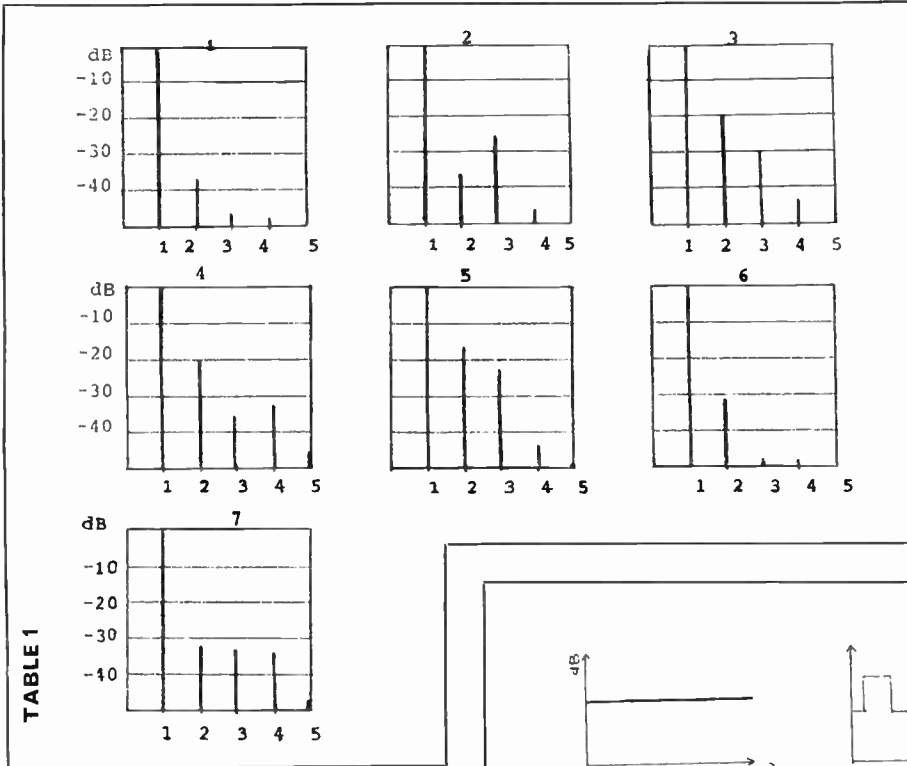
## Accutrac<sup>TM</sup> 4000

Guaranteed for 2 years.

# Pickup Musicality

Jean Hiraga

the inside of the anechoic chamber would be completely dark whereas the ideal auditorium would be uniformly lit. This ideal auditorium would have a reverberation with a harmonic spectrum similar to that of the 300B amplifier in last month's article, decreasing evenly with each successive harmonic.



## Interpretation of Spectra (table 1)

Figs 1-7 illustrate typical distortion spectra of cartridges; a brief summary of the subjective impression these give is as follows:

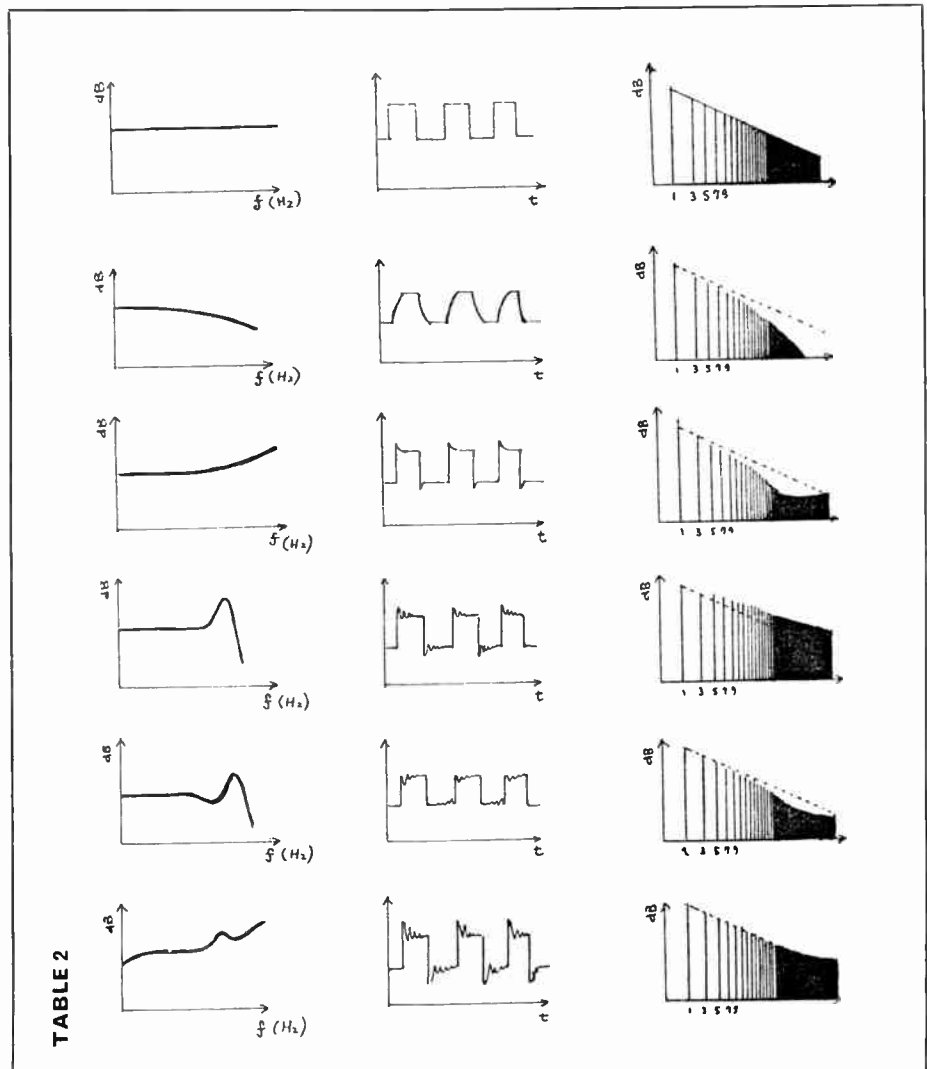
- 1 Distant and slightly dulled; harmonics are almost lacking.
- 2 midband lacks spaciousness; no high harmonics, third harmonic slightly exaggerated.
- 3 Natural and uniform; well-graded harmonics.
- 4 Slightly metallic treble sound; harmonics well-graded but the even harmonics are higher than the odd harmonics.
- 5 Constricted and coloured sound with reinforced treble; a rapid decrease in the relative harmonics levels, which are nevertheless maintained.
- 6 A dull sound, soft but imprecise; high frequencies are attenuated and only harmonic 2 is present.

This second article examines the harmonic distortion spectra of pickup cartridges and relates these to the perceived musicality. This does not take into account interfacing factors of arms and turntables, although those used have a high reputation internationally; neither do we have details of the harmonic distortion cut onto the test disc. We are indebted to 'La Nouvelle Revue du Son' for permission to republish.

THIS article applies the same form of measurement used last month on amplifiers to pickup cartridges. It is possible to achieve some correlation between this measurement technique and the subjective evaluation of the musicality of a cartridge.

The technique also enables one to judge the musical qualities of a particular acoustic (auditorium, theatre, etc), by examining the spectral composition of the reverberant sound. Indeed, two auditoria may have reverberation times which are close to the ideal, but the different harmonic content of the reverberation may make one sound much better than the other. Very absorbent surfaces may make mid-frequencies sound distinctively less alive. Although traditional reflective surfaces are not ideal, if the reflections are sufficiently diffuse one may obtain an ideal reverberation time and a musically satisfying result.

As an illustration of this, if one replaces the reflected sounds with light, the differences between an anechoic chamber and an ideal auditorium would be very pronounced;



7 Similar to 6 but more precise and with more treble.

Table 2 shows the relationship between the frequency response and square wave response of a pickup cartridge, and the effect this may have on the distortion spectrum produced. If the frequency response is not adjusted to the flat position, a significant error will result, so the appropriate equalisation must be carefully done to give any reliable results.

The following instruments were used in the measurements: Technics SP10 II turntable; Audio Craft AC300C pickup arm; B & K 2608; 2305 synchroscope Matsushita VP 526A; Nicolet Scientific UA500 real-time analyser. The measurements were conducted in the laboratories of a Japanese magazine, *The Radio Experimenter*, whose assistance we acknowledge.

### Harmonic Spectra of Various Cartridges (see Table 3)

This is not intended as a criticism of the various cartridges, but may illustrate the usefulness and practicality of this measurement technique. For example, one can contend and later confirm by critical listening that nos. 5 & 15 have similarities, with a natural reproduction balance and great detail right up to extremely high frequencies. Cartridge no. 3 gives a pleasant gentle sound, slightly muffled but nonetheless accurate and precise. Cartridge no. 10 has a slightly prominent treble; pleasant and precise, it has low distortion but a somewhat metallic hard sound. Cartridges 4 & 6 also have similarities: the sound is balanced but a trifle distant with particularly good treble detail on cartridge 6. These two cartridges show a particularly linear response curve. Cartridge 14 has low apparent distortion,

good balance but a rather forward midrange. The lower treble sounds slightly attenuated and extreme *hf* is rather bright. Listening without a reference, it gives the impression of very natural reproduction, but when compared with 5 or 15 one can notice coloration which nevertheless may sound agreeable. No. 9 is also linear and is characterised by good balance and low distortion; there is a slightly attenuated midrange but precise and pleasant extreme treble. For the other cartridges the subjective effect of the defined spectra will allow conclusions to be drawn. Although listening tests provide the decisive test which covers all aspects of cartridges, it is possible to contend that these measurements provide indications of the quality of a particular cartridge of the order of 70%. This test is not sufficient to tell the whole story, but nevertheless provides a very worthwhile measurement relating to musical reproduction. However, other factors which have important subjective correlations are pulse-testing and the measurement of the peak-signals of given musical programmes.

### Dynamics

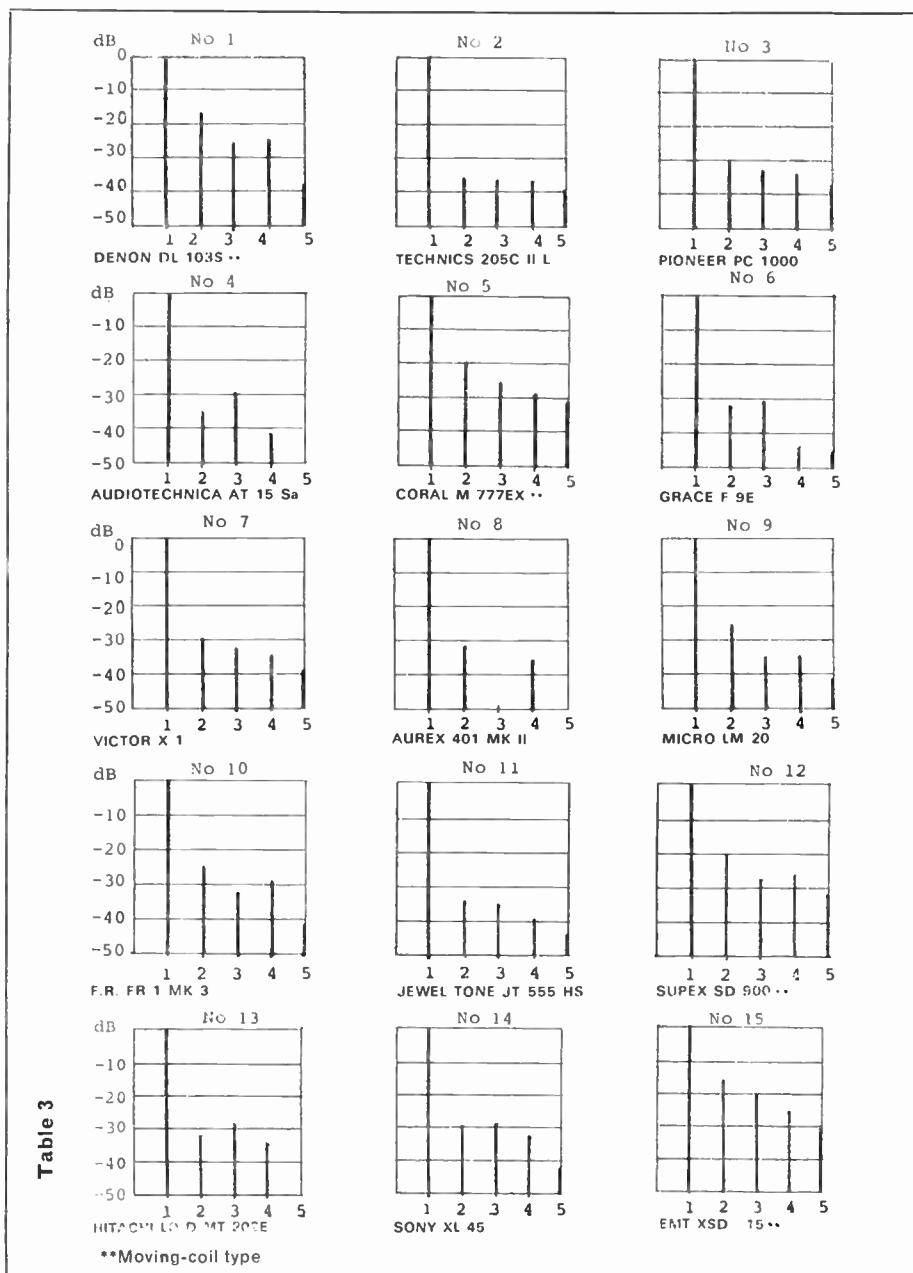
Cartridges also vary from one model to another in their ability to handle musical dynamics. In general, moving-coil cartridges give a higher instantaneous specific level than moving-magnet designs when the different sensitivities are taken into account. It is vital for musical reproduction that a cartridge has a linear dynamic correlation between the lowest and highest cutting levels, even at the expense of frequency response.

Twenty cartridges of different types were equalised to produce an output voltage of 5mV at 1kHz 5cm/sec. The voltages produced on *fortissimo* music passages showed remarkable discrepancies. The Westrex 10A (a very early and almost unobtainable cartridge) produced some 680mV, which would cause overload difficulties in many preamps. The classic Ortofon SPUGT-E in comparison achieved only 360mV, while no moving-magnet design exceeded 210mV.

But the most important aspect of this is related to definition or clarity. Despite a noticeable roll-off above 10kHz and in the bass compared with most modern cartridges, the sound of a harpsichord or harp on the Westrex is very accurate and precise, more comprehensible and clearer. For example, on a piano recorded at a low level one can perceive the noise of the hammers hitting the strings and the fingers on the keys far better than with any other cartridge despite the attenuated treble.

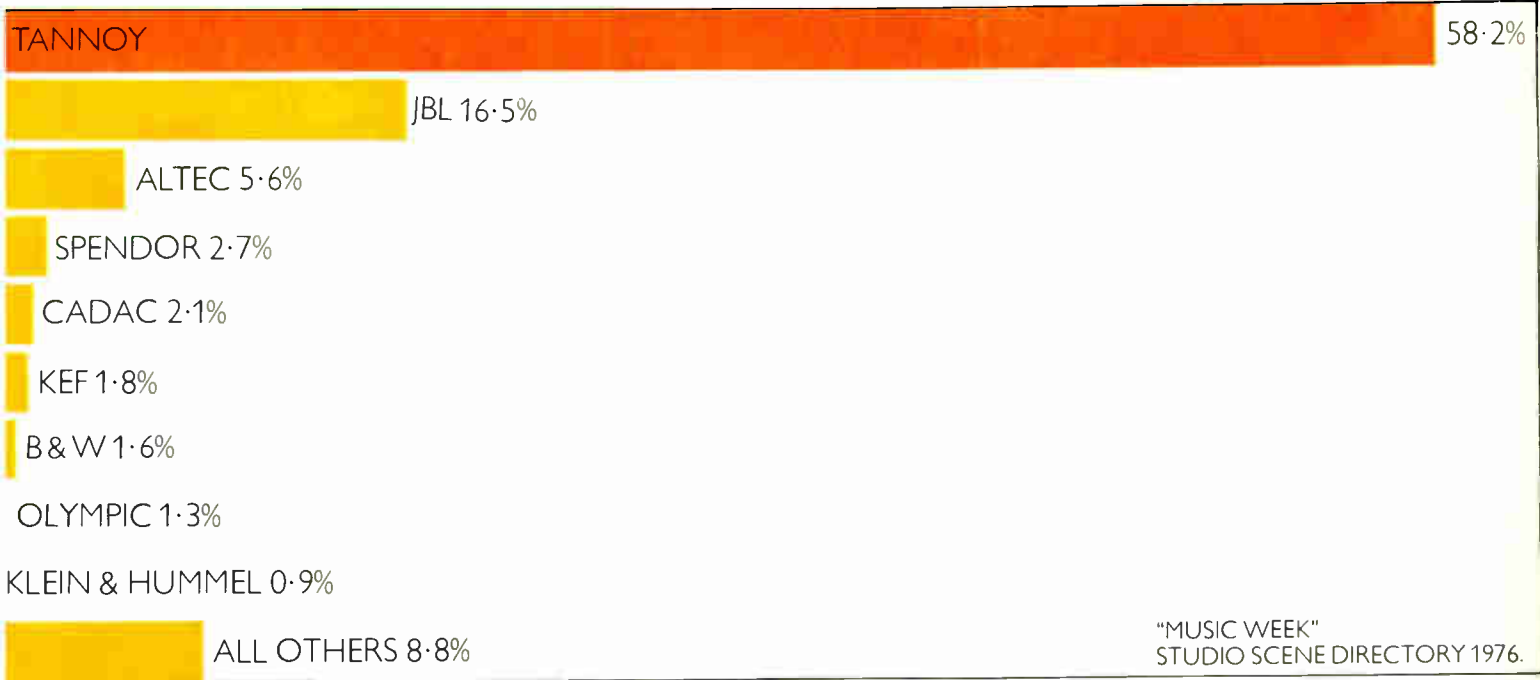
### Connections

The whole question of connecting wires will be dealt with more fully in a future article; it is sufficient to say that poor connections and choice of connecting wires can have a very significant effect upon the musical performance of a cartridge, quite apart from the well-established effects of inductance and capacitance described in the recent interface article (Dec '76). The chain from cartridge to pre-amp may contain seven different break points, any or all of which may have a deleterious effect. In principle these should be avoided as much as possible and where they are unavoidable, they should be scrupulously clean. ●



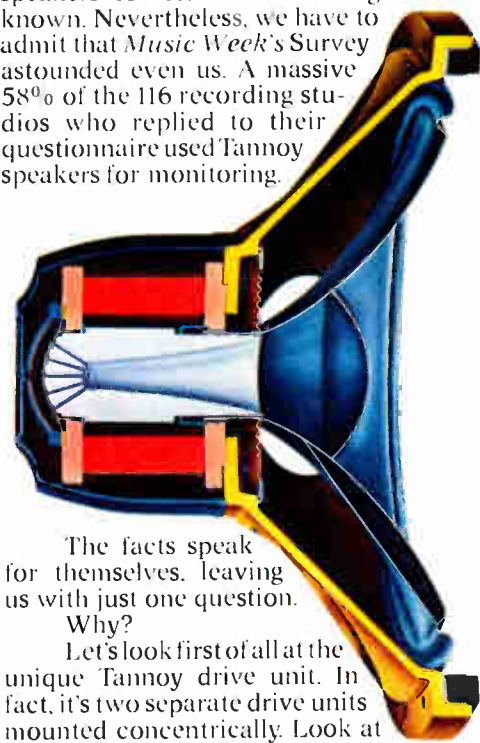


# An independent survey of British recording studios speaks volumes for us.



"MUSIC WEEK"  
STUDIO SCENE DIRECTORY 1976.

Among the people who move in those exalted circles, the popularity of Tannoy speakers for studio monitoring is well known. Nevertheless, we have to admit that *Music Week's* Survey astounded even us. A massive 58% of the 116 recording studios who replied to their questionnaire used Tannoy speakers for monitoring.



The facts speak for themselves, leaving us with just one question. Why?

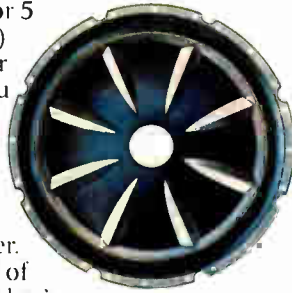
Let's look first of all at the unique Tannoy drive unit. In fact, it's two separate drive units mounted concentrically. Look at the diagram above.

In the centre is a high frequency compression horn; around it is a direct radiator bass unit - 10", 12" or 15" in diameter depending on the model you choose.

The high frequency unit drives through a phase-compensating throat which ensures that, by the time the sound reaches you, the two units are perfectly in phase. (Tannoy's elegant, 30-year-old answer to a problem which, some would have you believe, has only just been solved.)

Unusually, even our bookshelf speakers combine very high sensitivity (in the

Devon, 96 dB for 5 watts at 1 metre) with high power handling. So you can play your favourite music at genuinely realistic levels, even with a modest amplifier.



The secret of the Tannoy speaker's high power handling is the unique Gird-acoustic cone (shown above).

The radial struts are carefully placed to stiffen the cone without significantly adding to its weight, enabling it to make larger excursions without break-up. Which, if you know the volume levels they use in studio monitoring, is just as well.

But you may well ask, do the speakers in my local Tannoy dealer's demo room bear any resemblance to the ones in the Air Studio's control room?

The answer is: yes. A Tannoy speaker unit on the production line could just as easily land up in the Canadian Broadcasting Company's headquarters as in your lounge.

Although we must be honest. Of the 58% of recording studios who monitor with Tannoy's, about a third have them in professional cabinets.

# TANNOY

Tannoy Products Ltd., St. John's Road, Tylers Green, High Wycombe, Bucks HP10 8HR



# COLLARO CP6

**Designed for tomorrow – on the experience of yesterday**

The CP6 turntable introduces the new 600 series from Collaro – 5 units to suit all requirements comprising autochangers and single players.

The CP6, at the top of the range, looks impressive and gives impressive performance. Its features include: –

\* A unique, curved, square-section pick-up arm \* full-size, dynamically balanced steel turntable \* Automatic anti-skate

\* Viscous damped cueing \* Graduated stylus pressure adjustment \* Three speeds \* 4-pole long-life motor.

Available as a complete module with low profile plinth and cover, fitted with quality cartridge.

See your local dealer or write for further information.

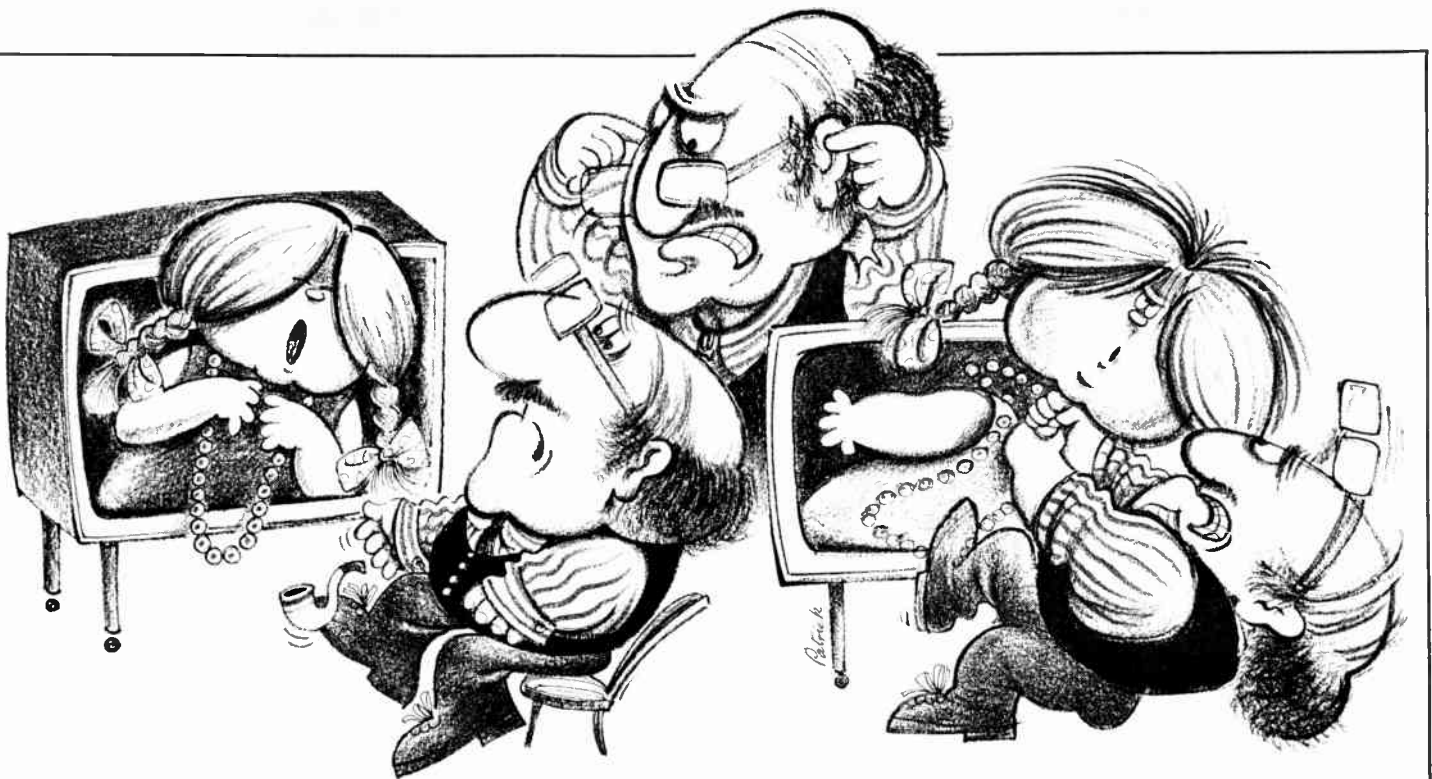
Manufactured in Britain by The Magnavox Company. Distributed in the UK by Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4936.



Other models in the range are: B600 Autochanger, P600 single play unit, B610 Autochanger, P610 single play unit. Available in chassis form or as complete modules.

**COLLARO**

Manufacturers of quality British turntables and record decks for over fifty years.



# Television Sound

A high quality take-off by Angus Robertson

**C**ONTRARY to popular belief, television sound quality can be almost as good as FM radio on Band 2. Unfortunately the manufacturers of television receivers seem to have heard about some market survey (probably never conducted) which says that the British public are perfectly happy with low quality, tinny, distorted sound. Although various representations have been made to manufacturers, committees and broadcasting organisations, there are still very few televisions available in the UK that include a high quality sound output for a separate amplifier/speaker system. Thus it is necessary for those enthusiasts who care about the quality of their TV sound actually to take the matter into their own hands and do something. Later in this article I shall describe various techniques for obtaining sound quality approaching that of the original broadcast, but first it is appropriate to consider the quality of sound transmitted by the broadcasting organisations.

Television sound is originated using similar techniques to those developed for radio. Broadcast quality microphones and audio mixers are used in TV studios, the sound quality not being limited or restricted in any way other than for purely artistic or operational reasons. In the case of ITV, sound is distributed to the transmitters using music quality PO audio lines, while the BBC use a digital transmission system known as sound-in-synchs. S-in-S transmits the sound interleaved with the picture information to simplify distribution (no audio circuits required) and is similar to the pulse-code modulation system used by BBC Radio for programme distribution. The digital sampling rate for S-in-S is 31,250 times per second, which is only

slightly lower than the PCM rate of 32,000 and to all intents and purposes quality is identical (bandwidth to 14 kHz). The rather complex networking arrangements required for ITV programme distribution at present preclude S-in-S on purely economic grounds.

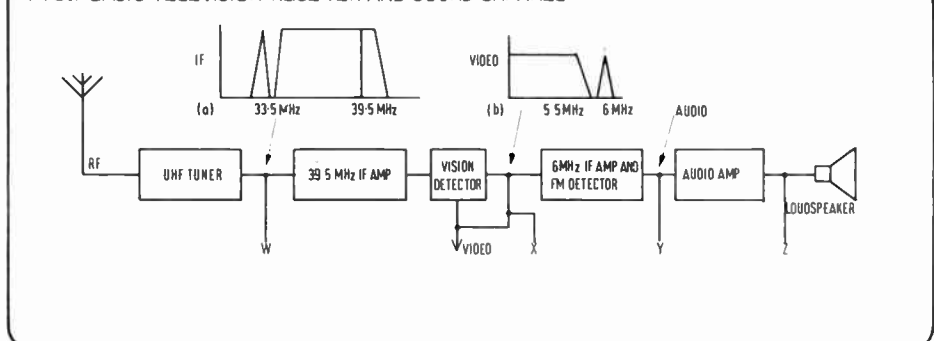
When the sound reaches the transmitter it is handled separately from the video and transmitted on a frequency exactly 6 MHz above the vision carrier. Vision is amplitude modulated, while sound is frequency modulated with a maximum deviation of 50 kHz (slightly less than for radio). The outputs of the vision and sound transmitters are combined immediately before the aerial, until which point they have been treated separately, and the sound has been kept up to the same standards as radio.

It is true that certain compromises have to be made in the television studio, since microphones cannot always be optimally placed due to visual requirements, and background noise tends to be higher than for

radio due to the level of activity in the studio itself and the powerful air-conditioning required to remove hundreds of kilowatts of heat radiated by the lights. Also, during editing of video tapes, audio tracks are copied from one tape to another (electronic editing) rather than being cut as in radio (mechanical editing). Audio performance of video tape recorders is not as high as that of audio-only recorders, the recording tape being optimised for the video—which is considerably harder to record. Multitrack tape recorders are now often synchronised with VTRs, resulting in improved audio performance, more versatile editing and stereo capability.

Incidentally, the sound bandwidth of all films transmitted using an optical sound track (principally feature films, serials and commercials) is limited to 7 kHz by an historic specification for the track's pre-emphasis (or rather de-emphasis). It is interesting to note that when renting PO lines to link outside broadcasts and television centres together,

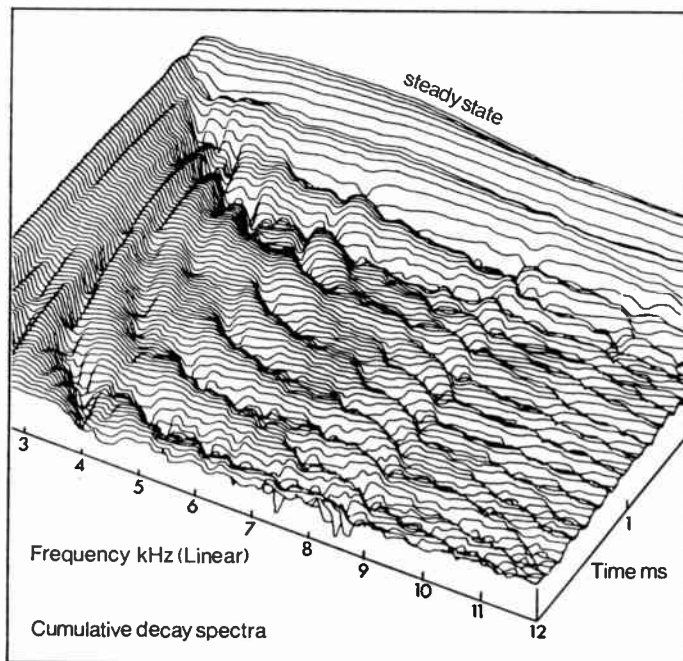
FIG.1 BASIC TELEVISION RECEIVER AND SOUND CHANNEL



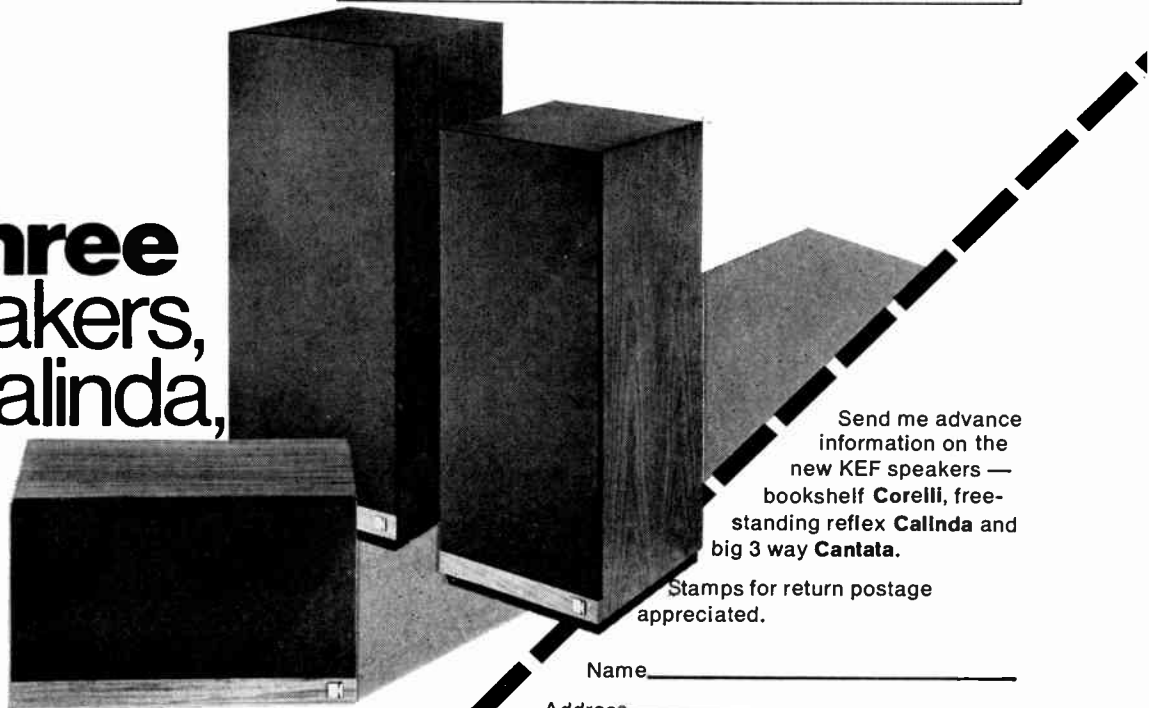
# KEF gain a new dimension

KEF engineers today are working with radically new techniques. Their computer-based analysis gives them a deeper insight, a more precise three-dimensional vision of speaker performance than was previously possible. They knew that KEF drive units, with their advanced laminated diaphragms, offered a high level of performance. So research looked even harder at the equally vital dividing networks, at cabinet construction and power handling capability. Yesterday's 'try it and see' methods were too imprecise — but the new KEF techniques revealed more. Enclosure materials were studied by impulse response, and network designs refined to get precisely the right response shape from each drive unit.

Applied to *your* speaker needs, the KEF programme has created three important new systems. You will be getting to know them well — Corelli, Calinda and Cantata. A 2 way shelf-mounting system, 3 way reflex free-standing enclosure, and larger 3 way system handling 150 watts. All three have the new computer-designed filter circuits. You can *clearly* hear the difference — better transient response, lower coloration. All three have redesigned cabinets, weighty with high-density internal damping laminations. All three handle today's power amplifier outputs with confidence and lower distortion. New speakers from KEF always make headlines. Watch for the reviews.



Result: **three** new speakers, Corelli, Calinda, Cantata.



Send me advance information on the new KEF speakers — bookshelf **Corelli**, free-standing reflex **Calinda** and big 3 way **Cantata**.

Stamps for return postage appreciated.

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**KEF** the speaker engineers

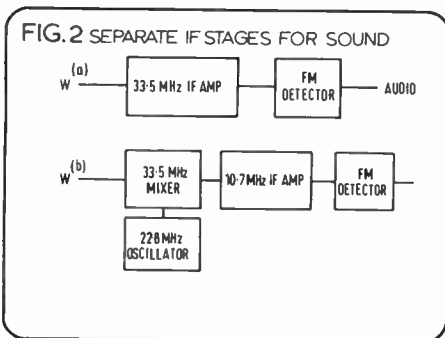


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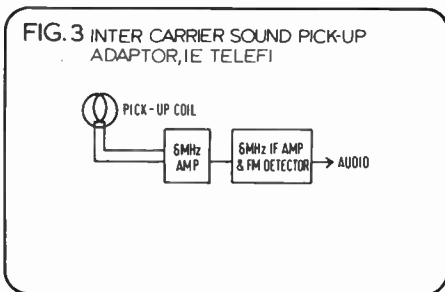
HFN 4/77

only a bandwidth up to about 8 kHz is commonly paid for, although it must be stressed that with careful equalisation it is usually much wider than this. Thus material originated (either studio or VTR) locally tends to have a higher quality than programmes originated in, say, Manchester and sent by PO lines to London for transmission—as with some ITV networked material. Since the BBC use S-in-S, quality is consistent throughout the UK except in those areas served by repeaters or transposers.

So what happens to the sound when it reaches the domestic television set? Vision and sound were transmitted separately and



ideally should be received separately, but unfortunately it is considerably cheaper to follow the system shown in fig. 1. The UHF tuner receives the Band 4 or 5 transmission (470 MHz to 854 MHz), amplifies and converts it to an intermediate frequency of 39.5 MHz. Now, since the sound carrier was transmitted 6 MHz apart from the video carrier, it appears at an IF of 33.5 MHz, just below that of the video (see insert (a) in fig. 1). A single IF amplifier is now used to amplify both vision and sound to a level suitable for detection. Insert (b) shows the detected video with the sound carrier now at 6 MHz. A second IF amplifier is tuned to 6 MHz and the FM carrier



then detected and demodulated down to audio. Finally, an audio amplifier drives a built-in speaker.

There are a number of limitations to this design (used in virtually every TV set). The frequency response of the 39.5 MHz IF amp. is not usually particularly good at its extreme, where the sound is located. A bandwidth of 3 MHz is usually found adequate for monochrome sets, although colour requires at least 5 MHz. Since two separate signals are being amplified together it is possible for the vision to interfere with the sound, particularly sharp edges of captions (which represent the highest frequencies in average picture content.) This is known as Intercarrier

Distortion and is inevitable with this design, although its severity varies widely depending upon the accuracy of alignment of the IF stages.

The loudspeaker used in the TV set is limited both in size and quality, since a heavy magnet would interfere with the scanning and colour registration of the picture. The plastic cases in particular that are sometimes used for cabinets tend to cause unpleasant coloration, and the drive unit is rarely properly loaded acoustically. Needless to say, the audio amplifier is rarely up to hi-fi standards. Distortion of 5% is very common and double figures are not unusual.

There are four basic methods of obtaining improved audio performance from television.

(1) Use an entirely separate tuner to pick up the sound carrier. This could be a modified UHF tuner head which provides an IF frequency of around 100 MHz suitable for receiving directly on a Band 2 tuner used as part of a standard hi-fi system (such a tuner head was described in HFN/RR in April 1974). Motion Electronics and Doram Electronics make TV sound tuners with an audio output. Although providing theoretically the highest possible sound quality, these systems must be tuned separately from the television set and this is a severe disadvantage.

(2) Use a separate IF amplifier for the sound signal (fig. 2a). Input is taken from Point w (fig. 1), which is the tuner head output. Sound would be detected directly at the IF amplifier output. As an alternative, fig. 2b uses a double conversion stage, converting the 33.5 MHz carrier down to 10.7 MHz, from where it may be handled using standard FM radio modules and practices. Advantages of this system: are (i) the IF strip may be tailored to have the correct bandwidth for the sound; and (ii) there is no intercarrier distortion.

Using an IF transformer at the input isolates this sound IF from the remainder of the set and thus allows the audio output to be taken to a high quality amplifier. In fig. 2b, as an alternative to mixing down to 10.7 MHz, we could mix up to 100 MHz and feed straight into an FM tuner. Since sound is taken from after the tuner, sound output will automatically follow the picture tuning. This technique is

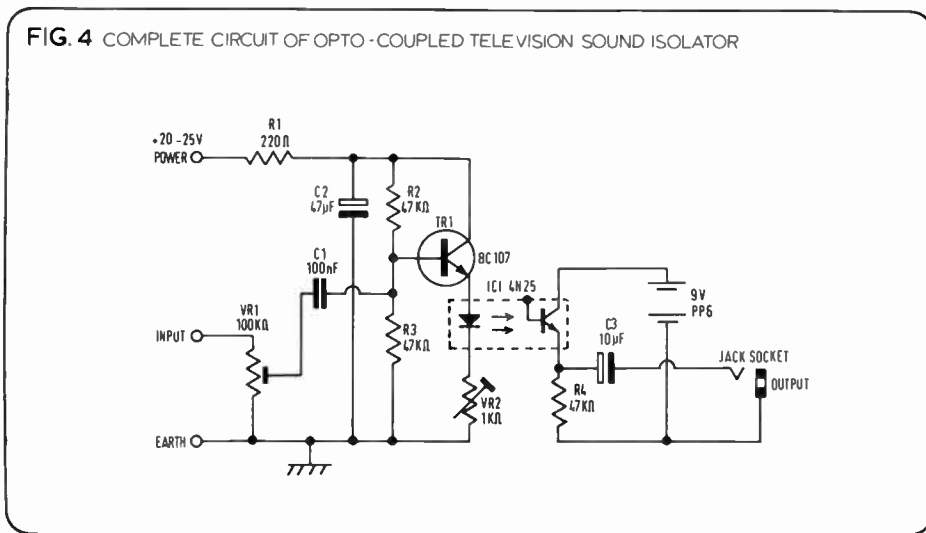
the most versatile and is used in professional TV tuners. It is however rather more complex than the system described under (4) below.

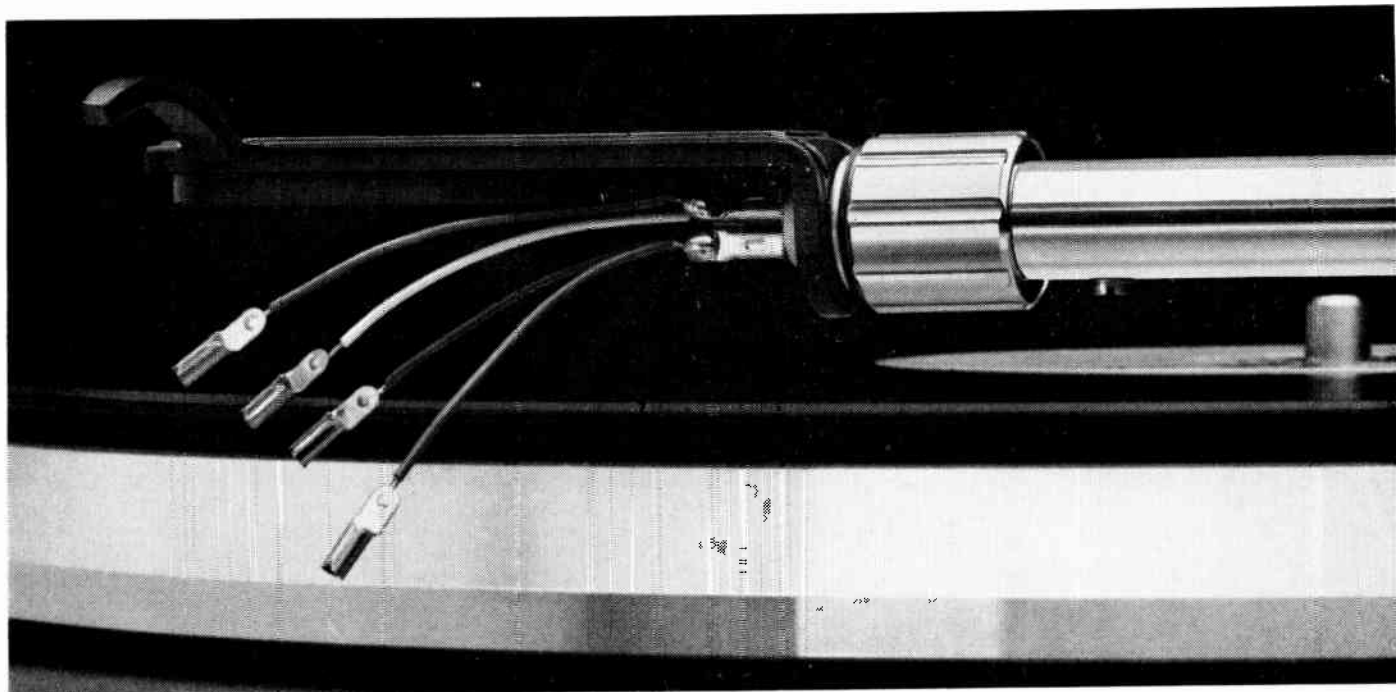
(3) A coil may be used to pick up stray radiation from the 6 MHz IF amplifier, which is then amplified and detected similarly to the TV set sound stage (fig. 3). Since a pick-up coil is used, there are no problems of isolation or making connections to the TV set. In older sets stray radiation made pick-up outside the cabinet possible, but with recent types the pick-up coil often has to be physically placed within a couple of millimetres of the sound IF transformer or amplifier, and even then only barely acceptable results may be found. The *Celestion Telefi* is an example of such a device, and circuits using this technique have been published in various electronics magazines.

(4) Sound may be taken from the set after the detector but before it reaches the audio amplifier at Point y and fed into a separate high quality amplifier/speaker system. This overcomes the limitations of the set's audio section, but is still prone to intercarrier distortion. However, the simplicity and cheapness of the circuit described later warrants its use for many non-critical applications. Quality depends principally upon the alignment of the 39.5 MHz IF amplifier and the response of the intercarrier IF amplifier and filters.

That said, there is still one major problem. Another technique used by TV set manufacturers to produce the cheapest possible receivers is to eliminate the bulky, heavy and expensive mains isolating transformer used in audio equipment to make safe interconnection of equipment possible. Thus TV sets are connected directly to the mains and use either a dropper resistor to obtain the different voltages required, or more commonly in colour sets a switching power supply using a transistor or thyristor as an electronic switch. In all cases the TV chassis is above earth potential, either at neutral or even live. It is thus potentially dangerous to connect the chassis to audio equipment which may be earthed. The TV chassis must thus be isolated from the associated audio equipment.

The most effective way is to use a mains isolating transformer and then earth the TV





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The greatest single benefit is the reduction of mass, both in the stylus assembly and in the cartridge as a whole.

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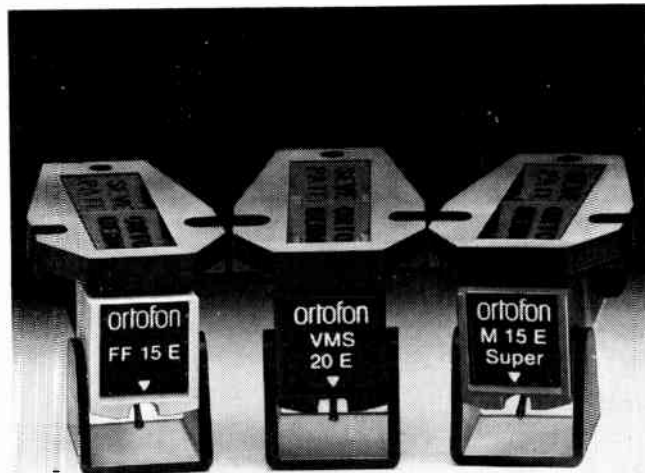
And whether you're after a medium priced cartridge like the FF15E (capable of producing sweet sounds in the most unpretentious of arms), or a state-of-the-art device such as the M15E Super (which, in a suitably refined arm, will track happily at less than a gram), the Ortofon difference is not just a theory.

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chassis. While this worked relatively well for monochrome sets which had power consumptions of 200 VA or so, it was often difficult to mount the transformer inside the cabinet due to the magnetic field affecting CRT scanning. With colour sets the problem is compounded with purity (colour) problems. Manufacturers are quick to point to the low current consumptions of recent sets (100 to 120 VA) but due to the switching power supplies used the *peak* current consumption is usually between 500 and 1000 VA, and this is thus the size of transformer required (weighing around 9 kg and having a large magnetic field).

Alternatively, an *audio* isolating transformer could be used, but these are relatively expensive as a bandwidth of 50 Hz to 15 kHz is required at low level with low distortion. The final solution is the circuit shown in fig. 4, which uses an opto-isolator to provide equivalent isolation at a fraction the size and with relative cheapness.

A technique used by some TV manufacturers is to use a loudspeaker isolating transformer at the amplifier output, Point z on fig. 1. While such a transformer is cheaper than either a mains isolation or low-level isolation audio transformer, the sound taken from this point will already have been distorted by the set's audio amplifier. Most TV rental companies will install such a transformer for around £4. One common application is to feed headphones or a hearing aid for the hard of hearing.

An opto-isolator consists of an L.E.D. sealed into a plastic package with a light-sensitive transistor. Since light is used to convey information from input to output, it provides perfect electrical isolation. Measuring only 8 x 9 mm, the device provides electrical isolation of 2.5 kV and a flat frequency response of greater than DC to 100 kHz.

The complete circuit is shown in fig. 4. An emitter-follower amplifier is used to drive the light-emitting diode, VR1 matches the level from the TV set and in some cases may be omitted, and VR2 controls the current flowing through the LED and is adjusted to provide minimal distortion. Power for the amplifier is taken from some suitable point in the television set. For the past few years virtually all television receivers have used an integrated circuit for the intercarrier IF amp and detector; this operates on a voltage of between 12 V and 25 V, which is ideal for powering the isolator circuit. Alternatively, in a valve set R1 should be increased to drop volts from an HT rail. Current consumption of the amplifier is about 3 mA, so the resistor value may be calculated from Ohms Law,  $R = V/A$  where V is the voltage drop required. For instance, a supply rail of 200 V would require a 56 k ohm resistor of 1 W dissipation. Ideally the supply should be relatively smooth, such as that from the IF strip rather than the audio power amplifier.

The isolated side of the opto-isolator couldn't be simpler. The varying brightness of the LED in turn varies the current flowing through the light-sensitive transistor and thus develops a varying voltage across R4; this is taken to a jack socket (or any other suitable connector) for connection to an external amplifier. A power supply is required to

operate this simple circuit, which obviously must be entirely separate from that of the amplifier, otherwise isolation is lost. A mains power supply could be used wired to the TV set's mains switch, or power could be derived from the external power amplifier; it is however far simpler to use a small battery. When the TV set is turned off, the LED is dark and no light reaches the phototransistor—thus very little current flows in the circuit, in fact about 1  $\mu$ A. During operation consumption is about 1 mA. Batteries will last their shelf life when supplying 1  $\mu$ A (between six months and a year), so a switch is unnecessary.

The PP6 battery recommended should last about eight months with five hours use every

day, the smaller PP3 around two months. If heavy use is made of the set, a PP7 should last twice as long as the PP6 and a PP9 roughly double that, depending upon actual periods of use. Audio output from the isolator is dependent upon the level of the input, but should be suitable for a normal amplifier's aux input (around 100 mV).

Television sets are dangerous. Bearing that in mind, most competent electronics engineers should be able to install the sound isolator in a TV set. Reasonable caution must be observed—do not work on the set while it is plugged in, and keep fingers well away from the tube and scanning circuitry which might have charges stored.

There are two different methods of

FIG.5 CHASSIS WITH ORDINARY AC POTENTIAL DIVIDER VOLUME CONTROL

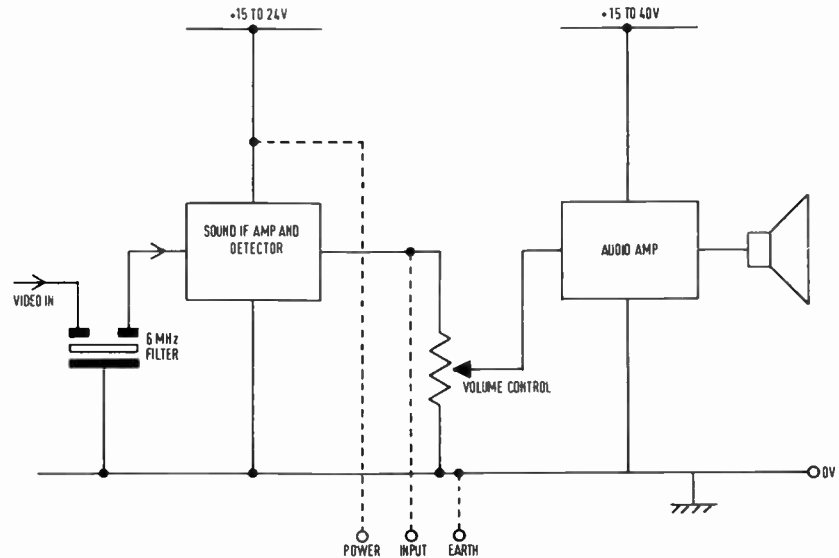
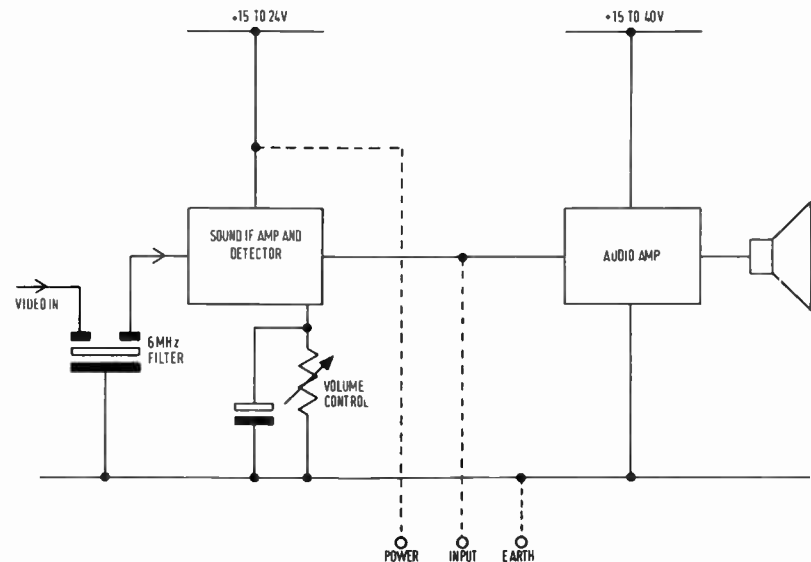


FIG.6 CHASSIS WITH DC VOLUME CONTROL



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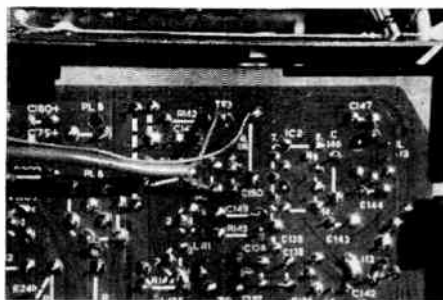
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obtaining the audio for the isolator input, depending upon the type of set. Fig. 5 shows schematically a common audio section as used in many receivers. An integrated circuit sound IF is used, with the detector output taken to a front panel volume control by screened cable. From this control, attenuated audio is taken to the audio amplifier (either integrated circuit or discrete) and then to the loud-speaker. The input signal required for the isolator circuit is taken from the top of the volume control before the signal is attenuated. A suitable voltage to supply the circuit is taken as indicated from the IC power rail. This circuit is ideal in that the volume control enables sound from the internal speaker to be used if the hi-fi system is not turned on.

Unfortunately, technology has now gone one step further and some manufacturers have managed to economise on those two expensive bits of screened cable going all the way from circuit panel to front panel. Instead, a DC voltage is used to vary the volume (fig. 6) which also has advantages in remote-control sets with sound dim or cut (very useful for



**FIG 7**

removing commercials). However, in this circuit the sound has already been attenuated when it dribbles from the integrated circuit and hence the volume control must be kept reasonably high to provide an output. In this case the internal loudspeaker must be disabled somehow, either by just pulling one connector off, or by installing a switch in the circuit (a normal mains on/off is perfectly adequate). Alternatively, but rather drastic,

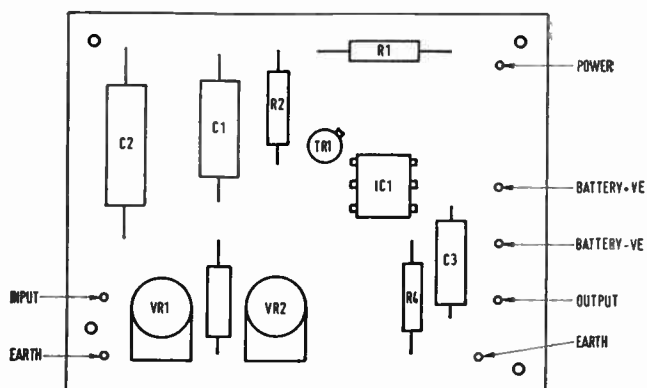
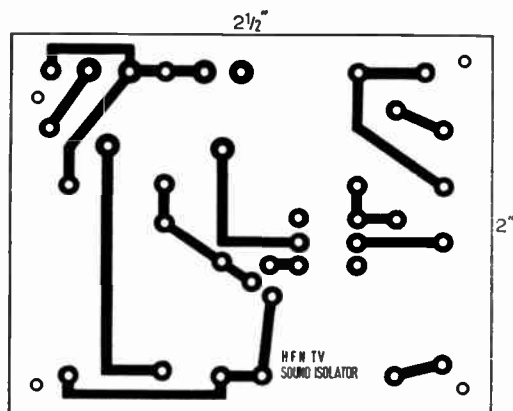
the circuit could be rewired to include a normal potential divider volume control with the DC control left as a preset.

Fig. 7 shows how the connections are made to the rear of the printed circuit panel of a common TV receiver. Removal of the connections at a later date would leave virtually no trace. It is necessary to study the circuit diagram and preferably service manual of the television set to discover where the actual connections should be made, but the principle shown in the two examples should be followed. Screened cable should be used to connect audio input and output to the printed circuit board, the layout of which is shown in fig. 8.

Construction is simple and non-critical. If methods of construction other than this printed circuit layout are used, great care must be taken to ensure isolation between the circuit's two sections. For this reason Veroboard is not recommended unless considerable areas of strips are removed to provide suitable isolation (at least 6 mm between earthed and live sections). As previously mentioned, VR1 may not be required if the signal level is not too high and a shorting link should be used to bypass its position on the PCB. The completed printed circuit board should be mounted somewhere in the set, preferably away from other boards and metal-work so that there is no possibility of the isolated half of the circuit touching any metal parts of the set. The jack socket (or other suitable connector) should be mounted somewhere convenient on the cabinet, preferably not on the back cover since it will have to be removed for maintenance. RS Components distribute a foam tape sticky on both sides which is ideal for mounting the PC board within the TV cabinet. As a further safety precaution, the connecting lead between TV and amplifier should be mains earthed at the amplifier end.

When setting up, VR2 should be adjusted for minimum distortion. If the sound output is still distorted, the input level is probably too high, so VR1 should be used to reduce it. Due to intercarrier distortion, it is possible that a buzz will be heard on the sound. The channel tuning control should be adjusted to provide maximum sound quality with the sharpest picture (usually a compromise). With some sets, it is possible that line-scan power (15,625 kHz) or field-scan (50 Hz) will also be induced on the audio, but amplifier scratch and rumble filters respectively should reduce the effect—although harmonics of 50 Hz can be troublesome. It is possible that with some sets other interferences may occur, and the only real way to eliminate these is by using a separate IF amplifier for the audio. In a future issue we hope to publish a constructional article covering such a circuit.

Finally, one rather obvious point that is often neglected. Hi-fi loudspeakers almost invariably have large to enormous magnets—colour television sets do not like magnets since they interfere with the shadow mask and cause purity errors. It is here essential that loudspeakers are kept at least 30 cm from the TV set—the ear is surprisingly tolerant of the sound location. ●



**FIG 8 Printed circuit layout and component layout for sound isolator. A complete kit of components including printed circuit board is available from TVS Electronics, 95 Ardwell Avenue, Ilford, Essex for £2.50 plus 25p post and packing.**

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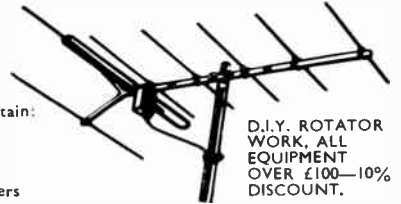
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# FM Radio

Angus McKenzie

**I**MAGINE a triangular steel platform floating in the North Sea. Three hollow legs shaped like milk bottles hold her 90ft above the waves. Nine anchor chains, three at each corner, reach out to nine anchors, each weighing 13 tons, keeping her steady. An athlete could run around each side in 10 secs; an average man could walk the entire perimeter in three, at most four, minutes. At the base of the triangle is a compact block of cabins and rest rooms, whose roof forms a helicopter deck, and at the apex is the drilling platform with its derrick mast towering 200ft above.'

This was the introduction to a remarkable binaural documentary on *Sea Quest*, one of the large oil rigs used in North Sea oil exploration. The 75 minute programme, transmitted on Radio 3 on February 8th, was produced by Richard Imison, and engineered by Lloyd Silverthorne and Leo Feord. Almost all the recordings were made on *Sea Quest* itself under Silverthorne's supervision. The equipment used was two stereo Nagra recorders and a small battery operated mono cassette recorder, used in some circumstances when the Nagras were too bulky to set up. The producer and his crew were stationed at Aberdeen, flying out to the oil rig by helicopter. They brought back to London about 40 hours of recordings.

Jack Willsher and Derek Taylor of the BBC's special services section of the programme operations department have been undertaking considerable research into binaural sound, and the Neumann binaural head was rejected, since while it gave good binaural images, the stereophonic sound heard on loudspeakers appeared to lack extreme hf. The Sennheiser dummy head fared much better, but unfortunately was considered so ugly as to be impracticable, since no-one being interviewed, let alone musicians in a concert hall, could look at the black rubber face without smirks. The BBC came up with two alternatives, both of which were used for the programme. A lightweight rig with two Sony ECM 50 miniature omni-directional mics at the ends of the headband was placed on the head of the interviewer. The outputs from the two mics were then fed directly into a stereo Nagra. The two microphones pointed upwards and slightly forwards of the human head, and were located very close to the ears. The other binaural microphone set-up incorporated a pair of similar mics at the ends of a 14cm aluminium bar, in the centre of which was a 25cm diameter disc made of Perspex. Various experiments were done before the programme was recorded, covering the Perspex with various materials such as lightweight felt, but it was found that high frequencies became much too dull. Surprisingly, though, the hard surface of the Perspex did not seem to detract from the binaural images, and the same bar was also used to record experimentally one or two Proms from the Royal Albert Hall last year.

The stereo Nagra and mono cassette recordings were transferred to an 8-track Studer A80, and in addition some stereophonic sea wash sound effects were brought into the 8-track system. After synchronising speech and sound effects tracks, the eight tracks were mixed down to a normal two track tape, which then became the binaural broadcast master tape.

Of all the sequences in the project, quite the most remarkable was one in which the 14cm aluminium bar was held by one of the engineers in his lap in the cinema on the rig during a film show. The film sound track had its usual coloured cinema quality, coming clearly from front centre, but the occasional quiet laughter and comments from the riggers was heard clearly from all around the sound stage, and indeed behind me as well as in front. I used a pair of Sennheiser HD414 headphones for monitoring. The lack of coloration was quite remarkable, and I enjoyed the binaural sound more than I would have done if the recording had been quadraphonic replay on four high quality loudspeakers. Unfortunately,



though, I found that many of the sequences recorded in more confined spaces were not so realistic, and quite frequently there seemed slightly too much bass, which one does not normally hear in real life.

Much artistic licence was used, for example in the helicopter sequences. The sound effects of the blades had to be mixed in with the binaural interview to promote the effect, since recordings made in the helicopter itself were far too noisy. However, the talk-back between the pilot and air traffic control was quite genuine, recorded off the output of the equipment.

For many of the general interviews, the interviewees were obviously encouraged to move about quite naturally, and the movement was very realistic, as was the sound quality of the voices. Unfortunately though, the interviewees sometimes approached too close to the microphone, and the sound quality then became sibilant and unnatural. Sometimes the mono cassette recordings were injected into the mix in the centre, but some phase jitter from the stereo cassette deck used to play them back caused speech to oscillate

rapidly over an angle of 10° or so, which became rather distracting.

In one sequence a storeman was detailing the types of provisions that he has, and while he was moving around the room the interviewer was clearly turning his head, for the entire sound field was moving. This could be detected by the change of position of the sounds of the machinery, and was found most distracting. Some of the sequences were straight binaural recordings of the oil riggers at work. These were in general very realistic, and the positional information was amazingly accurate. I also found that the distance information of the particular voice or sound effect was very accurately reproduced, and possibly more so than that of a normal coincident pair of bi-directional mics. The effect of the reverberation of the surroundings became part of the sound itself, and helped in the realism rather than muddying up the binaural images. This must be partly due to the brilliant way in which the BBC engineers placed the mics.

While writing this I am listening to the programme on two loudspeakers and find with interest that the stereo images are also very plausible, although central images are not so clearly defined as they are on headphones. The BBC's mic technique is obviously of considerable importance, and I suggest that the programme should be repeated sometime in the summer. I am informed by the producer that he has received hundreds of letters from listeners, virtually all of which are of praise, and it is particularly interesting that a high percentage of them comment especially favourably on the cinema scene. Do listen carefully if this is repeated, as the BBC are very interested to receive letters (which should be sent to Richard Imison, 'Oil Rig', BBC, Broadcasting House, London, W.1). I regard the potential of binaural broadcasts as almost as promising as that of quadraphonic matrix encoded programmes, and it will be most interesting to see how binaural broadcasts fare in the future.

I have recently been informed that regular matrix H encoded broadcasts will be starting around the end of April, and wonder if listeners receiving them in stereo notice the half left and half right bumps and the 47° phase shift introduced on centre front images that I have referred to previously.

On January 31st Radio 3 transmitted a relay of the Covent Garden production of Weber's *Der Freischütz*, conducted by Colin Davis. I was particularly struck by the amazing dynamic range, and the more realistic than usual sound quality from Covent Garden. I think some slight added reverberation was present, but the general sound was rather more dead than usual, and thus it was much easier to gain a sense of depth. The recitatives are important, and come over extremely well. The stage action was well portrayed, and the standard of singing was high, although I was a little disappointed with one or two of the soloists. The hiss levels of all the equipment used showed a distinct improvement over many earlier Covent Garden relays, and the balancer is to be congratulated for dealing so competently with what was obviously a difficult production.

# Does Beethoven's Fifth still sound as good as the first time you played it?

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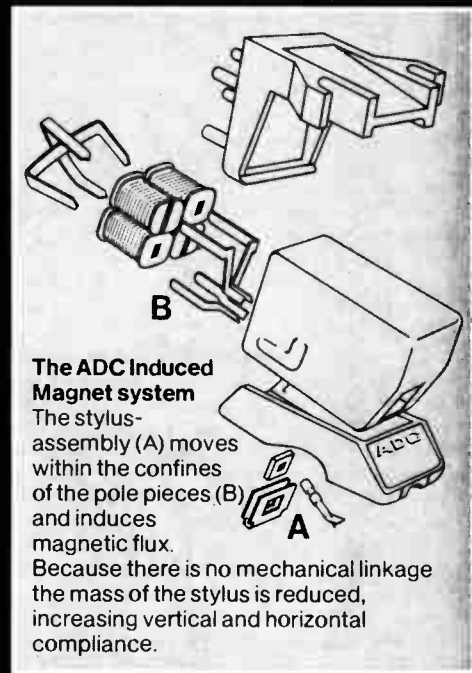
Tracking force range  $\frac{3}{4}$  to  $1\frac{1}{2}$  grams

Frequency response 15Hz to 20kHz  $\pm$  3dB

Channel separation (nominal) 26dB

Stylus tip Elliptical .0007" x .0003"

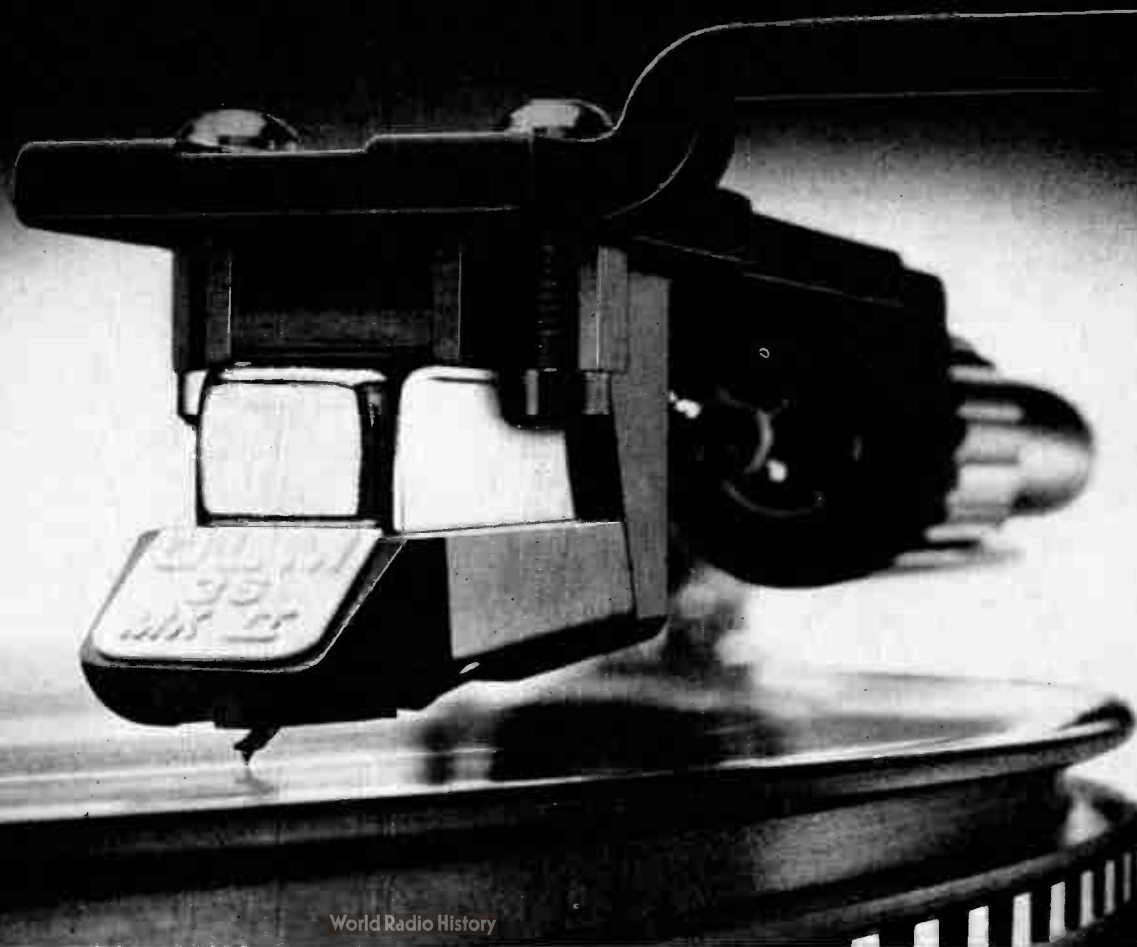
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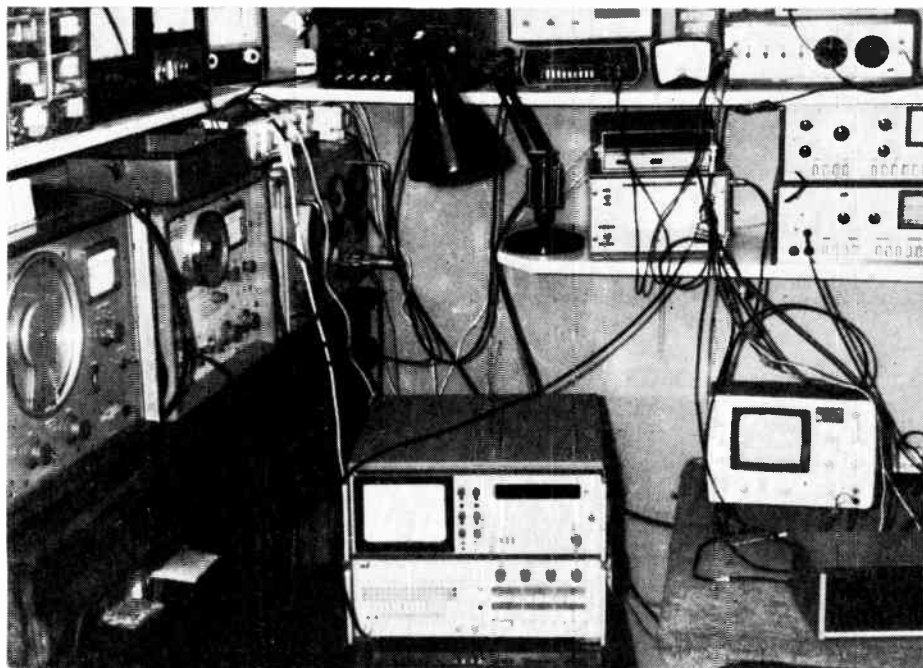
The stylus-assembly (A) moves within the confines of the pole pieces (B) and induces magnetic flux. Because there is no mechanical linkage the mass of the stylus is reduced, increasing vertical and horizontal compliance.

ADC QLM36 Mk2



# Assessing the Performance of FM Tuners

by Gordon J. King  
Part 3: The Audio Modulation



**A**LTHOUGH a tuner may approach the RF performance of a communications receiver, its utility in hi-fi is judged by its ability to deliver stereo programme signals of a quality that falls very little short of that of the signals actually transmitted. When fed with a high quality stereo-encoded modulated VHF signal at full deviation, a well designed tuner will extract from this the left and right audio signals without adding more than 0.5% harmonic or intermodulation distortion, and with a channel separation of at least 40 dB over the subjectively critical middle part of the spectrum. Moreover, when the VHF signal across the aerial terminals is around 1.5 mV the total noise will be some 65 dB below the level of the audio signal.

When the input signal is stereo-encoded the L + R mono signal is accompanied by the 19 kHz pilot tone, the residual of the transmitter-suppressed 38 kHz sub-carrier and the sidebands of the L - R stereo signal. This 'mix' is commonly referred to as the multiplex signal, whose spectrum is shown in fig. 1. The 100% modulation (one channel only) is made up of 45% L + R signal, 22.5% lower and upper L - R sidebands, 9% pilot tone and 1% residual sub-carrier. When a fully modulated centre-sound-stage source condition obtains, the L - R sidebands collapse to zero and the L + R signal rises to 90%, the 100% level then being made up by the addition of the 9% pilot tone and 1% sub-carrier residual. When the left and right signals are of exactly opposite phase and each is producing the same magnitude of signal for full modulation, the

L + R signal collapses to zero and each L - R sideband goes to 45%, thereby giving a total L - R signal of 90% which, again, with the 9% pilot tone and 1% sub-carrier residual adds up to 100% modulation level.

On normal programme signal, therefore, the ratio L + R to L - R is continuously changing, as also the total deviation, but with the 10% deviation of the pilot-tone and the sub-carrier residual remaining constant. Thus on a stereo-encoded transmission the modulation available for the actual audio information is only 90% (corresponding to  $\pm 67.5$  kHz deviation), so compared with the 100% ( $\pm 75$  kHz deviation) of a mono-only transmission, the effective S/N ratio is reduced. The theoretical reduction is about 0.8 dB, which assumes that the left and right

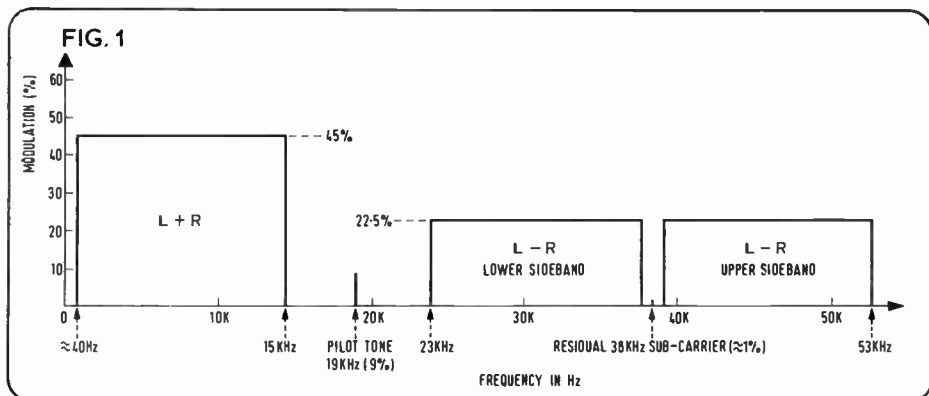
channel signals have exactly the same amplitude and phase. However, there is a further reduction of about 3 dB owing to reduced deviation of the L + R signal. In other words, a mono-only listener (with a mono-only tuner or with a stereo tuner switched to the mono mode) experiences a S/N ratio about 4 dB less than that obtained from a mono transmission (i.e., one which is not carrying pilot tone signal).

The S/N ratio reduction of stereo is influenced by the strength of the aerial signal. If the aerial signal is not much under 2 mV and the S/N ratio is referred to the full modulation of one channel, then the *ultimate* stereo S/N ratio is only about 2 to 3 dB worse than the *ultimate* mono S/N ratio. Using CCIR noise weighting, typical values are 67 dB mono and 65 dB stereo; but while the *ultimate* stereo S/N ratio may be reached with an aerial input of 150  $\mu$ V on mono, a signal ten times as strong (+20 dB) will be required on stereo—that is, 1.5 mV.

In other words, for a given S/N ratio a tuner requires about ten times more signal on stereo than mono. This results from the noise produced by the stereo decoding process and from the additional noise power bandwidth of the stereo sub-channel. The L - R information is obtained from a matrix at the transmitter which is amplitude-modulated on to a sub-carrier of 38 kHz to yield the lower and upper L - R sidebands. To provide more room for the audio information, the sub-carrier is suppressed at the transmitter (leaving the 1% residual already noted), and retrieved at the stereo decoder by the doubling of the 19 kHz pilot tone. For correct sub-channel demodulation the recovered sub-carrier phase must lock to that of the transmitter-suppressed sub-carrier. Since the sub-carrier is derived from the transmitted pilot tone, it follows that the pilot tone signal delivered by the FM detector carries this information, thereby serving as the phase-locking signal for the decoder-derived sub-carrier.

The transmitter stereo matrix is a simple arrangement which, from the pre-emphasised left (L) and right (R) programme signals, yields the mono L + R signal and the stereo L - R signal. There are numerous decoding arrangements based on one of two main systems, called frequency multiplex and time multiplex, the latter being found in the majority of modern FM tuners. The phase lock loop i.c. is popular and the block diagram is given in fig. 2.

After initial amplification, the multiplex



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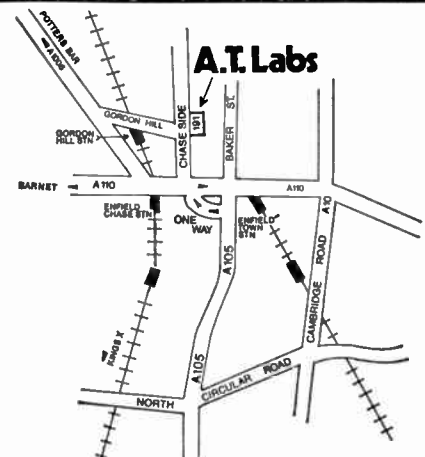
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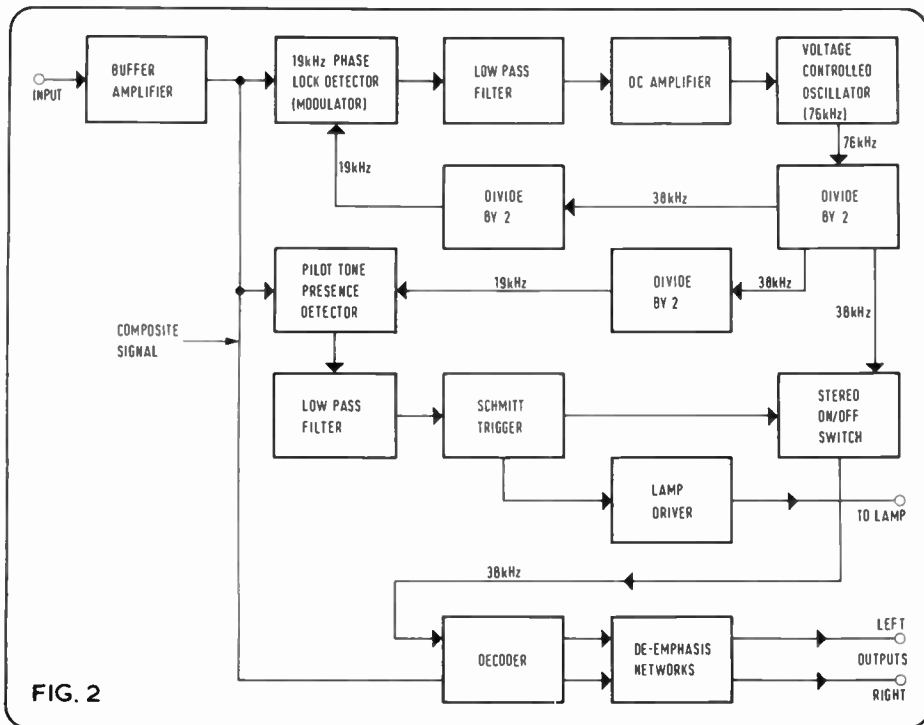


FIG. 2

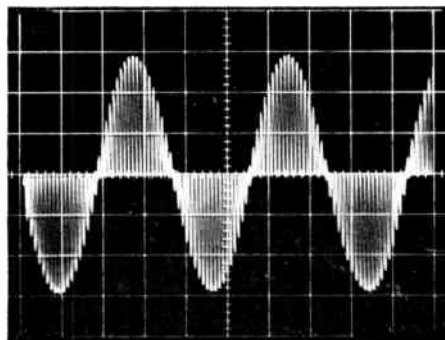
signal is communicated to the 19 kHz phase lock detector and the 38 kHz decoder (synchronous detector). A voltage-controlled oscillator (VCO) produces a 76 kHz signal which is divided by two to yield the 38 kHz sub-carrier and by two again to yield 19 kHz sample signal required by the phase lock loop detector. These are squarewave signals. The phase lock loop is completed by the low-pass filter and the DC amplifier, the latter producing a control voltage for the VCO. In other words, the VCO is held in phase-lock by a harmonic of the pilot tone.

A third divide-by-two stage produces another 19 kHz signal, but of opposite phase, which is fed to the pilot tone presence detector. This detector also receives the multiplex signal and hence the pilot tone. When the amplitude of the pilot tone exceeds a threshold level, the pilot tone presence detector delivers a triggering signal, which is passed to the Schmitt trigger by way of a low-pass filter. This operates both the stereo indicator control circuit and the mono/stereo switch, so that the 38 kHz sub-carrier signal is passed to the decoder. The resulting L-R signal is applied to a matrix along with the L+R signal, thereby producing the original L and R signals. The matrix both adds and subtracts the L+R signal and the demodulated L-R signal, such that 2L obtains from  $(L+R)+(L-R)$  and 2R from  $(L+R)-(L-R)$ .

The L and R signals are separately de-emphasised and further amplified so that they are of a level compatible with the tuner input sensitivity of hi-fi amplifiers.

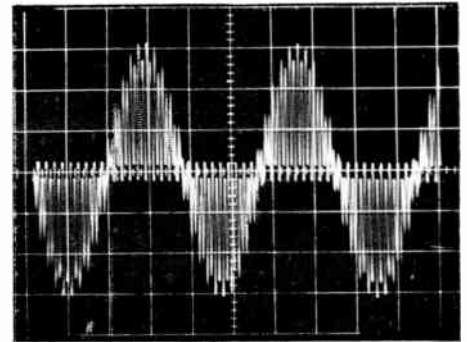
A frequency multiplex device is made by Mullard (the LP1400) and because with this system the pilot tone is extracted from the multiplex prior to its application to the synchronous detector, it has the advantage of achieving lower levels of 19 kHz and 38 kHz components in the L and R output, which greatly reduces the possibility of IM products

in the succeeding audio equipment. Moreover, the sum signal and the difference signal arrive separately at the decoding stage, allowing them to be de-emphasised *before* demodulation. This means that the noise (arising mainly from the increased bandwidth required for stereo operation) on the difference signal is also reduced by the de-emphasis, which endows the frequency multiplex system with an advantage in terms of stereo S/N ratio.



3a

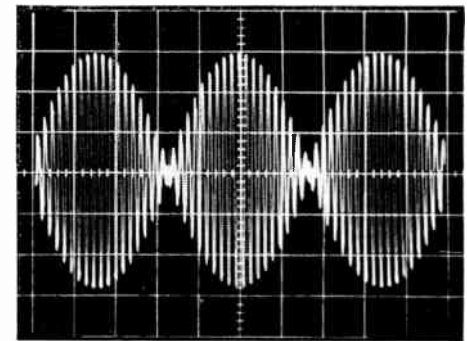
The oscillograms in fig. 3 show the multiplex signal at the output of the FM detector (through a tuner of good phase linearity) with one channel only modulated, (a) without the pilot tone and (b) with the pilot tone at the correct 9% level. Oscillogram (c) shows the L-R signal (i.e., no L+R signal) with 1 kHz modulation. Fig. 4 oscillograms show the effect of phase non-linearity—severe at (a) and less severe at (b)—signified by the wavy centre datum line. While it is unlikely that the perfect linearity of the waveforms in fig. 3 would be achieved from a tuner designed for domestic service, the poor linearity of waveform (a) in fig. 4 would certainly have an adverse effect on channel separation. Indeed, the measured separation on this signal was



3b

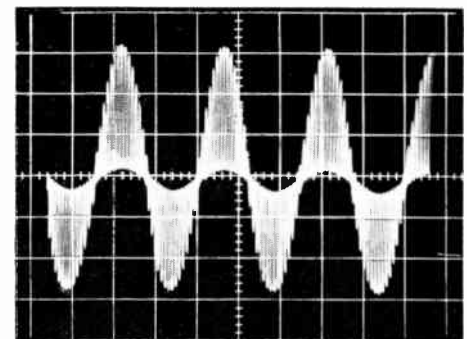
less than 20 dB at 1 kHz, which is poor.

For good separation (40 dB or more at 1 kHz) the phase linearity all through the tuner right up to the stereo decoder needs to be fairly accurately maintained over the full passband. One problem in this respect arises when a low-pass filter is inserted between the FM detector and stereo decoder to minimise 'birdies' interference.



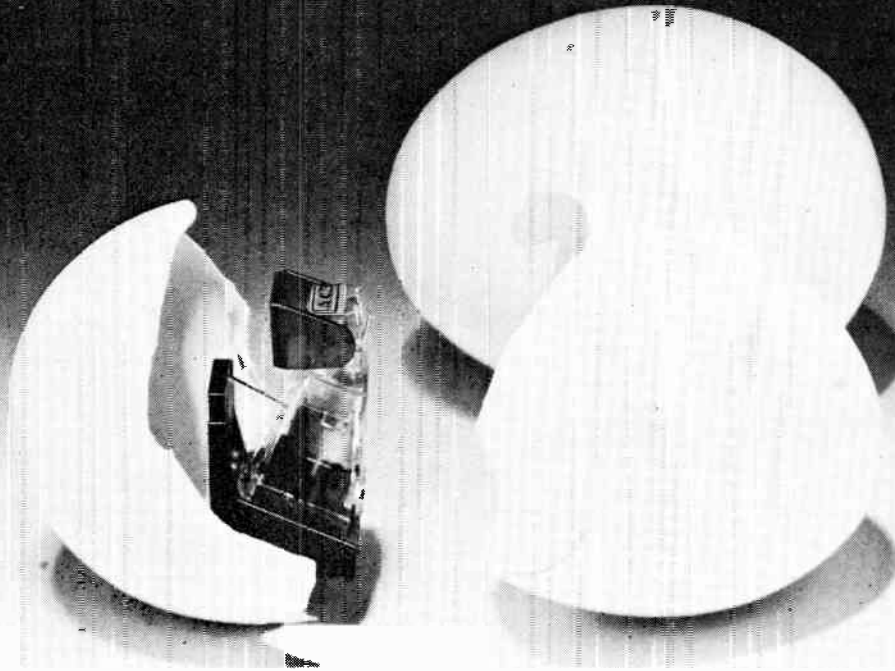
3c

Since the 38 kHz sub-carrier synchronous detector switching signal is of a quasi-squarewave form, it is rich in harmonics. One type of 'birdies' interference is produced by the beat between adjacent channel signals itself beating with a harmonic of the 38 kHz signal, such that the result falls within the audio passband and is perturbed by the modulation. For example, the FM detector of



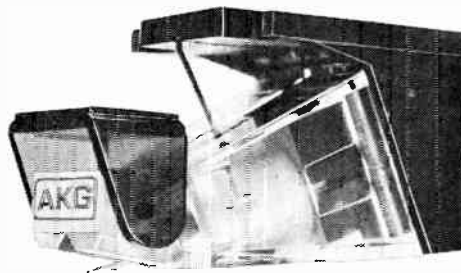
4a

a tuner responding to a stereo transmission will have a deviated input from that transmission and also a deviated input 200 kHz away when an adjacent channel transmission is also present, inherent non-linearity thus producing a 200 kHz signal at the output of the detector and input of the decoder. The fifth harmonic of the switching signal at 190 kHz beats with the 200 kHz signal and a 10 kHz signal is created in the decoder, which is



*\* Transversal Suspension*

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P 8ES

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incorporates a unique and brilliantly designed single pivot point suspension system which ensures that every instrument and performer will be reproduced not only with the highest possible fidelity and sound definition, but also with an almost uncanny aural sense of "depth" and directional detail.

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**S**PRING is here, and a young man's fancy turns to hi-fi and, in particular, Don Quillen and Trevor Horne's 'High Fidelity 77' show, being held at the Heathrow Hotel, London Airport from Tuesday 19th to Sunday 24th April. This is the fourth spring show they have organised and almost 100 manufacturers, distributors and publishers, including HFN/RR, will be displaying their wares. Several special events are planned to tie in with the show, including a series of lectures and demonstrations. The disadvantages of the Heathrow site as compared to a central London venue are offset by free parking and transport to the hotel from the airport terminals and Hatton underground station. There is no entrance charge and the exhibition catalogue is free.

The Autumn High Fidelity show, again organised by Quillen and Horne, following last year's success, has been moved from Heathrow to the Cunard International Hotel, near Hammersmith tube station, and moved from the middle of October to the 15th-18th September. Keen-eyed readers will have spotted that this coincides with another exhibition being held in a more cavernous building a stone's throw away—how odd!

Spring 'High Fidelity 77' Opening Times: 10am-6pm on Tuesday 19th-Thursdays 21st April (Trade and Press only); 11am-9pm on Friday 22nd and Saturday 23rd April (Public); 11am-6pm on Sunday 24th April (Public). Admission for both Trade and Public is free. ●



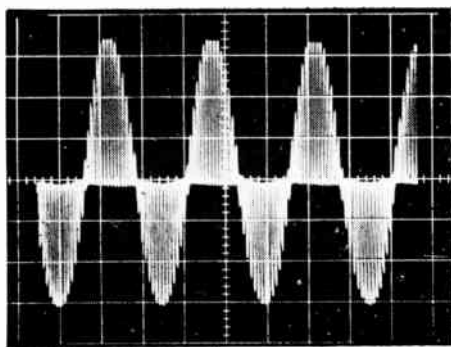
## EXHIBITORS

Exhibitors to date include the following (first time exhibitors at the show are marked with an asterisk):

Quad  
AGFA-Gevaert  
Aiwa  
AKG  
\*Audio Magnetics  
*Hi-Fi Choice*  
Dual  
\*Audio + Vision  
\*Revox  
BIB  
Bose  
Studiocraft  
BSR McDonald  
ADC  
Celef  
Celestion  
Chartwell  
\*Colmek  
Tenorel  
Acos  
Sonotone  
Unisound  
Vac-O-Rec  
Eagle  
Dayton-Wright  
Dunlap Clarke  
Exposure  
George Hadcock  
\*Opus  
Gale  
Sequerra  
Soundcraftsman  
Garrard  
Sabre  
\*Grundig

Cambridge  
JBL  
Leader  
Phase Linear  
Sonus  
Dahlquist  
Empire  
Isophon  
Sennheiser  
*Hi-Fi Answers*  
*Popular Hi-Fi and Sound*  
*What Hi-Fi*  
Alpha  
Collaro  
Infinity  
Pickering  
Poly Planar  
\*Lux  
\*Howland-West  
IMF Electronics  
*Practical Hi-Fi & Audio*  
\*Arnold, Curb  
JVC  
KEF  
\*Lecson  
*Hi-Fi News & Record Review*  
Metrocare  
Thorens  
Monitor Audio  
Monogram  
Mordaunt-Short  
*Hi-Fi for Pleasure, Hi-Fi Weekly*  
Trio  
Technics  
Nakamichi

Maxell  
Yamaha  
Neal  
\*Nightingale  
Accuphase  
Fuji  
NAD  
Akai  
Leak  
Rotel  
Wharfedale  
Groovac  
Peerless  
Ross Electronics  
Ross Unison  
Pioneer  
Audio Technica  
\*Shure  
\*Son Audax  
\*Sony  
\*Strathern  
Connoisseur  
\*SAS  
\*JBE, Klipsch  
Rogers  
Tannoy  
Ortofon  
Harman Kardon  
Koss  
J R Loudspeakers  
\*Audio Packs  
TDK  
Acoustic Research  
Teac  
Toshiba  
\*Uher  
Sansui  
BGW  
KLH  
Micro-Acoustics  
Fidelity Research  
Stanton  
Stax  
Zerostat  
Encore  
BASF  
Cambra Cases  
Castle  
Cerwin Vega  
CF Fraser  
DTR Electronic  
Goodmans  
Hitachi  
Keesonics  
Linn  
Marantz  
Milty  
Naim  
Nippro  
Nytech  
J. Parkar  
Pickering  
Pyral  
Rega  
Richard Allan  
Sounds Professional



4b

passed on to the audio stages and hence the hi-fi amplifier. The modulation on the original signals adds a lower frequency warble to the 10 kHz signal, hence the term 'birdies' interference.

The severity of the disturbance depends on the strength of the adjacent channel signal, on the discrimination against the signal provided by the i.f. channel selectivity, and on the nature and degree of detector non-linearity. Tuners with ultra-linear FM detectors

over a wide bandwidth are less prone to the trouble than those of more limited linearity. A good scheme for enhancing the linearity of the quadrature type of FM detector by coupling a 'dummy' resonance circuit to the quadrature coil has been promulgated.<sup>1</sup> Detector non-linearity also affects the distortion, often causing it to rise dramatically at high deviation.

The introduction of a low-pass filter between the FM detector and stereo decoder represents a method of keeping the i.f. beat signals from the decoder, thereby greatly reducing, if not eliminating, 'birdies' interference. Ideally, such a filter should have a flat passband and a high degree of phase linearity and commence its cut-off around 53 kHz so that it has minimal effect on the L-R upper sidebands while providing a high degree of attenuation to signals beyond the multiplex spectrum (fig. 1).

Phase distortion impairs the stereo separation by shifting the relative phases of the various components of the multiplex signal, the waveform then appearing as shown by the oscillograms in fig. 4. A simple filter tends to cause a reducing separation with frequency,

depending on its turnover (or corner) frequency and design. When the filter is adjustable there is merit in locating the most desirable turnover frequency by adjusting for the best separation up to, say, 5 kHz. The filter should also be effective in terms of beats corresponding to harmonics other than the fifth, so its turnover frequency cannot be too high. While a high turnover frequency (say, 80 kHz) will probably detract less from the separation, its 'birdies' suppression function will be less effective. The third harmonic of 38 kHz is 114 kHz, so there should also be reasonable attenuation at that frequency. The attenuation should hold to the eleventh harmonic at 418 kHz at least. To help compensate the phase non-linearity of the 'birdies' filter some tuners are equipped with an adjustable lift/phase lead network, set to 'optimise' the high-frequency separation.

This discussion of phase effects will be continued next month in the final article of the series.

### Reference

1. D. C. Read, FM Tuner Designs, *Wireless World*, pp. 48-52, March '76.

**THE SOURCE OF PERFECTION  
IN SOUND... TRACKS AT  
ONE GRAM (OR LESS)  
IN STEREO AND DISCRETE.**



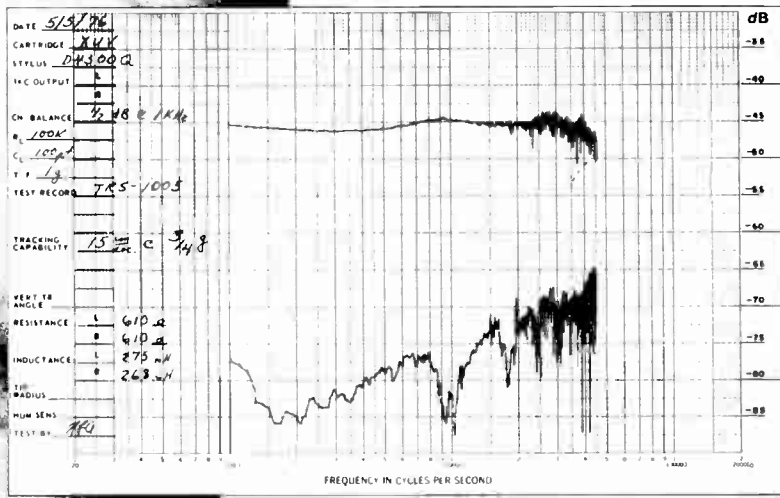
Pickering's engineers pursued the idea of a totally new departure in cartridge design with all the zeal of true crusaders. They had a reason . . . there was a demand for a pickup to play both stereo and discrete (as well as SQ and QS) with *total and absolute precision* at one gram. That they succeeded is a remarkable achievement because this cartridge successfully tracks all types of records at forces even lighter than one gram. It is a *real first* to do it this accurately.

The XUV/4500-Q features Pickering's patented Quadrahedral® stylus assembly. The Quadrahedral stylus assembly incorporates those features that produce extended *traceAbility™* for 4-channel as well as stereo. This means that it possesses not only superior performance in low frequency tracking, but also in high frequency *tracing ability*. When combined with the exclusive Quadrahedron™ stylus tip, a brand new shape, it can truly be called: "the Source of perfection in Sound", whether the playback requirement is stereo, SQ, QS, or discrete 4-channel.

**a typical curve of the XUV/4500-Q**

Shown below is a printout graph from Pickering's testing apparatus. The top line is a frequency response curve (note that it starts at 1,000 cycles for the sake of simplicity). It depicts the unusually flat frequency response throughout the spectrum. The bottom line, which also starts at 1,000 cycles, shows the separation characteristics of this new cartridge.

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# Tape Matters Douglas Brown

A LOT of cash and much expensive recording equipment is currently on offer in a series of competitions in which any averagely competent enthusiast has a good chance of scoring. As I have written here before, the number of entries in these contests is surprisingly small in relation to the prizes to be won; it has sometimes almost seemed like a pile of prizes in search of winners!

While it is true that in some contests the names of the same people turn up as winners fairly regularly, that does not mean that they are way ahead of the field in the quality of their recordings. More frequently, it is simply that they have taken the trouble to study the competition rules and the winning tapes in earlier years, so that they have a clear idea of what is expected. Year after year, valuable prizes are also going to newcomers to the hobby, submitting entries for the first time. So, if you can be tempted to 'have a go' in 1977, here are some of the details you will need.

Entry forms for the British Amateur Tape Recording Contest are now available from John Bradley, the Contest Secretary, at 33 Fairlawnes, Maldon Road, Wallington, Surrey. Please send a stamped, addressed envelope. The BATRC is the longest-running event of its kind, as it was established in 1957. It provides for tapes of every kind: schools and club entries, as well as the work of individuals. It has classes for music recordings, for reportage and documentary work, for wildlife tapes, for technical experiment and—this year—a special class for tapes

dramatising the centenary of recording.

Apart from the trophies for all class winners, there are valuable equipment prizes—and a jolly party for the winners next autumn, when all the best tapes will be played.

The best tapes in the British Contest are automatically entered in the International Amateur Recording Contest (CIMES), which this year will be judged in Vienna in October. In 1976 British competitors won well over £1,500 worth of prizes in CIMES. Closing date for the BATRC is June 30th.

Information is also to hand about the annual 3M Wildlife Contest. Total value of prizes offered in this event exceeds £1,000, including, for the entrant who is named '3M Wildlife Sound Recordist of the Year', a JVC portable stereo cassette deck, collapsible parabolic reflector, electret condenser microphone, with boom stand and mike suspension unit and 20 metres of stereo cable. Closing date is October 31st and entry forms are available from Bill Rowles, Recording Materials Division, 3M UK Ltd, 380/384 Harrow Road, London W9 2HU. This is a contest with a reward for everyone: all entrants, whether successful or not, are invited to a prize-winning luncheon in London!

There was a time when contest entries could only be recorded on open-reel tape, but all competitions are now open to cassette tapes as well. Indeed, the 'Centre for Creation and Promotion of Artistic Sound Recording' (CCPAS) in Brussels, Belgium, has announced a European recording contest in

which *only* cassettes may be entered. There are three categories, defined in terms so general that most musical, speech or sound effects tapes will qualify—provided they do not exceed three minutes' duration. Closing date is May 1st and entry forms are available from the CCPAS, Brussels Cultural Centre, St Nikolaasplein 28, 1120 Brussels, Belgium.

Judging takes place this month in another well-established contest: the Leslie Guest Tape-Slide Competition organised by the South Devon Recording Club in association with the Federation of British Tape Recording Clubs. This is the event which caters for those whose recording activity is ancillary to photography, and some extremely fine audio-visual programmes have been entered in the competition since it was launched in 1967. Judging takes place in Torquay on April 16th and the Competition Secretary is Robert J. Crome, 26 Duchy Avenue, Preston, Paignton, Devon.

THE FEDERATION of British Tape Recording Clubs has been delighted by Donald Aldous' acceptance of its invitation to become its Chairman. The Federation is holding its annual general meeting this year in Brighton and, apart from the business session, has an interesting programme providing for practical recording activity, lectures, a tour of the radio studios of Sussex University, and social events.

## Books

**CLOCKWORK MUSIC HALL** by David L. Trigg. Many line illustrations, 63 pages, soft cover. Price: £1.50. Published by Arthur H. Stockwell Ltd., Elms Court, Ilfracombe, Devon.

THIS SHORT illustrated history of 'talking machines', covering the period when *Variety* and the Music Hall were at their peak, is based on a series of broadcasts—from BBC Radio Leeds—in 1974–75 by the author, using items from his collection of wax cylinders. These were all played on an Edison Standard Phonograph, c. 1906.

As a student of recording history, any new text on this area immediately attracts me, particularly when the author—a fashion designer by profession—is unknown to me. David Trigg has researched his subject carefully and written the story in straightforward language. In fact, the amount of information he has crammed into the 63 pages is remarkable, especially its accuracy in relevant dates. He even includes a reference to Lambrigt's 1879 toy phonograph, probably the earliest toy device to demonstrate the principles of the 'talking machine'. This was sold in the UK as the 'Sixpenny Phonograph', although of French origin.

Whilst fully understanding that a book selling for £1.50 cannot these days be printed on art paper and use half-tone blocks for

illustrations, I must say that the author's own sketches of 'talking machine' and music-hall personalities are rather too crude for my taste. His drawings of the numerous machines, from Scott's 1857 Phonograph to the HMV version of Lumiere's Pleated Diaphragm Gramophone (1924) are, however, acceptable.

The printer's type faces presumably do not include accents for Pathé or Lumière, and the title of the book is ambiguous. A subtitle referring to the history of sound recording would surely help sales? Despite these minor criticisms, this very readable story of 'machines with voices' is outstanding value for money, unlikely to be surpassed in this centenary year of Edison's invention.

Donald Aldous

**INTERNATIONAL MUSIC GUIDE 77** edited by Derek Elley. 288 pages with illustrations. Price £2.50. Published by *The Tantivy Press*, Madgalen House, 136–148 Tooley Street, London SE1 2TT.

A USEFUL BOOK to have around. Attractively produced in 6½ by 8½ in. glossy paperback format, it wanders selectively through the music world, giving a balance of attention to recorded and live music. Starting with Musicians of the Year (Dorati, Henze, Von Stade, Suk, Tortelier), it continues with a summary of musical activities in most relevant countries outside the Communist bloc, gives a good survey of international music festivals, offers obituary information, covers non-classical fields briefly, goes on to

a survey of recorded music, ending with practical information on shops, schools, books, magazines, etc. It says that *HFN/JRR* is 'glossy, readable, large-circulation' with text ranging from 'the chatty to the thoroughly technical'—which seems a fairly reliable summary. As far as British music is concerned it can hardly rival the massive *Yearbook*, but takes a more generalised and quite discerning view of the world musical scene. It should prove a useful asset to any music-lover or record-collector. *Peter Gammond*

### Also Received

**TELEVISION AND RADIO 1977**, edited by Eric Croston. A guide to Independent Television and Independent Local Radio, published to celebrate completion of the first 21 years of advertising-financed broadcasting in the U.K. Contents include surveys of types of entertainment and information covered by programming, details of ITV and ILR programme companies, advertising control, technical standards and details, staffing, finance, and many other matters. 224 pages, over 300 illustrations (many in colour), semi-stiff covers, price £1.40. Published by the *Independent Broadcasting Authority* and distributed by ITP Ltd., 247 Tottenham Court Road, London W1P 0AU.

**VIDEO YEARBOOK 1977**, edited by Angus Robertson. A comprehensive directory of television systems and services, with full details of equipment, manufacturers and suppliers, covering the whole area of video (and audio where applicable to video work). 286 pages, numerous half-tone illustrations. Stiff covers, price £4.75. Published by *The Dolphin Press*, Link House, West Street, Poole, Dorset.

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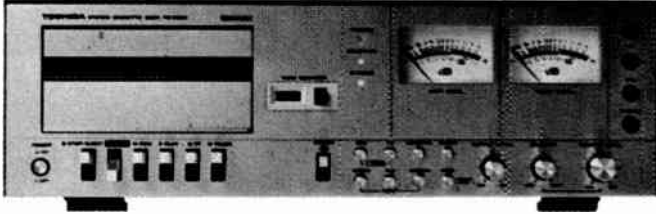
*—a quotation from Philip Mount’s review of three top cassette decks, Hi-fi Sound, June*

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\*Dolby is a trademark of Dolby Laboratories, Inc

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PC-5060  
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PC-4030  
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 40 Hz to 15 kHz (Chrome tape)  
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PC-4020  
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 40 Hz to 12.5 kHz (Chrome tape)  
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# HARDMAN'S

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# Subjective Sounds

Paul Messenger

## Anyone for Musicality?

First I must crave your indulgence if I get out a soapbox and take a sideswipe at some of the egregious bullshit that seems to be flying round the hi-fi world these days. I do not believe in the inherent virtue of valves, beauty of belt drives or superiority of moving coils. I *do* believe in the pre-eminence of good engineering.

The technological breakthroughs in hi-fi are first and foremost for copywriters, and stand or fall according to their use in an engineering context. Compatibility is at least partly concerned with ensuring that the hi-fi chain isn't spoiled by a weak link; any individual item is also a chain in itself and has its own weak links. The point that is often overlooked is that no amount of phase-locked-loop-V-FET buzz words can make up for any engineering deficiencies that a product may have. I have no objection to technical improvements as such, provided they do not distract attention from the real business of discovering the engineering logic behind hi-fi and producing equipment that sounds better because it is better engineered to the task it has to perform.

Nevertheless I do believe in 'musicality'. (I can hardly claim I want only to listen to the spoken word). This contentiously tenuous term is probably the synthesis of various factors: the symbiosis of such components as cartridges and arms, in which inherent limitations can interact favourably or disastrously; the engineering excellence that prevents loss of information in a musical (i.e. extremely complex) signal and avoids spurious additions; the musical or amusical nature of the distortions that are produced.

Dealing with these in turn, a good example of component interaction is a group of items that on paper appear excellent but from which I have been unable to get more than mediocre results in practice. For some reason that I have yet to fathom the Ortofon SL20E with transformer, Mayware arm and Technics SL110 do not work well together through the Radford SC22/STA25 III and stacked Quad ELSs (coming soon in this very column 'Living with a Stacked Pair'—a gripping confrontation between domestic disturbance and sonic superlatives). In fact this combination seems to dim and confuse the central image while spitting the treble from the speakers. In contrast the Onlife 20B/Grace/Linn through the same amp and speakers is splendid (disembodied liquid depth suspended transparency rhubarb rhubarb etc). I can only accuse the symbiosis gremlins at this juncture (or my own setting up)!

The engineering excellence of a product in musical terms must be determined by its ability to preserve musical information under real conditions. This must include information in the time and phase domains (for accurate spatial imaging) and under complex transient and dynamic conditions. The ability

to cope with 'stress' signals so that overload is not unpleasant and recovery is fast, is very desirable. The inevitable resonances and colorations in the audio range can also be minimised by effective engineering.

The concept of musical distortion is much more contentious. A premium is placed on the linearity of the relationships between the harmonics rather than the total harmonic distortion, which in practice means that the more 'distorted' component is the more 'musical'. This must suggest that hi-fi plus harmonic 'seasoning' may better produce *La Grande Illusion* than pure hi-fi for some people. Maybe these harmonics substitute for information lost in the recording process. The Japanese super-system that I heard used different front-end components for direct cut recordings, possibly because these tend to lose less information than most conventional recordings.

We have then three criteria for musicality. The symbiosis is really subordinate to the engineering, as good engineering can and should provide favourable conditions for reducing interface problems. The harmonic relationships, given linearity, must be a matter of personal taste and have a lot to do with programme quality, listening room, and psychoacoustics.

## Minimax Feedback

Last month I was complimentary about Videotone's Minimax and rather critical of their Musical Encyclopaedia. There wasn't sufficient space to comment on the possible virtues of the padded binding of the Encyclopaedia as cabinet damping material (in fact I believe its function was purely decorative but it had *potential* damping possibilities). I received a letter from a Mr. Spencer which described his experiences with the Minimax. He has found that laying the speaker on its side and stacking a pile of hardback books on it has given a significant increase in quality, presumably because of the increased stiffness and damping applied to the cabinet. Presumably wedging the Minimax between books at each end of a long bookshelf would also provide this benefit; the units would be visually unobtrusive and the bass would be enhanced (though polar distribution could be adversely affected); worth trying if you're a Minimax person.

## Records – a new generation?

The major record companies have been under continual fire recently from hi-fi people over pressing and recording quality. There are increasing signs that there is the demand for a hi-fi standard of recordings and pressings, perhaps working on the dual-standard once practised in France; but at present it appears that this demand will be satisfied by the smaller companies, with the exception of 12 in. 'disco' singles which some shops are stocking. These are being produced as a PR

exercise as DJs find them more convenient to use and superior in quality. Such is the commercial power of the radio and discothèque DJ, the record companies seem happy to bend over backwards with these special limited editions to persuade them to play their products. I have heard some of these and the recording and pressing quality varies from very good to sensational, but the music is strictly for dancing.

Sheffield Labs need little introduction, as their direct cut (*sans* tape recorder) records by Thelma Houston and Lincoln Mayorga have



H. J. band recording in Wylie chapel.

become obligatory dem. discs. Their latest, most ambitious, and best recording yet is **The King James Version** with Harry James and his big band (Sheffield Lab-3, SL21/SL22, £9.95). If you like big band jazz this is essential despite the high price, and if you don't it may convert you; an exemplary recording that beautifully captures an immaculately performed live workout. Harry James' trumpet is recorded right upfront, with the remainder of the band behind realising a natural reverberant acoustic with great precision. While I think the direct cutting technique is important, I think the zeal and enthusiasm of the engineers and the care taken in pressing plays an equal part, as the informative sleeve notes explain. (A\*:1\*; the sort of recording and pressing that redefines the ratings. Obtainable from Regent Acoustics, 130 Regent Street, London W1.)

Imminent Sheffield releases include a Chopin/Brahms coupling and a Jazz jam session with Dave Grusin. Additionally Advent records have produced a mixed classical orchestral session with Lorin Maazel and The Cleveland Orchestra. (Advent Records, 4150 Mayfield Road, Cleveland, Ohio 44121.)

Equally exciting are the new Gale records. Although heard in unfamiliar surroundings, these recordings, mainly of solo and chamber classical music, sounded thoroughly musical and satisfying. The first six of these records are being distributed through hi-fi shops and should be available by the time this appears in print. Although more expensive than most (£5.95 each) they are beautifully produced, pressed and presented, if over-packaged.

I heard the Gale records while on a visit to Naim Audio which was a fascinating experience. Space is short so I will merely say I came, heard, and enjoyed immensely the music that was played; I hope to return to the visit and the place soon. Turntable mats *do* sound different, but other unfinished business from last month will have to wait.

### AMPLIFIERS

<b>Akai</b>	
AM 2200	£82.78
AM 2400	£124.53
<b>Amstrad</b>	
2000 Mk III	£41.85
8000 Mk III	£29.50
<b>J.V.C.</b>	
JAS 11	P.O.A.
JAS 31	P.O.A.
<b>Leak</b>	
3900 A	£254.39
<b>Marantz</b>	
1030	£75.46
1060	£122.53
1040	£118.79
1070	£148.67
<b>Pioneer</b>	
SA 5300	£60.00
SA 6300	£80.00
SA 7300	£123.25
SA 7500	£175.95
SA 8500	£200.00
SA 9500	£268.65
SA 9900	£398.75
<b>Rotel</b>	
RA 212	£56.50
RA 312	£66.00
RA 412	£86.00
RA 712	£104.00
RA 812	£149.00
RA 1312	£268.00
RA 1412	£350.00
<b>Sansui</b>	
AU 2900	£72.00
AU 3900	£98.00
AU 4900	£125.00
AU 5900	£161.00
AU 7900	£223.00
AU 9900	£385.65
<b>Sony</b>	
TA 70	£49.50
TA 88	£57.00
TA 1630	£80.50
TA 2650	£107.95
TA 3650	£146.00
TA 5650	£224.00
TA 3140F	£91.00
TA 8650	£539.00
<b>Technics</b>	
SU 7200	
SU 7600	
SU 3500	
SU 8600	
SU 9600	
SE 9600	
<b>National</b>	
SU 2300	P.O.A.

### TUNERS

<b>Akai</b>	
AT 2200	£79.37
AT 2400	£123.84
<b>Amstrad</b>	
3000	£41.85
<b>J.V.C.</b>	
JTV 31	P.O.A.
JTV 71	P.O.A.
<b>Marantz</b>	
104	£99.64
112	£142.92
125	£204.71
150	£344.00
<b>Pioneer</b>	
TX 5300	£73.00
TX 7500	£139.85
TX 9500	£193.35
<b>Rotel</b>	
RT 224	£62.00
RT 324	£78.50
RT 624	£116.00
RT 724	£94.00
RT 1024	£257.95
RT 824	£147.50
<b>Sansui</b>	
TU 3900	£100.00
TU 5900	£150.00
TU 7900	£173.00
TU 9900	£283.48
<b>Sony</b>	
ST 70	£49.50
ST 88	£57.00
ST 2950F	£97.50

ST 3950	£139.50
ST 5950SD	£215.90
ST 5130	£170.95
ST 4950	£136.00
<b>Technics</b>	
ST 7200	
ST 7600	
ST 3500	
ST 9600	
<b>National</b>	
TU 2300	P.O.A.

### RECEIVERS/TUNER AMPS

<b>Akai</b>	
AA 1010	£122.00
AA 1020	£150.18
AA 1030	£167.54
AA 1050	£270.00
<b>J.V.C.</b>	
JRS 100	P.O.A.
JRS 200L	P.O.A.
JRS 300	P.O.A.
JRS 400	P.O.A.
JRS 600	P.O.A.
<b>Leak</b>	
3200	£154.39
3400	£193.46
<b>Marantz</b>	
2215B	£118.04
2215BL	£131.47
2225B	£172.22
2230	£222.42
2235	£273.67
2240	£281.97
2250	£356.76
2275	£442.90
2325	£511.04
<b>Pioneer</b>	
SX 300	£78.00
SX 450	£118.00
SX 550	£142.75
SX 650	£200.25
SX 750	£238.25
SX 850	£317.95
SX 950	£365.00
SX 1250	£560.00
<b>Rotel</b>	
RX 202	£107.50
RX 402	£142.50
RX 602	£167.27
RX 802	£210.47
RX 7707	£162.50
RX 1603	£515.00
<b>Sansui</b>	
221	£94.00
331	£105.00
5050	£170.00
6060	£228.00
7070	£309.00
8080	£358.00
9090	£406.00
<b>Sony</b>	
STR 7015	£130.95
STR 7025	£142.00
STR 7035	£160.95
STR 4800	£200.95
STR 5800	£250.95
STR 6800SD	£298.00
<b>Technics</b>	
SA 5060	
SA 5160	
SA 5360	
SA 5460	
SA 5160L	
<b>National</b>	
SG 25Q	£118.95
<b>Harman/Kardon</b>	
330C	P.O.A.
430	P.O.A.
730	P.O.A.

### CASSETTE DECKS

<b>Amstrad</b>	
7070	£92.00
7050	£75.00
<b>Akai</b>	
CS 705D	£132.95
CS 707D	£165.95
GXC 740D	£307.00
GXC 760D	£386.00
GXC 310D	£165.27
GXC 710D	£213.00
GXC 75D	£192.95

CS 34D	£96.10
ST 5950SD	£137.95
<b>J.V.C.</b>	
CD 1740	P.O.A.
CD 1635 Mk II	P.O.A.
CDS 200B	P.O.A.
CD 1970	P.O.A.
CD 1770	P.O.A.

<b>Marantz</b>	
S120	£190.89
S220	£195.74
S420	£259.74

<b>Pioneer</b>	
CT 2121	£134.95
CTF 6060	£170.00
CTF 7070	£230.00
CTF 8080	£276.25
CTF 9191	

<b>Rotel</b>	
RD 20	£156.00
RD 12F	£156.00

<b>Sansui</b>	
SG 2000/2	£144.00
SG 3000/3	£172.00

<b>Sony</b>	
TC 118	£97.50
TC 135SD	£122.00
TC 136SD	£135.89
TC 138SD	£171.00
TC 153SD	£177.80
TC 186SD	£129.54
TC 204SD	£154.95
TC 206SD	£172.75
TC 209SD	£247.00
TC 177SD	£393.70
EL 5	£292.00
EL 7	£444.00

<b>Teac</b>	
A 400	P.O.A.
A 440	P.O.A.
A 650	P.O.A.
PC 10	P.O.A.

<b>Technics</b>	
RS 263 AUS	
RS 273 US	
RS 640 US	
RS 610 US	
RS 630 AUS	
RS 671 US	
RS 676 US	

<b>Harman/Kardon</b>	
HK 2000	P.O.A.

### REEL TO REEL DECKS

<b>Akai</b>	
4000DS	£142.80
4000DB	£196.71
GX 265D	£323.43
GX 630DB	£447.96

<b>Teac</b>	
A 2300S	P.O.A.
A 2300SD	P.O.A.
<b>Sony</b>	
TC 654	£254.00
TC 377	£158.00

### TURNTABLES

<b>Akai</b>	
AP 001	£66.00
AP 003	£94.50
AP 006	£171.00

<b>Garrard</b>	
SP25 Mk IV	£36.72
75DD	£90.50
125 SD W/Cart.	£49.50
86 SB Mk II	£68.00
GT SSP	£100.00

<b>Goldring</b>	
L 80 PC	£56.92
L 82 PC	£65.20
L 84 PC	£77.40
L 90 PC	£120.00

<b>J.V.C.</b>	
JLA 15	P.O.A.
JLF 45	P.O.A.

<b>Leak</b>	
3001	£93.60

<b>Marantz</b>	
6100	£78.00
6200	£128.59
6300	£162.12

<b>Pioneer</b>	
PL 112D	£60.00
PL 115D	£68.28

PL 117D	£101.00
PL 510A	£120.00

<b>Rotel</b>	
RP 900	£59.60
RP 1500 W/A	£70.00
RP 3000 W/A	£115.00

<b>Harman/Kardon</b>	
ST-6	P.O.A.
ST-7	P.O.A.

<b>Sansui</b>	
SR 222P	£59.00
FR 1080P	£76.00
SR 525P	£124.00
FR 5080P	£173.00
SR 929P	£287.00

<b>Sony</b>	
PS 1350	£75.50
PS 1700	£78.00
PS 3300	£114.50
PS 4300	£139.70
PS 6750	£170.95
PS 1450	£62.50

<b>Technics</b>	
SL 20	
SL 23	
SL 1500	
SL 1700	
SL 1300	
SL 120	
SL 110	
SP 10 Mk II	
SL 150	
SL 2000	

<b>Thorens</b>	
TD 126 Mk IIC	£203.76
TD 126 Mk IIB/C	£162.19
TD 145 Mk IIC	£105.13
TD 160 Mk IIC	£88.83
TD 160 Mk IIB/C	£72.53
TD 166 Mk IIC	£77.42

<b>National</b>	
SL18	P.O.A.

### SPEAKERS

<b>AR</b>	
AR 7X	P.O.A.
AR 16	P.O.A.
AR 17	P.O.A.
AR 14	P.O.A.
AR 12	P.O.A.
AR 11	P.O.A.

<b>Celestion</b>	
Ditton 11	£58.20
Ditton 15	£93.40
Ditton 22	P.O.A.
Ditton 33	£142.40
Ditton 44	£170.70
Ditton 25	£197.45
Ditton 66	£284.00

<b>Leak</b>	
3020	£81.71
3030	£108.41
3050	£149.16
3080	£219.95

<b>National</b>	
SB 60	£46.70
SB 61	£59.45

<b>Technics</b>	
SB 30	
SB 40	
SB 102	
SB 202	
SB 302	
SB 402	
SB 501	
SB 5000	
SB 6000	
SB 7000	

<b>Wharfedale</b>	
Chevin XP	£27.50
Denton 2XP	£40.50
Linton 3XP	£57.95
Glendales 3XP	£78.75
Dovedales SP	£134.95
Kingsdale	£173.00
Airdales	£219.00

<b>Marantz</b>	
HD 44	£108.33
HD 55	£149.42
HD 66	£212.16
HD 77	£304.82
4G	£75.00
5G	£107.00
6G	£145.00

7G	£179.00
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<b>KLH</b>	
KLH 331	P.O.A.
KLH 363	P.O.A.
KLH CB 10	P.O.A.
KLH CL 3	P.O.A.
KLH 300	P.O.A.

<b>JR</b>	
JR 149	£135.00

<b>Tannoy</b>	
Devon	£243.00
Cheviot	£257.17
Berkeley	£326.02
Arden	£372.00

### MUSIC CENTRES

<b>J.V.C.</b>	
MF 1820L wo/spk	£150.00
MF 184SL wo/spk	£226.00
MF 55 wo/spk	£320.00

<b>National</b>	
RE 7860LB	P.O.A.
SG 1020L	P.O.A.
SG 1060L	P.O.A.
SG 2070L	P.O.A.
SG 2500L	P.O.A.
SG 2080L	P.O.A.

<b>Philips (with Speakers)</b>	
RH 953	£226.00

<b>Hitachi</b>	
SDT 2680	P.O.A.
SDT 2690	P.O.A.

<b>Pioneer</b>	
M 6500 wo/spk	£287.95

<b>Sony</b>	
G 2711 Super	£215.95
G 2711 KL	£169.95
G 2511 KL	£170.95
2422 KL	£143.95
DXT 5502 wo/spk	£217.35
G 2311 KL	£95.00
2615 H	£86.00

<b>Sony</b>	
HMK 40A	£247.65
HMK 70	£380.95
EX-2K	£200.95
EX-1K	£170.95

### HEADPHONES





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It has to be. A specialist hi-fi company that didn't make superlative equipment would soon be out of business in Japan.

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\*At current rate of VAT.

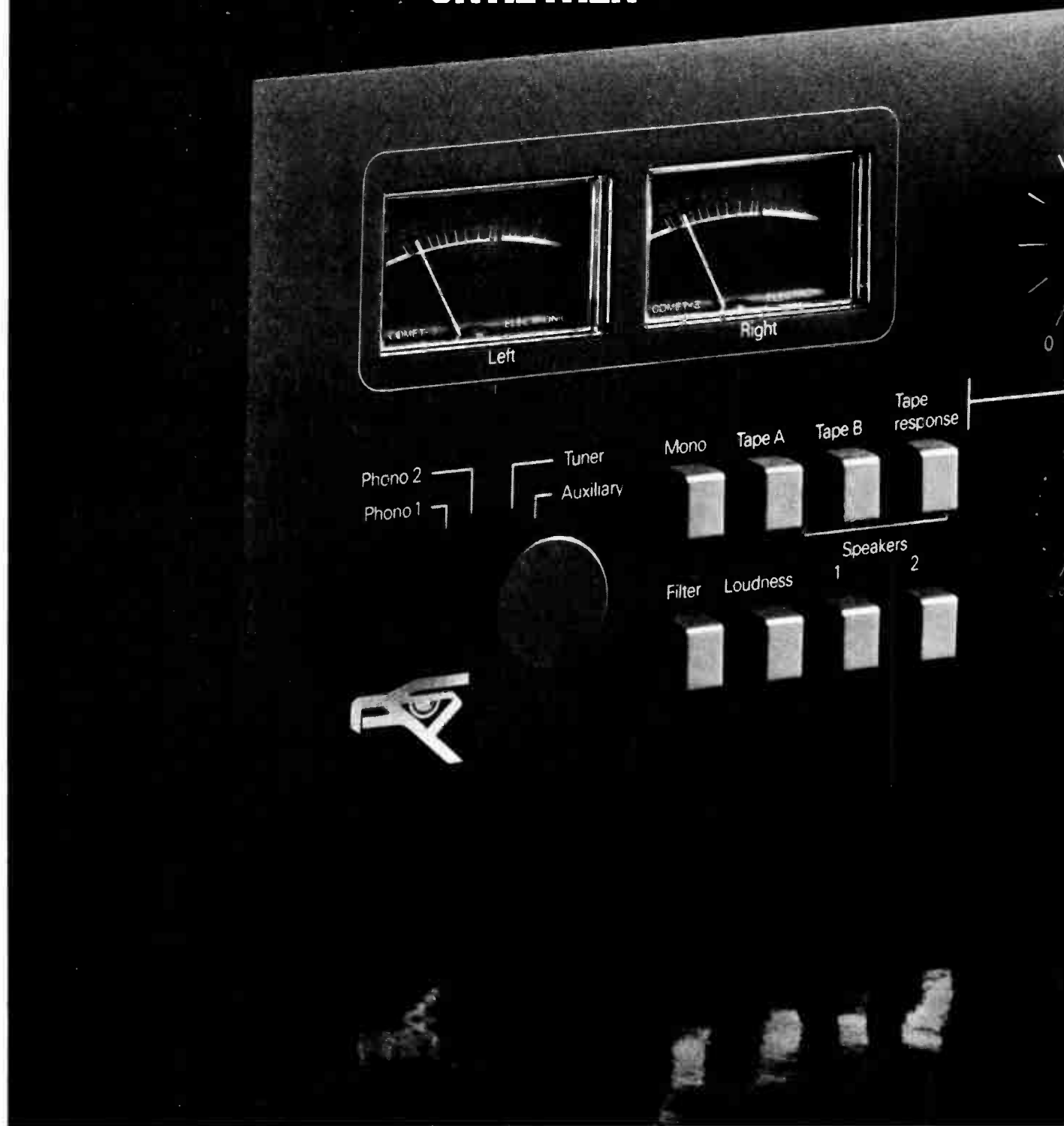
To: B. H. Morris and Co. (Radio) Ltd., Precision Centre, Heather Park Drive, Wembley, Middx. HA0 1SU. Please send me my free catalogue.

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HFN 4

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**EAGLE**

HFN4

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# Empire's Blueprint for Better Listening

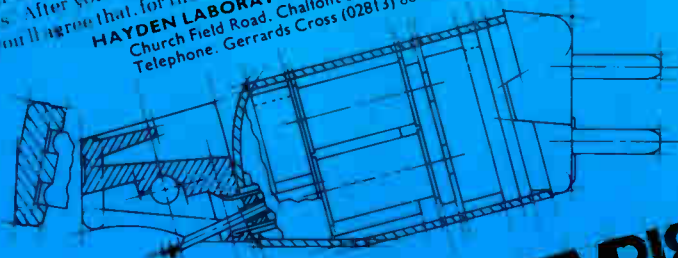
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The advantages of Empire are threefold. One, your records will last longer. Unlike other magnetic cartridges, Empire's moving iron design allows our diamond stylus to float free of its magnets and coils. This imposes much less weight on the record surface and insures longer record life.

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MODEL & STYLUS COLOR	4000 D/III	4000 D/II	4000 D/I	<del>2000Z</del>	2000 E/III	2000 E/II	2000 E/I	2000 E	2000
FREQUENCY RESPONSE	10Hz-50KHz ± 3 db	15Hz-50KHz ± 3 db	15Hz-45KHz ± 3 db	20Hz-20KHz ± 1 db	20Hz-20KHz ± 2 db	20Hz-20KHz ± 2 db	20Hz-20KHz ± 3 db	20Hz-20KHz ± 3 db	20Hz-20KHz ± 3 db
TRACKING FORCE RANGE	¾-1¼ gm	¾-1½ gm	1-1¼ gm	¾-1¼ gm	¾-1½ gm	¾-1½ gm	1-2 gm	1¼-2½ gm	1½-3 gm
SEPARATION									
15Hz to 1KHz	28 db	26 db	24 db						
1KHz to 20KHz	23 db	21 db	20 db	20 db	20 db	20 db	18 db	18 db	16 db
20 Hz to 500Hz	15 db	15 db	15 db	30 db	28 db	25 db	23 db	23 db	21 db
500Hz to 15KHz				25 db	20 db	18 db	15 db	15 db	13 db
I M DISTORTION @ 3.54 cm/sec	2% 2KHz-20KHz	2% 2KHz-20KHz	.2% 2KHz-20KHz	.08% 2KHz-20KHz	1% 2KHz-20KHz	.15% 2KHz-20KHz	.2% 2KHz-20KHz	.2% 2KHz-20KHz	2% 2KHz-20KHz
STYLUS	2 mil bi-radial	2 mil bi-radial	2 mil bi-radial	2 x 7 mil elliptical	2 x .7 mil elliptical	2 x .7 mil elliptical	2 x .7 mil elliptical	3 x 7 mil elliptical	7 mil radius spherical
EFFECTIVE TIP MASS	4 milligram	4 milligram	4 milligram	2 milligram	6 milligram	.6 milligram	.6 milligram	9 milligram	1 milligram
COMPLIANCE	30x10 <sup>-4</sup> cm/dyne	30x10 <sup>-4</sup> cm/dyne	30x10 <sup>-4</sup> cm/dyne	30x10 <sup>-4</sup> cm/dyne	20x10 <sup>-4</sup> cm/dyne	18x10 <sup>-4</sup> cm/dyne	17x10 <sup>-4</sup> cm/dyne	16x10 <sup>-4</sup> cm/dyne	14x10 <sup>-4</sup> cm/dyne
TRACKING ABILITY	32 cm/sec @ 1KHz @ 1 gm	32 cm/sec @ 1KHz @ 1¼ gm	30 cm/sec @ 1KHz @ 1½ gm	38 cm/sec @ 1KHz @ .9 gm	32 cm/sec @ 1KHz @ 1 gm	28 cm/sec @ 1KHz @ 1¼ gm	28 cm/sec @ 1 KHz @ 1½ gm	28 cm/sec @ 1KHz @ 1¼ gm	32 cm/sec @ 1KHz @ 2 gm
CHANNEL BALANCE	within 1 db @ 1KHz	within 1 db @ 1KHz	within 1½ db @ 1KHz	within ¾ db @ 1KHz	within 1 db @ 1KHz	within 1¼ db @ 1KHz	within 1½ db @ 1KHz	within 1½ db @ 1KHz	within 1½ db @ 1KHz
INPUT LOAD	100K ohms/channel	100K ohms/channel	100K ohms/channel	47K ohms/channel	47K ohms/channel	47K ohms/channel	47K ohms/channel	47K ohms/channel	47K ohms/channel
TOTAL CAPACITANCE	under 100 pf/channel	under 100 pf/channel	under 100 pf/channel	300 pf/channel	400-500 pf/channel	400-500 pf/channel	400-500 pf/channel	400-500 pf/channel	400-500 pf/channel
OUTPUT @ 3.54 cm/sec	3 mv/channel	3 mv/channel	3 mv/channel	3 mv/channel	4.5 mv/channel	4.5 mv/channel	7 mv/channel	7 mv/channel	7 mv/channel

Re-assessment of recent 'star' quality recordings and re-ratings for some others; comments based on actual releases, not test-pressings. Following equipment employed:— Cartridges: Shure V15/III, Onlife Ultimo DV38/20B. Arms: SME 3009 Imp., Grace G707. Turntables: Thorens TD 125, Linn Sondek LP12. Amplifiers: Quad 33/303/405, Radford SC22/STA25. Loudspeakers: Crabbe/IMF, Quad, B & W DM6/DM5, KEF 104, Spendor BC-1.

The equipment used by the QM team is not claimed to be the best available, but should be representative of high quality domestic installations.

# Quality Monitor

IN HIS October review of Solti's *Carmen* (with LPO, Troyanos, Domingo, Van Dam, *et al*, on Decca D11D3), J.F. commended the excellent recording, with its 'good balance between voices and orchestra and a warm but clean acoustic which does full justice to the colourful score', but stopped short at a plain [A] rating. Then P.G. followed this up (*Looking Back*, January) with a reference to 'a slight and uncharacteristic reticence' of sound which just prevented the discs from reaching star quality.

Intrigued, we obtained a set for QM, and sure enough the first impression was indeed of a slight orchestral reticence. But then we realised that the overall balance and ambience demand a fairly high replay level, and that if one accepts producer Christopher Raeburn's philosophy whereby the orchestra seems generally somewhat behind the singers, the whole thing soon slots into easy aural acceptance. Despite its placing, the orchestra offers great detail, sonority and—where needed—brilliance and punch, all within the wonderfully encompassing acoustic of the Henry Wood Hall. The many effects of distance and movement are well managed, and voices are always clear despite some tremendous climaxes, although we felt that spoken dialogue sometimes seemed too close and artificial. The latter would prevent an unqualified star, but at least up to [A\*/A].

More opera (well, light opera) from Decca: the D'Oyly Carte production of Sullivan's *The Grand Duke* on SKL 5239/40, awarded [A/A\*] by P.G. in December, a rating with which we concur. The orchestral recording (apart from an over exuberant-triangle which was left hanging on the microphone stand) is natural and enjoyable. The choral parts are well-handled with good but not outstanding detail. The soloists are fine apart from Ludwig, whose tenor has a slightly throttled and forced sound (adenoids?). Overall this is a satisfying and enjoyable record with only small blemishes, and we happily confirm its slightly qualified star for the sonic aspect.

A Latin version of *Jonah and the Whale* is hardly operatic, but such a tenuous dramatic connection may perhaps excuse the jump from G & S to Carissimi's *Historia di Jonas* (and Cavalli's *Missa pro defunctis*), performed by the Louis Halsey singers on Oiseau-Lyre SOL 347. Highly praised by A.J. in December, there is little but confirmatory noises that we can add. Despite the rich reverberant sound, no detail is lost and the illusion of a church acoustic is admirably conveyed. The direct

image is rather narrow, but this enables the depth perspectives to be better perceived; we must thank the BBC influence and Hugh Keyte for this jewel.

Leaping forward by three centuries for some rather different vocal 'music', Berio's *A-Ronne* and *Cries of London* on Decca HEAD 15 were awarded a star by B.S. in December. This is a most difficult record to assess for quality, as it is not possible to use 'naturalness' as a yardstick. Neither is it possible to create much illusion of reality of performance; the reality is the recording itself. The acoustic appears to have very little depth, though individual voices sometimes have reverberation, and sometimes not. The recording technique may be summed up as pyrotechnic; at times one suspected the use of noise-gating techniques on the voices, but it was probably deliberate. All-in-all a 'modern' recording of a 'modern' work, which conveys great excitement and is well worth a listen. Swingle II's technical mastery is amazing, but the auditory assault was slightly marred by a noisy surface on Side 2 of our copy—but star confirmed.

Peter Maxwell Davies' concert (Oiseau-Lyre DSLO 12) was double-starred by B.S. in December, and this is enthusiastically confirmed. This also is modern music, played by the Fires of London, but in a medieval or baroque vein. The link between early music and folk is very strong these days and this disc captures this fusion extremely well and also has a strong religious element. The recording cannot be faulted in any way; it is superbly natural and detailed throughout. A neutral and slightly dry acoustic is enforced, and the recording as a whole reminds one of the late David Munrow's excellent discs of early music, which brings us to the next record.

In January, C.E. gave a star to Munrow's three-record HMV set with a much augmented Early Music Consort of London, *The Art of the Netherlands* (SLS 5049). We totally concur with this rating; the recording quality can only be described as superb. Although many combinations of Renaissance instruments of all sorts are used, the balance is always perfectly judged—just listen to Josquin de Prés' setting of the basse danse *La Spagna* on Side 3, where cornett, alto shawm, alto and tenor sackbuts, a tabor and a bass dulcian show how to form an exciting but evenly balanced ensemble. Where voices are used in conjunction with instruments, as in some of the chansons on the first two sides, the balance is again exemplary. The image is ranged across approximately two-thirds of the stereo stage and the ambience is entirely convincing, ideally suited to Hafler reproduction, reverberant without being in the least woolly, leading to a very natural sound. The *a cappella* vocal tracks are especially satisfying in this respect.

Early instrumented music on record opens up ancient byways, but an interesting modern

byway spanning pop, jazz, poetry and the sounds of open-air nature is to be found on a Decca disc called *Sunset Wading* (SKL 5233), mentioned in passing by F.D. in his Rock column last November. On this, John G. Perry and supporters provide assorted songs and music on fourteen tracks, much of it set against a backcloth of 'atmosphere' recorded in the Lake District. Reactions will differ, but while we are not actually adding a star to F.D.'s [A], it seemed worth mentioning this off-beat issue for its rather striking sonic juxtapositions, its very clean Pop (Rock?) style sounds, and some touching poetry—including a plea to leave the 'city frenetics' and '... return again across the far edge of the lake/Wading through the clean unrippled quiescence.'

Such a gentle mood is caught at times in Poe's poetry as set by Rachmaninov in *The Bells*: 'they dream, in an enchanted heaven ... with a silent fascination.' In his December review of *The Bells* (and *Vocalise*) by LSO/Previn *et al* on ASD 3284, H.O. remarked enthusiastically on the 'natural concert-like perspective and tonal warmth and brilliance' [A\*]. We must agree on these points, but politely reassure him regarding some doubts expressed about loss of clarity early in the third movement. On close listening to this we found a perfect balance between the heavy choral and orchestral passages, but appreciate that this scoring has, on other recordings, posed innumerable problems. H.O. also suggests that Robert Tear's voice is a little back compared with the other soloists. This point must be debatable, but its stereo positioning does enhance the 'natural' perspective. Star confirmed.

Staying with H.O. and Rachmaninov, it may seem churlish to disagree with a critic who has been so bowled over by a record that he grants a *double* star, but we really must take issue regarding sonic aspects of the Soderström/Ashkenazy recital of 16 Rachmaninov songs on SXL 6772 (January). A brightly clean and fresh recording, certainly, with an impressive immediacy of impact; but despite the Kingsway Hall venue, with its possibilities of an attractive surrounding acoustic, the performers are too closely miked to capture more than the slightest trace of a setting. Both singer and piano are central, and could easily have been given a wash of ambience without any loss of detail; but while headphones do reveal some width of image on the piano, with loudspeakers it makes little difference whether one listens in mono or stereo. The sound is still very good [A], but no star.

Two of the items on the above disc appear in a recital of songs by Rachmaninov and Glinka, featuring Galina Vishnevskaya with her husband Rostropovich at the piano on DG 2530 725. Granted a star by J.F. in February, in this case we have no reservations over the recording, which presents the voice with

limpid purity of sound, moderately spaced from the piano in a pleasant acoustic. A really excellent example of balancing.

Paradoxically, it sometimes seems more difficult to achieve a satisfying balance between the two instruments of a duo than between the many departments of an orchestra, although not all engineers and producers agree with this—especially after spending hours arranging microphones for an orchestral session! But in listening terms the odd decibel this way or that can often make more difference in chamber music than in large-scale works. Critics are also more fussy, which is perhaps why C.B. withheld a star from Beethoven's Op. 30/3 sonata for violin and piano (featuring Perlman and Ashkenazy, January), while granting one to Op. 12/3 on the same disc. Respectfully disagreeing, we would actually have cast a reverse vote, feeling that the violin in Op. 30 had a very slightly smoother tone at climaxes, while not seeming underbalanced. But this is a fine point when considering the very high overall quality on Decca SXL 6789, where the two instruments are placed quite close together near the centre of the sound-stage, at a medium distance, with stereo used primarily to capture a very pleasant Kingsway Hall ambience. The latter surrounds one beautifully with a Hafler set-up, making this disc a delightful acquisition, well worth [A\*/A\*].

Another violin/piano record accorded a star by C.B. (without qualification this time!) featured pieces by Franz Reizenstein on Oiseau-Lyre SOL 348, with Eric Gruenberg (violin) and David Wilde (piano). This offers

a rather bright and incisive fiddle sound in the Sonata in G $\flat$  for the pair of instruments, a balance contrasting very interestingly with the more distant and notably more reverberant setting for the solo violin work on the other side. We would have hesitated over granting a star to this issue, but it certainly is an excellent recording in its various ways, so we won't argue. Piano tone very clean.

Understandably impressed by, and concerned to describe, the three piano works by American composers Dett, Griffes and Ives played by Clive Lythgoe on Philips 9500 096 (October '76), K.D. simply allocated an [A] for sound, without any further comment on this aspect of the recording. It was certainly worth this rating, and were it not for a just perceptible thickening of texture towards the ends of sides—despite elliptical stylus, high trackability, etc—we would add a star for some superb piano reproduction. The instrument is placed just beyond the loudspeakers and occupies about half the full sound-stage. Almost in the room, in fact, and so impressively real at times (superb bass chording in particular) that you could easily convince a visitor that Mr. Lythgoe himself was having a go on your newly installed grand! Star quality for most of the time, so up to [A\*/A].

As with pianos, harpsichords are very much a matter of taste, and if you happen to like the tone of an instrument which suffers from a lot of thumpy action-noises when heard at fairly close range, then thumpiness there has to be. C.E. was very attracted to the sound of Valda Aveling's recital of Scarlatti Sonatas (HQS 1365) in January, but as a one-time player he

is perhaps used to all those odd noises and was not deterred thereby from awarding a star for sound. Frankly, we found the continuous rumble of the mechanism so disturbing during all rapid passages that we preferred to apply severe bass-cut and put up with the resulting rather thin tone-colour. Sacrilegious, perhaps, but we really can't avoid downgrading this one to [A].

One more instrumental chamber record: the Philips coupling of Brahms Sonata No. 1 for violin and piano and the Trio in E $\flat$  for violin, piano and horn (9500 161), given an [A\*/A] by P.T. in January. This seems a shame, because the previous record in this Brahms series by Arthur Grumiaux, accompanied by Gyorgy Sebok (pno), received an unqualified star last November. But we must agree with P.T.'s comments on the level of the horn on Side 2 of this new issue: although it has a rather muffled tone, it is a little too far back in the balance generally for one to decide whether this is the natural sound of the instrument (Brahms wrote for an unkeyed horn) or not. The balance between the violin and piano on Side 1, however, is perfect, with a natural ambience well-suited to this intimate music.

Brahms encouraged and inspired the young Dvorak, whose symphonies still seem rather underplayed—apart from No. 9 (*New World*). No. 8 is also a splendid work, and in February K.D. gave a star to Zubin Mehta's Decca recording of this, coupled with *The Wood Dove* (SXL 6750), his reasons being that 'in clarity, brilliance and depth [this recording] would be hard to beat'. Sound quality of the Los Angeles players is certainly superb: the

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quiet solo woodwind passages in the first movement are never submerged by the accompaniment, and the strings, in the *Adagio* especially, have a magical air of hushed majesty about them. Orchestral climaxes such as in the introduction to the final movement are well handled, and the dynamic range is not too restricted. Repeated listening, however, has convinced us that something overall is very slightly lacking, more so in the Symphony than in the delightful though macabre *Wood Dove*. Without being able to put our finger on quite what it is, we feel that a very slight change to [A\*/A] is appropriate.

In January, L.T. apologised for granting a 'finicky rating' of [A/A\*] to another Decca recording of an American orchestra, a splendid disc of overtures by Verdi, Beethoven, Berlioz, Glinka, Brahms and Rossini, featuring the Cleveland Orchestra under Maazel on SXL6782. Possibly the odd moments to which L.T. referred 'when the resolution dropped and instrumental detail became a little confused' arose naturally from the pleasantly set-back, reverberant balance adopted, without any obvious highlighting. But if this isn't a startlingly over-brilliant, in-your-lap version of the Cleveland players, it is startlingly natural in the more traditional sense of how an orchestra should sound at a concert in a real hall. We were very impressed and would only keep the original qualified rating because of an occasional pre/post echo noted (quite correctly) by our finicky reviewer.

Brought up like so many on ballet 'suites' rather than complete versions, we are always

struck by just how much delightful but little-known music there is in the Tchaikovsky ballets. Packed with instrumental colour, these really are worth hearing in their entirety—especially when played and recorded as well as are *Swan Lake* and the *Nutcracker*: the former by the LSO under Previn for EMI on SLS 5070 (3 discs) and the latter by the Concertgebouw under Dorati for Philips on 6747 364 (2 discs). In his December review of *Swan Lake* H.O. congratulated the Bishop/Parker team for a recording with spaciousness, clarity, warmth, natural colouring and a convincing dynamic range, his only doubt concerning occasional over-prominence of the brass. We were not worried on this score and, noting also an impressive firmness and fullness in the deep bass, would fully concur with the star rating were it not for a slight constriction of the lateral sound-stage—presumably arising from quadraphonic aspects of this 'compatible' issue. It is really noticeable in this otherwise splendid set, especially when compared with the Philips ballet, so we reduce the rating to [A\*/A].

Granting a similar qualified star to the *Nutcracker* in January, C.B. wondered whether the Amsterdam players were tackling the work in a mood of curiosity. If so, then perhaps this led to a certain excitement of discovery and enthusiastic participation, for there is a great feeling of freshness about this issue, in both performance and sound quality. The latter is splendid: spacious, widely spread, orchestra set fairly well back yet heard in enormous detail, terrific punch, wide dynamic range. Tonally a trifle overbright and with a touch of

the Concertgebouw's lack of weight in the deep bass, this recording nevertheless fully deserves its [A/A\*], while the two QM discs were also very notable for a complete absence of low frequency background noise. Uncanny silence at the ends of sides, which shows that it can be done when the record companies try.

Almost as silent in this respect (and Philips again!) were the seven discs of Haitink's set of nine Beethoven symphonies with the LPO on 6747 307. Granting a mixed rating ranging from [B] to [A\*], C.B. confined the star in his January review to No. 9, which he commended particularly for its immediacy within a general framework of perspectives having 'a concert-hall realism'. We agree with C.B.'s overall judgement, which places the bulk of the set in an [A] class for sound, observing a certain give-and-take between the symphonies in terms of balance, ambience, brilliance, textural detail, etc. We sometimes felt like suggesting a star for isolated movements, although at a highish replay level (modulation generally slightly on the low side) there was occasionally a suspicion of gentle tape hiss, while bass would perhaps benefit from a little lift on some systems. Hafler helps spaciousness a little, but not markedly. The *Choral* deserves its star, especially for the recording's handling of massive forces in the last movement, and for sensibly leaving the vocal quartet back with the orchestra. And we must add support on the musical side: having decided just to play through the one starred disc (merely dipping into the others at random) we found ourselves caught by Ludwig's perennial magic and played the lot.

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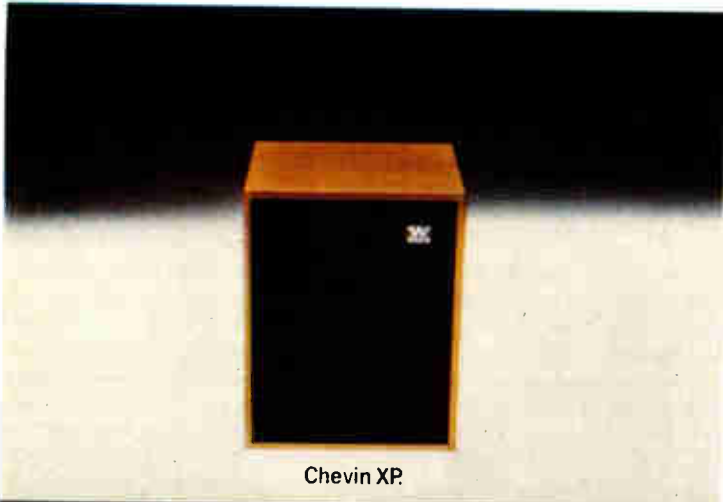
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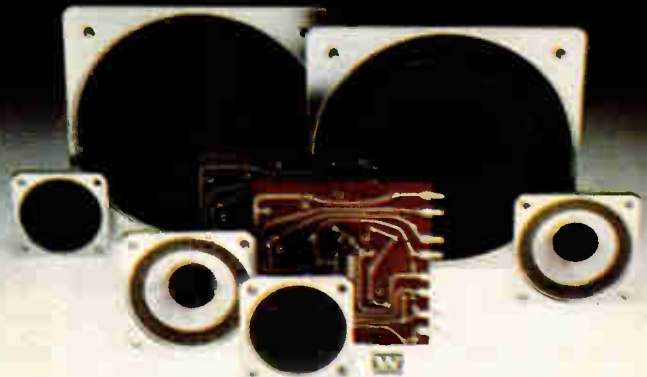
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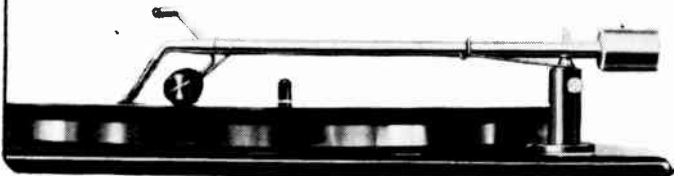
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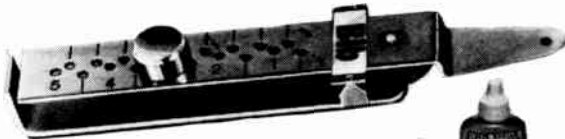
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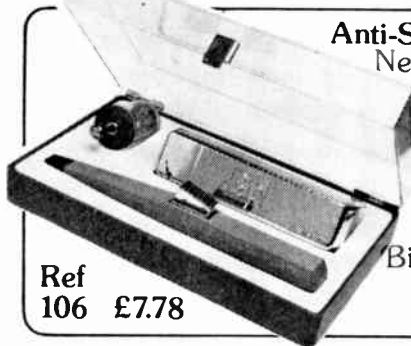


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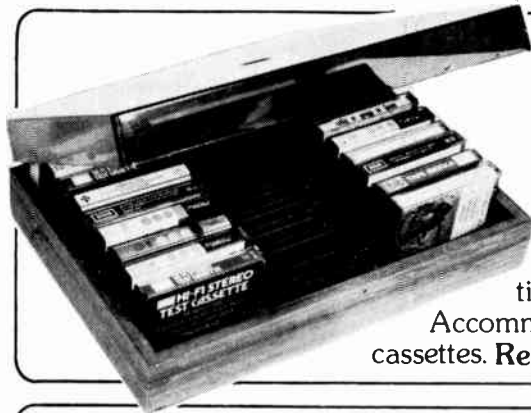


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# Looking Back Peter Gammond

IF, IN certain moods, one is inclined to believe that record companies are collectively insane (some more insane than others, of course), there are moments of more benevolent outlook when it appears to be the kind of insanity that is born of pure altruism, of a charity that almost goes beyond the bounds of belief. Knowing, as we all know full well, that record companies have to show a profit to keep in business, we must grant them their right to issue the 25th version of a work that the general public (which is not the intelligent and discerning readership of this magazine), in their sheep-like way will flock to buy because suave gentlemen on the radio keep telling them to. What is more surprising and everlastingly gratifying, is that the handful of extremely intelligent enthusiasts who run the musical side of the record business are able to keep on persuading their accountant masters to put out records that make the catalogues look like the minutes of the proceedings of a learned academic society. To them I say, long may ye prosper and, to our aforementioned intelligent and discerning readers, long may ye continue, even be able to continue, to buy that which is interesting and adventurous.

A belligerent reader, writing in great anger the other day because I had used the word 'one' instead of 'two' in a review, also accused me of knowing nothing about anything in music except Mozart. As I do not claim to be a Mozart expert, merely a devotee of his music, this leaves me stranded without much background knowledge, even after some

twenty years of reviewing—and rather self-conscious about mentioning Mozart. Nevertheless: may I whisper to those who share my enthusiasm, that they should not miss *Lo Sposo Deluso*, a Mozartian operatic fragment of considerable interest (cleverly restored by Erik Smith) coupled with a fine performance of the excellent *Schauspieldirektor* (Philips 9500 011). The way things are going, it may well be some time before more such delightful and rare dishes are planned for us.

Having reviewed Copland's *Old American songs* with delight, I can only reiterate the pleasure they gave, coupled with the more rarified interest of his Emily Dickinson settings (Argo ZRG862). Such records can hardly become best-sellers, but let us hope that there are enough affluent enthusiasts to make their issue worthwhile. I am also enough of a Dvorak enthusiast to welcome a rarity like his *American Flag* cantata (airy as it is) given substance by the excellent coupling of his orchestrated *American suite* (CBS 76510). The true Dvorak collector will hasten to acquire this rare offering while it is available and will join me in blessing the irresistible enthusiasms that bi-centenaries arouse.

Other rarities that I suggest you try not to miss are a delicious collection of oboe (and flute) pieces by Bellini, Moliqeu, Moscheles and Rietz, played with the usual panache by Heinz Holliger (Philips 9500 070). That is, if you like such quietly civilised music. Some time ago my appetite for the lighter side of Shostakovich was whetted, as others were, I know, by an extremely entertaining record called 'The

Light Music of Shostakovich' (CBS 61220). So I was pleased to be able to dip further into the cleverly frivolous score of *The Gadfly* (HMV ASD3309) and discover more of the light-hearted moments of an eminently serious composer. I also think it marvellous to find a popular label like Classics for Pleasure (with the financial help of Messrs. W. D. & H. O. Wills—I hope they will forgive me for having just given up smoking) issuing material like Britten's Violin concerto and *Serenade* (CFP40250). I trust that a few casual rack purchasers will not be unduly surprised at what they have bought. They will not be at all surprised at the entirely likeable content of 'Immortal Pas de Deux' (CFP40274) which contains Minkus' *Don Quixote* Pas de Deux 'used by John Curry, World Skating Champion 1976' who can do far more than I can to promote record sales. Here's where the amiable sheep will help us goats to enjoy our recorded rarities by balancing the accounts to good effect. As will the purchase of the reissued 'Elizabethan Serenade' (EMI 'Starline' SRS5197) which, besides Ronald Binge's inspired crowd-puller, includes music by Hartley, Ancliffe, Farnon, Byfield, Coates and the like.

So, to end my sermon, while hoping that you will investigate the fine choral music contained in Kodaly's *Missa brevis* and *Pange lingua* (Decca SXL6803), I can remain fairly confident that a fair number will be following the renewed recording activities of that fine pianist Maurizio Pollini with interest. They will be well rewarded with his insight into the Chopin *Polonaises* (DG 2530 659) and Beethoven's 4th Piano concerto (DG 2530 791).

# Things I Hear Arthur Jacobs

THOSE cow-bells jangling away in Mahler's Sixth Symphony are surely an awful mistake. I know they are supposed to represent pastoral loneliness, or something, but to mix such crude illustration with symphonic composition seems to me like 'improving' the Mona Lisa with real lipstick.

Too much to hope, in our present era of Mahler-worship, that James Levine would silence the bells in his performance of the work with the London Symphony Orchestra at the Festival Hall. But otherwise I applauded his full-toned yet finely detailed performance, and now await with interest the RCA recording of it on which he and the orchestra were engaged.

With less avidity, I confess, I await the recording which the LSO made for EMI with another recent, and rarer, visitor. That veteran of Soviet musical life, Aram Khachaturian, is now a sturdy 73. His EMI release as composer-conductor will be of excerpts from his two popular ballets, *Spartacus* and *Gayaneh*—from which comes the Sabre Dance, an inevitable encore at his Festival Hall concert which opened with the Soviet-Hollywoodish Symphony No. 2. Inside, the hall was packed. Outside, a silent picket recalled Jews and others whose exit from the Soviet Union is not

so freely granted.

THE EIGHT encores which Montserrat Caballé granted, at a Sunday recital in Covent Garden Opera House, made a total which is unparalleled in my recent experience. One was a solo for her castanet-player, José de Udaeta. Her excerpts from *zarzuelas* (Spanish light operas), recently recorded on SCLR 6792, took extra fire from the delightful rapport which she established with this 'live' audience.

FIRST LOVE is special, as we all know. So I do not think any performers could replace the delight which Peter Pears and Benjamin Britten gave me 25 years ago with some of Aaron Copland's *Old American Songs* (on 78, curiously never transferred to LP). In the nonsense-song 'I bought me a cat' Pears did not make the mistake, as Robert Tear does, of ineffectually half-Americanizing the 'I' into 'Ah'. But Tear, brilliantly accompanied by Philip Ledger, now gives us (on Argo ZRG 862) a larger selection of these Copland settings, and 'At the river' held me rapt.

With his interest in Victorian and Edwardian song, I am a little surprised that Robert Tear has apparently not yet lighted on that once popular song by Coleridge Taylor, 'Eleanore'. I fear that Georgina Dobrée's enterprising

revival of Coleridge-Taylor's Clarinet Quintet (which she plays with members of the Amici Quartet on Discourses ABM 23) will not restore the composer's reputation: it is dull music, starved of the virtuoso excitement of high notes, and dully recorded.

YOU DO NOT have to be young to be a devotee, as I am, of the Young Vic (which has not been absorbed by the National Theatre) and of the genius of Denise Coffey as a theatrical director. Few who saw her recent uproarious *Charley's Aunt* realized that it was Miss Coffey's own unladylike voice belting out 'Ta-ra-ra-boom-de-ay' as a tape-recorded intermission, since she had found no suitable commercial recording.

I last met her at the Coliseum, full of enthusiasm for the English National Opera production of Iain Hamilton's *The Royal Hunt of the Sun*. It has enjoyed a box-office success rare for a modern opera. Yet, well remembering the brilliant and profoundly moving original play by Peter Shaffer, I felt that Hamilton's new operatic version added less than it took away. I am curious to know what opinion Shaffer himself—who was, for a brief while, a music critic—has of the opera, especially because he was so struck by the music which Marc Wilkinson wrote for the original version that he incorporates some of it in the printed text of the play.



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# Gramophile

Julian Lloyd Webber

Born in 1951, Julian Lloyd Webber started to play the cello at the age of six and progressed rapidly, winning an open scholarship to both the Royal Academy and the Royal College of Music. Upon leaving the Royal College he studied with the French cellist Pierre Fournier, but not before being asked by Sir Arthur Bliss to give the first London performance of his cello concerto in September '72. Also at this time, he made his first record, a recital album which included the Debussy sonata, for Discourses Ltd. which was produced by our Music Editor Peter Gammond. With this HFN/RR connection already in existence, it was with interest that we went along to meet Julian at his Kensington home to talk about his record, released and reviewed this month, of modern British music with pianist John McCabe, who also contributes his 1966 Partita for Solo Cello (L'Oiseau-Lyre DSLO18).

How did that Discourses album come about we asked? 'It was a straight approach from Peter... after I had performed the Bliss Concerto. I was very pleased to do it, especially as although the pieces were meant to be fairly short, we managed to include the Debussy sonata—one of my favourite works.' After a brief sidetrack about the reissued pre-war Beecham Debussy records, we managed to steer the conversation back to JLW.

Was the new L'Oiseau-Lyre album a pet project of his? 'The British Council were the actual motivating force behind the record, but I actually chose the repertoire. None of the works have been recorded before, but I've played them all in recitals and the Fricker Sonata, which is probably the main work on the album, I've broadcast. You don't seem to hear so much of Peter Racine Fricker now; he was a great white hope in the '50s, but he is not so fashionable now, but certainly the sonata is an excellent piece, maybe he will be better appreciated when he is in his eighties. I have a special liking for British Music, the British Romantic Period from Elgar to Bliss, and it's a shame that it's been very unfairly treated... there is a lot of good music which

is never played.' Records seem to do well. 'I agree and it's a little strange that there is plenty of interest in records of, for instance, the music of Frank Bridge, but as far as live performance goes, there is very little interest. Take the Debussy Sonata, everybody plays it which is good because it is a very good piece, but the equally good Delius Sonata, which is of comparable length, is hardly ever played. You just have to keep plugging away!' Julian made his Festival Hall debut in January 1974 with the Elgar Concerto, does he especially like this work? 'Yes, and it's the concerto that I have been asked to perform most often. Abroad too, which is strange because it's a work that I don't think is played that often outside of the UK. Maybe I get asked to play it abroad... because I'm English and the Elgar is the English cello concerto that they're most familiar with?' We discussed the fact that there are still pockets of ignorance about Elgar even now. 'Yes, I was doing a broadcast of the Elgar in Luxembourg, apparently the first time it had been broadcast. A VIP came up and asked me if I was from England. I said "yes that's right" and she added that she hadn't met Mr. Elgar yet, where was he from?!... What do you say to that... that he is a new young composer?!'

Are there more records in the pipeline? 'There are two being released by Lyrita later this year. The first one is the John Ireland Piano Trios which should appear around July... these are amongst the few chamber works that I've done. I would like to do more chamber music but you really only have the time to concentrate on one thing at a time... Again the Ireland Trios are hardly ever played; the second Trio is quite a short work, under 15 minutes long and it could fit into any programme very well but people just don't know about it. The other record is of the Frank Bridge *Oration* with the LPO conducted by Nicholas Braithwaite, which is probably the work that turned me onto Frank Bridge. It is a big work, one of his last and very enjoyable.'

There is a three year gap between his first record and the



new L'Oiseau-Lyre; was Julian involved in any recording in that time? 'I played on the soundtrack to the film *The Odessa File* which was composed by my brother Andrew.' [Andrew Lloyd Webber is the co-writer of *Jesus Christ Superstar* and *Evita*.] We listened to the soundtrack album (on MCA) and certainly the cello was featured heavily (at one point there was an impressive solo in ninths) but the music is more on the rock side rather than classical; did he enjoy recording that kind of music? 'Yes, and I found it very interesting to work with pop musicians as it's obviously something that I don't get much chance to do. I found that very often the rhythm and togetherness of their playing... is more precise than classical orchestral musicians. In general there is a tremendous precision about pop music... that isn't always there in classical music—an orchestra doesn't always 'swing' and a rock group wouldn't get away with that at a live concert'. Some classical musicians do get bitter over the large sums of money that it is possible to earn in pop music, did he have any feelings after seeing Andrew's success at close quarters? 'Well, if I want to make that sort of money, it's up to me to produce another *Superstar*... you have to do what you are best at and with me, it's playing the cello. If you don't make it in rock music you can really be on the rocks whereas if someone tries to make it as a [classical] soloist and doesn't reach the top rank, they will never be penniless in the same way. Pop musicians... are purely in the business of selling records


to a very fickle public and if they manage to do that, they will have earned their money. There is a tremendous fall-out rate in pop—how much do you hear of Bobby Vee now?'

Getting back to the new album, does he worry about being 'type-cast' record-wise, but he explained that he features more of the regular classical repertoire in concerts—I'm doing an all-Beethoven concert at the Queen Elizabeth Hall on March 27th in aid of the Multiple Sclerosis Society, it would be nice if you could mention that—as a cellist I feel it is a great tragedy about Jacqueline du Pré?' [Unfortunately, however, that concert will probably be immediate history as you are reading this.] Did he have any plans to record ultramodern music at all? 'Not really, I still have my feet firmly in tonality. I would not necessarily say no to it, but I would want to be convinced that a piece had more than just technical virtuosity to recommend it... Ultramodern music does look very nice on the printed page (even if it doesn't always sound 'nice') perhaps it is best used as wallpaper!!'

## Crescent Records

Crescent Records, run by David Lord and Brian Preston, has been in existence for just over a year. They have the commendable policy of trying to produce natural-sounding records, using basic coincident microphone techniques with a minimum amount of equalisation and compression in the recording process. Often,

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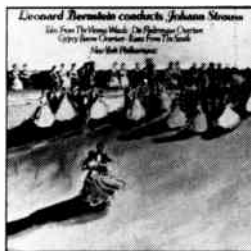
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a very narrow musical bandwidth is covered by a small record company because it has been set up primarily to cover a particular field of music which perhaps has not been treated fairly by the majors.

The first batch of releases from Crescent, however, covers quite a range of styles, from folk and light (see reviews this month) to organ music (18th Century Organ Music from Hexham Abbey, ARS 109—Gerald Gifford playing the new Lawrence Phelps instrument) and chamber music (Beethoven Op. 1 Piano Trios, ARS 108, with George Malcolm, Christopher Hiron and Kenneth Heath). A new series, sponsored by Bath University, is devoted to works composed by musicians with Bath connections. The first record in this series, 'Bath's Musical Heritage' Vol. One, BUR 1001, features Gerald Gifford playing pieces by J. C. Bach, Handel, Thomas Chilcot and others on a 1775 Shudi Instrument and includes a complete commentary on the music and instrument.

Crescent Records are available from Avon Recording Services, 6 Camden Crescent, Bath, Avon, and cost £2-80 including p&p, but should now be finding their way to your friendly neighbourhood record store. The first batch of these are due to be reviewed next month.

### Murray Perahia

Murray Perahia's affair with Mozart gets a boost this month with the release of his recording of two Piano concertos, Nos. 9 in E<sub>b</sub>, K271 and 21 in C, K467 (*Elvira Madigan*) on CBS Masterworks



Murray Perahia directing the ECO from the piano in No 1 Studio, Abbey Road

76584. Murray was the subject of a 'Gramophile' interview in September '73, and we went along to see him again at Abbey Road Studios last September where he was in the middle of sessions for the above album. Accompanying him was the excellent English Chamber Orchestra with whom Murray had done his previous Mozart concerto album (CBS Masterworks 76481). They had just come back from Paris where Murray had premiered

with the two concertos being recorded, both he and the ECO getting very good reviews.

Our first sight through the control room window when we came in, was of this slight, dark figure directing the orchestra from the piano through the third movement of K467. The strings of the ECO had a beautiful fat sound, courtesy of producer Roy Emerson, through the ubiquitous Tannoys (although we did spot a pair of DM6s which were being evaluated). Murray copes very well with the arduous task of being both soloist and conductor, no doubt helped by the fact that he studied with Karl Bamberger in New York, and obtained a degree in conducting rather than piano. He believes strongly that this is possibly the best, though most arduous, way to perform Mozart, although it does throw a heavy responsibility on the orchestra, who, when the soloist is playing the piano, have to listen to each other and play more as chamber musicians. After listening to the playback of the movement and making notes on the few places that needed re-recording, Roy and Murray retired to a nearby pub where, just by chance, they bumped into Paavo Berglund, an old friend of Murray's, and became deeply involved in musical intricacies.

A third album in the series (again produced by Roy Emerson) is on the way, featuring the F major Piano concerto K413 with the ECO, and was recorded at the end of February in conjunction with a British tour. He returns to this country in the summer to play a Mozart concerto with the NPO

under Muti and more concerts with the ECO and also the Northern Sinfonia, and through July will be giving Master Classes at Dartington.

### Pascal Rogé

Parisian Pascal Rogé, born in 1951, had his first piano lesson from his organist mother when he was four and progressed rapidly, graduating from the Paris Conservatory



in 1966 with the first prizes in piano and chamber music. He then went on to study under the late Julius Katchen for three years and made his first record, a Liszt recital, for Decca in 1970 (SXL 6485). HFN/RR went along to meet Pascal Rogé at Broadcasting House on one of the first sunny days in February. He was over here for a fleeting visit, the main purpose of which was to make a Saturday afternoon personal appearance in Harrods' piano showroom. (He had been preceded by the Park Lane Group who had played an arrangement of Rossini's *Semiramide* Overture for 16 pianos, and also a piece by Douglas Leedy for nine players on one piano!)

How was the personal appearance, we asked? 'It went very well, it was more of a recital: I played Ravel's *Sonatine* and *Pavane pour une Infante defunte* and also some Liszt and Schubert. It was rather different from a normal concert ... for one thing, the audience were so close, almost on top of the piano. It was a little daunting at first but the music communicated very well ... I enjoyed it very much.' Mention of Ravel reminded us that there was a four-year gap after his first record, despite very favourable critical reviews, before the release of the first volume of Ravel piano music in November 1974. Why was there this delay? 'Katchen impressed upon me the necessity of doing something only when you feel you are ready for it. I was lucky that Decca went along with me and didn't press me to make records just because I was signed to them.' He went on, saying that the biggest thing he learnt from Katchen was the ability to view a work as a whole rather than first cutting it up into parts before reassembling it.

After the Liszt record, Rogé won both the Georges Enescu and Marguerite Long-Jacques Thibaud international competitions and concentrated on touring; then, in 1975, Decca released three records (SXL 6674, 6700 and 6715) of Rogé playing the complete Ravel piano

music to coincide with the centenary of the composer's birth. With that series and the release this month of César Franck's *Symphonic Variations* with Maazel and the Cleveland Orchestra, was there not a danger of being categorised as a French music specialist? 'Liszt wasn't French, was he? ... No, I don't think there is a danger ... but obviously being French, I think, does give me a greater understanding of the music of a French composer ... The Cleveland Orchestra is a great orchestra—it always amazes me how such an orchestra can come from such a place, all steel mills and furnaces. My next recording project is to record the complete piano music of Debussy—this is music I love—and the Saint-Saëns Concerto'.

As well as the Franck, Rogé has another release this month, Bartok's Second and Third Piano concertos with the LSO conducted by Walter Weller, following on his February release of the First Bartok concerto coupled with the Op 1 Rhapsody for Piano and Orchestra (SXL 6815), again with Weller and the LSO. It seems quite a step from Ravel and Debussy to the percussive style of Bartok. 'Well, the common factor is that they were all great pianists ... I love the music of Bartok ... the four works are spaced equally throughout his life [1904, 1926, 1931 and 1945] and by playing all of them you get an insight into Bartok's life and into his musical development. I would like to record the solo piano music, including the *Mikrokosmos* ... but unfortunately there are no plans for this—it probably wouldn't be a very commercial record.' Is he satisfied with his recorded output so far? 'I think so, it is very hard because you can always improve on what you have done in the past. You could spend your life making one record a year of just one work. Every record would be different, but unfortunately the only person who would buy the record would be yourself—not the way to keep record companies in business!'



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# Beethoven's Empire of the Mind

By John Crabbe\*



ASK the proverbial man in the street to name a 'great composer' and he will probably pick Beethoven. Indeed, in many cases this would be the *only* composer he could bring to mind.

Apart from Shakespeare. I can think of no other figure in Western culture who commands such supremacy and veneration in his own art, yet is known, at least by name, to a universal public. What is it, 150 years after his death, that still confers on Beethoven the mantle of a prophet, an artist with a perennial vital message for each new generation? Why does his music radiate such energy that it shines right across the romantic age to probe, even today, beyond the boundary of ordinary musical feelings? Why, when elated by the fifth symphony's exultation or absorbed in the questing mysteries of the late quartets or piano sonatas, do we feel the urge to wonder what Beethoven is *saying* or to ask what he *means*?

Similar questions are sometimes asked of new composers whose musical aims and idioms seem obscure, but Beethoven has been dead for two whole lifetimes and ordinary music-lovers have been familiar with his idiom for almost as long; yet still we sense an extra-musical 'something' behind the notes, an intense individual person striving with all his might to direct our attention, first to things of great human concern, then—in his last

\* Excerpts from a forthcoming book of the same title, to be partnered by a similar volume dealing with Hector Berlioz.

utterances—towards the transcendental. The very least that can be said is that he brought to music a passionate and visionary element, a sense of drama and struggle that was absolutely new. It has been emulated since, but never repeated on the same scale by any one man.

Paradoxically, I believe that Beethoven's very individuality contributes greatly to his universal appeal: his craggy turbulence; his love of nature; his contempt for authority and etiquette; an assertive will contrasted with humility before his God; a careless disregard of physical surroundings; a passionate desire to beg, borrow or steal fire from the gods in order to benefit mankind with his art; and, above all, strong feelings that we should

direct our attention to higher things, beyond the hurly-burly and chaos of the world. Despite the French revolution, in Beethoven's time that world was still largely ruled by princes of church and state; but he lived in a private 'empire of the mind', which he characteristically regarded as 'the highest of all spiritual and worldly monarchies'. And in that empire, music was placed at the apex: he declared that 'music is a higher revelation than all wisdom and philosophy'.

Such philosophy as Beethoven had was not of an intellectual kind. Like many self-educated men, he was inclined to dabble in the books that happened to be at hand, and his penchant for noting down impressive ethical phrases from any and every source suggests that he tended to regard literature as therapy for the soul rather than as enlightenment for the intellect. There is little evidence in his correspondence of an orderly mind able to grasp abstract concepts or evolve any sort of detached view of life—none of the clear-headed perceptiveness found in Mozart's letters, for instance. It was an *attitude* towards life that concerned Beethoven, a philosophy of feeling and striving more easily conveyed or evoked by music than by words. Thus while he seems to have made some attempt to read the philosopher Immanuel Kant, it is significant that the one passage he noted down as a sort of guiding aphorism was: 'The moral law within, the starry sky above'. This comes (in the reverse order) right near the end of Kant's *Critique of Practical Reason* and is far removed

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in spirit from the intricate arguments with which the philosopher had wrestled in order to save science, reason, moral freedom and God from the extremes of metaphysics and scepticism. But the quotation does have the sort of lofty and uplifting tone that Beethoven admired, and which he toiled so mightily to enshrine in his music.

Like Kant and Rousseau—each in his way resembling the composer as a product of the 18th century Enlightenment who also foreshadowed Romanticism—Beethoven distinguished sternly between morality and mores, between that which is right and that which is merely conventional. The distinction may seem tenuous in this relativistic age, but it was fundamental to Beethoven and played its part in shaping his art. This is not to say that his behaviour was always beyond reproach: in fact he was impossible to get on with, he did sometimes deceive his publishers (but helped massively to establish the composer's right to the fruits of his work), and when all is said and done he acted like an obsessive psychopath in the endless disputes about his nephew Karl. On the other hand, beneath the rugged exterior there was a warm, humane spirit inclining to easy forgiveness and frequently to great apologetic outpourings of regret and high-minded contrition. Ferdinand Ries said that 'on the whole he was a thoroughly good and kind man, on whom his moods and impetuosity played shabby tricks. He would have forgiven anybody, no matter how grievously he had injured him or whatever wrong he had done him, if he had found him in an unfortunate position'.

One outcome of the 'shabby tricks' was that Beethoven's best and most lasting friendships tended to be with people who kept their distance and communicated mainly by letter. He would pour his heart out to Franz Wegeler and Karl Amenda, friends rarely seen in person, while his other great friend Stephan von Breuning found that residence in Vienna led eventually to a break which lasted almost till the end of the composer's life. Similarly, his relationships with women tended to be either short-lived infatuations or Platonic friendships continued by letter. In some respects this tendency to give loyalty to Platonic, idealised people at the expense of imperfect but real human beings is part of the deeper, 'philosophic' Beethoven. We see this at play in *Fidelio*, where, paradoxically, humanity comes most vividly to life when people are used to exemplify abstract ideals: Leonora shines as a symbol of loving devotion, while the prisoners emerging for a brief glimpse of daylight represent the hope of liberty.

Although a boistrous, fun-loving man, forever coining puns ranging from the astute to the unmentionable, he disliked triviality in music, especially in relation to the Italian influence in opera. Thus despite a deep respect for Mozart he declared that he 'could not compose operas like *Don Giovanni* and *Figaro*; toward them I feel too great a repugnance. I could never have chosen such subjects; they are too frivolous'. On the other hand, a considerable element of slapstick frivolity failed to prevent great admiration for *The Magic Flute*, probably because its Masonic message of enlightenment and moral purification more nearly matched his own ethical notions. Vocal music, then, must have a

moral, as in *Fidelio*, while music in general should in his view be imbued with an element of daemonic fire, wrested from the gods in the manner of Prometheus.

In his ballet *The Creatures of Prometheus* Beethoven employs music to represent such a fire—a sort of holy flame with life-giving powers of knowledge and creativity. This early work has faded, but its music was used again in various guises, notably in the finale of the *Eroica Symphony*, where there may be more than a purely thematic connection between humanist epic and supernatural legend. It is certainly likely that for Beethoven, who greatly admired the heroes of ancient literature, the heroism of the incorruptible mythical Prometheus was as real as that of the all-too-human Bonaparte with whom the symphony is normally associated. Beethoven himself abandoned the latter connection with his famous destruction of the work's title page when Napoleon was crowned Emperor of the French in 1804: 'Now he, too, will trample on all the rights of man and indulge only his ambition. He will exalt himself above all others, become a tyrant'. On the other hand, when Napoleon took a crucial step towards dictatorship by becoming First Consul in 1799, it is said that Beethoven likened him to the great Roman consuls of old, whom he respected. Despite a continuing liberal thread and an occasional flash of radical fire, Beethoven's political position became steadily more hazy as time went on, but here already was a nice mixture of attitudes, for the supposed modern champion of liberty and republicanism was seen also as an ancient conquering hero and man of strength.

The inherited strength of property or social position and strength of character or moral position tended also to become confused in his mind. Thus he came eventually to acquiesce in a Viennese assumption that the Flemish *van* in his name (of which he had once been proud) was equivalent to the aristocratic *von*, and was devastated by his relegation to a lower court during litigation concerning his nephew: 'The common citizen should be excluded from higher men, and I have gotten amongst them... my nature shows that I do not belong among this plebian mass'. Shattered indeed were the ideals of the French revolution to which he had once subscribed. Of Liberty, Equality and Fraternity, only the first remained unscathed and worthy still of active pursuit. Fraternity he continued to accept as a subject for moral declarations about mankind, but found it difficult to practise in the real world of individual people. And equality had really always been for him no more than a claim that he, Beethoven, was at least equal to the greatest of men: to his patron Lichnowsky he said 'Prince, what you are you are by accident of birth; what I am, I am through my own efforts. There have been thousands of princes and will be thousands more; there is only one Beethoven!' The intention in an early declaration that his 'art will be exercised only for the benefit of the poor' was not carried out at a practical level (excepting a few charity concerts), yet similar sentiments are found in the finale of the ninth symphony, where the words of Schiller's *Ode to Joy* declare that all men are brothers and should rejoice together—an idea with a slightly political, not to say revolutionary,

flavour in Metternich's repressive Austria of the 1820s.

But whatever the ebb and flow of his politics, it was ideals of a more elevated kind—especially his ideals for the art of music—which formed the really vital thread running through his inner life. At first this idealism was simple and unbridled, as when youthful enthusiasm reacted to an early success with a determination not to be seduced by popular taste: 'Courage! Despite all the weaknesses of the body, my spirit shall rule.' Later, under the impact of deafness and in the mood of defiance found in the Heiligenstadt Testament, his ideal became more ruggedly heroic, making him ready to do battle with the toughest of personal fates—a stance perhaps most easily recognised musically in the third and fifth symphonies. Finally, in the manner of a gradual religious conversion he came to accept rather than oppose his fate, finding a new sort of freedom in the spiritual isolation to be detected in the last quartets: 'Submission—submission! Thus may we win something even in the deepest misery... Live in your art alone. Limited as you are now by your hearing, this is the only existence for you'.

The art for which Beethoven existed in this lonely fashion was seen by him as a very elevated, sacred thing: 'only art and science can raise men to the level of gods... The true artist has no pride. He sees unfortunately that art has no limits'. Various blends of aspiring heroism and mystical insight became in later decades a hallmark of the Romantic movement, and Beethoven, a pioneer of this new outlook as expressed in music, certainly regarded his art as a crucible of the spirit in which man and God might be blended to generate new hopes and visions, perhaps eventually even some sort of superman.

Because self-conscious Romanticism came later to music than to the other arts we are apt to forget that Beethoven's own generation was active in the flood-tide of a new culture. In Germany, Novalis, Schelling, Hegel and the Schlegels were all born within five years of Beethoven, as were Chateaubriand and Mme. de Staël in France, and Wordsworth, Coleridge, Scott and Turner in Britain. Thus the new spirit—an outlook compounded of yearnings for freedom, heightened individualism, devotion to dreams and passions, elevation of feeling as opposed to reason, reverence for the beauties of nature and imagined glories of a Gothic past, fondness of poetic symbolism, aspirations towards the 'infinite'—all this was in the intellectual air that Beethoven breathed and may be seen shining through at key points in his music. Vague influences, to be sure, but it was probably to some extent the very vagueness of romantic thought and poetry that appealed to Beethoven, for he could the more easily see reflected therein his own ill-formulated feelings of grandeur. At any rate, he felt a desperate need to express the new spirit, although the circumstances of his art made it too early for this expression to break the bounds of classical form in the manner of Berlioz and others in a later epoch.

Is this another key to his universality? Is Beethoven's greatness felt to be so pervasive simply because his passionate feelings in the presence of sweeping new ideas were ill-defined in the manner of ordinary people, yet

managed to find powerful expression within an essentially conservative framework comprehensible to the common man? Certainly it was the content, not the form, that was new in Beethoven, and that content has such an insistence and passion—and presses with such force against the boundaries of form—that even the superficially non-musical may be alerted to the power of a genius at work.

The sources of Beethoven's feelings about many non-personal matters may be traced back to his reading. His introduction to literature came through the ancient classics and German poets, read in a rather random fashion from books found in the homes of the Bonn aristocracy. Despite the informality of this first contact—or perhaps because of it—he retained an interest in literature and endeavoured throughout his life to study, or at least to peck at, a wide range of subjects. In 1809 he declared that 'there is hardly a treatise which could be too learned for me... from my childhood I have striven to understand what the better and wiser people of every age were driving at in their works. Shame on an artist who does not consider it his duty to achieve at least as much'. Exaggerated and boastful no doubt, but a number of acquaintances reported that his conversation would often range over a remarkably wide span of subjects—even if only to proclaim generalities. Very particularly, there was an ever-present willingness to discuss or read anything with a tone of spiritual uplift. Thus the personal library of 200–300 volumes left at his death had a general emphasis on poetical works and included a considerable number of religious and speculative books.

In addition to a well-thumbed trinity of Plutarch, Plato and Homer, he was acquainted with Horace, Pliny, Ovid, Cicero, Euripides, Aristotle and other ancients, and to Ossian, in the writings misleadingly ascribed to that ancient Celt by the Scot James Macpherson. Some favoured names among his literary contemporaries were Goethe, Schiller, Klopstock, Matthisson, Wieland, Tiedge and Seume, whose writings reflect in various ways the strands of moral aspiration, nature-worship, thirst for freedom, and vague religious feelings that seem to have comprised the serious part of Beethoven's non-musical inner life. He also admired Milton and greatly loved Shakespeare.

An almost Shakespearean diversity of sources and facets contributed to his idea of God, although in one respect his religious outlook had a commonsense directness, in that he usually regarded the deity as a very personal and approachable being, needing no intermediary of any sort—be it church, priest or saint. In prayer-like utterances he invariably addressed himself directly to God, nearly always humbly and with proper piety, but without ritual and never—as far as we know—in a church. Though nominally a Catholic, he disliked the dry 'civil service' religion that had evolved in the Austrian church and glanced with occasional sympathy at various ethical reforming movements. In this sense he was temperamentally a child of Pietism, a wing of German Protestantism concerned very much with private religious illumination rather than precise dogmas or ecclesiastical institutions.

Sincerity of personal conviction within a

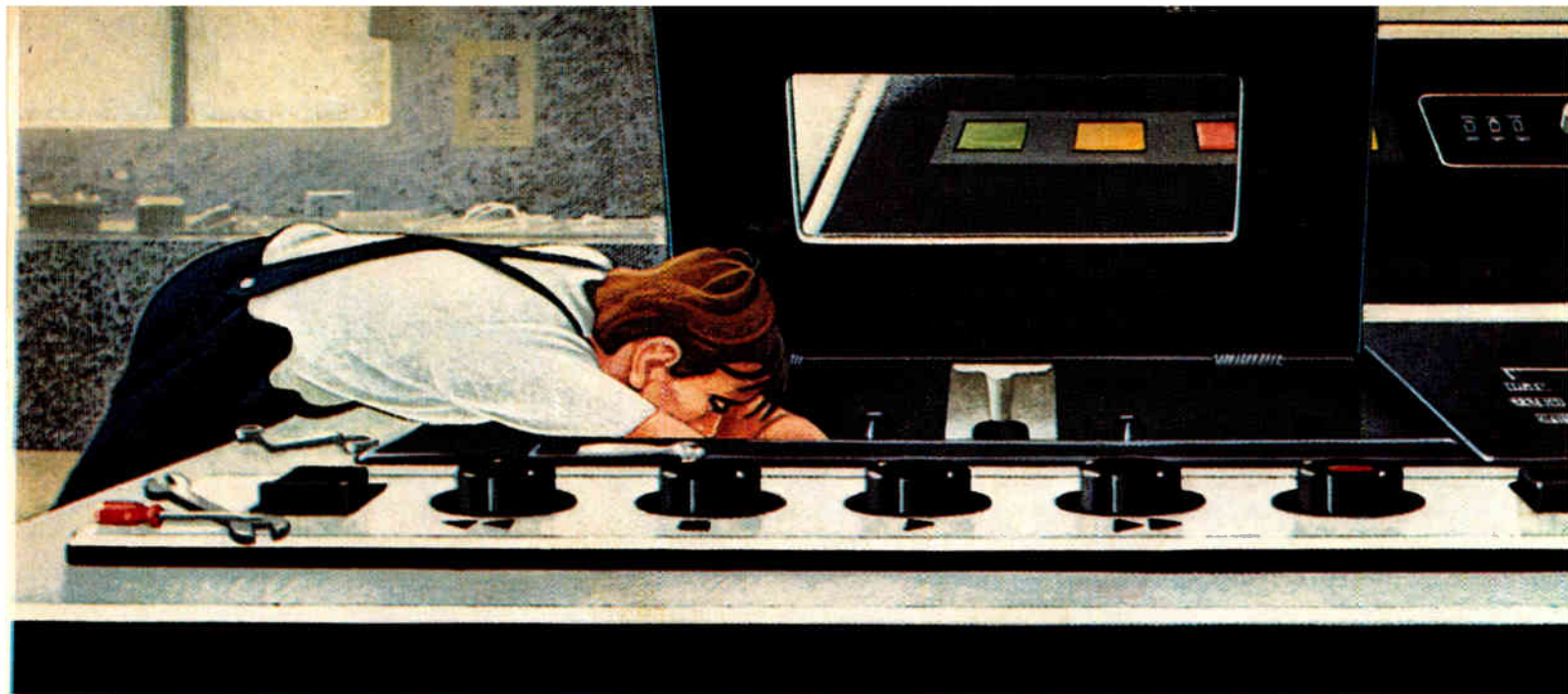
generally Christian scheme of values led Beethoven to direct that both of his Masses could and should be performed with German texts in Protestant churches as well as in the traditional Roman fashion. But in the *Missa Solemnis*, music and God were enmeshed in such a tumultuous, impassioned yet monumental union, so massive is the composer's apparent commitment in this work, and so terrifyingly intense were some of the creative episodes during its composition, that we must accede to a 'temporary suspension of disbelief' in Catholic dogma during its performance—as perhaps did the composer during its creation. But composition of the Mass did overlap with that of the *Choral Symphony*, and these two craggy peaks may be seen as complementary, sitting back-to-back at a spiritual mountain pass across which Beethoven clambered and groped into his final state of isolated resignation. The symphony was a final summing-up of a whole world of thoughts about man and his destiny which had flitted hither and thither across Beethoven's mind for a lifetime. The Mass, on the other hand, is not so much a summing-up of past ideas as a projection into tangible form of a continuing, deeply felt quest for spiritual comfort—a quest to be pursued more intimately in the late quartets.

In religion as in politics, Beethoven has been claimed as the champion of many factions—sometimes with much plausibility—or reluctantly rejected as an enemy after much heart-searching. However, it seems to me that there is a measure of truth in all contentions, that despite intellectual and theological inconsistencies, Beethoven's *feelings* could allow him to be a neo-Protestant non-conformist, a delver into Eastern religions, something of a nature-worshipping pantheist, in some ways even an anti-clerical rationalist, yet remain a man who could slave to produce some of his most powerful music for the Latin Mass. But Beethoven's dominant personal *Credo* really concerned the notion of a divine creative element incarnate within man himself. He spoke of 'we finite beings, who are the embodiment of an infinite spirit', and said, anticipating death, 'I must leave behind me what the Eternal Spirit has infused into my soul and bids me complete'.

This was the essence of Beethoven's mind and spirit. He believed himself to be in some fashion the prophet of an ill-defined but strongly felt revelation: an insight deeply concerned with music, which he regarded as its highest expression, but also involving the whole realm of spiritual things and, for men, the profound importance of freedom. He saw freedom in the Kantian sense as the necessary precondition for goodness and creativity, and to some extent this was reflected in the political Beethoven, who preached the ideal of liberty.

The revelation and the ideal are still there, distilled in his music, to be felt afresh by each new generation. As Franz Grillparzer declared in his funeral oration just 150 years ago\*, 'You have not lost him, you have won him... thus he will live to the end of time'. ●

\* Beethoven died on 26th March 1827, and the funeral was on 29th March.



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World Radio History



## Music on Record

**Christopher Breunig looks at a wide range of recommended Beethoven recordings**

**M**Y FIRST records, bought twenty-one years ago, were Beethoven's *Eroica*, his G-major concerto, and two late sonatas played by Gieseeking. For years the proportion of Beethoven I collected was about four records in ten, and even today I suspect that if pressed I would admit that listening to other composers is somehow peripheral. (The precipitate deletion of the *Archiv Bach Edition* suggests that my preference is not that singular!)

The catalogues too reflect the challenge to musicians that Beethoven presents: not just in popular works like the *Moonlight* (24 versions), the fifth symphony (27), or *Emperor* (26). We have had 12 LP versions of the *Missa Solemnis*, and I can recount twenty complete sets of the symphonies since Weingartner's. Karajan and Walter have each recorded two sets; Rubinstein made three sets of the piano concertos in stereo; Kempff has recorded the 32 piano sonatas three times. And of course Barenboim had taped all the concertos, trios, and sonatas very early in his recording career with EMI—going on to conduct the LPO in the five concertos for RCA, and directing the English Chamber Orchestra from the keyboard in the only decent recording we have had of Beethoven's transcription of Op. 61 (Deutsche Grammophon).

Competition in boxed sets of the nine symphonies is such that one can choose East German, or American orchestras, alternative cycles by the Philharmonia and Vienna Philharmonic Orchestras, readings with every conceivable repeat (Solti) or repeats cut, quadraphonic recordings, or plain mono. Notwithstanding this, or because of it, readers often write in to ask us for guidance. But just as there is no 'definitive' *Eroica*, there is no clear first choice. My own current preference would be Haitink's sanely considered performances, reviewed in January (Philips 6747 307) [A\*/B: 1\*/2], or for someone patient with the slow tempi, Klemperer's Philharmonia series made between 1958–62 (HMV SLS788, includes overtures) [B: 1(\*)/2] certainly provides a basic compendium—discounting at about £9.95—which can be supplemented with contrasting approaches.

Indeed, assembling a collection of different interpretations is preferable to bulk buying, although nowadays it is the more expensive way. For there are several indispensable single LPs, such as Kleiber's *fifth* (DG 2530 526) [A/B: 1\*] and *seventh* (2530 706) [A/B: 1\*], Böhm's *Pastoral* (2530 142) [A: 1\*]—all VPO—the original Klemperer/Philharmonia *Fidelio* overtures, and symphonies 3, 5, 7, together with the *Grosse Fuge* arr. for strings (HMV SLS873 T) [B: 1\*]; historic



recordings of the *Eroica* and *Choral* by Furtwängler (Unicorn M) and by Toscanini; Erich Kleiber's 1959 *Eroica*, with repeat (Eclipse). Then there are symphony performances of special, even controversial sensibility: Jochum's Beethoven on Heliodor (1, 2, 4, 5, 8); the St Martin's *fourth* (Philips 9500 033) [A: 1\*]; Furtwängler's VPO *Pastoral* (Unicorn WFS9 M) [B/C: 1\*]. Matching Klemperer in integrity, with seeming disregard for orchestral polish, Colin Davis' *fourth* (BBC SO) and *seventh* (LSO) are outstanding in a Philips series (9500 032 & 219) [B: 1], [A: 1]. As suggested last month, Davis, still with full repeats, provides the alternative to C. Kleiber, whose stark intensity and swift speeds have proved unacceptable to some collectors of the A-major.

It is now fashionable to look for a *ninth* with full scherzo repeats: i.e. Klemperer, Dorati, Ozawa, Solti (Haitink too). In spite of initial acclaim, Solti's does not wear too well, especially its laboured slow movement (Decca 6BB121-2)—I would rate this [A: 1], whereas Ozawa's freshening account merits a star for recording (Philips 6747 119) [A\*: 1]. The noble Giulini/LSO reading is coupled with a less distinguished *eighth* (HMV SLS841) [A: 1\*/1(2)], but along with the Bayreuth recording by Furtwängler (Electrola import) is probably the one I would choose. If the side-break is acceptable, then Schmidt-Isserstedt's—unfortunately dubbed a '*ninth* for everyday use'—single-disc version remains a warmly attractive account. (Decca SXL 6233) [A: 1].

Klemperer's rugged *Missa Solemnis* conveys best the composer's spiritual and aesthetic struggles (HMV SLS922) [B: 1\*], but Karajan's distantly-balanced DG offers a contrasting approach, is beautifully sung, and has a price advantage (2727 048) [A: 1\*] over his more recent HMV, where his conception has advanced a further stage (SLS979) [A\*/B: 1\*]. The work is the logical purchase when the *Choral* symphony no longer seems daunting.

It is not unreasonable to get the five piano concertos as a set. Ten such are listed, and those by Bishop-Kovacevich/Davis (Philips 6747 104) [A/B: 1\*] and Kempff (DG) [B: 1/1\*] are the most desirable; Kempff, however, does not play Beethoven's cadenzas. (DG are reissuing their massive *Beethoven Edition*, so certain sets may have revised numberings.) Ashkenazy provides a developing style through the cycle, although some find Solti's accompaniments unidiomatic, and the heavy bass in the Chicago productions (Decca) is unmusical on certain stereo systems. The bargain box by Gulda, who plays a Bösendorfer instrument, is memorable and individual (Decca SDDE304-7) [A: 1/2].

Arrau's Concertgebouw cycle with Haitink (*Universo*) offers an opportunity for gradual acquisition of the five [B: 1]. Recently DG released a live Arrau/Bernstein account of the G major, part of a double-album which would suit a basic collection (2721 153) [A/A\*: 1\*]. Pollini's new *fourth* has the less familiar Beethoven cadenza in the first movement. Böhm's accompaniment

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with the VPO was, I thought, disappointingly engineered, for so lavishly spread a recording. I am glad to report that current German pressings are from a recut, at a higher level, with a marginal sharpening of definition. Now rated [A/B: 1\*], musically this fourth is of the highest distinction. Other single discs of interest are Curzon's elderly Emperor (Decca SPA334) [B/C: 1\*], Annie Fischer's *Heliodor* C-minor, a strongly personal reading accompanied by compatriot Fricsoy (2548 238) [B: 1(\*)], and Barenboim's B-flat, with the *Choral Fantasia* under Klemperer (ASD 2608) [A: 1].

The *Triple concerto* with its polonaise finale and brief *largo* is one of Beethoven's most intriguing works. It is most perceptively analysed by the late Deryck Cooke in the folder-sleeve of HMV's de-luxe version with Karajan, Oistrakh, Richter, and Rostropovich (ASD2582) [A/B: 1]. An even more striking performance, the Serkin/Marlboro, long-deleted, has been reinstated by CBS (61663) [B/C: 1\*]. There's a new Philips, due from Haitink and the Beaux Arts Trio, so it may be worth deferring.

The Violin Concerto was finely done by Grumiaux and Galliera, and not all critics found the remake with Davis/Concertgebouw as satisfactory; even so it is probably the best recommendation (Philips 6500 775) [A: 1]. Suk (HMV) uses odd cadenzas, but Boult's accompaniment is excellent, and the disc includes a superlative *Coriolan* overture (ASD 2667) [A: 1 (1\*)]; Schneiderhan uses transpositions of Beethoven's cadenza composed for the piano transcription. He is partnered by Jochum (DG 135 081) [A\*: 1]. Szeryng is finely accompanied by Haitink (Philips), but I cannot enthuse over the cheaper Universo alternative by Krebbers and the Concertgebouw. Issac Stern's remake (CBS) is not recommended.

Beethoven enthusiasts tend to divide into those who play the piano, and thus have absorbed the works for that instrument, and those who prefer to trace the composer's development via the string quartets. Philips have put together the outstanding, and patiently awaited, Quartetto Italiano recordings, that ran from 1968 until 1976, when their Op. 18 finally appeared. This 10-LP box, impeccably pressed in Holland, discounts at around £19 (6747 272) [A\*: 1/1\*]. The discs are separately available, with the Rasoumovsky packaged as 6747 139 (rrp. £4.95). Playing and recording are superior to the Hungarians' (EMI), or Amadeus' (DG), whose Op. 18 makes the best of their three *Privilege* albums (2733 002) [A: 1]. The inimitable LaSalle have so far done Op. 132 and Op. 130 with the *Grosse fuge* (the later finale is omitted altogether): two impressive DG issues, superbly engineered (2530 728 & 351) [A\*: 1\*]. Incidentally, the cellist has now changed. Highly regarded in some quarters, and considered dedicated and self-effacing are the Vegh Quartet (three Telefunken albums). The recorded sound is somewhat cavernous and depressing, and breathing noises from the leader are certainly disturbing. Minor intonation problems are also apparent, but once attuned to these performances it is quite likely that you



Balt's famous drawing of Beethoven (OUP)

will view them as a modern counterpart to the classic Busch quartets. In mono only, of course, Op. 59, 95, 127, 130, 131, 132, 135 are available in one CBS and two World Records albums.

An item for any basic collection is the Op. 20 Septet. An instant reassurance that chamber music is not necessarily off-putting. Since 1960 the Vienna Octet (?) version has stood without peer, although technically it has been bettered (Decca SDD200) [B/C: 1\*]. Perhaps the new Vienna recording from DG (see reviews) will provoke a reduction in cost. A satisfying Berlin group disc (Philips) seems to have suffered deletion; none of the remaining listed recordings is worthwhile. More 'easy' listening is offered by the Grumiaux Trio coupling of the Serenade Op. 8 and Op. 25 (strings with flute) (Philips 6500 167) [A: 1]; the complete box of string trios by the Trio Italiano D'Archi (DG 2733 004) [A\*: 1\*] offers endless pleasure with such accomplished playing so realistically balanced. Both Decca versions of the Piano and wind quintet are enjoyable: Ashkenazy's is coupled with Mozart (SXL6252) [A: 1\*], the cheaper alternative with Spohr (SDD256) [B: 1].

The cello sonatas have always been lucky on records: two historic discs by Casals and Serkin (CBS 78291 (x)) [D: H] show the pianist in fine form, shepherding his colleague and friend in the five sonatas. Kempff and Fournier included the Variations as well: live recital recordings on DG. Live from Edinburgh's 1970 Festival, the tapes on HMV by Du Pré and Barenboim were engineered by the BBC (SLS5042). Both these sets, rated [A: 1(\*)], make the case for more of such material, spontaneous and compelling, to be available on disc. The violin sonatas have been less fortunate, but now three discs are released in a progressing cycle made by Perlman and Ashkenazy, vital, musicianly, and affectionate in response to Beethoven's ideas, and technically beyond reproach. Sonatas 2 & 9, 4 & 5, 3 & 8, are on SXL 6632, 6736, 6789 [A\*: 1\*].

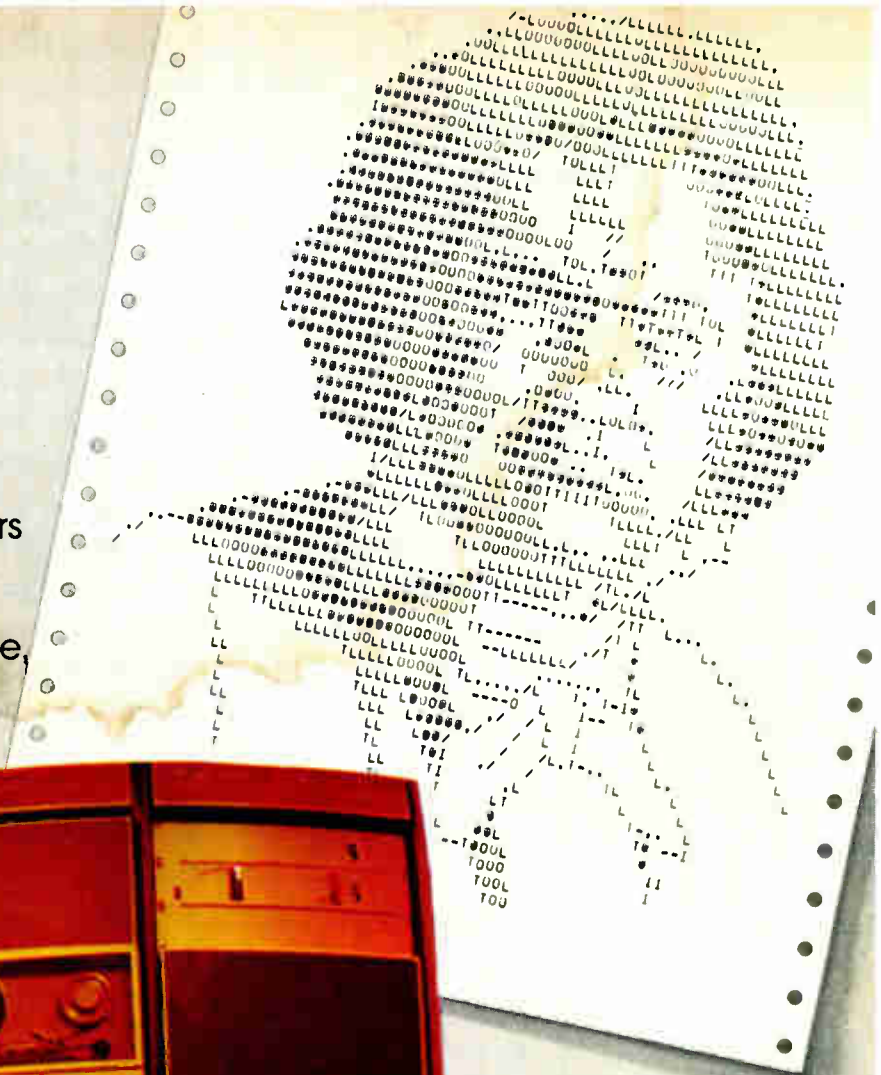
The sonatas for piano solo epitomise Beethoven's maturity, from a virtuoso idolised by the Vienna art patrons to a philosopher, wrestling with forms and content, setting on paper ideas that give us

a glimpse into sublime areas. Artur Schnabel pioneered the recording of these scores (HMV), but his work remains in the archives—why?—leaving RCA to represent him in a solitary coupling of Op. 109 and 111 (SMA7013 x) [H: 1\*]. LP transfers of the original Society recordings are available from import specialists. Schnabel's successor, Wilhelm Kempff is at best in the lyrical works, and his approach to tempi is idiosyncratic. Arrau is more soul-searching, less magical and inspirational. Their cycles (DG & Philips) are complementary; the DG recordings are shallow, the Philips vary, but at best yield demonstration-worthy sounds, albeit with high hiss levels. Barenboim's youthful cycle (HMV) is a bargain at about £10 discount, and is at times astonishingly mature, elsewhere impulsively drawn towards details. Individual records of note are by Gilels, in the *Waldstein* and Op. 101 (DG 2530 253) [A: 1\*], Ashkenazy in the two early sonatas Op. 2: 2 and 3, and in *Les Adieux*, the *Pathétique*, and the *Waldstein* (SXL6706) [A: 1/1\*], Bishop-Kovacevich in Op. 110, 111 (Philips 6500 764) [A\*: 1\*], Arrau in the *Appassionata*, *Moonlight* and *Pathétique* (Universo 6599 308) [A/B: 1\*/2]. Gulda's intelligence and superlative technique make for cool but rewarding listening (various *Eclipse* discs)—Op. 31: 3 deserves specific mention (ECS725) [B/C: 1].

Finally, in the theatre music there is Szell's *Egmont* disc with Lorengar/VPO (SXL6465) [A\*: 1\*], one of the few remaining examples of Szell's Beethoven on records. But once more we suggest that Decca excerpt the music from the aggressive narration and declamations of Klausjürgen Wussow! Klemperer's *Fidelio* is surely the one to have, (HMV SLS5006) [A: 1\*], remastered and improved, massive but glowing. Mehta's *Prometheus* ballet, with slight cuts, sounds well on some stereo equipment, less good on others (Israel Philharmonic/Decca); the Utah/Abraham is still listed on VSD71124: it is idiomatic, and cleanly recorded [A: 1]. Beethoven in relaxed mood can be heard in records by Boskovsky (Decca), Melkus (Archiv); recounting *Wellington's Victory* (Karajan/DG); or in wind trifles (Brymer/Decca)—even *Rage over a lost Penny* (Kempff: DG 138 934 [A\*: 1\*] a wonderful piano miscellany). ●

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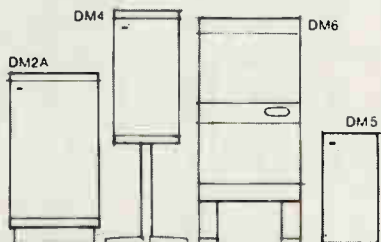
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# Record Reviews

## An Operatic Double

Reviewed by Peter Gammond

### OFFENBACH: 'La Grande Duchesse de Gérolstein'

Régine Crespin | Alain Vanzo | Charles Burles | Claude Meloni | Robert Massard | François Loup | Tibert Raffali | Mady Mesplie | Chorus (CM: Guy Lhomme) and Orchestra Capitole de Toulouse | Plasson  
CBS 79207 (2 records) (£6.29)

I can hardly over-emphasise my personal welcome of this record. Without question, Offenbach is one of the most seriously neglected of the world's well-known composers—which may sound a bit of a contradiction. He wrote over a hundred stage works and even if we grant that only about ten of them are worthy of regular revival (and I don't) then we must grant that, in the case of English theatre productions, they are

sadly mauled as very few other composer's works are and, in the case of records, poorly represented. Apart from *Tales of Hoffmann*, none has a complete recording available and even the couple of highlights discs available are in English. So the overdue appearance of a first-rate French recording of *La Grande Duchesse*, in commercial terms his most successful work of all, first performed in 1867, is a great occasion. We have had to rely for far too long on scratchy old monos from the early LP days.

The role of Grand Duchess was inextricably connected with the legendary name of Hortense

Schneider who captivated the hearts of the crowned and uncrowned heads of Europe alike; the toast of Paris and a fêted visitor to London. After the delights of 'Prima Donna in Paris' (Decca SET520/1) there could be little doubt that Régine Crespin was the natural heir to Schneider. It was almost too much to expect that she would actually be allowed to assume the mantle—but now it has happened and there is absolutely no cause for disappointment. She has just the right regal, self-important, maturely attractive quality and the ability to sing with both virtuosity and humour—a rare attribute. Ably supported by an excellent

cast of natives and conducted with unflagging spirit and verve by Michel Plasson (who had a triumphant Paris Opéra debut with *Faust* and is hailed as 'a great French conductor of the new generation'); it also has the benefit of a lively recording quality, perhaps not as theatrically real as would have been ideal, more a good studio sound, but fresh, full and clear; and the music has its own inbuilt theatrical qualities in Offenbach's score, and splendid songs like 'Voici le sabre', 'Ah, que j'aime les militaires' and 'Piff-paff-pouf'. A first-rate offering in every way; heartfelt thanks to CBS for this gracious gift. [A: 1/1\*]

### NICOLAI: 'Die lustigen Weiber von Windsor'

Helen Donath | Edith Mathis | Hanna Schwarz | Kurt Moll | Peter Schreier | Siegfried Vogel | Bernd Weikl | German State Opera Chorus (CM: Christian Weber) | Staatskapelle, Berlin | Klee  
DG 2740 159 (3 records) (£8.00)

The music is ever friendly, in opera-comique style, and the score contains several well-known melodies heard in its popular overture, the wonderful duet (No. 6) between Falstaff and Ford, and the famous 'Horch, die Lerche singt'. The score, as a whole, has the virtue of never being dull and always on the move. In the context of 1849, when it was first produced in Berlin, it is a remarkably fresh work, less hampered by tradition than, say, *Marta* or *The Bohemian Girl*. It has always been among my

favourites. My liking has long been satisfied by the excellent 1963 HMV recording (ASD580/1) which has been worn thin by constant repetition both at home and in gramophone recitals. By virtue of some small cuts and compressions it was got onto two discs. So this new issue may seem extravagant on three. Yet four of the sides are well over twenty-five minutes, two are under twenty, so it does not appear greatly padded out. The linking aid of a narrator is added, all cuts are restored and we have a nice, spacious recording and logical scenic turnovers. The sound is of a pleasant, natural and theatrical-sounding quality.

With such a famine of *Merry Wives* there is little point in pitting this new recording against the old classic mentioned above;

I can see no real case for one against the other. Those who have lived with the old recording are surely ready for the treat of a new one and will, in any case, welcome the chance to have the full opera in a modern recording. I shall certainly not sever the allegiance to the old recording which was not only excellent and warm in quality, but had a wonderful Falstaff in Gottlob Frick, the right sort of rich, plummy character, a nice touch of Fritz Wunderlich as Fenton, and a younger Edith Mathis as Ann Page—now matured into a Mistress Ford.

I think, in fact, that Frick and Gutstein were more roundly comical as Falstaff and Ford than the rather more dignified Kurt Moll and Bernd Weikl in the new performance, but there is little to choose in singing ability. Peter

Schreier is an excellent Fenton and I don't think that Helen Donath loses any points to the young Mathis. The older recording has certainly more character about it, simply because it has a rosier, more romantic outlook. Today, and even a gap of fourteen years or so emphasises it, we are both purer and more cynical in our recordings. It applies to Nicolai as much as to Bach and Haydn. The new recording is all technical excellence but the old one quite simply seems warmer to me; or is that my vintage showing? The new recording is welcome because it has come and will offer a new chance to new listeners to taste the delights of Nicolai's spieloper in a good modern recording with a good all round accomplished performance. [A: 1]

### RECORD RATINGS

Record Ratings are designed to summarise our critics' findings, but should preferably be noted in conjunction with the full reports—and taken as a guide only.

Recording	Performance
A	Very Good 1
B	Good 2
C	Moderate 3
D	Poor 4
H	Historical (pre-LP) H (or 1, 2, 3, 4 as appropriate)

Occasionally a record may be worthy of special mention, taking it beyond the 'very good' bracket. In such superlative cases a star is added to the letter or figure as appropriate: e.g. B: 1\*, A\*: 2 or (exceptionally) A\*: 1\*. © Hi-Fi News & Record Review.

### INFORMATION

#### STEREO, MONO, QUADRAPHONIC and STEREO TRANSCRIPTION

Any record reviewed in this magazine may be assumed to be stereophonic unless its number is accompanied by:

M (monophonic)

T (stereo transcription)

Ⓞ (quadraphonic: stereo compatible)

R refers to a U.K. reissue

Cassettes are Dolby unless otherwise stated.

### RECORD FAULTS

'Recording' ratings should be taken to refer to recorded quality, but do not take account of individual pressing faults encountered with our test samples. Readers may assume that a certain proportion of such variable faults might occur among commercial pressings.

### PRICES

We do our best to ensure that prices given are correct, but we cannot always guarantee accuracy, since price rises are too frequent and often arrive just as we go to press.

# Best of the Month

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## **ALWYN: Symphony 1** LPO / Alwyn Lyrita SRCS 86 (£3.46)

Symphony 1 was completed in 1949, when Alwyn was in his mid-forties, and a part of its fascination—for me, at least—is the way it combines an immense orchestral expertise, gained largely in writing for films, with an eagerness in taking up the symphonic challenge. There is real symphonism here; the scherzo makes a particularly strong impression, followed closely by the finale, which Alwyn describes as his most extravert piece. Fascinating, too, is the background presence of 'those composers I revered'—mainly Elgar, and occasionally Scriabin. Not that this music lacks a personality of its own; my finding is that its individual qualities seem stronger, not weaker, with repeated listening. The composer gets some excellent playing from the LPO, though once or twice there are signs of insufficient acquaintance with the work. The recording is superb, wonderfully firm and round with a splendid presence, a most satisfying perspective and natural dynamics. Where appropriate, individual parts have great clarity—for instance, the cellos and double-basses early in the slow movement—but there is never any distortion of the musical balance. Warmly recommended. The sleeve-note is by Alwyn himself. [A\*: 1]

Hugh Ottaway

## **MAURICE ANDRÉ TRUMPET RECITAL**

Works by Albinoni, Stölzel, Clarke, Purcell, Vivaldi and Telemann  
Maurice André (lpt) / Wind Ensemble / String Orchestra / Birbaum  
Philips 'Universo' 6581 018 (£1.99)

Over-familiar perhaps are Purcell's *Trumpet Tune* and Jeremiah Clarke's *Trumpet Voluntary* (once thought to be by Purcell) on which André is accompanied by an anonymous wind ensemble conducted by Armand Birbaum; more intriguing, however, is an arrangement for trumpet and six clarinets, of Albinoni's 'St Mark's Concerto', originally written for violin and continuo. 'Why clarinets?', I wondered, as Albinoni certainly wouldn't have been familiar with a clarinet consort, and it is hard to dispel the illusion that the backing is provided by synthesisers—plummy buzzings indeed! Another work originally for violin, but here transcribed for trumpet, is one of the many Vivaldi violin concertos. This works surprisingly well, and André's playing sparkles. His lyrical phrasing is suitably authentic and has a pleasing warm quality—a little too warm in Telemann's *Divertissement* for Two Trumpets and Strings, where a faint *marachi* vision is conjured up—I'm reasonably sure that Telemann wasn't a habitual visitor to Acapulco!

In these latter two works, and also in a suite of dances from Henry Purcell's operas and a concerto by Bach contemporary Stölzel, André is accompanied by a small string orchestra, again conducted by Birbaum. Unfortunately, their intonation is not always all it should be and their ensemble is occasionally a little ragged, possibly due to the fact that there is no keyboard continuo used. A shame that André's mastery of the tiny D trumpet is not matched by the quality of the strings. The strings, however, are not helped by the sound quality on this 1970 French recording which, although the trumpet sounds realistic, has a dry-sounding orchestra set in a reverberant acoustic—an odd mix which perhaps leads to the impression of raggedness. [C: 1/3]

John Atkinson

## **J. S. BACH: Sonatas for violin and clavier, BWV 1014-19**

Jaime Laredo (vln) / Glenn Gould (pno)  
CBS 79209 (2 records) (£6.29)

The Bolivian violin virtuoso Jaime Laredo effectively belongs to the performing generation of Perlman and Zukerman, yet his tonal warmth and his cleanness of line bring to mind Stern and Menuhin at their best. However, Bach's Sonatas with obligato clavier are—as has frequently been made apparent—no easy gamble, even for artists of world class. In the event, Laredo actually plays rather variably, with some beautifully controlled and projected cantabile lines, but also with crude and awkward-sounding playing in the more demanding rapid movements. One is led to question the circumstances of the original taping of the work: were the artists hurried? Has Laredo heard his playing? Was he satisfied with all of it? There can be no doubt that some of it is breathtakingly musical: equally, there are readily apparent shortcomings.

Glenn Gould's accompaniments are scrupulously tidy. They are, however, phrased in a particularly detached way, so that they achieve maximum contrast with the violin style, which is far more melodic. One effect of this is that the listener's attention is throughout focused on the piano material; most violinists would not approve of such a duet-partner. Glenn Gould's playing is, as we have come to expect, full of light and shade, strongly characterised, sparkling; however, it is also marred by the customary inadequacies—a misunderstanding of the essentials of ornament-playing, audible singing during the performances, occasional slips in hurried materials. Apart from the failure to eradicate Gould's vocal contributions, the engineers have done a good job. [A: 1/3]

Stephen Daw

**J. S. BACH: The Well-Tempered Clavier: excerpts**  
BWV 846, 847, 848, 850, 851, 852, 853, 860, 861, 862, 866, 867  
Wilhelm Kempff (pno)  
DG 2530 807 (£3.59)

Not many established pianists play Bach's '48'. Some consider the works ill-suited to the piano (although Bach himself did, we now know, own an early piano towards the close of his life). Some fail to appreciate the special technical and interpretative challenges, no doubt. Some do . . . and opt to avoid them.

We should therefore welcome Wilhelm Kempff's venture into this new, if familiar, field: it is even something of a rare event for an artist of his achievement and stature to take such a plunge. Unfortunately, the results are not altogether successful. First, his technique seems at times to be placed under strain—especially, his left-hand melodic playing often sounds heavily overweight, even clumsy; possibly the rather resonant acoustical circumstances favoured by DG don't help, but since the music sounds better balanced for much of the time, the blame for a number of lapses in this respect must rest on the performer. Second, Kempff's interpretations are rather solid and unimaginative for my taste: the most effective movement is probably the E flat minor Fugue, where he plays the music in a very 'straight', lyrical way, but even this is marred by some ungratifying tone during a widely-spaced passage towards the climax of the whole. Even more surprisingly, he fails to bring out the poetic frailty of the same fugue's famous Prelude (which he himself has described in the cover notes as 'a lamento of the most moving kind!')—it sounds curiously uninvolved.

There are some poetic moments within the music which are underlined by the veteran pianist's clearly sincere affection: but much the same can often be said of a performance that is, in whole, less than satisfactory. Despite distractingly poor recording, Maurice Cole on *Saga* would still be my first choice in this genre. [B: 2]

Stephen Daw

## **J. S. BACH: Toccata in C (BWV 564) □ Fantasia in G (BWV 572) □ Sonata 1 in E♭ (BWV 525) □ Passacaglia in c (BWV 582)**

Gillian Weir (organ of St. Laurence's, Rotterdam)  
Argo ZK10 (£2.50)

There is a specially tidy and neat rhythmic quality about Gillian Weir's playing, which gives a very pleasing sense of intention precisely achieved. Her preferences as a recording artiste have generally been inclined towards French music, so that the first side, which features Bach playing with musical structure and expression in a particularly daring—but also absorbent—manner, might be said to suit her particularly well: this is cosmopolitan Bach. On the other hand, the more mature and concentrated styles featured on Side Two actually struck me as slightly better represented, even though I found her large-organ registration-effects somewhat distracting in the great *Passacaglia*.

Possibly everything is just a little *too* tidy, and the rhythms are treated too strictly, the pace too unyielding, the lines without subjective affection. This is partly a matter of taste, and certainly the catalogue contains many bad organ records whose greatest faults lie at opposite extremes. The recording sounds rather remote and resonant for

Argo. I just wish that this really talented and world-beating performer could give to Bach the apparent immediacy and involvement that I associate with her devastating Camallieri 'Missa Mundi'. In the meantime, there are many aspects of performance here that the majority of organists might dream of, but never attain. [A/B: 1] *Stephen Daw*

**J. S. BACH: Cantatas for Easter: BWV 1, 4, 6, 12, 23, 67, 87, 92, 104, 108, 126, 158, 182**  
Mathis | Reynolds | Töpper | Schrier | Haefliger | Fischer-Dieskau | Adam | Munich Bach Choir and Bach Orchestra | Richter  
DG Archiv 2722 022 (6 records) (£15-00), some R

This volume does not quite belong to the 'Déja Vu' column, as cantatas 92, 108 and 126 have not, as far as I can see, been issued here before by Archiv. BWV 126 is remarkable for its sustained drive; if ever the 'murderous intents of papists and infidels' could be thwarted by mere music, this is the work to do it. And how extraordinarily operatic are the recitatives and arias. This is Richter's sort of music; whatever the rights and wrongs of style there is no denying the impact of the performance. BWV 108, on the other hand, is a comparatively intimate work, and it includes one of Bach's loveliest arias, 'Was mein Herz von dir begehrt', movingly sung by Hertha Töpper, and sensitively accompanied by the Munich strings. A pity though that the engineers placed the microphones inside Ernst Haefliger's mouth—the effect is analogous to reading a score through a microscope, every slight imperfection of the print standing out on the page. BWV 92 is the most substantial in length of the three, a nine-section cantata largely based upon the words and melody of a 17th century Lutheran hymn. This, like BWV 126, contains some fiery operatic music, notably the tenor aria 'Seht, seht, wie bricht, wie reißt', sung with blood and guts conviction by the admirable Peter Schreier. As has been pointed out in reviews of the other cantatas in this volume [see reviews of August '69, December '75 and January '77] Richter secures fully professional standards from his instrumentalists and soloists, and his choir, if a trifle breathy and sharp, is by no means out of place in such company. He is not overconcerned however with matters of style, any more than the engineers are concerned to present an honest (if less glossy) perspective. For the latter reason, the recording can rate no more than a B. [B:1/2] *Peter le Huray*

**BALAKIREV: Piano concerto in f# 'Youth' / MEDTNER: Piano concerto 1**  
Igor Zhukov (pno) | Moscow Radio SO | Dmitriev  
HMV ASD3339 (£3-50)

Medtner was the last of the nineteenth-century pianist-composers, a rhetorician in the grand manner, and although his music is not without individuality, it is with manner rather than substance that the listener is left. The Piano concerto 1 contains a lot of pleasing music, but there is something hollow and pretentious about the total effect. Still, those unfamiliar with Medtner might well like to sample this vigorous and enthusiastic performance. The Balakirev, too, is both little known and well played. In effect a tone-poem in concerto form, this is an attractive, well-balanced work, and the recording is very good Melodiya, for the most part of A quality. The Medtner comes across less successfully; it seems more resonant and is certainly less

clear; B, falling to C in a couple of places where the piano seems to recede into the middle distance. [A/B/C: 1] *Hugh Ottaway*

**BARTOK: Piano concerto 2 in G □ Piano concerto 3 in E**  
Pascal Rogé (pno) | LSO | Weller  
Decca SXL6816 (£3-50)

Good though Rogé is, and here he is very good, his playing sounds over-careful compared with Anda's splendidly loose-limbed and dynamic performance. Similarly Weller's handling of the orchestral score just misses Fricsay's vitality. I doubt whether it is really valid to point up the DG artists' Hungarian origins, but it does seem to give them a more relaxed yet controlled approach to the music that is not equalled by their non-Hungarian rivals. Compare the first movement of No. 2 in the Rogé-Weller version with that of Anda and Fricsay; and I think you will get the point. This is electric, exciting, stimulating, whereas the new version, in spite of all its virtues is none of these. And the recording is less helpful than the old one in bringing us into contact with Bartok's fascinating use of the orchestra—winds and piano only in the first movement, strings and piano in the slow section of the second. DG capture these contrasted timbres very successfully despite the age of the original, whereas Decca, for all their expertise, somehow dull the brilliant edge. Rogé is more successful with the Third concerto which is, generally, more restrained anyhow, and is very good in the *religioso* section of the slow movement. Yet here again I have to confess that Anda's and Fricsay's greater authority pay the best dividend, while at £4-30 the whole set they have an advantage that only the greatest artistry could hope to compete with. [A: 2] *Kenneth Dommett*

## Easeful Chamber Beethoven

**BEETHOVEN: Septet, Op. 20 □ Fugue in D, Op. 137**  
Vienna Philharmonic Chamber Ensemble  
DG 2530 799 (£3-59)

For seventeen years the Decca recording of Beethoven's Septet, the first stereo production we had, has remained unsurpassed in terms of performance, but now—with an entirely different group of Vienna Philharmonic principals—DG have something musically comparable, with the advantages of modern sound, and a brief filler. This is the contrapuntal movement written in 1817 (the opus number misleads); with the deletion of the Vox/Endres recording it is the only current version.

Both works are beautifully recorded, and there is a complete absence of background irritations. The instruments are precisely defined in space, in depth seemingly, as well as laterally, and ambience is similarly conveyed. The instrumental timbres are very true—but I suppose English listeners might not care for the 'poopy' timbres of Roland Berger's horn. Not surprisingly, the playing shares some of the qualities of the parent orchestra's, when under a beloved conductor. That is, a deceptively easeful stance is felt, though the chamber-playing is of the most disciplined kind. It's a pity that Philips so hastily deleted their Berlin version (6500 543), but with so delicious a replacement to hand I shan't cry for long. [A\*: 1\*] *Christopher Breunig*

**BERKELEY: Duo for Cello and Piano (1971) / DALBY: Variations for Cello and Piano (1966) / FRICKER: Sonata for Cello and Piano (1956) / McCABE: Partita for Solo Cello (1966)**  
Julian Lloyd Webber (vlc) | John McCabe (pno)  
L'Oiseau-Lyre DSLO 18 (£3-50)

Julian Lloyd Webber is not only a very talented cellist, but also one who has achieved a great deal within a short time. His most striking quality is his very warm tone which shows on all the works on this record, and in the shorter pieces of Martin Dalby and Lennox Berkeley this warmth is very effective. Dalby's *Variations* are a simple, lively piece. From a compact initial idea grow six variations, each longer and more complex than the last. Thus the last variation becomes almost a self-contained movement. Berkeley's *Duo* sounds rather dated—even staid—by comparison. Fricker's *Sonata* is a substantial work. A meaty first movement leads to a slow, lyrical second which encapsulates a whimsical mini-scherzo as its middle section. There follows a very busy *moto perpetuo*. It is here we meet some of Mr. Webber's limits, for his rich, cultivated tone lacks that harder, biting edge which this movement needs. In the last movement Fricker brings together the contrasting motions used in the 2nd and 3rd parts and cleverly injects some of the feeling and argument of the first; then briskly draws the work to its close. Even more substantial is John McCabe's *Partita*. Styled like an 18th Century Suite (with a glance in Bartok's direction) it is a powerful and wide-ranging work. Here again I feel that the piece asks for more variety of texture, tone and rhythmic bite than Julian Lloyd Webber can yet summon. [A: 2] *Benedict Sarnaker*

**BLOCH: Schelomo—Hebrew Rhapsody / SCHUMANN: Cello concerto in a, Op. 129**  
Mstislav Rostropovich (vlc) | French National Orchestra | Bernstein  
HMV ASD3334 © (£3-50)

Released last month to mark the cellist's 50th birthday, this coupling fills a gap left by the deletion of those by Rose, Walevska, and (?) Navarra. Rostropovich's earlier Schumann recording, with the Leningrad Philharmonic under Rozhdestvensky, is listed on DG *Privilege*.

That version was generally regarded as wayward, but magnificently fiery and alive. Rostropovich has intensified his interpretation, rather in the manner of Arrau's changing performances on records; with both artists, the mannerisms become even more underlined. Thus Rostropovich has arrived at a reading with even greater contrasts between withdrawal and digging accentuation. For some, this HMV recording will seem more than anything a Rostropovich parody, and I am sure that hearing instant comparisons with both recordings in synchronisation, most people would find that the new collaboration with Bernstein (who accompanied Rose's CBS version a decade ago) was relatively lifeless.

I am equally disappointed with the Bloch, of which I had high hopes. The Starker/Mehta Decca coupling with the Israel Philharmonic failed to live up to its promise, and Zara Nelsova's fine Utah recording is no longer listed. But she brought the right tonal richness to the solo part. I personally find Rostropovich's instrument, as reproduced by EMI, rather thin and whining, and the accompaniment is recessed and seriously lacks fullness in the lower register. Judged purely subjectively, this recording, for all its depth, lacks colour and glowing warmth necessary for the work. (Note, for instance,



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the dry feathery intrusion of the strings' *col legno*.) The performance is slow and solemn, complaining and cautious. An old copy of the Nelsova is well worth searching for (WRC ST876/Vanguard). HMV—[B:2]

Christopher Breuing

**BOCCHERINI: Symphony in d, Op. 12, No. 4** □  
Symphony in c, Op. 41  
I Solisti Veneti / Scimone  
RCA Erato STU70828 (£3.49)

I Solisti Veneti, on this record, consist of 14 string players with three winds—oboe, clarinet and horn. One can but compare them with *I Musici*, but they lack the ultra-professional suavity of their competitors: they play with superb verve and enthusiasm, excellent ensemble and musical sense, but overall they are rougher and more earthy. As recorded here, the upper string tone has a degree of acidity which may be put down as an engineering fault, as the overall sound is not of the highest quality: the frequency-range is somewhat compressed, and detail is lacking. Nevertheless, this is a record well worth hearing, and not only because the contents deserve to be heard more often than they tend to be these days. [B/C:2]

Peter Turner

**BRAHMS: 'Deutsche Volkslieder'—21 songs**  
Edith Mathis (sop) / Peter Schreier (ten) / Karl Engel (pno)  
DG 2536 279 (£3.50)

Brahms' Folk Song arrangements are typical of their period in that they are all given delightful piano accompaniments which conform to the accepted harmonic conventions of their day. Purists may well feel that they have become a little emasculated in the process, but they contain a wealth of melody and are considerable works of art in their own right. Here they are beautifully sung by Edith Mathis and Peter Schreier, and Karl Engel accompanies with complete understanding. Listening to all twenty one of the songs at one sitting and with as many as ten verses in a song, is not the ideal way to appreciate them, but individually they all contain moments of great beauty and are splendidly recorded on this new release. The German texts are printed on the back of the record sleeve but no translations were included. [A\*:1]

John Freestone

**BRIDGE: 'Phantasm' for piano and orchestra—rhapsody / MOERAN: Rhapsody in F sharp for piano and orchestra\***  
Peter Wallfisch (pno) / \*John McCabe (pno) / LPO / \*NPO / Bräthwaite  
Lyrita SRCS 91 (£3.46)

*Phantasm* (1931) is a large-scale work, more closely organized on ternary lines than the designation 'rhapsody' might suggest, and eloquent in manner if elusive in substance. Here indeed is an extraordinary, but not eccentric, quality of expression, true individuality and compositional mastery: surely compulsory listening for all seriously interested in twentieth-century English music! I have never accepted the conspiracy theory as an explanation of Bridge's neglect; but it is certainly astonishing that so distinctive and impressive a piece has gone unplayed—and unpublished except in a two-piano version. True, though not 'difficult' this music takes time to sink in, and emotionally it is far from comfortable. By comparison, the Moeran seems almost bland. A late work (1943), the *Rhapsody in F sharp* is neither as interesting as the *Symphony* nor as rapturous as the *Violin concerto*, but its lyricism and

warm textures are typical of the composer and it is well shaped. Two first-class performances, and my only criticism of the recording is that in the Moeran the piano sounds somewhat recessed; otherwise, well up to the high standard that Lyrita invariably achieves. I hope the Moeran *Violin concerto* is scheduled for the near future. [A/B:1]

Hugh Ottaway

**MONTserrat CABALLE—RECITAL CATALANI: 'La Wally'—'Ebben? ... Neandrò lontanò' / GIORDANO: 'Andrea Chenier'—'La Mamma Morta' / MASCAGNI: 'Cavalleria Rusticana'—'Voi lo sapete' / PONCHIELLI: 'La Gioconda'—'Suicidio' / PUCCINI: 'Turandot'—'In questa reggia' / VERDI: 'Macbeth'—'Veni! t'affretta' ... 'Or tutti sorgete' □ 'Il Trovatore'—'Tacea la notte' ... 'Di tale amor'**  
Montserrat Caballé (soprano) / Orquesta Sinfónica de Barcelona / Guató and Guadagnò  
Decca SXL-R6825 (£3.50)

In the great scene from *Macbeth*, Lady Macbeth enters reading a letter from her husband, and in the aria and cabaletta which follow she expresses her ruthless ambition in one of Verdi's most inspired passages. Caballé sings with tremendous conviction and brings the scene to life in a most vivid manner. The small part of the servant is well sung by the bass Juan Pons. Señora Caballé is equally successful in Leonora's aria from Act 1 of *Il Trovatore*, floating the opening phrases of 'Tacea la notte' with great beauty of tone and with a delicacy and sensitivity characteristic of her best work. She is here assisted by Cecilia Fondevila in the role of Ines.

In the verismo arias which occupy the rest of the record she uses her unique command of pianissimi with great effect, but the voice does not always expand with the necessary amplitude on the forte passages in the highest register, and so her 'In questa reggia', while always impressive, does not command the sheer weight and tone which a Turner or a Nielsen could achieve with such thrilling effect. The voice is a little too soft grained to suggest the icy remoteness of Turandot's character, and in the absence of a Calaf the penultimate phrase is left to the orchestra. In all the other arias there are some exquisite moments as the Spanish soprano caresses and moulds a phrase in her own inimitable manner.

The recording is good, and the *Symphony Orchestra* of Barcelona accompanies well apart from a certain lack of flexibility in the cabaletta 'Di tale amor' which gives the artist little chance to do more than sing the phrases accurately. A leaflet giving texts and English translations is included. [A:1/2]

John Freestone

**CHAUSSON: Poème / FAURE: Berceuse / SAINT-SAENS: Violin concerto 3, Op. 61**  
Isaac Stern (vln) / Orchestre de Paris / Barenboim  
CBS 76530 (£3.49)

Stern brings charm to the Saint-Saens, where Kyung-Wha Chung brought a misplaced intensity of attack, and there is some eloquent oboe playing towards the end of the second movement. Still the most apt acoustic is provided by Philips, on Szeryng's Saint-Saens collection (6580 016); here the frequency range is limited, so that tutti passages expand to produce comparatively ugly quality—the Philips treble is clear and open, with an excellent spatial definition, although both records involve solo artists who clearly favour a forward balance. At times Stern fills the frontal area of the stereo image, as in those uncomfortably close

violin solo productions one often encounters.

The Chausson is lovingly savoured, although in Barenboim's hands the orchestral part is more Wagnerian than French: Martinon, with the same orchestra (ASD3125 ©—with Perlman), achieved a more singular flavour. But again, the comparatively flat orchestral rendering on this CBS issue may influence one's reactions, making you feel the characterisation is more generalised. Still, such reservations will not deter Stern's admirers, and others should find the coupling useful. [B:1]

Christopher Breuing

## Superb Bream lute

**LUTE MUSIC OF JOHN DOWLAND**

Julian Bream (lute)  
RCA RL 11491 (£3.49)

There are twelve pieces, all taken from Diana Poulton and Basil Lam's 1974 edition of the 'Collected Lute Music of Dowland'. Mr Lam contributes scholarly notes. Two items are duets, played by Bream through double-tracking which is quite unrecognisable as such. The recital consists of the usual *pavanes* and *galliards* but also includes such amazing works as 'Forlorn Hope Fancy' and 'Farewell', in which the expressiveness of the lute is taken to moving depths.

There are few artists performing today—or at any other time, I should say—who could educe the possibilities of the music as does the great Bream. Indeed, I cannot remember hearing him in better form where the formidable technical problems are concerned, and this is combined with a grasp of the inner significance of the music which is rare in music as a whole. One listens, hardly daring to breathe or to hope that such perfection will last to the end; but it does, and the last piece is perhaps the finest. The recording is of clinical clarity: perhaps a shade too closely-miked, as the sounds of the breathing and movements of the artist are obtrusive; but doubtless that had to be tolerated in the cause of retaining the last sheen of instrumental tone. As my copy is totally flawless, I became aware that this is an outstanding issue in every way: marvellous music, superbly played and interpreted, and made everlasting through the magic of the gramophone. *Laus Deo!* [A/A\*:1\*]

Peter Turner

**ELGAR: Symphony 1 in A flat Op. 55**

LPO / Boult  
HMV ASD3330 © (£3.50)

When it really goes, this is a work that lugs the guts out of me and leaves me flattened! As recorded here, the finale is certainly in that class—as intense and emotionally committed as Boult has ever done it—and so is the scherzo, the latter part of the first movement and the closing phase of the *Adagio*. These are very fine indeed, and yet I do not feel that the performance as a whole warrants a star. There is at times a quality that I can only call 'outsidedness', which expresses itself in a characteristic tendency to press forward, however slightly, and in one or two hints of uncertainty on the part of the orchestra. Even the transition from the scherzo to the *Adagio*—unbroken here, for movements 2-4 are on the second side—seems to me measured rather than felt. And

the beginning of the *Adagio* does not unfold with the rapture to be found, say, in Boult's earliest LP version (ALP 1052). But there is so much that is Boult at his best that it is hard to make these remarks without giving them too much emphasis.

The recording seems rather less clear on the first side than on the second. The latter is of a very high quality, but from time to time throughout, and especially in the first movement, I felt that the violins were somewhat remote in relation to the woodwind and brass. And I rather question whether the brass is always completely integrated. Otherwise, very satisfactory. Undoubtedly a record to return to, despite reservations. [A/B: 1\*/1]

Hugh Ottaway

**FINZI: Clarinet Concerto, Op. 31** □ **Grand Fantasia and Toccata for piano and orchestra, Op. 38** — **Eclogue for piano and strings, Op. 10**  
John Denman (clt) | Peter Katin (pno) | NPO | Handley Lyrita SRCS 92 (£3.46)

The Concerto for clarinet and strings (1949) is the best of Finzi's more extended orchestral works and ought to have been recorded long ago. In the finale there may well be an allusion to Vaughan Williams' Concerto for oboe and strings written five years earlier. Certainly, in their English lyricism and in many qualities of texture, these are comparable works. Finzi's personality emerges strongly: the *Adagio* sets one thinking of some of the best of his Hardy settings, which remain the central reference-point for this composer. The performance? I could wish the solo part more positively played and, in the outer movements, the strings a little less demonstrative. These points are reinforced by the recording, for the more vehement string passages—the opening, for instance—tend to be fierce and shrill, and the clarinet is somewhat under-prominent.

The two works with solo piano are very little known but well worth recording. Each reflects the composer's love for Bach, but in its own distinctive way. The Eclogue is a beautifully wrought expression of that reflective mood which first comes to mind whenever Finzi is mentioned. If the Grand Fantasia and Toccata has never made its mark in the concert hall, the reason is more likely to be the eccentric relationship between piano and orchestra than the change in style exhibited by the Toccata. This last has more than a touch of Walton-on-the-Naze about it, but Finzi's presence is clear and persuasive, as it is in the Bach-like Fantasia. Performance and recording are of a high quality, but some of the piano tone is a little steely. [A/B: 1/2]

Hugh Ottaway

**FRANCK: Symphony in d** □ **Symphonic Variations\***  
Pascal Rogé (pno)\* | Cleveland Orchestra | Maazel Decca SXL6823 (£3.50)

Franck's symphony can be about as palatable as blotting paper; but Maazel, a sophisticated, self-aware musician, avoids the square, the naïve here. This performance is stunning, sensational.

But, in making the score so likeable, so sensuously rich, and so exciting, is Maazel moving further and further from the inherent nature of the music? That is a question I leave for every purchaser to decide for himself; for me this is the most thrilling of the recent recordings, but having experienced it (and I've been playing it through several times during the reviewing period!) I shall perhaps allow other, plainer versions to have their say.

I have mixed feelings about the *Symphonic Variations*. Largely I consider this a showy

account, sumptuously played by the Clevelanders, such as one might encounter at a good concert: a pre-interval filler before a main offering. Overall rather superficial. Rogé seems inconsistent; at times his playing is inward and poetic, then large areas are presented comparatively weakly, then a more assertive manner is adopted. The part needs stronger characterisation, and Kersenbaum makes deeper contact with the music (Fagund/HMV).

The Decca recording has its star moments, but is an example of complex mixing techniques applied. The orchestral image is rather flat, yet with a reverberance acting like a separate backdrop behind the orchestra. Spread is good; not too much detail is brought forward obscursively. [A: 1]

Christopher Breunig

**GUITAR MUSIC OF THE TWENTIETH CENTURY: BALADA: Analogias** / **BROUWER: Parabola** / **KUCERA: Diario** / **MADERNA: Y Despues** / **POULENC: Sarabande** / **RUIZ-PIPO: Estancias**  
Narciso Yepes (gtr)  
DG 2530 802 (£3.59)

Poulenc, of course, could not be called *avant-garde*; and his *Sarabande* is not strictly in that dance-rhythm, being more concerned with mood. Leo Brouwer sounds serial, if not strictly so; Bruno Maderna has made a setting of one of Lorca's poems, though one may doubt if that could possibly be apparent without the ascription; Vaclav Kucera's piece is based on the life and death of Che Guevara. None of the works can introduce the nowadays-mandatory percussion—apart from knocking the body of the instrument—but one often has the feeling that were this possible it would have to be there. Indeed, much of this writing is so far removed from the traditional usage of the instrument that it takes time to get the hang of it. Such adventures and advancements of musical scope are very much worth while, and what is done here suggests that the possibilities of this remarkable instrument are very far from being exhausted.

Most of these works are dedicated to Narciso Yepes, and one can imagine any of them bringing the house down if interspersed with a more traditional programme. Lovers of the guitar should be warned to approach this record with dedication and an open mind. Should they achieve that, the rewards are great; should they decide not to risk it, they stand to lose a great deal: musical ruts should be avoided by listeners as much as performers.

Yepes, of course, does superbly well despite the terrifying difficulties. [A: 1]

Peter Turner

**HANDEL: 'Messiah'**—highlights  
Labelle | Brunskill | Eisdell | Williams | BBC Chorus | LSO | Beecham  
HMV HLM7053 M (£1.99)

Stand by for lighting from the brow of great Sir Thomas (Jove) Beecham himself! This extract from his 1928 *Messiah* (the first-ever *Messiah* on record) is among the most exciting of modern rescues from the HMV archives. I confidently recommend it even to those who do not normally bother with 'historic' recordings at all. The processing, leaving only the slightest crackle, is magnificent, and the orchestral sound is by no means undifferentiated.

Excitement reaches its climax at 'Why do the nations', furiously and splendidly delivered by Harold Williams (who died only last year, aged 83), followed by a breakneck choral

performance of 'Let us break their bonds'. It is true that soloist and conductor get slightly out of step—enough, in a modern recording, to stop and do it all again—but this only lends immediacy to this performance. Some other items, including 'Ev'ry valley' and 'For unto us a child is born', are also surprisingly and successfully fast.

As to historical style, many will be surprised how many unwritten vocal appoggiaturas Beecham provides for his singers—fulfilling a baroque convention which did *not* have to wait for rediscovery until the 1950s. Of the singers, Muriel Brunskill (still under 30) was evidently not quite on top form, but Dora Labette (a Beecham favourite) and Hubert Eisdell, as well as Williams, deal finely with their parts. The chorus, likewise to be praised, is not quite so well reproduced on record. But what a souvenir! [H: 1]

Arthur Jacobs

**HANDEL: Opera and Oratorio Arias**  
Marco Bakker (bar) | ECO | Montgomery  
HMV HQS1367 © (£2.50)

Four of Handel's English arias (including 'Where'er you walk', stolen from the tenor department!) are followed by four from Italian opera.

Good as Mr. Bakker's English is, it is still a foreigner's English, finding difficulty over the 'a' in such words as *shall* and *hand*. Someone at this British recording session might at least have told him that 'Judas Maccabaeus' is customarily pronounced to rhyme with 'see us', not 'slay us'. I fear that, unfair though it is (since records oblige us to put up with far worse handling of other languages, particularly French), this un-English English will put off many potential buyers in this country.

Unfortunately, Mr. Bakker's countervailing virtues are not much in evidence. He sings accurately and with even tone, but rather dully. The celebrated 'Largo' (*Ombra mai fu*) suffers from inevitable comparisons. I liked best a meditative aria from *Giulio Cesare* (originally for castrato, like the 'Largo' itself) and the voice-versus-trumpet contest of 'Revenge, Timotheus cries'. The voice rings out with a distinct presence and is well balanced against Kenneth Montgomery's orchestral support.

The sleeve-note by W. A. Chislett is helpful, but in the same space it would have been more helpful still to provide texts and translations. [A: 2]

Arthur Jacobs

**HAYDN: Symphony 88 in G** □ **Symphony 96 in D 'The Miracle'**  
LSO | Previn  
HMV ASD3328 © (£3.50)

I don't recall coming across André Previn as a Haydn conductor before. His approach to these two fine symphonies is very broad, romantic in the slow movements, yet with plenty of spirit and even swagger to the allegros. I would have welcomed a little more relaxation in the minuet of 88, though its trio is just right. Its slow movement is taken very slow indeed, to the point of dragging—though there is plenty of feeling. The detail is allowed to come through strongly in the fast movements, and balance and dynamic shadings have been carefully observed. There is the occasional fall from highest grace with smudged detail, but the playing is for the most part very fine and expressive. Even too expressive, perhaps, at the end of the 'Miracle's' Andante, and in the mannered if almost forgivable lingering in the trio. The recording is clean, unobtrusive yet with



atmosphere. Challenging readings, thought-provoking if not entirely successful. [A: 2]  
Peter Branscombe

**HAYDN: Symphonies no. 88 in G and 99 in E♭**  
*Concertgebouw / Davis*  
Philips 9500 138 (£3-50)

It is too long since Colin Davis recorded Haydn, a composer whose qualities he understands and conveys superbly. This coupling of two splendid but unnamed and therefore (?) under-appreciated symphonies is very welcome—there are good alternative versions of each, but they are not paired on any other now available recording. Even if they were, I feel this issue would be hard to beat. The Concertgebouw plays warmly, spiritedly and with precision. Davis sets and maintains natural, unforced tempi, the balance is fresh yet careful (all those lovely wind details come through bravely), the claims of strength and delicacy are equally well met. My only reservation concerns the very resonant recorded quality, with the bass line positively booming when Haydn is in his most energetic moods, and with a tendency now and then for the orchestra's full attack to blur in climaxes. I found the quality more mellow, less vibrant with a bass cut and at a rather lower volume setting. Beautifully perceptive accounts of two masterworks. [A/B: 1]  
Peter Branscombe

**HAYDN: 8 Nocturnes, Hob. II: 25-32**  
*Music Party / Hacker*  
Oiseau-Lyre DSLO 521-2 (2 records) (£7-00)

In place of the two *lire* the top lines are here given to two flutes (in nos. 1, 2, 3 and 6) or flute and oboe (in nos. 4, 5, 7 and 8). The rest of the ensemble is made up of pairs of clarinets, horns and violas, plus string bass; in the last two nocturnes violins are substituted for the clarinets—I list the details of scoring, as this information is not set out in the otherwise admirable documentation.

These really are lovely works—full of variety, good humour, spirit, with every now and then a truly profound movement (the short Largo that Haydn added before no. 8's Allegro, and its later Adagio). The melodies are often of melting beauty, the instrumentation as original and effective as one can hope for even from Haydn, that old master of the art. The instruments are for the most part contemporary, and their direct, perky timbres are just right for the music. There are occasional reminders of the difficulties attendant on playing taxing music on old instruments, but the gains are impressive, the results as joyous and full of enthusiasm as one could wish. The performers are generous with repeats—and rightly so, for the music is scintillating. The recorded quality is very high throughout four long sides—towards the end of the last side I noticed some tonal congestion and roughness. But stereo spread and balance are fine, and the violas, so often mere handmaidens, emerge boldly and happily from the textures. To think that none of these works had been published before the lifetime of most readers of these lines! Don't hesitate to buy, and relish, these treasures. [A: 1]

Peter Branscombe

**HAYDN: String Quartets, Op. 64**  
*Medici Quartet*  
HMV SLS5077 Ⓞ (3 records) (£6-50)

The Aeolian Quartet will presumably soon reach op. 64 in their Argo series—they will need to look to their laurels. The Amadeus

bring the weight of their experience and expressive poise to these works, but the fresh response and technical excellence of the Medicis is most attractive. In the wonderful Adagios of the B $\flat$  and G major quartets they choose and sustain very slow tempi, though I think their Andante in the last of the set is too slow. The delicate Allegretto scherzando of the opening C major work is excellently done. All the minuets are Allegretto movements; the Medicis resist any temptation to hurry them, and the trio in the E $\flat$  quartet is lilting enough to permit thoughts of Lanner. The opening movements are for the most part spacious and unhurried; one disappointment was the Lark's Allegro, marginally on the fast side, and a bit jerky—though in general I found the players' keen rhythmic sense being their best virtues. They don't rush their finales, either, finding just the right pulse—the closing Presto of the whole set shows off nicely their poise, wit and polish. The dynamic range is pleasingly wide, and I thought their impressive *pp* passages owed nothing to the volume control. Indeed, the clear, natural sound is a feature of the set: quiet surfaces, excellent balance and a true chamber acoustic. Rosemary Hughes provides the perceptive notes. [A: 1]

Peter Branscombe

**HAYDN: The Piano sonatas, Vol. 4**  
*John McCabe (pno)*  
Decca 4HDN 109-11 (3 records) (£5-95 until 1st October, then £7-50)

My calculations suggest that there is just one more volume to succeed this latest issue and complete a notable achievement. Decca are here not first in the field, but it is already entirely clear that John McCabe's are the performances to have. There is nothing in the least perfunctory or mechanical—on the most obvious level, no attempt to march straight through from first to last keyboard works (not that the chronology is anyway always clear); on a deeper level, Mr. McCabe takes a thoughtful line with repeats (generous but not slavish), treats each work on its merits, indulges in no special pleading. Each side of each record is thought out in terms of congruity and also of contrast—and the sides are all of very full length (over 31 minutes in two cases). The areas most thoroughly explored here are the early sonatas (eight composed before 1766, as Martin Cooper's useful notes make clear at a glance), and a series of fine works composed in the 1770s. The latest included in this album is no. 58 in C, written a couple of years before the first London visit. In addition to 14 sonatas, we hear the Capriccio in G, the variations on the pig-gelding song. That leaves 9 sonatas and some further piano pieces for the final issue—which I hope will not be too long in coming.

By now readers will know what to expect from John McCabe's Haydn playing. The qualities that have impressed me most strongly in the past, and that are quite as evident here, are his modesty, his sense of style, a firmness of technique that prevents any briefly taxing pianistic problem from leading to a distortion of the line or a simplification of the texture, and, most important of all, his love for the music. He clearly feels deeply for the often tiny individual movements of early works, but without trying to make them more than what they are. Indeed, his evaluation of the works seems to be eminently sound—if a tempo or an emphasis at first struck me as unexpected, I invariably found on reflection that the way Mr. McCabe did it was right. He is at his most persuasive in the superb great Andante with variations that

opens sonata 58; and how beautifully he phrases and characterises its fast rondo ('rather like a dance in the servants' hall after an aristocratic reception above stairs', in Martin Cooper's happy phrase). Where so much is all one could hope for, it is a nuisance to have to report that the piano tone is at times distinctly edgy, rattly. Loud chords do rather often have a harsh, brittle quality that is entirely at odds with the otherwise warm, open and well-balanced sound picture. Thus [B: 1].  
Peter Branscombe

**HAYDN: Piano sonatas, London nos. 30, 32 50** □  
*Variations in f*  
*Gilbert Kalish (pno)*  
Nonesuch H-71328 (£1-85)

Last September Gilbert Kalish's first of what promises to be a series of Haydn piano sonata recordings was issued at the same time as John McCabe's third box. Now Mr. Kalish is again in Mr. McCabe's shadow. Not that any of the works on this issue repeats any in the latest Decca box; but comparisons are inevitable. Kalish is a brilliant pianist, for whom the music holds no technical difficulties. He gives thoughtful, elegant performances of all these four very varied works, yet rather seldom did I feel myself involved in the process of imaginative recreation that is such a hallmark of the McCabe readings. This is not to say that McCabe 'interprets'—far from it; it is rather that I find myself wishing Mr. Kalish had been rather more positive in his involvement, finely as he shades the F minor theme, for instance, of the great Variations. The piano tone tends to be a bit hard and bumpy, and there is some background hiss—but for anyone anxious to acquire these fine works (all otherwise available, though not together), the performances can certainly be recommended. [B: 2]  
Peter Branscombe

**IRELAND: Piano Music, Vol. 2**  
*Eric Parkin (pno)*  
Lyrita SRCS 88 (£3-46)

The principal work here is the Piano sonata (1918-20), for which very high claims used to be made: 'not only the greatest written by a British composer, but one of the finest and most important since Liszt's in B minor' (Ralph Hill). To-day, however, one is likely to hear in it Ireland's vices as well as his virtues, especially the vice of busy-ness. The Sonata and the best of the shorter pieces seem to me more enduring music. The pieces included here are *Summer Evening, For Remembrance, Amberley Wild Brooks, The Darkened Valley, Equinox, On a Birthday Morning, Soliloquy, April* and *Bergomask*. At least three of these are among the very finest. Eric Parkin gives thoroughly fluent, idiomatic performances and is particularly effective in the more vehemently pianistic passages. I look for more inwardness in *Soliloquy*: although marked *Andante moderato*, it should sound more what Grainger might have called 'clingly'. In *April*, too, there is scope for rather more subtlety of nuance: at the end, for instance, and in the shimmering development of the initial idea. (The structural plan given in the sleeve-note should surely be amended to read: A—A1—B—A2—B2—A1/A.) Otherwise these performances are highly commendable, and the recording is very good indeed. In the Sonata there are one or two hard-toned passages, but everything is well accommodated. A specially commissioned water colour of Amberley Wild Brooks by Juliet Pannett adorns the front of the sleeve. [A: 1]

Hugh Ottaway

**LISZT: Piano Music**  
*Rhonda Gillespie (pno)*  
Argo ZK9 (£2.50)

It is arguable that the extent of Liszt's influence on musical composition was greater than the intrinsic quality of his own contribution to it, but this legendary genius was probably the supreme virtuoso-composer of all time, and this collection of some of his ubiquitous transcriptions (including Isolde's 'Liebstod', *Danse Macabre* and the famous Rigoletto quartet paraphrase) and 'lollipops' (Liebesträume, Consolation No. 111 etc.) might, in the hands of a Kentner, a Brendel or a Horowitz have been a good introduction to his writing for the piano, but, as presented here, it fails to rouse enthusiasm. It has to be said, with regret, that the standard of performance is not adequate. The playing is insensitive; a great deal is missed, and even as a demonstration of pianistic virtuosity it leaves much to be desired.

One previously unrecorded item is included on this disc, a transcription by the composer for piano of a setting he made of Ruckert's poem *Ich liebe dich* recently discovered in the Congress Library in Washington. It is a very short, straightforward and relatively simple piece, worth hearing, but it does not constitute a sufficient reason to recommend the record.

The recording is satisfactory without being distinguished. The surfaces of my test pressing are quite appalling, but we tend to hope that this will not apply generally. [B: 3]

B. J. Webb

**A LITTLE MUSIC FOR A FEW FRIENDS**

**GIULIANI: Divertimento** / **MANNINO: Mini quintet, Op. 74** □ **A little music for three friends** / **MARGOLA: Partita for flute and oboe** / **MON-TANARI: Five inventions for wind quartet**  
*Hallé Wind Quintet* / *Michael Davis (vln)* / *John Adams (vla)* / *Ian Rudge (vlc)*  
Amberlee-Euroson ALF701 (£1.99)

I didn't understand the full significance of the title of this record until I heard the music. People who write music like this must certainly have few friends and equally minimal audiences; it is no wonder that the concert halls are half empty if this is all that contemporary composers can offer as attraction. The whole of Side One is, to my ears, an unmitigated bore; the restless, neurotic music of the uninspired. Side Two, which is occupied by one longer work by Nunzio Montanari, has more promise. It starts as if it might maintain the momentum and feeling of lasting music and it has many fine moments; but there is still the tendency to ramble and lose our attention. I think it might stand a further hearing or two; even if only the first movement. The Hallé Quintet and their friends seem to play with precision and I trust that they enjoyed themselves. The recording allows all detail to be heard. [A: 1]

Peter Gammond

**MAHLER: Symphony 9**  
*Chicago SO* / *Giulini*  
DG 2707 097 (2 records) (£7.18)

One thing to note is the duration of the performance: 87' 55" as opposed to 79' 26" common to both the Solti (Decca) and Bernstein (CBS) recordings. That is mechanically measured, of course; what is more likely to strike the listener is that Giulini brings an extraordinarily individual refinement to the music, in this deeply-felt account. A conductor's sound indeed! For some, this fastidious realisation of the orchestral

texture will sound slightly foreign to Mahler, notably in the inner movements, that Klemperer conducted with such earthy vigour. But—and the unique orchestral sound persists there—the string playing in the last movement would surely turn a heart of stone. The sense of continuity suggests very long takes. The nocturnal section with harp and woodwind shows how strong an empathy with the mystical side of Mahler's composing Giulini has—it would be good to hear him in the *Song of the Earth*.

The Chicago playing is magnificent, the players bringing great commitment to their parts. The recorded sound is good, although not notable for consistency of perspective, and the upper register is slightly thick in quality, as though filtered by the hall used (Medinah?). The more open Concertgebouw acoustic may persuade some in favour of Haitink, still, but for warmth of feeling, dedication, and taste this new set should be welcomed. [A/B: 1\*] *Christopher Breunig*

**MEDIAEVAL PARIS: Music of the City**  
*Praelorius Consort* / *Ball* / *Purcell Consort* / *Burgess Turnabout* TV 37086S (£1.89)

Much of the music on the recording was taken from the Montpellier Codex, compiled in Paris at around 1280. Predictably, a good deal of the instrumental and vocal pieces are anonymous, but the record includes songs by Adam de la Halle, Colin Muset, and the rather more obscure Jehannot de l'Escurel who, unfortunately, seems to have ended on the gallows in 1303.

The church music of the period is represented, among other things, by a splendid performance of an Alleluia by Perotin. The standard, throughout the album, remains high, and there is some fine instrumental work during the dance numbers. These are all played with tremendous attack and verve, and come off very well indeed. A wide variety of instruments are used, all of which are listed on the sleeve.

The recording is almost faultless, although the instruments seem to me slightly forward. The vocal balance and perspective is marginally better, but few will find any fault with this otherwise highly enjoyable album. [A: 1]

Colin Evans

**MENDELSSOHN: Rondo capriccioso, Op. 14** □ **Sonata in B $\flat$ , Op. 106** □ **Variations serieuses, Op. 54** □ **3 Fantasies, Op. 16**  
*Ilse von Alpenheim (pno)*  
Philips 9500 162 (£3.50)

This off-beat Mendelssohn record introduces to the catalogues Ilse von Alpenheim—who is married to Antal Dorati—and the third and most interesting of the juvenile piano sonatas written in 1827. Its scherzo is an entertaining mixture of the *Midsummer Night's Dream* scherzo and that of Beethoven's sonata Op. 31: 3, although only the *MND* overture existed at that time. The other main influence is that of Weber, whose *Konzertstück* is echoed in the latter half of the sonata. Beethoven's Op. 90 sonata finale—itself a Mendelssohnian *Song without Words*—is clearly mirrored in the third Fantasy, Op. 16.

It would be hard to imagine a finer interpreter of this admittedly slight, but gently appealing music. (The sad introduction and postlude to the first Op. 16 Fantasy are more deeply affecting.) Ilse von Alpenheim ripples the scherzando writing without virtuoso projection or hardness, her cantabile is warm and clearly articulated, and the balance between inwardness and brilliance is just right. The piano is beautifully recorded. [A: 1\*] *Christopher Breunig*

**MESSIAEN: L'Ascension** □ **Les Offrandes Oubliées** □ **Hymne**  
*ORTF* / *Constant*  
RCA Erato STU 70673 (£3.49)

This record groups three of Messiaen's earliest orchestral scores. The earliest is *Les Offrandes Oubliées* (1930) which he wrote when he was 22. In his later arrangement for keyboard Messiaen added titles to its three sections: The Cross; The Sin; The Eucharist. The first and last are formally balanced. Both are slow, hieratic, almost trance-inducing pieces, the latter distinguished by its clearer, brighter colour which generates a quietly ecstatic glow. Between them lies an energetic, brass-heavy piece of constant (even frenetic) motion. The *Hymne au St. Sacrement* of 1932, for all its variety and strong motion, bodes less well of Messiaen's future virtues for it is a rather congested piece both in ideas and instrumentation. By contrast *L'Ascension* (1933) is Messiaen's most important work of this early period for it summed up his achievement so far and also brought to a crisis the limits of his musical processes up to that date. By 1934—in *La Nativité du Seigneur*—he began to resolve these problems and mature into the very substantial composer we know. Thus these works shed a fascinating light on Messiaen's development and this record is most welcome for grouping them thus. The performances are good, but the recording is marred by a rather metallic balance and by some (very slight) pre-echo. [B/C: 1/2]

Benedict Sarnaker

**MOZART: Eine Kleine Nachtmusik K.525** □ **Serenata Notturna K.239** □ **Piano Concerto 21 in C, K.467**  
*Annerose Schmidt (pno)* / *Dresden State Orchestra* / *Sulner*  
Philips 'Universo' 6580 112 (£1.99)

The *Eine kleine* has to be good to hold its place. At once one appreciates its open-air atmosphere. There is happily no attempt to 'do something with it': it is a very good straightforward performance. The *Serenata*, of vivid attack, lacks only the echo effects the double ensemble demands. The Piano concerto taken as a whole withstands immediate comparison with the best available, accepting the usual swings and roundabouts. It has particularly fine sound for the heartrending second movement, beautifully performed with pianist and orchestra in close concord. [A: 1]

Leon Thompson

**MOZART: Piano concerto 21 in C, K467** □ **Piano concerto 9 in E, K271**  
*Murray Perahia (pno)* / *ECO* / *Perahia*  
CBS 76584 (limited edition at £2.49)

Both concertos offer a view of Mozart's more extravert side, particularly in their outer movements. This, I feel, tempts the pianist into driving them all rather too hard. In the exuberant finale of K271 he is almost relentless: good for the adrenalin no doubt, but ultimately unsympathetic. As in the previous record the slow movements come off well and are tastefully adorned with appropriate decorations, though again I note an absence of true repose. And this high powered pianism is not the same thing as dramatic tension which depends on a contrast between a heightening and a slackening off of the emotional climate. Indeed, I have the idea at times that the pianist is too much aware of his responsibility as both soloist and director and has not yet quite got the balance right. It must be emphasised, though, that there is much to enjoy in his playing; his sheer command of the keyboard, for example, and

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his obvious pleasure in the music, which, in the E flat concerto particularly, is almost the saving grace of the whole thing. Unhappily I do not find the recording itself very sympathetic either. On this side the strings have a steely edge which the very resonant studio does nothing to assuage, and which to my ear is quite at odds with the music's needs. Both sides show a marked bias towards the bass. Also, both can be improved by a 4 kHz cut. This restored the C major performance to something very much more acceptable, but a similar application to the treble filter did nothing to help the E flat concerto beyond restoring the obsessive dominance of the lower frequencies. The only other recording to link these two concertos is Nina Milkina's on Pye Nixa, reviewed last April. Though the sound is not first class, and the orchestra is perhaps less expert than the ECO the performances have the edge on these. [B/C: 2]

Kenneth Dommett

**A MOZART SOIREE: Oboe quartet in F, K370\***  
 Flute quartet in D, K285\*\*  Piano quartet in G, K478†  Andantino for cello and piano in B, K374g

Maurice Bourgue (obo)\* / Michel Debost (fl†)\*\* / Hephzibah Menuhin (pno)† / Yehudi Menuhin (vln) / Luigi Alberto Bianchi (vla) / Maurice Gendron (vlc)  
**HMV ASD3329 (£3-50)**

Like most 'live' recordings this one is subject to the vagaries of chance. Happily the audience is well behaved and are permitted a modest amount of very loud applause before they are faded out, not too discreetly. But even that is too much for me, and I am out of my chair before the first predictable pair of palms collide. As far as the Oboe and Flute Quartets are concerned I do not begrudge the enthusiasm which is well earned. Both Bourgue and Debost have established themselves as soloists of international stature who deserve our enthusiasm and respect, and if one tends to notice them more than the other players it is perhaps because both these works are in effect more concertante than true chamber music. That is not to say that the contribution of the three string players is negligible, and in these performances they seem to respond very positively to the alert playing of the two wind soloists. Unhappily the Piano Quartet is not up to this standard. The sound for a start has deteriorated significantly: the strings have lost their brightness and the piano sounds dull and lifeless. So, I fear, is the performance. Compared with the fine Pro Arte recording still available on Oiseau-Lyre this lacks tension. The essential drama is missing from the first movement while the others seem tired and uneventful. The remaining item, new to record, is a fragmentary cello and piano movement probably begun in 1781. This performance doesn't sound fragmentary but no information has been offered concerning it. It is a pleasant, not particularly profound piece despite its key and it receives an adequate though not especially winning reading from Gendron and Hephzibah Menuhin. [A/C: 1/3]

Kenneth Dommett

#### MONTEVERDI: Madrigals

Lausanne Vocal Ensemble / Lausanne CO / Corboz  
**RCA Erato 70848/70849 (2 records) (£3-49 each)**

Considering that the singers are mostly French, it is interesting that the style is very Italianate. Some of the madrigals are given an almost operatic treatment, which certainly works with the dramatic madrigals of love and war, but is perhaps less appropriate for the reflective, more subdued settings. Throughout the album, the singing is of the highest

quality. Both Jennifer Smith and Wally Staempfli come over very well, the latter especially in the 'popular' songs like *Maladetta sia l'Aspetto* accompanied on these occasions by Jurg Hubscher on the lute.

One of Monteverdi's finest duets *Ardo a Scoprir* is given dramatic treatment by John Elwes and Philippe Huttenlocher, but their reading strikes me as somewhat overdone in the melodramatic outbursts of which it is more suited to the stage than the madrigal.

One of the highlights of the second volume is the madrigal version of *Lasciate mi Morire*, which is sung with remarkable poise and control, giving an evocative feeling of desolation and despair.

This collection of two records would make an excellent introduction to the madrigals, although I have reservations about some of the vocal treatment. The sound is perhaps not up to the very highest quality, being a little diffuse and lacking presence in the voices. [B: 1]

Colin Evans

**MUSSORGSKY: Pictures at an Exhibition** (orch. Ravel) / **PROKOFIEV: Symphony 1 in D, Op. 25 'Classical'**  
 Chicago SO / Giulini  
**DG 2530 783 (£3-59)**

The playing is not of the slickest finish, yet the wealth of expressive detailing here quite staggering. The producer has tried to ally himself to the maestro's approach, and it could be argued that that has not always proved most helpful. For instance the triangle rings in closeup at the *Great Gate of Kiev*—is Sir Georg phoning perchance? And does the cutback in level at the end reflect truthfully a discretion on Giulini's part, or is this a remixing characteristic? I am uncertain. But one does hear, in the first movement of the *Classical*, first-desk players exposed to close-up, which suggests some impurities of intonation; then when Prokofiev fills the texture in the development section, a more generalised picture of the orchestra has superseded the original impression. These are carping points to illustrate why I have given the production a plain rating. The Karajan *Pictures* is the real alternative to consider; the two conductors' readings offer endless fascinating comparisons, the Berlin and Chicago orchestras' relative merits and failings could be endlessly debated, even the contrasted recording philosophies exemplified give food for thought. The Chicago acoustic is more open, but perhaps the Berlin production is dynamically still the most exciting, in spite of a 'thuddy' acoustic ambience.

In short, both discs are essential. But if Karajan directs the glossier performance, Giulini surely gives us the more provoking. As in the Prokofiev symphony, tempi heard in isolation seem as if unlikely to marry with what we anticipate as coming in succession. However, Giulini's speed relationships do work—e.g. a fast *Bydlo*, a gentle, slowish *Ballet of unhatched Chicks* (where tocking percussion interact, reminding us of Ravel's love of mechanical toys). Giulini's perceptiveness extends inevitably into the field of timbres: note the 'dry' percussion strokes in Baba-Yaga's flight, and how this characterises more strongly than the averagely heard orchestral sonorities at this point. As I say, one could record pages of impressions from these poised, profoundly committed, and completely honest examples of Giulini's art. It is good that such musicianship is caught on tape for us all to wonder at. [A: 1\*]

Christopher Breunig

#### AMERICAN MUSIC FROM SOUTHWARK CATHEDRAL

Music by Barber, Bremner, Buck, Copland, Ives, Sessions

Walter Hillsman (org)  
**Vista VPS 1038 (£2-99)**

#### THE ORGAN IN HULL CITY HALL

Music by Guilmant, Harwood, Hollins, Kellner, Sweelinck

Peter Goodman (org)  
**Vista VPS 1042 (£2-99)**

Vista concentrate almost entirely on the larger organs which, judging by their prolific output, must be in some popular demand.

In the first of these examples Walter Hillsman, a recitalist well-known on both sides of the Atlantic, includes in his all-American selection two of Ives' irreverent variations ('send-up' is the term that comes temptingly to mind), and Copland's only organ work *Epistle*, not otherwise available in the British catalogue. An interesting collection, issued to mark the Independence Bicentennial, excellently performed and very well recorded in Vista's consistent style. The banding between items 3 and 4 on side 2 has been omitted, but there is a pause. [A: 1]

Peter Goodman offers mostly romantic music to show off the large concert Compton at Hull, especially its reeds, in a splendid performance, if a somewhat flamboyant one in terms of rhythmic flexibility. There are very impressive sounds to be heard, with levels ranging from a brief passage with a just acceptable signal/noise ratio to cartridge trackability tests at the side-ends. Blumlein technique, of course, as in all Michael Smythe's recordings. Incidentally, 'samplers' of the genre may be had on VPS 1010 and 1033, containing items extra to those required for other productions, played on 12 instruments. [A: 2]

Trevor Attewell

#### PIANO MOODS

Music by Liszt, Satie, Chopin, Debussy, Rachmaninov, Schumann, Schubert, Bach, Ben-Haim  
 Ilana Vered (pno)

Decca 'Phase 4' PFS4387 (£3-35)

As the title implies, this disc has been planned to display the ability of the Israel pianist, Ilana Vered to convey a wide range of atmospheres from Bach through Liszt and Rachmaninov to Erik Satie. Her encompassing facility has been one of the foundations of her reputation, and it is well demonstrated here, although one cannot say that the utmost is extracted from any of the well-known pieces which are recorded here, and equal success in all of them would have been astonishing indeed. Miss Vered is at her best in the more extravert music, but 'the' Rachmaninov *Prelude* is sorely pulled about. Under the circumstances it is to be expected—and regretted—that there will be exaggerations, rather as if these works has to be 'sold' or 'put over' to the public by pointing them.

The piano tone is not distinguished; under pressure, the lower middle register has a nasal quality, and the treble goes 'wooden' when it is hammered, which happens quite often. There is loud and disturbing pre-echo at the start of side 2. [C: 2]

B. J. Webb

**POULENC: Concerto for Organ, strings and timpani in G**  'Concert Champêtre' for Harpsichord and orchestra

Marie-Clair Allain (org) / Robert-Veyron Lacroix (hpd) / ORTF / Martinon

RCA Erato STU-70637 (£3-49)

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timps there even seem, indeed, pre-echoes of Malcolm Williamson.) The organ is nicely balanced and most impressively played: all well done in every way.

In both works spacing, spread and instrumental balance are all that could be asked. In the final analysis the record doesn't really make **A** because of a certain 'masked HF' most noted in larger ensemble passages, and a hazy suspicion of mistrack in the organ, and other, loud bits. Good, though; and certainly should not discourage the Poulencian (!) from purchase.

The harpsichord work, while not profound, has plentiful supply from the jolly tunes department, together with imaginative nicenesses of various kinds, and rounds off a very rewarding recording. [**B**: 1/1\*]

Geoff Jeanes

## PUCCINI: 'Suor Angelica'

Scotto | Horne | Cotrubas | Ambrosian Opera Chorus | Desborough School Choir | New Philharmonia Orchestra | Maazel  
CBS 76570 (£3.49)

*Suor Angelica* passes tolerably well in the theatre as one contrasting element in *Il Trittico* where its sentimentality sets off both the brutality of *Il Tabaro* and the humour of *Gianni Schicchi*. On its own, on record—minus the spectacle and with a libretto ramming the text home—it can be unbearably maudlin. Sister Angelica, banished to a nunnery by her noble relatives for disgracing their family, spends her time amongst giggling and bitching nuns (verismo?). Visited by her harsh and unyielding Aunt she infers that her illegitimate son is dead. This causes her to commit suicide (more verismo). Just before she dies her prayer for forgiveness is answered by the appearance of the Virgin Mary with Sister Angelica's blond and blue-eyed son (most verismo?). I must confess that I find this Puccini's least acceptable work (the story is well served by its sentimental and pretty, illustrative music). The performance is good: Marilyn Horne takes most of the accolades; Eleana Cotrubas as Sister Genovieva is sweet-toned and very touching. Renata Scotto does a good impersonation of the title role, but her tone can be harsh when high and loud. Lorin Maazel conducts as vigorously as this music will bear. [**A**: 1/2]

Benedict Sarnaker

## RACHMANINOV: Piano concerto 3 in d, Op. 30

Andrei Gavrilov (pno) | USSR SO | Lazarev  
HMV ASD7032 (£2.50)

Gavrilov's recording, made in the Moscow Conservatory *Great Hall*, last year, is technically very similar to the outstanding *Melodiya* production with Yevgeny Mogilevsky, Kondrashin and the Moscow Philharmonic (SXP30218), although without the deficiencies of that version—starved string tone, some coarseness, and a fairly high tape level. The piano tone here is somewhat veiled, and I was very aware of the fading up of instrumental sections, sign-posting the musical textures, which I found irritating. The generally fuller tone of this more recent *Melodiya* recording theoretically justifies the price difference between *Greensleeve* and *Concert Classics* labelling, however, I still cannot listen to Mogilevsky's electrifying account of the concerto without tensing up, as though experiencing a live performance. To a lesser degree this applies to the Ashkenazy/Ormandy (RCA, now full price). But Gavrilov is altogether cooler; indeed his reading almost totally lacks the tautness of live music. And the USSR Orchestra is decidedly poorer

than Kondrashin's, not just the tonal quality of the horns.

Still, this new disc should appeal to those who collect pianists. Andrei Gavrilov certainly has a stunning technique, notes stream like clear water from his fingers, and there is an elegance about his style that holds the interest. I suspect that the Rachmaninov 3rd is not really his work, and the self-conscious orchestral delivery at the opening of the slow movement suggest lip-service more than anything. Perhaps the deleted Anieyas/NPO would have made the better ESD reissue? [**B**: 2]

Christopher Breunig

## Nicely slow in the slow bits

RAVEL: Bolero □ La Valse □ Daphnis et Chloë: Suite 2  
Strasbourg PO | Lombard  
RCA Erato STU 70930 (£1.49 until 1st July, then £3.49)

In *Bolero*, the Erato engineers have not aimed at the breathtaking (and domestically unreasonable?) dynamic range of CBSO/Frémaux, but have nevertheless produced a fine and detailed recording. Neither, in *La Valse*, have they been tempted to the thunderous dem-room grandeur EMI accord Previn's aggressive bass-drum. Instead, a clean open sound with detail and lucidity—from both a podium and a mixing-desk point of view—with real-sounding punchy percussion where needed. A gentle and, indeed, valse-like approach, nicely accelerated in the accelerative bits and, I can't resist saying, nicely slow in the slow bits. Even at the end, things remain satisfyingly clear and unconfused.

*Daphnis et Chloë* is sheer delight. From shimmering opening to irresistible rhythmic climax, this impressionistic orchestral painting commends itself, both by beauty of tone-colour and by rich warmth of recording, to any enthusiast of goodly sounds. There may be some **A** sound in the first two items, but for *Daphnis* there's no hesitation in awarding a full star for a supremely natural sound experience. Hats off to Erato, as to Alain Lombard and his Strasburgers. [**A/A\***: 1\*]

Geoff Jeanes

## RAWSTHORNE: Symphony 1 □ Symphonic Studies

LPO | Pritchard  
Lyrita SRCS 90 (£3.46)

At the time of its first performance Symphony 1 was highly praised, but it has since been under-valued and under-played. How much more satisfying it is than the spineless spasms that so often pass for composition to-day! Almost every move is well judged and clearly articulated, my only reservations being about the finale, which I find less convincing than the other three movements. To turn from the symphony to the pre-war *Symphonic Studies*, however, is to discover an even greater vitality. Here is a twentieth-century classic of English music, and listening to this outstandingly fine performance by the LPO under John Pritchard I wondered whether Rawsthorne had ever written a better work. If you don't know the *Symphonic Studies*, or even if you do, be sure to hear this new recording, which is one to return to again and again. The sound on both sides is well balanced, natural in colouring and perspective, and only very slightly marred by an

occasional over-brightness—at the beginning of each work, for instance, where there seems a touch of pre-echo. A pity Alan Frank's sleeve-note is unduly short and somewhat slight. An important record. [**A**: 1/1\*]

Hugh Ottaway

RUBBRA: Symphony 10, Op. 145 □ Improvisations on Virginal Pieces by Giles Farnaby, Op. 50 □ 'A Tribute', Op. 56  
Bournemouth Sinfonietta | Schönzeler  
RCA RL 25027 (£3.49)

Here is No. 10—and very welcome too. Completed in 1974, this *Sinfonia da Camera* brought to fruition an idea that the composer had had in mind for some years: 'to compress the usual three movements of a symphony into a continuous movement that would, at the same time, mirror the three sections of a normal first movement'. The result is certainly the most concentrated of Rubbra's symphonies, probably the most purely contemplative, and to the casual listener perhaps the most elusive. The basic material is extremely simple, and, as always with Rubbra, the working of it needs to be followed closely. This is also true of *A Tribute*, written for the seventieth birthday of Vaughan Williams, but much less so of the Farnaby Improvisations, in which the approach is quite different. The performances by the Bournemouth Sinfonietta under Hans-Hubert Schönzeler are deeply sympathetic and may be commended unreservedly. The recording style, however, seems ill-suited to Rubbra's textures, for the closeness is of a kind that tends to separate the individual strands rather than to present the music as a whole. There are passages in the symphony where I feel I am in the middle of the orchestra. With this one reservation, warmly recommended. The sleeve-notes are by the composer, of whom a recent photograph makes a very appealing front cover. [**A/B**: 1]

Hugh Ottaway

## SCARLATTI: 18 Harpsichord sonatas

Luciano Sgrizzi (hpd)  
RCA Erato STU 72001 (£3.49)

This is quite a pleasant collection of fairly representative sonatas, which have been grouped in sets of two or three in the same key. This certainly avoids the bitterness that sometimes results in hearing a number of these short works in sequence. There is adequate indication that Scarlatti preferred to group the sonatas in this way, but it would appear from the album that Sgrizzi has gone for a fairly arbitrary grouping. The sonatas appearing on this record are K.159, K.132, K.133, K.376, K.377, K.264, K.198, K.20, K.9, K.430, K.14, K.424, K.425, K.474, K.126, K.72, K.184, and K.543.

The performances are very attractive, using conservative changes of registration and showing a striking rhythmic vitality. The player uses discrete *rubato*, and has a certain lightness of touch that is particular, appropriate to some of the sonatas.

The sound falls easily on the ear, but it seems to me that the stereo spacing is rather overdone—it gives the impression that the harpsichord is several yards long! [**B**: 1]

Colin Evans

## SCARLATTI: Harpsichord sonatas

Blandine Verlet (hpd)  
Philips 'Universo' 6581 028 (£1.99)

The record has been cut at a surprisingly high dynamic level, so much so that the initial shock of hearing a gargantuan harpsichord made me leap across the room to make

**O**h my fellow men, when you read this some day, reflect that you have done me wrong, and let him who is unfortunate comfort himself with the thought that he has found someone equally unfortunate who, despite all the burdens placed upon him by nature, did all which was in his power to earn a place among worthy artists and human beings. - Ludwig van Beethoven, Heiligenstadt, 6th October 1802.

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suitable alterations to the volume control. There was no trace of distortion, and although cutting at a high level reduces the risk of surface noise, listeners not *au fait* with harpsichord music should perhaps be reminded that too high a volume results in a very unrealistic sound. The sound is also a touch over-bright, but some judicious tweaking of the tone controls produces a more acceptable sound.

There is no doubt that Blandine Verlet is a distinguished player, whose playing is characterised by clean phrasing and crisp ornamentation. I must confess to being not completely happy with the use of *rubato*, which struck me as rather lumpy: it seemed as though there was a sort of self-conscious tendency towards hesitancy, which at times is rather predictable.

However, apart from these reservations, the record's price would make it quite a nice introduction to Scarlatti's sonatas. [B: 2]

Colin Evans

**SCHUBERT: Sonatas (sonatinas) for violin and piano: 1 in D, D384 □ 2 in a, D385 □ 3 in g, D408**  
Ilse Mathieu (vln) / Jörg Ewald Dähler (pno)  
Claves D608 (£3-89) (distributed by CRD)

The first of the sonatas is perhaps one of the most mundane pieces that Schubert wrote and it is almost impossible to sound anything but pedestrian in playing it. It is almost totally lacking in any Schubertian charm. By the second sonatina Schubert is getting into his stride; by the last, written a little later, he has found a way to insinuate charm into the bare bones of a violin sonata. As a result, a performance of the works in chronological order tends to appear to get better and better—as it should be; we certainly wouldn't want it to be the other way round. They are all relatively simple pieces, within the range of most amateurs, and we can therefore be highly critical of a professional performance. The soloists here do not seem to get all that much inspiration from the works. They play them coolly and neatly but without much emotion. The recording is adequate without being distinguished. The piano is notable in being a historical Brodmann hammerklavier restored in 1965 for a Basel museum. Its merits are that it sounds very much like any modern grand piano; certainly none of the clangour of most historical instruments. [A: 1]

Peter Gammond

**SCHUBERT: Piano sonata 17 in D, D850 □ 4 Deutsche Tänze, from D366**  
Vladimir Ashkenazy (pno)  
Decca SXL6739 (£3-50)

There is the romantic Schubert of the Piano trios and symphonies to be found in the second *con moto* movement; the bucolic Schubert of the Landler world in the scherzo; in the rondo, the marche militaire Schubert who would like to have written *Lilac Time* had the opportunity arisen, coyly hidden by a Haydn-esque student writing something to please his professor. Four Schuberts in one; so how does the performer reconcile the characters. Perhaps, he can't; perhaps this is why we still feel that Schubert was never the complete composer of piano sonatas—in spite of many recent attempts to prove that he was. Ashkenazy quite simply plays each movement for all it is worth and I'm still not sure whether this makes them more or less united. Why worry? There is so much pleasant music to delight in and Ashkenazy is such a marvellous pianist who never allows any piano to dominate him. This is a clear realistic sort of recording which the sleeve says (perhaps some confusion with all this

deutsche stuff about) was produced in Petersham in April 1975. The filler is provided by four of the four-hundred-and-fifty-two dances that Schubert wrote. These he imbued with all sorts of poetic fancies; friendly music, but still dance music for listening. [A: 1\*]

Peter Gammond

**SCHUMANN: Grand sonata 3 in f, Op. 14 'Concerto Without Orchestra' / Scriabin: Piano sonata 5, Op. 53**  
Vladimir Horowitz (pno)  
RCA ARL1-1766 (£3-49)

The sound of the piano concertos issue is by no means ideal; it was recorded live during Horowitz's 1975/6 American concert tour (the first he had made for nearly a quarter of a century) and has a rather hard, clangorous tone, probably the responsibility of the theatre or hall where it was recorded. But after a while one gets adjusted to it and acoustics are forgotten in the sheer magic of the performance. The concert represented here is an unusual one. Half is given to Schumann's least popular sonata, which, published as 'Concerto Without Orchestra', and first performed by Brahms, was dedicated to Moscheles who demurred at the title. It was re-issued as Sonata 3. It originally had two scherzos and five-movements but one was dropped. One of many tributes to Clara Schumann, it is a large-scale piece of experimental romanticism and, particularly in the last movement, of a complicated virtuosity that takes a Horowitz to sort it out into a matter of heart and soul. He handles it superbly and, if anyone can put this work back into the general repertoire, he is the man to do it. Horowitz is not only a true virtuoso but also a dramatic artist; he seems to know instinctively how to make a work unfold with maximum effect; not too hurriedly, but gradually gathering impetus and feeling. This is a demanding record: those who can absorb the Schumann will not necessarily feel at home with Scriabin's 'black music' as one commentator described it—'a deed of wizardry'. Also called 'a glorious afterthought' to the *Poem of Ecstasy* it is prefaced with an excerpt from his poems of that name. A difficult, restless, changing, demanding work; but again Horowitz, one of Scriabin's foremost interpreters, leads us through the dark alleys with a firm sustaining, guiding hand. Nothing more can be said except that these seem, without need of detailed analysis, great performances, communicating their greatness emotionally, which is becoming a rarer art than is good for music, under the pressures of endless concerts and recordings. [B/C: 1\*]

Peter Gammond

**SCHUMANN: Piano sonata 1 in f, Op. 11 □ 2 in g, Op. 22**  
Lazar Berman (pno)  
HMV ASD3322 (£3-50)

Berman is, we now know, not like Richter in Schumann: he provides a virtuoso approach, with biting attack, and a Lisztian *espressivo* which delays the delivery of melodic notes. In fact, his treatment of the simple *aria* in the first sonata is jumpy and over-elaborated besides the exquisite refinement of Pollini's legato. I also prefer Kempff's steady reading of the more popular second sonata, even the exaggeratedly measured scherzo; I find it more perceptive and authoritative. However, many will prefer Berman's performance, for its grand manner and fast speeds.

The Russian is not really helped by a dynamically compressed recording that presents a hard steely forte, in close balance.

This sort of production puts a vice-like hold on poetic subtleties of tone gradations. [B: 1]

Christopher Breunig

**SCOTT: Piano concerto 2 □ 'Early One Morning'—poem for piano and orchestra**  
John Ogdon (pno) / LPO / Herrmann  
Lyrita SRCS82 (£3-46)

It had seemed to me that Scott's 'neglect' was perhaps not unjust, but then I listened to the Second Piano concerto, which, though undated, would appear to have been written in 1956. No other major work by Scott that has come my way has impressed me as this has done. I found it gripping throughout, highly chromatic but not diffuse, and brilliantly laid out for the chosen forces. The other work might be described as Scott's answer to *Brigg Fair*. Originally written for two pianos and orchestra (1931) and revised for one piano in 1962, this poem of summer is a meditation on a traditional tune, not a sequence of variations: a slighter work than the concerto, but fascinating and thoroughly enjoyable. John Ogdon is in splendid form and the performances seem to be excellent. So is the recording; the balancing, colouring, presence and overall effectiveness undoubtedly merit a star. Well worth investigating. [A\*: 1]

Hugh Ottaway

## Another fine Finnish

**SIBELIUS: Symphony 2 in D, Op. 43**  
Boston SO / Davis  
Philips 9500 141 (£3-50)

Hot on the heels of an immensely impressive Sibelius First Symphony (*HFN/RR*, March '77, p. 111) comes this quite magnificent version of the Second. I have no hesitation in awarding two stars, for 'magnificent' is applicable to both performance and recording. Colin Davis' respect for detail is exemplary, as is his grasp of the whole, the playing of the Bostonians has the best sort of virtuosity—it is never flashy—and the overall effect is clear, sensitive and strong. There were moments in the first movement, and again in the build-up to the recapitulation in the finale, when I thought perhaps the temper was a little cool and clinical. But my main impression was very different: a well-balanced interpretation in which the longer- and shorter-term considerations seemed to reinforce each other—as, indeed, they should. My only reservation about the recording concerns the wide separation, which in some circumstances may be distracting; but in all other respects the achievement would be hard to fault. Balancing, colouring, dynamics, and—very important—the impact in a smallish room are excellent. Everything is comfortably accommodated, and the quality is maintained throughout: the massive coda to the finale, which Davis sustains superbly, comes off the record as cleanly as the music at the beginning of either side. If you have tended to take Sibelius' Second for granted, this is a record to make you fall in love with it all over again. [A\*: 1\*]

Hugh Ottaway

**SIBELIUS: 'Finlandia', Op. 26 □ 'The Swan of Tuonela', Op. 22 □ 'Karelia', Op. 11—suite □ 'Valse Triste', Op. 44**  
NPO / Kord  
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Vivid, immediate, full-bodied and with excellent colouring, the sound is marred only by the spot-lighting of soloists and some over-brightness at climaxes. Even the 'spot-lighting', however, is less marked than on some records in this series, but in my view it is sufficiently unnatural to preclude the awarding of a star. The NPO under Kazimierz Kord gives very fine playing, and if you lack these Sibelius 'pops' there is much to be said for buying this record. The performance of *Finlandia* is as broad and spacious as you are likely to hear, that of *Valse Triste* very sensitive but perhaps excessively slow; in *The Swan of Tuonela*, as so often, a sonorous glow tends to undermine the black intensity, but this is still a beautiful and moving performance. The early *Karelia Suite* is quite delightfully done. [A: 1\*/1]

Hugh Ottaway

**J. STRAUSS II:** 'Die Fledermaus' overture □ *Roses from the South* □ 'Gipsy Baron' overture □ *Tales from the Vienna Woods*  
 NYPO | Bernstein  
 CBS 61779 (£1-99)

These appear to be new recordings, dated 1976, and they are on a moderately priced label. That is the good news. Beyond that four Strauss items on a disc (the first side lasts 21':37", the second 24':17" seems distinctly on the stingy side; they could have thrown in a polka or two as most comparable discs do. Beyond that Bernstein indulges in his post-*Carmen* liking for incredibly slow tempos on various occasions. I have rarely heard the overture to *Die Fledermaus* so willfully pulled about. When not lingering he goes belting through the waltzes, with percussion unmercifully bashed, getting not much nearer to the Viennese lilt than the 4,000 miles or so that separates New York from Vienna. The sound is not very distinguished. Rest easy, Willi, your crown is not in jeopardy! [B/C: 3]

Peter Gammond

**STRAVINSKY:** *Firebird*—complete ballet (1910)  
 RPO | Dorati  
 Enigma VAR1022 (£3-49)

The playing of the RPO here is very good, but solos are less distinctive than those of the old LSO, nor is it in the same class as that of the LPO under Haitink (Philips 6500 483). The LPO suggest ease and mastery; with the Mercury version you had the impression of the players completely caught up in the projection of the score. If the RPO do not match their electrifying colour and vividness, that is partly because the Enigma producer has decided to recess the orchestral picture very considerably. The sound is bass-light, but has a decently extended dynamic and treble range, and depth. What has been overlooked, in transferring at a modest level, is that persistent pressing ticks divert one's attention in extended quiet passages. Listening to the Philips disc is, by contrast, like hearing a tape, so clean and smooth is the quality—the overall balance is not dissimilar, but the realistic weight makes all the difference to the strings.

In short, this sort of recording demands pressing standards that have not been provided. But someone who is unfamiliar with Dorati's taut, barbed manner in this ballet—he often makes it sound like a Bartok score—should certainly try to hear this Enigma *Firebird*. For serious students of interpretation there is enough in it to justify

duplicating with the earlier recording, for comparative purposes. [A: 1/2]

Christopher Breunig

**TELEMANN:** Overture 'Hamburger Ebb und Fluth' □ 'Ouverture des Nations Anciens et Modernes' □ Overture in C Major  
 ASM | Marriner  
 Argo ZRG 837 (£3-50)

The performance is impeccable with correctly chosen tempi and dynamics. The works on this album are not, of course, modern overtures, but suites in the French style; an alternating slow and fast introduction followed by a collection of dances. The first two are unmistakably programme music, the 'Hamburg Ebb and Flow' was written for an Admiralty feast in 1723 and features dances describing some of the nautical winds and gods, with alternating flutes and recorders, as well as the more usual oboes, bassoon and strings. The 'Ouverture des Nations', written for strings, consists of paired dances, the more conservative ones representing the old-fashioned Baltic states while the more exciting dances are their up-to-date 18th century counterparts. Odd man (or woman) out is *Les Vieilles Femmes* who cry, with wailing chromatic appoggiaturas, for the times past.

The recording is excellent, setting the Academy in the pleasing ambience of St. Mary's, Rotherhithe, and the balance between the wind and strings is always exemplary—listen to the *Sommeille* in the C major Overture where the 3 oboes are supported by shimmering strings and a muted harpsichord with no one group of instruments overpowering any of the others. The harpsichord, played imaginatively and with taste by Nicholas Kraemer, I think, blends very well into the ensemble, and is again well recorded. A small minus point is that there are a few extraneous traffic noises faithfully reproduced but this record is well up to Neville Marriner's and the Academy's superlative standard. [A: 1\*]

John Atkinson

## Warmly recommended Telemann

**TELEMANN:** Six flute sonatas, Op. 2 for 2 flutes  
 Michael Debost (fl) | James Galway (fl)  
 HMV HQS1368 (£2-50)

James Galway, of course, needs no introduction, but he is brilliantly matched on these recordings by Michel Debost, who seems a perfect musical partner in terms of effortless agility and tone quality. Both players produce a beautifully relaxed, limpid sound and their sheer technical command of the music makes for a rewarding listening experience. The control and the perfect articulation in the fast movements is superb, and the excellent recording places the instruments in what seems to me to be just the right perspective. They are close enough to underline the intimate, conversational quality of music, but not so close that the sound is marred by mechanical clattering.

This is a most attractive record which I can warmly recommend, and not just to flute players. [A\*: 1\*]

Colin Evans

**TRADE WINDS: LIGHT MUSIC FOR WIND QUINTET**

**DANIELSEN:** Musical saunter\* / **JANSEN:** Fragments\* / **TCHAIKOVSKY:** Nutcracker suite\*\* (arr. Lovelock) / and pieces by Byrd, Dvorak, MacDowell, Mozart, Mussorgsky, Poldini, Prokofiev, etc.  
 Halle Wind Quintet | \*Norwegian Wind Quintet | \*\*Melade Wind Quintet,  
 Amberlee-Euroson ALM602 (£1-99)

The *Nutcracker* suite is not really a revelation in this form though it translates quite well into wind quintet terms. Perhaps side two provides the best entertainment, nine pieces, popular classics, such as MacDowell's *To a wild rose*, Poldini's *Poupée valsante*, Dvorak's *Humoresque*, arranged for quintet and skilfully played by the Halle Quintet. For those who like the sound of mixed wind playing this is a friendly offering. The timbres of wind instruments record well but I didn't think that they had been given their full vibrant quality on this pleasant but somewhat subdued recording. [A/B: 1/2]

Peter Gammond

**TRUMPET MUSIC**

**GERVAISE:** Seven French Renaissance Dances / **LOEILLET:** Sonata in C / **PURCELL:** The Queen's Dolour / **D. GABRIELI:** Sonata in D / **BACH:** Jesu, Joy of Man's Desiring / **BIBER:** Sonata No 4 in C / **ALBINONI:** Concerto in d, Op. 9, No. 2  
 Maurice André (tp) | Alfred Mitterhofer (org)  
 HMV ASD3318 (£3-50)

Maurice André's beautifully sweet trumpet tone will need little introduction to connoisseurs of brass music, and it is perhaps this alone which contributes to the success of the recording. He is at his most characteristic during the slower numbers, and particularly in the beautiful slow movement of the Albinoni concerto. This, incidentally, deserves to be as popular as the so-called Albinoni *adagio*, and will be sitting on my turntable for some time to come.

It was a nice idea to include Bach's 'Jesu Joy', and although the trumpet sings with tremendous poise and control, the clumping sounds from the apparently ancient organ do little to enhance the peaceful atmosphere.

The recording keeps the trumpet firmly in its place, and is very spacious. For brass enthusiasts this record is a must. [A: 1\*]

Colin Evans

**VIVALDI:** 'La Cetra' Op. 9

| Solisti Veneti | Scimone  
 RCA Erato STU 70897 (2 records) (£6-98)

A veritable blitz of Vivaldi this month from RCA, all with the worthwhile I Solisti Veneti conducted by Claudio Scimone. The performance, if a little on the conservative side, cannot be faulted and the recording quality is generally good, but one suspects close-miking techniques plus the addition of artificial reverberation. This leads to certain anomalies in the overall sound—occasionally dry instruments suspended in a pleasing ambience. This also makes it very easy for instruments to be made larger than life.

The twelve *La Cetra* concertos are very much more of a vehicle for the soloist than the earlier sets and, as with Op. 4 set, the solo violin is a little too close, very noticeable when it is only supported by the continuo cello and harpsichord such as in the *largo* of Concerto No. 3 which, because of the reverberation and their level, seem to be quite some way behind it.

A fine record in its way and, despite my misgivings, it deserves its rating. [A: 1]

John Atkinson



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**VIVALDI: L'Estro Armonico: 12 Concertos, Op. 3**  
*I Solisti Veneti / Scimone*  
**RCA Erato STU 70753** (3 records) (£10.47)

*L'Estro Armonico* furnishes some memorable examples of the composer's amazing facility for brilliant orchestration. Although, in this particular collection, Vivaldi confines himself to exploiting the possibilities of the basic baroque string orchestra with continuo, plus concertino soloists, the effects he creates are truly stunning. The opus is, of course, dominated by Corelli's influence. Not-with-standing, Vivaldi's individualistic stamp is clearly evident and is manifest primarily in the vivacious, sparkling and bold treatment of the solo episodes whose figurations contain flights of dazzling and unbridled virtuosity. In this context Vivaldi's writing must be regarded as a far remove from the concerto da chiesa of the earlier master.

I Solisti Veneti are famous for their magnificent interpretations of baroque music in general and for their readings of Vivaldi's music in particular. In these performances the soloists offer some incisive playing coupled with pleasing ornamentation (where the score permits) and perceptive use of phrasing and dynamics. Occasionally, however, I felt the tutti episodes were a little larger than life (due, perhaps, to the fact that they were miked too closely by over zealous engineers?). The harpsichord continuo offers some pleasing effects but the instrument used in this recording does not appear to be sufficiently mellow. Further, I felt the inclusion of a lute or a small chamber organ might effectively have enhanced the overall tonal variety of the bass line.

The E major Violin concerto receives a magnificent reading, I also enjoyed the rapturous play on sonorities in the first concerto of the opus. The problematical larghetto of the tenth concerto in b minor appears to be taken just a shade too slowly, the movement therefore fails to make its full impact. Elsewhere, however, tempi are lively and intelligently selected.

Some pre-echo tends to be annoying, leading to certain passages being spoiled by their anticipation. [A:1]

Victor McAloon

**VIVALDI: 'La Stravaganza' Op. 4**  
*I Solisti Veneti / Scimone*  
**RCA Erato STU 70955** (2 records) (£6.98)

In Vivaldi's twelve Op. 4 concerti, the solo violin has an even more prominent role than in the preceding *L'Estro Armonico* and this recording reflect this—the leading violin being just a little larger than life. The soloists, Piero Toso (and Juan Carlos Rybin in Nos. 2 in E minor and 9 in F) bring out the lyricism in the writing, especially in the *Largo* movements, although neither of them has much of an extravagant flair with ornaments—somewhat belying the name of the set, (*Stravaganza* however, is thought to refer to the harmonic daring of the writing rather than the technical virtuosity of the solo part.)

I Solisti Veneti (thirteen strong plus double bass and continuo), conducted by Claudio Scimone, turn in a solid rather than exciting performance and I would have liked to have seen more changes being rung with the continuo. Although a lute is used in a few of the slow movements, No. 5 in A and 2 in E minor for instance, and a bassoon is occasionally used, sometimes in the *concertino* group, sometimes in the *ripieno*, the main weight falls on a rather tinkly harpsichord. How nice to have interspersed this with the use

of a chamber organ (the 1714 Amsterdam edition calls for '... violoncello et organo').

The recording quality is satisfying though a little on the dry side, with a good dynamic range, a minor quibble being the slight spotlighting of the solo violin (and also of the lute when used.) [A/B:1] John Atkinson

## Compliments to the Seasons

**VIVALDI: Il Cimento dell'Armonia e dell'Invenzione: 12 Concertos, Op. 8**

*I Solisti Veneti / Scimone*  
**RCA Erato STU 70680** (3 records) (£10.47) (R nos. 1-4)

The only other listed recording of the complete Op. 8 is the Zukerman/ECO set, CBS 78225, 2 records at £5.99, reviewed in January 1974, A:1. For a separate 1-4 the 1970 ASM/Marriner, Argo ZRG654, features in our Basic Classical Library at A:1\*.

Concertos 1-4 (The 'Four Seasons') from this recording were released on STU70679 and reviewed in July 1976, and praised quite highly. Considerations such as the rich and pure violin solo tone (Piero Toso), with a technique which brought the display sequences vividly to life, and inspired orchestral support, contributed to an A:1 rating.

For exactly such points (evident throughout), the set is here given, on consideration, our top available rating for technical quality. The recording has the virtues of the performance: biting, exciting, and delighting. The ensemble is presented with an achievement of detail and a perfection of balance that amaze, while solo players (nos. 9 and 12 are for oboe) are excellently distinct. Perspective tends to be close—one hears clearly the key-fingering of Pierre Pierlot's (admirable) oboe—and this brings out all the wealth of instrumental sound. And yet there is a marvellous ambience all around, excellent on Hafler.

For those who want a first-rate 'Four Seasons' alone, the four from this set are superb. For those who know and love the 'Seasons' and wonder what the rest of opus 8 are like: come on in, the water's fine! [A\*:1/1\*] Geoff Jeanes

**VIVALDI: Six Flute Concertos, Op. 10**  
*Vivian Preston (fl) / The Academy of Ancient Music*  
**Oiseau-Lyre DSLO 519** (£3.50)

Stephen Preston and Christopher Hogwood's Academy of Ancient Music turn in an authentically baroque performance of the Op. 10 Concertos with a suitably small force of one-keyed flute, two violins, viola, cello and continuo. The sound of baroque violins has a harsher, reedy quality and is more direct than that of their modern counterparts and this difference is accentuated by a very sparse use of vibrato, using it more as an ornament at select points rather than continuously. This lack of vibrato throws a lot of responsibility onto the players because their intonation has to be spot on—a heavy vibrato can cover up a lot of misplaced notes. The musicians here, who include Tony Pleeth on baroque cello, are specialists in this field and there are only a couple of moments where intonation is doubtful. The string ensemble is always tight.

Stephen Preston, who teaches at the Guildhall, excels on the one-keyed flute, an instrument very unlike the modern Boehm flute, with a much more appealing soft woody tone.

It is a very hard instrument to play in tune—every note demands a different embouchure from the player, but Preston cannot be faulted. The blend of the flute and strings is much more cohesive than with modern instruments; compare the *Il Sonno* movement of *La Notte* on this record with Gazzelloni/Musici on Philips—when the flute enters, it is not nearly so obtrusive. Incidentally, no bassoon is used in *La Notte* and to my way of thinking, isn't missed. Ornaments such as the birdlike trills in *Il Gardellino* (The Goldfinch) are executed immaculately, and fast arpeggio passages are always uniform. The continuo part is played by Christopher Hogwood, who must be one of the hardest working musicians around at the moment, on a rich sounding Schütze copy of an Italian harpsichord, except in the *largo* of *La Tempesta di Mare* and the F major Concerto where he plays a chamber organ, which makes a nice change. The melancholy F minor *siciliano* in this concerto has the flute and muted violins in unison—very testing but perfectly played.

The recording makes no effort at artificially enriching the baroque string sound with reverberation—just enough ambience is captured to give the impression of a recital room rather than a concert hall and it works very well—the beginning of *La Tempesta* is exciting without being exaggerated. I suspect a little over-close miking on the flute which gives it a *jangly* edge, but all in all, this record is how I like to hear Vivaldi. [A:1]

John Atkinson

**WEBER: Piano concertos no. 1 in C and no. 2 in E**  
 Variations on 'A Schüsserl und a Reind'rl' for Viola and Orchestra □ *Andante and Rondo ungarese for Viola and Orchestra*  
*Malcolm Frager (pno) / Anner Bylsma (cel) / Rainer Moog (via) / North German Radio SO / Andrea*  
**RCA PRL2-9066** (2 records) (£5.98)

The piano concertos are often undervalued; here they are played with an engaging spirit and tenderness that will surely help them towards a deserved popularity. The first has a bold military opening but more reflective passages later, and a delicate and lovely little Adagio. The second has a first movement of a span and eloquence that should win many new admirers; its Adagio is a gem—a gentle movement that does not lack stormy passages. The finales are vivacious. Malcolm Frager succeeds admirably in mastering the considerable technical difficulties without ever letting us forget the expressive (and formal) qualities of the music. The orchestra sounds rather congested in a few loud passages in the second concerto but not to the extent of damaging the very favourable overall impression.

The *Grand Potpourri* is in fact a four-movement concertante in all but name, lasting some 20 minutes. A pleasing work, with the expected attractive melodies, neatly scored—and finely balanced by performers and engineers alike. Of the two works for solo viola, both again very well performed, greater interest attaches to the variations on the Austrian folksong (a great favourite in Weber's day). It is quite a challenge to the soloist, and the 5th variation, with pizzicato viola and bassoon to the fore, is a real beauty. I thought the solo instrument was rather unnaturally favoured by the microphone-placing, but the orchestral contribution can be clearly heard. Apart from mild incipient distortion here and there, the recording is worthy of the expressive and well-controlled performances. [A/B:1]

Peter Branscombe

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## Orchestral/ Symphonic

ELEGANTLY presented in an attractive double folder, **Beethoven's** 'Complete Overtures' performed by the Gewandhaus Orch/Masur are on Philips 8780 031 (2 records, £3.50). Comparisons with the Karajan box and with individual overtures by others inevitably reveal preferences, but as one man's complete set of performances this offering would be hard to beat. C. B. disliked the symphonies with which they first appeared in 1975, but interpretations here are never less than good and sometimes touch star quality. The recording, thick-textured in places, varies between very good and mediocre, but overall satisfactory. [A/C: 1]

Silvestri's inimitable account of **Enescu's** Rumanian Rhapsody No. 1 reappears, now coupled with exciting **Prokofiev** *Love of three oranges*, **Khachaturian** *Gayaneh* Suite, **Liszt's** *Hungarian Rhapsody 4* (CFP40262; £1.25). All VPO. Stereo manipulation a bit obvious, nonetheless compelling. [A: 1\*/1]

Two major **Mozart** reissues from Philips are each combined with half of Arthur Hutchings' book *Mozart: The Man & The Musician* which was favourably reviewed in February (page 67). **Mozart**—The Mature Symphonies (6747 130, £28.00) is an 8-record set of symphonies 21–41, with Josef Krips and the Concertgebouw and including *Mozart the Man* (for the other half, see below under 'Operatic'). The performance is good but occasionally idiosyncratic. The recording has a warm 'live' reverberant feel, natural but sometimes a little fuzzy when compared with recent Klemperer reissue (HMV SLS5048, 6 recs) which has a crisper but not always more realistic sound. [A/B: 2/3]

It always makes an interesting coupling to have the piano and orchestral versions of **Mussorgsky's** *Pictures at an Exhibition* back to back for side by side examination (HMV SXL30233, £2.25). These versions were originally issued separately; the brilliant and imaginative account of Ravel's orchestration by Maazel was highly praised when it came out in 1963, and still sounds good with a full and clear sound. Gina Bachauer's piano version we assume to be the 1957 recording. This also sounds excellent in every way, sensitively played and well recorded; so the disc offers a good cheap alternative to the very fine (Decca SXL6328) Ashkenazy/Mehta at full-price. [A/B: 1]

A collection of five well-known **Offenbach** overtures by the City of Birmingham Orchestra under Frémaux (HMV 'Greensleeve' ESD 7034, £2.50) can only be moderately acclaimed. In spite of the French conductor, the performances seem to lack the final sauciness and vivacity that this composer demands. The recording is warm but not clearly defined; a

too reverberant bass muddies up the texture. Five overtures is not an over-generous measure. Passable but not exciting. [B/C: 2]

**Schubert's** *Symphony no. 9 (The Great)* is performed by Krips and the LSO on Decca 'World of' series, SPA467, £1.89. This recording is first class in musicianship and sound quality. The flowing warmth and richness of sound makes this 1963 publication a suitable introduction to this 'great' symphony. [A/B: 1]

Released March 1976 in a set with the 10th Symphony, Berglund's **Shostakovich** 5th (HMV 'Greensleeve' ESD7029, £2.50)

is much attractive music here to reward generously the careful listener. The recording is outstandingly fine and the pressings immaculate. See the *Privilege* Schubert box reviewed below for comments on the Amadeus approach to chamber music and on the ratings given. [A/B: 1]

A very nicely recorded set of **Chopin** Waltzes, Nos. 1–15 and 19 performed by Katin are on Decca SPA486 (£1.89). The Waltzes are performed in the order of their composition, that incidentally makes for attractive single-session listening. Katin happily is not afraid to use rubato, which dis-

'schmaltz', 'cloying', and 'over-lush', later to be challenged by a listener who claimed that if those words described what he had just heard, then that was how he liked Schubert played. (Applause and general embarrassment.) Obviously this is how these distinguished instrumentalists respond, and obviously critics' opinions have no special sanctity. If you enjoy the Amadeus approach, here is a box of joys. Our only objection concerns the rather screechy recorded tone of the leader in the higher reaches. This unfortunately misses a full 'A'. [B: 1]

## Vocal/Operatic

**MUNCHINGER'S** *Bach St John Passion* was issued in April 1975 and was generally summed up as a dramatic and exciting account of the work, strongly rivaling other German versions and the more reflective English accounts. Highlights from Britten's version are already in existence. This new set of highlights (Decca SXL6778, £3.50) offer a strange rivalry but an undoubtedly interesting one if you are inclined to buy highlights discs for that purpose. Overall an excellent and detailed recording and most stimulating performances. [A: 1]

creetly applied as here, lifts the recital out of the autoclave. There are interesting sleeve notes too by Katin. [A/B: 1]

We are by no means short of bargain versions of **Dvorak's** superb Cello concerto and there are excellent versions among them by such people as Tortelier, Fournier and Starker. Even so, the Gendron/Haitink version deserves pride of place and it is good to see it back in the catalogue (Philips 'Universo' 6580 149, £1.99). It is a sturdy yet sensitive performance, Gendron producing his usual rich cello tones and firm bowing. The recording is not ideally clear at the louder moments but quite adequate. [B: 1]

A compilation of **Handel's** *Fireworks* and *Water Musics* with Leopard and the ECO are reissued on Philips Universo (6580 147, £1.99). The scale of orchestration is small and performances are exemplary. However, the recording has a brightness and steeliness that won't appeal to everyone. [B/C: 1]

Milstein's admirers will want **Prokofiev** concertos 1 (Philharmonia/Giulini) and 2 (NPO/Frühbeck), especially for cool brilliance of D major scherzo. Original criticisms of harp balance no longer seem applicable. But ensemble problems mar the G-minor, which in no way effaces classic Oistrakh/Philharmonia version. 'Plummy' acoustic here, though plenty of depth in these 1966 efforts (HMV SXL30235; £2.20—from Col. SAX5275). [B: 1/2]

The DG *Privilege* box of three records of **Schubert's** *String Quartets* 2733 008 (£6.45) includes No. 9 in G minor, No. 12 (Quartett-satz), No. 13 (Rosamunde), No. 14 (Death and the Maiden) and No. 15 in G, performed by the Amadeus Quartet. A lecturer once described these performances as

was very well received at the time, and found its way into our Basic Classical Library. Both performance and recording are excellent and every nuance of the Tchaikovsky-like scoring is made clear. Top-class EMI sound with tremendous clarity and impact. A very satisfying record. [A\*: 1\*]

Although at a sitting it's a heavy dose of orchestral **Wagner**—and how one misses the voices after a while!—HMV SLS5075, 'Klemperer conducts Wagner', gives on 3 records (£6.60) most of the favourite extracts from all the major works. One can only averagely rate such a wealth of material: [B: 1/1\*]. Strongly recommended, despite sometimes rumbly pressings and comparatively coarse (1960, 1963) sound.

**Wagner's** overtures to *The Flying Dutchman* (Paita, NPO), *Rienzi* (Paita, Netherlands Radio PO), *Tannhäuser* (& *Venusberg music*) (Leinsdorf, LSO), and *Walküre* Act 3 (Walkürenritt) (Stokowski, LSO), are available on Decca 'World of' series, SPA468, £1.89. Publications date from 1966/73 on this excellent selection of orchestral highlights. The sound quality is first class, with admirable stereo balance maintained throughout. Good clean surfaces, and very enjoyable. [A: 1]

## Chamber/ Concertos

THE two *String Sextets* and the two *String Quintets* of **Brahms** are performed by the Amadeus Quartet in a DG *Privilege* box of three records, 2733 011 (£6.45). Apart from the altogether delightful 2nd Sextet in G, there is nothing here that makes the immediate appeal of say Brahms' Clarinet Quintet or the Piano Trios, but please don't misunderstand, there

from the latest batch of Argo's mid-price (£2.50) label comes ZK8, Tudor church music of Orlando **Gibbons**. King's College choir, as splendid in 1959 as ever since (and sounding much the same), provide four Mass extracts and three verse anthems. An odd flutter in the organ introduction beginning Side 2, as if a surplice got caught momentarily in a tape reel (?), but overall a nice, rich-textured recording. Not, like some later offerings, set back for us to revel in the surround-sound of that colossal architecture, but with compensating benefits of clarity and detail. [B: 1]

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*tutte*, directed by Colin Davis complete on 12 records. A libretto in Italian and English is supplied with each opera, together with a large hardback copy of Hutchings' book *Mozart The Musician*. The whole package costs £38. The book is the other half of *Mozart The Man & The Musician*, mentioned here under 'Orchestral/Symphonic'. What of the performances, how do they compare? Well, all these performances are among the really good and have been so assessed by our original reviewers. The actual recording too is very fine, in fact we thought better of the *Don* than did the original reviewer, but were not so happy about *Così*, finding the solo voices and ensembles rather bright and edgy at times in the higher registers. Superlative Dutch pressings are a feature of this most attractive package, which is well worth acquiring by those still in need of all three of these magnificent performances. The reissue rated as: *Don & Figaro* [A: 1], *Così* [A/B: 1].

*Il Re Pastore* (The Shepherd King), an early opera by Mozart, is complete on 2 records, handsomely boxed with libretto and excellent notes, on RCA PVL2 9086 (£3.98). Of course it is not a *Figaro*, a *Così*, a *Flute* or a *Don*, although it echoes all four. With a cast of three sopranos and two tenors, vocal sonorities are limited, but with the magnificent artistry of Grist, Popp, Saunders, Monti and Alva the opera is presented to near-perfection, perhaps handicapped at times by the slow tempi adopted at big moments by Denis Vaughan, the director. Fine recording, faultless German pressings. [A: 1]

A likeable and pretty impressive performance of Mozart's *Requiem* conducted by Kertesz with mainly Viennese forces was first issued in 1966 (Decca SPA476, £1.89). It is a full-blooded performance with a popular appeal, but of course, it has many excellent rivals mainly in the full-price area. For anyone wanting an introduction to the work, this can certainly be recommended, leading perhaps to comparative purchases. Ameling, Horne, Benelli and Franc are a good quartet of soloists. [A: 1]

**Mussorgsky's Boris Godunov** (Christoff) under Dobrowen on HMV SLS5072 (4 recs, £9.95), is a 'processed stereo' version of a recording made in the Théâtre des Champs-Élysées, Paris, probably in 1953. A strong cast and a performance of great vitality, quality of sound seeming to warrant an overall C. Many of the solo voices come across very well indeed, and there is always a striking theatrical presence; but the choral sound tends to be generalised, unduly close and at times overbearing, and there is a somewhat tiring over-brightness. The 'stereo' effect, if not particularly positive, is acceptable throughout. The fine performance, in Russian, makes this set a real contender in what

is at present a limited field. But see Karajan (SET 514-7) and Melik-Pashaev (77396). [C: 1]

There is always a place in the catalogue for one or two versions of the most popular operas in English. The 1960 Sadler's Wells recording of **Puccini's Madam Butterfly**, highlights now re-issued (HMV 'Greensleeve' ESD7030, £2.50), is a recommendable version for those who want to know what their operas are about. It can sometimes prove an intriguing experience to be able to follow the thoughts behind the music without continual reference to a translation. A nicely controlled performance under Bryan Balkwill and a pleasantly clear and gentle recording. For the English-speaking market. [B: 2]

The classic first recordings of **Tippett's A Child of Our Time** and the *Ritual Dances from The Midsummer Marriage* have been re-issued on Decca DPA571-2 (2 records) (£3.35). Dating from 1958, these have come up extremely well with a clear, vivid sound and only a small loss of quality at climaxes. Those taking part in the oratorio are Elsie Morrison, Pamela Bowden, Richard Lewis, Richard Standen and the RLPO and Choir under John Pritchard. In the *Ritual Dances*, John Pritchard conducts the Covent Garden Orchestra. Both performances are outstandingly fine, conveying a deep sense of rapport with the music. Strongly recommended. [A/B: 1\*]

'**The World of Verdi**', Decca SPA447 (£1.89) is a further permutation of Decca's famous operatic extracts such as we have heard in 'Favourite Opera' and 'Favourite Composers'. With the exception of the rather poorly recorded opening Overture *La Forza del Destino* the rest of the recording is most attractive. Here is an excellent selection of Verdi highlights performed by star spangled artists including some of the finest performances available today, and that doesn't necessarily mean the most recent. [A/B: 1/2]

Dating from 1959 is **Walton's Belshazzar's Feast**, HMV SXLP30236 (£2.20) with the Philharmonia Orch. and Chorus conducted by the composer. The recording quality is good with a generally natural balance between the soloist and the choir and orchestra, who are set in a pleasing ambience which doesn't obscure the text. The orchestra seems a little cramped at climaxes, but there are no tonal imbalances to be found here, unlike some other recently re-issued recordings of the same vintage. Coupling is the 1958 *Partita for Orchestra*, a rarely-recorded large-scale small work, i.e. a *divertissement*, which is as well-recorded as it is charming. [B: 1]

'**Gerard Souzay sings Opera Arias**' is on Philips Universo 6580 174 (£1.99) with the Lamoureux Orchestra/Baudou. The varied programme includes well known items from Mozart's *Figaro* and *Don*, a delightful baritone rendering of

Gluck's 'I have lost my Euridice', together with many unfamiliar arias opening with an aria from Monteverdi's *Orfeo*. Side 2 is devoted to French opera, again including the comparatively rare. The rich creamy baritone voice of Souzay, his sensitive artistry, his versatility, his vivid characterisations, his impeccable diction are here sampled and preserved for us in a fine recording. [A: 1]

## The Others

**Walter Carlos by Request** (CBS 73163, £3.49) consists mainly of synthesiser works and transcriptions from an album that was released in 1975 and quickly disappeared for copyright reasons, but also works by Monteverdi and Handel (*The Water Music*) from his 1969 album, *The Well Tempered Synthesiser*. Carlos has a much less flamboyant attitude to tone colours than Tomita whose Debussy album on RCA is probably the synthesiser album, but in the main, his approach is more successful in letting the music speak for itself. Best tracks are a wicked arrangement of Wagner's *Bridal Chorus* from *Lohengrin* and a hi-fi-demonstration-standard recording of Bacharach and David's *What's new Pussycat?* which has to be heard to be believed (dig the wailing cat's chorus at the end—rating H for hilarious!). Great recording, but some surface noise. [A/B: 1]

A massive miscellany of composers, conductors, orchestras and soloists are included in the 4LP **Concert Classics Festival** box (HMV SLS5073, £6.95). It is difficult even to list the most important areas covered in these collections. There is one side of soprano songs; Johann **Strauss** also merits one side; **Mozart**, **Tchaikovsky** and **Smetana** a little less; **Mendelssohn** and **Sibelius** each receive half a side; **Bach**, **Beethoven**, **Rossini**, **Ravel & Wagner** rather less. Conductors include Boult and Beecham, Klemperer, Kempe and Karajan, Stokowski, Sargent and Susskind, etc. Overall this is the usual strange mixture, but the transcriptions are of an unusually high standard, tending towards the 'rich orchestral' but having a surprising consistency and unity, despite the widely different recording dates. [A/B: 1/2]

Incidentally, EMI have asked us to point out that their ad in January was premature: the set was rescheduled, but should now be available.

Yet another ready-made orchestral and vocal concert, this time entitled **Festival of Italian Music**. It is a 2-disc folder set, Philips 6780 756 (£3.50). Assembled (with one exception) from fairly recent recordings of attractive sound. Orchestrally, performances mostly very good, varying from a first class, rarely heard, **Rossini** Overture *Il Turco in Italia* (St Martin's) to a well performed somewhat un-

rewarding **Paisiello** Harpsichord concerto. Vocal contributions, mainly **Verdi**, are shared between the admirable Bergonzi and Cristina Deutekom, technically a most accomplished coloratura, lacking only a desirable sweetness of tone. [A/B: 1/2]

Philips 6747 327 (£1.99) is a double album entitled **Greatest Music in the World Vol. 4**. It is a collection of some 16 popular items all very well recorded and performed. Among the 9 complete items included are the overtures to *Signor Bruschino* (Rossini) and *The Flying Dutchman* (Wagner), an 'exciting *Sorcerer's Apprentice*', a **Rachmaninov** Prelude Op. 23/5, **Tchaikovsky's Eugene Onegin** Waltz, a Schubert impromptu Op. 90/4 and the 'Hallelujah Chorus' under Davis. [A/B: 1/2]

'**The World of Mendelssohn**' (Philips 6833 204, 99p) brings us a good cross-section of his works from previous Philips issues—Haitink with movements from Symphony 4 and the Violin concerto, Davis with *The Hebrides*, I Musici the Scherzo from the Octet, etc. An excellent collection for those wishing to become acquainted. [A: 1]

CBS have to resort to some peculiar choices to maintain their momentum in both **Mozart's Greatest Hits Vol. 2** (CBS 30088, £1.29) and **Rachmaninov's Greatest Hits Vol. 2** (CBS 30089, £1.29). On the Mozart in particular where the Pinza/Walter excerpts from *Don Giovanni* and *Figaro* date back to 1947—fine performances but hard sound and Casals is the conductor of the 1st Movt, of No. 40. Ormandy and Entremont are the main contenders in the Rachmaninov stakes. There is good quality here, but we can think of other similar series which seem less a matter of expediency. [B: 1]

'**The World of Opera, Vol. 3** (Decca SPA489, £1.89) is one of those mixtures that can certainly be recommended as an overall introduction to a busy field for those wanting to make their initial venture cheaply and fairly safely. From connoisseur's eyes (for which a collection is presumably not intended) slight reservations might be expected—Krause's rather offhand *Don Giovanni*, Sutherland's wordless *Violetta*, James King's western *Walther—Mario del Monaco*. In sum, however, it all seems excitingly atmospheric. [A/B: 1/2]

CBS 30091 (£1.29) is a very attractive record for the casual listener. Instead of another collection of overtures, we have a collection of Opera Ballet music, excellently performed, as one would expect from NYPO/Bernstein. We hear the 'Bacchanale' from *Samson and Delila*, a shortened 'Dance of the Hours' (*Gioconda*), ballet music from *Aida*, *Carmen* and **Gounod's Faust**. The record was originally issued in 1970 and the sound is generally 'good', but just sometimes it hardens. [B/C: 1]

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TWO fine performances, to start the ball rolling, of two very different works by **Bartok**—the early Lisztian *Rhapsody* and the first Piano concerto of twenty years later. Both are played with virtuosity and insight by Pascal Rogé sympathetically accompanied by Weller and the LSO (Decca KSXC6815, £3.75). The recording is good though it seems that a very hard-toned piano was used, probably right for Bartok's percussive music. [A: 1] The separate reissue of the Solti **Beethoven** symphonies continues with Nos. 2 and 4 on a double-cassette (Decca KBB2 7042, £4.75). Solti's approach throughout the symphonies was, in general terms, muscular and vigorous. To some tastes, therefore, his attack on the calmer waters of 2 and 4 may seem to cause rather too much of a splash. They are impressive renderings but I found myself thinking of Beecham or even Schmidt-Isserstedt, one of the most recent successful rivals. [A: 1/2] By contrast, if one can contrast piano solo and orchestra, Ashkenazy's performances of **Beethoven** Piano sonatas 2 and 3 (Decca KSXC68008, £3.75) seem outstanding examples of control and finesse. The playing is always firm and decisive, yet expressive and sensitive at the same time, an attribute of only the very greatest players. Magnificent performances finely recorded. [A\*: 1\*] With the **Dohnanyi** centenary, that old favourite the *Variations on a Nursery theme* has been revived on several occasions. Bela Siki's version from Seattle (Turnabout KTVC34623, £2.25) is a useful offering, reasonably priced, brightly performed and having an extra attraction in coupling the better-known work with the Suite, Op. 19. This was recorded in 1967, the *Nursery Variations* in 1975. The newer recording is better-balanced but slightly reticent, the older one has more impact, very different but both reasonable in support of good performances. [A/B: 1] Boulez gives an excellent performance of **Dukas'** *La Péri*, the composer's masterpiece, and a rather tense performance of **Roussel's** Symphony 3 (CBS 40-76519, £3.69). Both works are not overdone on disc and not otherwise available on cassette. The recording is a little on the turgid side, on tape at least inclined to be overfull of sound. [B: 1] We are hardly short of **Dvorak's** *New World* Symphony, even on tape where some 18 versions are already available, so a new one by Riccardo Muti comes in for stern competition (HMV TC-ASD3285, £3.75). This is an enjoyably, romantically-inclined account that cannot be greatly faulted in any way, but it remains expensive. There are good cheap versions available. Normal warm EMI sort of sound. [A: 1] **Dvorak's** 8th Symphony is less lavishly treated with only three performances; to

my mind it is just as attractive—but we know the value of a name! Mehta's new recording is stunning and virtuosic but perhaps excessively so (Decca KSXC6750, £3.75). It does not replace the wonderful Kertesz performance for me—also available on a Decca cassette (KSXC6044). That also contains the *Scherzo capriccioso*, this new recording has *The Wood Dove*. Where this new recording does win is with the sound which is magnificent; but the Kertesz was also pretty good. [A\*: 1/2] Something of a **Dvorak** revival with the String quintet/Bagatelles also available on cassette (Decca

**Carols for Christmas Eve** with the King's College Choir—lovely sounds—[A: 1] (HMV TC-CSD-3774, £3.60); and **A Song for Christmas**—a joyful carol concert in Liverpool Cathedral (HMV 'Greensleeve' TC-ESD7024, £2.75). [A/B: 1] What looks like being a good **Mendelssohn** symphonic cycle is inaugurated with Nos. 1 and 5 (Decca KSXC6818, £3.75) with Christoph von Dohnanyi conducting. He gives vigorous performances of a Solti-like strength and impetus, the Vienna Philharmonic providing warmth and sweep in their usual manner. A nice spacious sound without

on another Polydor Mozart issue in which Gervase de Peyer and the Amadeus tackle the ever-ingratiating Clarinet Quintet and Luther Koch the Oboe Quartet (DG 3300 720, £3.69). These are eloquent, graceful, happy performances that go down like a vintage port and I have no quibbles whatever. [A: 1/1\*] A final round-up of **Mozart** in 'Mozart's Greatest Hits Vol. 2' (CBS 40-30088, £1.99). This has a scrapbook appearance beyond most compilations of this sort as it goes back to 1947 for its operatic pieces, with Pinza, granted, but still backish. Casals conducting Symphony 40 was of uncertain quality. Excellent is the Horn concerto 4 with Mason Jones and Raskin's *Exsultate* *Jubilate*. Adequate as a sampler. [A/C: 1/2] **Paganini** Violin concerto 1 takes up the *whole* of a cassette (Decca KSXC6798, £3.75). It is given a fine thoughtful but capably virtuosic performance by a young Russian violinist Boris Belkin from Israel, with the Israel Philharmonic conducted by Mehta who generally plays second fiddle with commendable obedience to his young soloist. It is a fine record all round, with well-balanced sound. [A: 1] A reissue from 1964 of the **Palestrina** *Stabat Mater* and other choral works (Argo KZKS4, £2.75) seems to me quite breathtakingly beautiful music and ideal for the luminous voices of the King's College Choir. The recording is just less than satisfactory with a somewhat cluttered characteristic, but it hardly lessens the impact of the music. [B: 1] For a refreshing and not over-hackneyed Piano concerto try **Poulenc** (HMV TC-ASD3299); it's a delightful work that pokes its nose enjoyably into the popular idiom now and then. Well performed by Cristina Ortiz. I am not so won over to the same composer's *Gloria* which occasionally goes off the boil, but this is a welcome coupling with a recording that doesn't quite sparkle as it might. [A/B: 1/2] **Prokofiev's** *Alexander Nevsky* is a curious mixture of cinematic slop and Russian vitality, but I won't presume to tell anyone whether they should like it or not. On the whole I do when it is well performed. The Schippers recording (CBS 40-61769, £2.29) is full of verve and on the whole successful. The recording is a bit hard and inclined to overwhelm one. [B: 1] Those who enjoy the windy grandiosity of **Rachmaninov's** music (sorry, I'm being personal again—and I do greatly enjoy the *Paganini* variations) will surely get rich reward from Previn's account of *The Bells* and the one popular *Vocalise* item (HMV-TC-ASD3284, £3.75). It seems a beautiful and convincing account of the music and it is certainly the most distinguished cassette recording that I have come across this month, staggeringly right in every way: clear, warm and spacious. [A\*: 1/1\*]

# Classical Cassettes

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KSDC487, £2.50). Sound performances from the Vienna Philharmonic Quintet. The Bagatelles would appear to be new to the catalogue; the Quintet must surely be a repeat of the 1972 issue then coupled with the Sextet; though it says 1977 on the label(?). The recording is somewhat harsh. [B: 2] **Falla's** *Nights in the Gardens of Spain* and Harpsichord concerto are usefully coupled (Turntable KTVC34588, £2.25) and are well-performed with Betica and Galling as respective soloists and the recording is well up to the best that Vox have so far provided. [A: 1] The two **Peer Gynt** suites are padded out with some **Grieg** songs with orchestral accompaniment on (CBS 40-76527, £3.69). Andrew Davis conducts and Elisabeth Söderström is the singer, adding the vocal sections to *Peer Gynt* as well as the separate songs. These are excellent, wholehearted performances, with Söderström impressive. The recorded sound is clear and vivid and well-suited to tape reproduction. [A: 1]

## HELY-HUTCHINSON to RACHMANINOV

Unfortunately the record companies always send most of their Christmas issues too late for them to be reviewed at the right time. But that is no reason why you should still not buy the reissue of **Hely-Hutchinson's** attractive *Carol Symphony*, with its teasing quotes and general buoyancy of spirits, particularly as it is coupled with **Vaughan Williams'** fine *Fantasia on Christmas Carols* and four rare carol items (HMV 'Greensleeve' TC-ESD7021, £2.75). [B: 1] Perhaps I might also mention two very pleasing albums which you might get cheap in the sales ready for next Christmas—

the total clarity needed for a star. [A: 1/1\*] We also have **Mendelssohn's** 4th, with the *Hebrides* overture and **Weber's** *Oberon* in a reissue from 1963 by Szell (CBS 40-61019, £2.29). These are all exciting performances with the Cleveland Orchestra in brilliant form. The recording is curiously boxy, though not harsh or lacking in detail. [C: 1] **Mozart's** Symphonies 34 and 39 are given big, fast, excitable readings by Mehta and the Israel Philharmonic (Decca KSXC6833, £3.75). If it wasn't for the delight of hearing so much detail and inner part and the pleasure of a fine, clear, clean recording, I would say it was all a bit too high-pressure. As it is I am torn. If you like your Mozart given the virtuoso treatment and big sound, you will like this. [A: 1] **Mozart's** early Piano concertos 1-4, all based on music by other composers, may not be masterpieces but they are good enough fare for the dedicated Mozartian (HMV TC-ASD3218, £3.75). Lacking the 'enigmatic corners' of the later works they make ideal fare for 'from the piano' performances such as Barenboim adroitly gives to them. An enjoyable set with a recording a little lacking in refinement but of robust quality. [A/B: 1] It is good to have Pollini back on record: nevertheless I found his recording of two **Mozart** Piano Concertos K488 and K459 (DG 3300 716, £3.69) a bit disappointing, particularly as Böhm is the conductor. Not that anything goes wrong but that nothing of the expected distinction seems to happen. The concertos amble along without noticeable enthusiasm or inspiration from anyone concerned and only Mozart seems in sparkling form. [A: 2] But there is some very distinguished **Mozart** playing

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Gallagher & Lyle in concert

CERTAIN personages at HFN/RR are firmly convinced that Gallagher and Lyle should be rated almost as high as the current price of coffee. And on the evidence of *Love On The Airwaves* (A & M AMLH64620, £3-60), it's hard to disagree with such beliefs. Not that I really need any convincing. I've always waved a G & L banner since the days when the twosome penned *When I'm dead and gone* for McGuinness-Flint, my only dismay being that the Great British Record Buying Public left it until 1976 and the advent of the *Breakaway* album before they suddenly realised that classy pop duos didn't go out of style when Simon and Garfunkel called it a day. On *Airwaves*, David Kershenbaum's production is excellent—'It's a bit like 10CC', says one of our certain personages. And again I agree—in fact, for the opening seconds of *Airwaves* one becomes convinced that the Manchester Melodians are about, once more, to provide their well-known interpretation of *I'm not in love*. Instead, G & L offer their jaunty little title track, which is perhaps a bit shallow but, nevertheless, a happy enough introduction to pleasures to come, pleasures that include *Dude in the dark*, a tempo-switching piece of craftsmanship that is intricate in its construction yet made to sound amazingly simple by the manner in which G & L choose to reveal each layer of skin. *Head talk*, on which the duo vocally match the brass team riff for riff, is another winner, while *The runaway*, a song that reminds me of both McLean's *Vincent* and Hall and Oates' *When the morning comes* yet retains an identity of its own, should provide A & M with a hit single any time they need one. [A: 1]

While on the subject of A & M and fine harmony duos, I'll devote more than a few words to the subject of the Alessi Brothers, Billy and Bobby, whose Bones Howe-produced album *Alessi* (A & M AMLH64608, £3-60) has provided with a great amount of pleasure during recent weeks. Howe's been around quality vocal groups for years now—he engineered the first 5th Dimension LP—and he knows a good thing when he hears it. So

with Alessi he's come up with as neat a package of summer sounds as we're likely to have headed our way during '77. The sleeve notes, trying to explain the appeal of Alessi, claim: 'Had the Beach Boys been born and raised on the concrete sands of Long Island and recorded their first album in the second half of the '70s. . . . And even allowing for the usual hyperbolic approach of liner-writers, that sounds a reasonably accurate assessment of the Alessi sound. Which means we're back to [A: 1] again.'

The blockbuster of the month, however, is most definitely Pink Floyd's *Animals* (Harvest SHVL 815, £3-60), an eminently disturbing release. Basically it's a throw-back to Orwell and *Animal Farm*. We're all dogs, pigs or sheep, claims Floydian lyricist Roger Waters, allowing that there may be a few crossbreeds. The dogs are hardly likeable, the pigs even less so—and the sheep are things of pity, though it seems that they will eventually have their day and rebel against becoming lamb chops. Be careful with that axe, Eugene, that ewe may be somebody's mother, Waters appears to be saying at one point, managing en route to include a tirade against the Mary Whitehouse mentality, plus a few non-EMI adjectives, thus proving that the Floyd can get away with a darn sight more than the Sex Pistols and still be cordially received at Manchester Square. Having said, or rather written all this, I'll willingly concede that *Animals* is possibly the finest Floyd release to date. It has a strength of purpose, allied to an excellence of performance, that few bands—especially one with the Windmill-run lifetime of the Floyd—could hope to equal. Everything flows easily, without becoming somnambulist, while Floyd's use of their usual electronic gimmickry— which this time includes a vocoder-assisted recitation of a mock *Lord's Prayer*—is accomplished in stunning fashion. [A: 1\*]

While, ultimately, there will be few who fail to appreciate *Animals*, David Bowie's *Low* (RCA PL12030, £3-25) could cause a

considerable number of furrowed brows. For, having proved that he could become involved in the Philly soul-cheese machine and live, Ziggy Stardust has opted to go into orbit once more, his spacecraft being apparently accompanied by celestial melodies provided by Bowie and synthesising side-kick Eno—the result being not unlike *Tangerine Dream's Greatest Hits*, the whole of the album's second side adhering to this particular concept. Side one is a kind of preparation for things to come; tracks such as *Speed of life*, a laser-lit *Jean Genie*-type riff, the mill-hammer pounded *What in the world?* and *Sound and vision*, on which Bowie goes disco in best Mantovani fashion, being easily assimilable by even the most bop-happy member of the Bowie Fan Club—though what some of 'em will make of at least half the album is anybody's guess. I suppose Bowie sees this all as being in the nature of an experiment—but the results are a little like discovering the jet engine about 50 years after Frank Whittle! All things considered, though, *Low* is hardly a disaster—though it's undeniably disappointing. But I'm not going to knock Bowie for trying to reach Mars with this stage of the rocket. At least he's out there trying! [B: 2] Leon Redbone received rapturous applause when he appeared as supporting act on Leo Kottke's recent London gig. However, I find his particular brand of nostalgia—as exemplified by *Double Time* (Warner Bros. K56301, £3-29)—fairly nauseous, perhaps the least tripe items on the album being his re-hashes of Jelly Roll Morton and Jimmie Rodgers material—but, even then, one wonders just how many rock fans have bothered to listen to the originals in order to ascertain exactly what Redbone lacks. It's said that when Morton died, somebody stole the diamonds out of his teeth—and sometimes it seems to me that the theft is still continuing. [A: 3]

Certainly Warners have far better releases on offer—one being *Luxury Liner* (Warner K56334, £3-29), the third solo album from the delightful Emmylou Harris, a set on which Emmylou, while excellent as ever, is nearly upstaged by the often phenomenal country-rock guitar playing of Albert Lee. [A: 1\*] Also worthy of attention is *This Is Loma Vols. 1-7* (Warner-Loma K56265-71, volumes available separately at £3-29) a series featuring the best of the music once found on Warner's R & B-oriented subsidiary label during its 1964-69 lifespan. Possibly the best of the series is volume seven, an album containing some great juke-box blues tracks by James Cotton, a couple of Dr John organ-ised instrumentals by the Charlie Underwood Glide Band; *Waitin'*, from Walter Foster, a James Brown written and produced affair; and a brace of genuine, good-time, eight-in-a-bars from Alton Joseph's *Jokers*,

# ROCK



Fred Dellar

a Huey P. Meaux masterminded outfit. Immaculately re-mastered by Claude Nobs—he of Montreaux Festival recording fame—I rate this one as a [B: 1] proposition, adding a recommendation that volume seven, which contains the whole of Linda Jones *Hypnotised* album—plus all of a J. J. Jackson album as a bonus—should find its way onto your check list.

It seems a pity that we've had to wait the best part of four years to see the release of *Buckingham-Nicks* (Polydor 2391-93, £3-25) in this country, for Lindsey Buckingham (guitarist/bassist/vocalist and male) and Stevie Nicks (vocalist and most definitely female) recorded one of the best albums ever to find its way into our import shops during 1973. Buckingham-Nicks utilised both acoustic and electric backings—Lindsey sometimes displaying his own acoustic guitar expertise on items such as John Lewis' delicate *Django*—the duo's harmony vocals being anything but soporific. Excellent songwriters, Buckingham-Nicks often rocked with all the aplomb of a Bob Seeger—and currently they're a part of Fleetwood Mac, which must make that ever-changing unit a much improved band. But they once made *Buckingham-Nicks*, an album that you've simply got to add to your collection—and I rarely twist readers' arms in such a manner! [A\*: 1\*]

A total of no less than 22 Chuck Berry classics on one disc can't be bad—well, musically, anyway!—which makes *Motorvatin'* (Chess 9286-690, £3-25) both a bargain buy and a marketing man's dream. [B/C: 1\*] And though the recording quality of Fairport Convention's *Live at The L.A. Troubadour* (Help 28, £1-99) isn't all that it might be—thus explaining its appearance on Island's lower-priced label—the band's playing (by the line-up that existed just after the loss of Sandy Denny and Ashley Hutchings) is often inspired, *Matty Groves* featuring one particularly frenetic, Le Mans-paced workout by Dave Swarbrick. [B/C: 1]

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I WONDER how many readers have heard, or even heard of, recordings on such labels as Old Homestead, Flying Fish, Revonah, Vetco, Kanawha, Davis Unlimited, or Bear Family. If you have then it is certain that you're a devotee of a branch of folk music which is broadly termed 'Old Time' by its fans. That doesn't mean Harold Davidson and the *Yearning Saunter* though; it means Child ballads, mountain songs, fiddle and banjo tunes, string bands, bluegrass and much else. It's a corpus of music which, if its representation on the radio programmes were any indication, might well not exist. It only becomes widely known today in its most popularised forms as 'country and western', in the albums of Johnny Cash, or at its most commercially exploited in the worst star-spangled and silver-plated excesses of Nashville.

Authentic old time music, which has many forms and a long history, is supported by a large international following to whom more than a hundred record labels cater. Not all are American; some, like Leader in Britain or Folk Variety in Germany, have issued valuable releases—and there's a not inconsiderable following even in Japan. One of the best of these labels is Rounder Records of Somerville, Massachusetts: American, but distributed in Great Britain. It has several number series which cover different facets of the music, reflecting its policy of reissuing major records from the past, and making an authentic documentation of what survives to the present.

It all started fifty-four years ago, when a distributor of Okeh Records in Atlanta, Georgia, persuaded them to record a local fiddle player that he liked. The company were so embarrassed by the record, which their executive Ralph Peer called 'pluperfect awful', that they didn't even give it an issue number. Instead they off-loaded the five hundred pressings on the Atlanta distributor—and were amazed to find that it sold as fast as they could press it. The record was *The Old Hen Cackled and the Rooster's Going to Crow* by Fiddlin' John Carson. It opened the market for American country music, to which Carson himself contributed some two hundred items. This title is one of sixteen of his best which are reissued on **Fiddlin' John Carson—The Old Hen Cackled** (Rounder 1003). Born just after the Civil War, John Carson was 56 when he started recording and had been playing music for over forty years. He had been a solo fiddle player, singing to his wild, hard-toned sawing, ballads, reels and country songs, some of which go back to his childhood. He had a solo artist's metrical freedom and a wayward disregard of the lyric at times, but his raw-boned voice and forceful playing is exciting to hear on, say, *I'm Nine*

*Hundred Miles from Home* or the ballad *The Bachelor's Hall*. On some items he was accompanied by his daughter Moonshine Kate (there's a splendid photograph of them both on the cover), and on the later records by his string band, the Virginia Reelers. Their *Sugar in the Gourd*, which features John Carson at his very best, is a swinging reel that summons the spirit of a country hoe-down of long ago. [H: 1/2].

It was the competition of other string bands that made John Carson form his own, one suspects. Incomparable among the early bands was Gid Tanner and his Skillet Lickers. Tanner was more of Fiddlin' John Carson's generation than his fellow fiddle player in the band, Clayton McMichen, and the contrast of styles gives a bite to their recordings. They were supported by banjo and guitar, the latter played by blind Riley Puckett, who sang many of the songs, and at different times by several other musicians. The basic band can be heard on **Gid Tanner and His Skillet Lickers** (Rounder 1005), and it is at least as good as the other reissues of this extensively recorded group. To those unfamiliar with this field of folk music it may sound pretty tough stuff, but in many ways the Skillet Lickers were more advanced than Carson, as comparison of their version of *Sugar in the Gourd* with his, or of *Setting in the Chimney Jamb* with Carson's *Whatcha Gonna Do When the Licker Gives Out*, will reveal. Their well-structured ensembles, their use of instrumental dynamics and complementary accompaniments to the vocals, make for beautifully integrated performances. The record spans a decade from 1924 when Gid Tanner and Riley Puckett's sombre *John Henry* was recorded, to *Tanner's Boarding House*, an odd entertainment made in 1934. Between these years is a rich range of music that can be termed 'hillbilly', but which is at the very peak of its tradition. [H: 1].

When the Skillet Lickers' last session was issued their music was already sounding old-fashioned. New forms of rural music were being recorded and the popularity of Jimmie Rodgers' 'Blue Yodels' and of the close harmonising of the Carter Family eclipsed the older musicians. A fashion for harmonising old songs, often by brothers, such as the Monroes, the Delmores and the Lillys, developed. Among the most popular of these were Bill and Earl Bolick, the 'Blue Sky Boys', who are the subject of Rounder 1006. **The Sunny Side of Life** is the title of the album, and of their first major record, made in 1936 when Earl was only sixteen and brother Bill just a couple of years older. This track is on the LP, a remarkable performance, relaxed yet complex in the inter-

play of voices, guitar and mandolin. It's at a faster tempo than most of the songs which are drawn out and melancholy with the nasal tenors having a bitter-sweet quality, at once nostalgic and stringent. There's a perfected technique which left nothing to chance, and so one gets none of the recklessness of Fiddlin' John or the abandon of Gid Tanner's crew. It's serious song-making too: *Turn Your Radio On*—and 'get in touch with God'. There's *Dust on the Bible* and the Blue Sky Boys, harmonising gently, blow it away. They were extraordinarily popular with a mailbag of as much as a hundred letters a day when they broadcast from WWNC Asheville, North Carolina in the 'thirties. But some of their popularity seems to have been coaxed from local patriotism; *Alabama, Kentucky, Sweet Allalee* (from Tennessee, that's where I want to be . . .) and *In the Hills of Roane County* spread the net wide. In spite of the dash of lemon I find their home brew a shade too sweet for my taste. [H: 2].

The Monroes, whom they resemble, were to sow the seeds of bluegrass—but that is another chapter. What happened to the old-time music and the traditions that shaped it? Fortunately there are still some ageing survivors in the hills and, as in blues or jazz, dedicated enthusiasts seek them out, record them and fill in the gaps that commercial recordings left. One of the most assiduous is John Cohen of the New Lost City Ramblers, an urban group that played in traditional style. A dozen years ago he made a research trip in the mountain regions of Virginia and North Carolina principally to seek out banjo tunings. There are probably over fifty different tunings used by traditional banjo players, some, like F#BEAD, being used for a single tune only. This one was played for *Cumberland Gap* by Frank Profitt and can be heard on the fruits of Cohen's trip *High Atmosphere* (Rounder 0028). It isn't just a scholar's collection, though the beautifully compiled and presented notes with their evocative photographs do add valuably to knowledge of the banjo idiom. There are some fascinating items, like *Forkey Deer* played by Sidna Myers of Hillsville, Virginia who lived in 'one of the humblest homes I have ever visited', Cohen states. Some of these items, like *Rolling Mills are Burning Down*, played and sung by George Landers, are otherwise unrecorded songs, while the more familiar such as *Shady Grove*, played here by Wade Ward, get distinctive treatment. But there are unaccompanied songs too: a powerful *Conversation with Death* by Lloyd Chandler and *Young Emily* by Dellie Norton of Sodom, North Carolina, whose lean, ornamented vocal technique seems to penetrate back to the roots of mountain music. [B: 1].

# folk



Paul Oliver

Those roots lie, of course, in the imported British traditions of ballads, dances and hymns. Almeda Riddle sings *Ballads and Hymns from the Ozarks* (Rounder 0017) in a subtly modulated style, which is warmer in tone than Dellie Norton's. The Ozarks lie in Missouri and Arkansas, a western chain of wooded mountains that have a similar culture to that of the Appalachians and which have similarly supported Old Time traditions. Almeda sings Child ballads like a fifteen-verse *Lady Margaret* or *The Four Marys*. Sometimes the locale or the characters are transposed so that *The Mermaid* (Child 289) becomes *The Merrimac at Sea* with Civil War overtones. From the recesses of her memory or through chance encounters, she recalls *Rare Willie Drowned in Yarrow* or *Peggy of Glasgow* in full versions that should be of great interest to the British folklorist as well as to those who value the American heritage. A whole album of unaccompanied song may be hard going for those entirely new to the field, but Almeda Riddle, now nearly eighty and living in a cabin that she literally built herself, is one of the last of a remarkable breed. It's worth persevering because her singing is very rewarding. [A/B: 1].

In a later article I'll discuss other aspects of white American Old Time music. Meanwhile you could do no better than start a collection with these on Rounder. The records are imported but can be obtained by mail order. The largest stock in Europe is carried by Mike's Country Music Room, 18 Hiltun Avenue, Aberdeen, Scotland, from whom it is possible to get lists and catalogues—including some for the labels I mentioned at the beginning of this feature.

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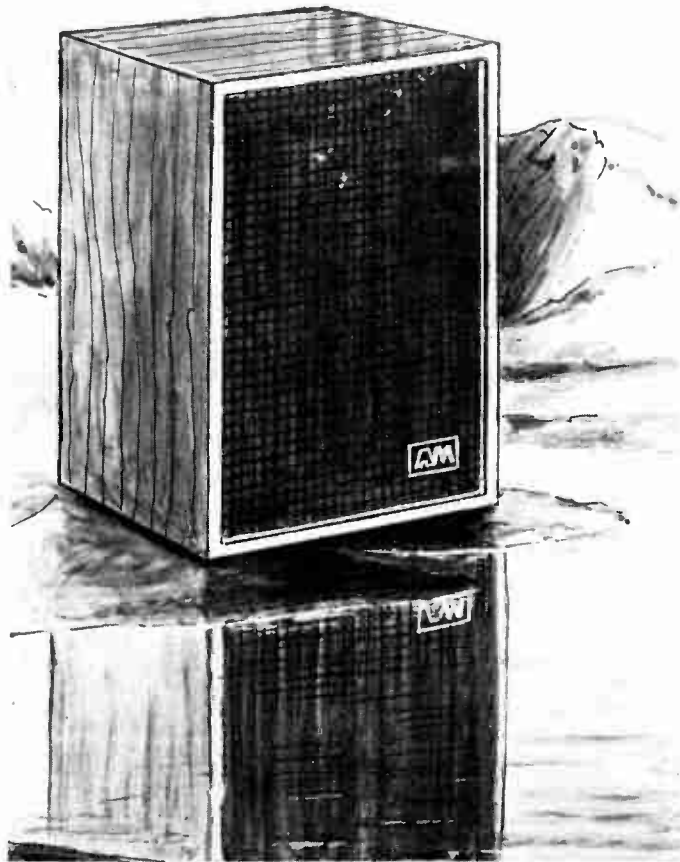


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FIRST, let me say that I do know the difference between a brass and a military band. It is only the rest of the editorial staff, spiritually and intellectually above such things, who would absent-mindedly label a gaggle of Guards a brass band. (What irked most was the letters which professed emotions ranging from amusement to horror that I should not know—each of them knowing full well that I did, if you see what I mean. How much we suffer from errors made on our behalf by sub-editors and printers.) However, let me try to forget the whole thing. **The Virtuosi Brass Band of Great Britain** (which is what it says it is) is now appearing on the Philips label (Philips 'Sonic' SON 025, £1.99) and its latest offering is a comparatively popularly-slanted and entertaining programme conducted by Messrs. Scott, Ball and Mortimer which, although it doesn't say so, appears to be made up of selected items from the previous Virtuosi Brass Band issues on the Virtuosi label. A reissue highlights disc therefore with, I fancy, a slightly enhanced sound quality, at least a more pugnacious sound. Excellent entertainment, virtuosity and engineering [A:1]. As if to deliberately confuse the issue, and get me into such a state that I split my infinitives, an LP this month called **'Music by Sound in Brass'** is not by a brass band at all but, as carefully added on the sleeve, performed on Handbells (Saydisc SDL274, £2.21). The cumulative effect of a complete programme by handbell ringers is, except to the committed enthusiast, perhaps a little overwhelming. One comes to feel that such diverse items as Brahms' *Wiegenlied*, *Parade of the Tin Soldiers* and Joplin's *Original rags* were better played as their creators intended. The effect of isolated items is quaint and charming, amusing and enjoyable; an attractive and unusual sound. The bells are perhaps most effective in the slower and quieter pieces where their natural lingering resonances, although dampened as they are put down, meld more naturally than in the quicker pieces. A delightful and well-made record with, I am sure, a dedicated bell-ringing following to welcome it as well as the casually inquisitive. [A:1].

Palm Courtly is not common on record today and **'Georgian Serenade'** will be welcomed for that reason alone (Crescent ARS 102, £2.40). But I must admit that the name of The Pump Room Trio, Bath, added a lot of extra allurements with its nostalgic reminder of a more leisured past. In fact the trio still plays at the Pump Room and the record will also act as a souvenir. A pleasant programme of light music played in unmistakable Palm Court or Pump Room vein [A/B:1]. From the same source, a popular selection is played on the **Bath**

# LIGHT



Peter Gammond

**Wurlitzer Organ** by Ken Morrish (Crescent ARS104, £2.40) and this will clearly delight all lovers of the cinema organ and its coconut-ice sound [B:1]. Both these records are available from Avon Recording Services, Bath, England, 40p extra for postage and packing.

A variety of sounds this month, ranging from **The Haydock Sound** (Haydock Male Voice Choir, Grosvenor GRS1049, £2.50), an excellent programme of light pieces skilfully sung and well recorded (Don't be put off by the cover, which appears to be a colourful picture of some horrible skin disease.) [A:1]; to **Scottish Fiddler's Rally** (Rel Records, REL 454, £2.49)—from Radio Edinburgh, 11 Atholl Place, Edinburgh. Infectious foot-tapping stuff, this, entertaining even to those not sold on this special brand of music-making. Complete with sample scores and a first-rate 16-track recording [A:1]. For the followers of Semprini there is a new album of light and popular classics played in his distinctively television style (with some untidy fingering) and pleasantly recorded [A:2]. **Elizabeth**, (predictably for the Jubilee), (CRD 'Britannia' BRI 077, £2.50) is a shattering dose of patriotism—*Rule Britannia*, *Land of Hope and Glory*, *Jerusalem* and all that belted out at full-blast by various permutations of the Coldstream Guards, the London Festival Orchestra conducted by Eric Rogers and the Ambrosian Singers. Both the performances and the recordings are of an unobtrusive nature, but no doubt it will stir some flag-wavers [C:2/3].

From the silver screen, the Original Sound Track album of **Sisters** (Entr'acte ERQ 7001-ST) with music composed and conducted by the late Bernard Herrmann. The note claims it to be a 'varied, moving and inventive' score; it would probably be a help to have seen the film as it all seems a bit disconnected just as music. Good recording and professionally performed [A:1].

THE most interesting and satisfying album I've heard so far this year is an unusual one. Take this title, for instance: **Arizona Dranes 1926-1928 Barrel House Piano with Sanctified Singing**. I have to admit that it drew me towards this album, sparking off a reservoir of curiosity. 'What is it all about? Well, the woman herself was born in Dallas, Texas just after the turn of the century. In her teens this blind singer/pianist began playing for prayer meetings in the area until a minister of Fort Worth recommended her to the Okeh record company, Chicago. The company signed her up and that's how we come to have this album compilation of Okeh singles. In spite of the scratchiness you expect from recordings of this era, the spirit of her playing and singing strikes through, unimpeded. It's quite clear that she wasn't affected by the idea of being in a studio, for her performances come across directly as in a live situation, among friends. Her piano playing is rich in rhythm, and she pounds out throbbing ear-catching lines of down-home earthiness. The immediate impact of her singing is in her sincerity. When she sings 'My soul is a witness for the Lord', she means it. But unlike a lot of religious music, Arizona Dranes' is largely happy music. She's joyous to be grooving for the Lord, and she wants to use her talents to spread the word. It's unusual to hear this kind of amalgam of sanctified singing and the more worldly style of barrelhouse piano, and it seems unlikely that she had much contact, if any, with other barrelhouse-style players. What this record—Herwin 210 [H:1\*], available through Continental Record Distributors—says to me, has to do with the spiritual side of jazz. You can never put your finger on it, but you can recognise this quality in a small number of jazz musicians like Albert Ayler and John Coltrane. The pastor who recommended her to Okeh recognised her spirituality. He wrote, 'Since she is deprived of her natural sight, the Lord has given her a Spiritual sight, that all the churches enjoy that sweet melody made from the Instrument. She's loyal and obedient. Our prayers ascend for her.'

Arizona Dranes could still be stomping and singing at prayer meetings in the south-west of the States, unaware of the rediscovery of these discs of fifty years ago. If she is, I hope somebody's looking after her—she's a precious lady.

Mongezi Feza's death on December 14 '75 was felt strongly by anyone who'd ever heard this tiny South African trumpeter play. He played with fire, attack and a much overlooked sensitivity. **Blue Notes for Mongezi** is a double album tribute to Mongs paid by fellow South Africans, Dudu Pukwana, Chris McGregor, Louis

# JAZZ



Ken Hyder

Moholo, and Johnny Dyani. This was the band Mongs came to Europe with. The music on this set was taken from a three-and-a-half hours continuous blow in a London rehearsal room shortly after Mongs' death. The music winds its way through many moods and textures, most of the time steeped in sadness. All the players wail from the heart and sometimes the heaviness of the emotion is hard to take. This is honest music, however—nothing is contrived. It just happened. Try it for size. It's on Ogun OGD 001/002. [B/C:1/2]

I first heard Booker Little on the **Eric Dolphy at the Five Spot** album on Prestige, and I have to admit that while I dug his playing, I felt he was greatly overshadowed by Dolphy. I'm afraid that **The Legendary Quartet Album** on Island ILPS 9454 by Booker Little [B:1/2] doesn't change my opinion. He's a fine trumpeter—but genius, well that's something else. Throughout the sleeve notes we're constantly reminded of how young he was (22) when this record was made, and that he died a year later. Well, if you can get past all the boy wonder jive and into the music you can hear for yourself the stately quality of the album. The players exude confidence and energy, taste and musical maturity in a fine balance. Recommended.

Brief rundowns—Keith Jarrett's **Shades** (Impulse IPML 8039) is one of the best of Jarrett's more recent albums. More grooving and less ruminating. Happy sounds [A:1/2]. Miles Davis' **Water Babies** (CBS 81741)—a collection of out takes from around the Shorter/Carter/Hancock/Williams era. Choice moments but often plainly boring. [A:1/2] Charlie Haden, **Closeness** (A&M SP 710)—a beautiful album of duets with Ornette Coleman, Alice Coltrane, Keith Jarrett and Paul Motian. The duet with Ornette is a gas. A lovely album [A:1/2].

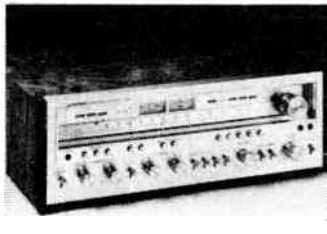
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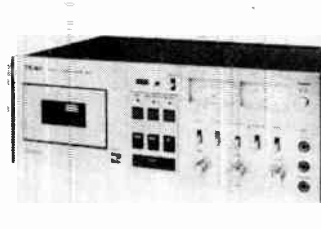
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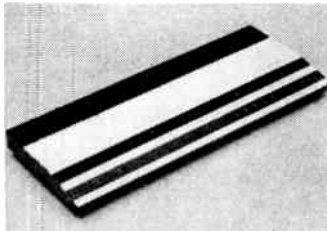
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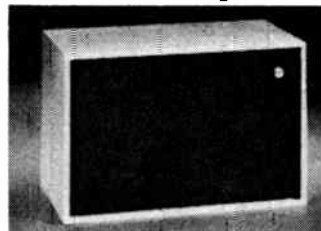
Always famous for their design, B & O have outdone themselves with the new 1900 receiver and 5000 cassette deck. In stock, but very limited supplies.

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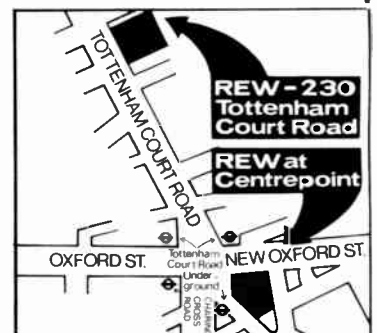
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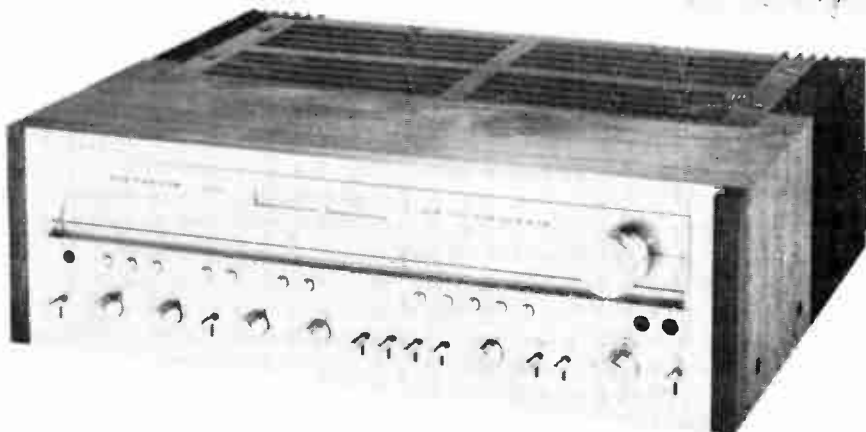
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# Three Powerful Receivers

Gordon J. King

## NAD 300



## PIONEER SX 1250

## ROTEL RX 1603



SOME powerful receivers are now appearing on the market, and this composite review looks at three fairly recent ones—all Japanese. We must commence by stressing that all the receivers are incredibly heavy and large (the Rotel RX-1603 for example has an unladen weight of 33 kg and dimensions of 60×18×48 cm), so if you are contemplating such a purchase you will first have to ensure not only that there is sufficient unrestricted space available for housing but also that the weight can be adequately supported!

Until fairly recently, anyone requiring a powerful amplifier plus sensitive radio facilities would have been obliged to invest in separate items. Some people would still prefer to do this because it gives greater flexibility over the choice of the two sections. One of the first of British manufacturers to appreciate the need for a well balanced and powerful unit integration was Goodmans, whose Model 150 delivers a punch of some 100+100 W into 4-ohm loads. This receiver, which is extremely well matched on

the radio side, is still, so far as I am aware, the most powerful of British designs and is still selling well.

However, from the sheer power point of view it has been outpaced by the receivers here reviewed—probably not so much by the NAD 300, which has an 8-ohm rating of a shade below 100+100 W, but certainly by the other two which yield powers approaching 200 W per channel.

The need for extremely high 'heating powers' is often questioned and is generally answered by the argument that because loudspeakers are becoming less and less efficient it is necessary to pump more and more urge into them to achieve the required level of sound intensity in the listening room. This, of course, is true to some extent; but it is *not* the whole story. The factor which is not exposed by the manufacturers' specifications is that in order to keep in the specification race in terms of crazy high-frequency response and very short small-signal rise-times, very fast output transistors are essential to minimise

the possibility of transient intermodulation distortion (TID). Such fast power transistors are more susceptible to secondary breakdown than slower ones, which means that the designer is obliged to incorporate some form of protection to minimise the risk of frequent power transistor failure.

When the protection is by simple voltage-current (V-I) limiting, the power promised by resistive-load measurement is not always kept when the amplifier is driving into a real loudspeaker. Thus, while a 200 W amplifier might well deliver some 28 V rms into 4 ohms of pure resistance—heating it up like an electric fire element—it may only deliver 14 V rms or less to a real loudspeaker before the protection comes into effect and severely distorts the signal. Another reason why amplifiers are being made in greater and greater powers is, therefore, so that a larger output voltage can be delivered to a loudspeaker load while retaining the V-I protection!

This problem and that of the amplifier/loudspeaker interface were explored in my recent

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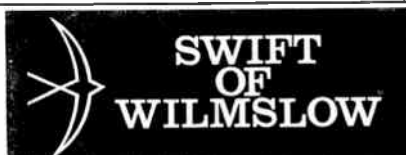
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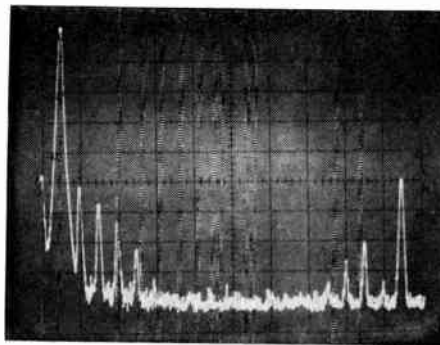
article (HFN/RR Dec '76), and to keep in line with the philosophy therein expressed I shall gradually be changing over to measuring amplifier output voltage across  $R_L$  and  $Z_L$  loads rather than concentrating on heating power of resistive elements! I feel that it would be highly desirable for colleague reviewers to do likewise, for it is surely high time that the stupidity of rating amplifiers in terms of heating watts was killed once and for all. There are many parameters given by the manufacturers in their specifications which have very little correlation with the listening experience, so in future we shall be concentrating far less on these (though we shall test them to let you know whether the equipment meets its engineering specification or not) but more on those which we evolve over the years and which seem to have more subjective relevance.

Two important tests we make on amplifiers are small-signal rise-time and power amplifier slewing-rate (the latter measured with sinusoid rather than stepped signal to avoid possible response restriction in the pre-amplifier stages from affecting the result). From these two parameters it can be told pretty conclusively whether or not an amplifier is guilty of TID. For example, from the rise-time  $rt$  we can find  $f_{-3dB}$  from  $k/rt \times 10^{-6}$ , where  $k$  is a constant of impulse function (typically 0.35) and from slewing-rate we can find  $f_{hf}$  from  $sr \times 10^6 / 2\pi V_{rms}$ , where  $sr$  is the slewing-rate in  $V/\mu s$  and  $V_{rms}$  the hf voltage across the load (note  $V_{rms}$  is deliberate for this calculation). When  $f_{hf} \geq f_{-3dB}$  the amplifier is incapable of TID. Since my test also usually gives  $f_{-3dB}$  this calculation from  $rt$  can be avoided.

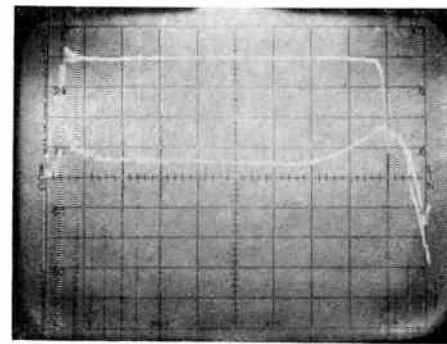
None of the receivers reviewed here is particularly prone to TID; moreover, none incorporates simple V-I protection, which means that they are all relatively insensitive to the nature of the load presented by the loudspeaker, however 'naughty' its crossover network. In other words, the output voltage promised by the resistive-load power is virtually delivered by all the receivers to a real loudspeaker before the onset of severe clipping distortion. This is one area where many Japanese amplifiers score over their European counterparts—protection is provided by relay, which disconnects the loudspeakers rather than restricting the drive.

In this review we have presented and compared the results of the FM radio and audio sections separately, leading to two sets of tabulated results, each with suitable comment. To avoid making the review unwieldy, frequency/amplitude sweeps, spectrograms and oscillograms are not given for each and every receiver; instead typical sample displays are presented, but all the information on the three receivers is available in the results tabulations. Because the *NAD 300* is the only receiver with Dolby facilities, we have included encoding and decoding sweeps of this part of the circuit.

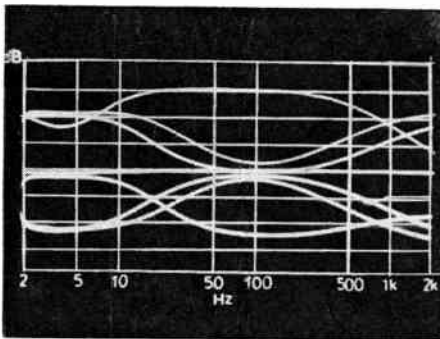
It should be noted that the parameter of intermodulation distortion (IMD) refers to the second-order product; that is, the 1kHz difference frequency between the two equal amplitude driving signals at 15 and 16 kHz, the percentage being referred to either driving signal corresponding to 100% or 0 dB datum. Controlled objective/subjective experiments



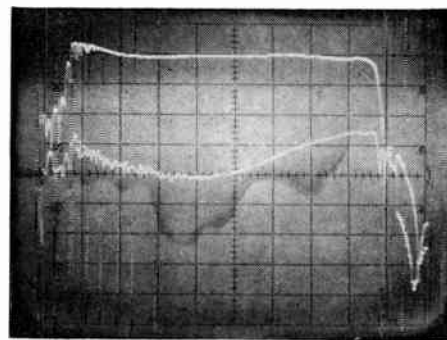
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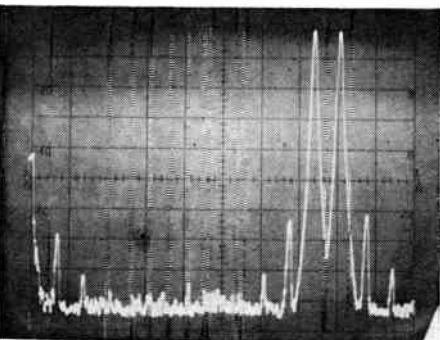
2



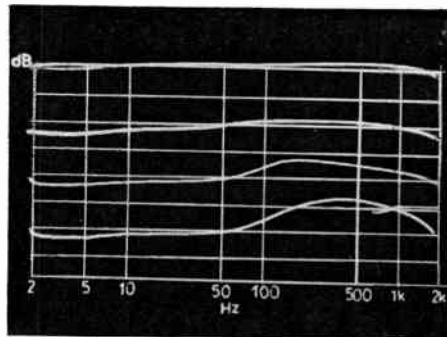
3



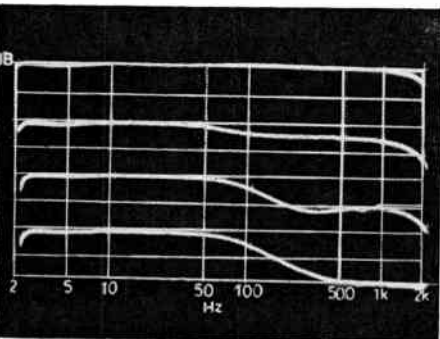
4



5



6a



6b

1 FM stereo distortion at 1 kHz and 100% modulation, also showing pilot tone residual (Rotel RX1603). Scale 10 dB/2 kHz/div.

2 FM stereo frequency response upper trace and stereo separation lower trace, showing 19 kHz rejector notch (Rotel RX1603). Scale 10 dB/div. and three divisions per frequency decade (logarithmic sweep 20 Hz–43 kHz).

3 Top-to-bottom, low and higher filters, tone controls at two pairs of turnover frequencies and loudness (Rotel RX1603). Scale Hz  $\times 10$  (log. sweep 20 Hz–20 kHz) and 5 dB/div.

4 FM stereo frequency response upper trace and stereo separation lower trace, showing 19 kHz rejector notch (NAD 300). Scale 10 dB/div. and three divisions per frequency decade (log. sweep 20 Hz–43 kHz).

5 Intermodulation distortion with equal amplitude driving signals at 15 and 16 kHz into  $Z_L$  load of 5.3 ohms and 60deg.  $\emptyset$  at 15 kHz with 21 V rms composite signal across load. The 1 kHz difference-frequency (2nd-order IM) is the parameter. (NAD 300.)

6 Dolby characteristics at 0, -10, -20 and -30 dB, (a) encoding and (b) decoding (NAD 300). Scale Hz  $\times 10$  (log. sweep 20 Hz–20 kHz) and 5 dB/div.

have shown listeners to be more susceptible to IM products brought back in-band from hf driving signals than to up-band harmonic distortion pure and simple. (This is probably why some cassette machines are less palatable than other signal sources—just listen to the IM products coming down in frequency as two hf driving signals are brought closer together!) It has been suggested that a 500 Hz tone of 8 dB sound pressure level (spl) can be heard simultaneously with a

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1.2 kHz tone of 100 dB spl\*, which implies that IMD down to -92 dB (0.0025%) is detectable by the human ear. With third-harmonic distortion the ear is more tolerant, just about detecting this relative to a 1.2 kHz 60 dB tone at a level of around -54 dB (0.2%).

Our results, however, give distortion factor at three frequencies round the middle of the dynamic range and IMD both at the top and the bottom of the dynamic range, which collectively constitutes a very searching evaluation of overall distortion performance. Distortion in the FM tuner section is separately assessed in both left and right channels, in the sum (L+R), in the difference (L-R) and in the normal mono channels at 100% and 300% modulation levels. Another measurement which we have found to correlate closely with the listening experience is the pilot tone rejection ratio. When the ratio is poor (less than 45 dB or thereabouts), IM products resulting from the tone and audio components are brought back in band and can be heard by critical listeners.

We shall now look at each receiver in turn, the NAD 300, the Rotel RX-1603 and the Pioneer SX-1250. This does not imply any particular order of merit and was chosen merely to keep in line with the order of testing and the order of the test results. It is noteworthy that, allowing for the differences between the manufacturers ways of testing and the standard way that we test in our lab, all the receivers met or virtually met their published engineering specifications (which we are not going to print here as they are very boring).

## NAD 300

Although capable of raising a good 21+21 V across our  $Z_1$  load, this receiver is the lowest-powered but also significantly the cheapest of the three. It is also the smallest and has its power transistor heat-sinks inside its metal enclosure (those of the other two are exposed at the rear corners.) Its fascia is typical of NAD receivers, but larger. One of its primary features is the Dolby facility, which includes a 400 Hz (measured at 401 Hz) tone oscillator for Dolby reference setting in conjunction with one of the meters at the side of the tuning scales. This signal can be switched to the recording outputs and the Dolby reference level is indicated by a mark on the meter which also, incidentally, serves as the comparative signal strength meter on radio. In this way, then, a test tone tape at approximately 200 nW/m recording level can be made for setting up the Dolby circuits to use with any suitable non-Dolby cassette or reel-to-reel tape machine.

Dolby decoding is also available on FM radio, the Dolby switch having a position for this which also changes the de-emphasis to 25 $\mu$ s—the approximate requirement for compatibility. In actual fact, this de-emphasis is more suitable for the American standards, where the pre-/de-emphasis time-constant is 75 $\mu$ s. In Europe, of course, it is 50 $\mu$ s, so with Dolby encoding at the transmitter and then 25 $\mu$ s pre-emphasis, a receiver without Dolby decoding and with 50 $\mu$ s de-emphasis is less compatible than the American combination.

\* D. T. Owens, *Wireless World*, p. 54, December, 1967.

Our lab worked out that a time-constant of 17 $\mu$ s would be more compatible in Europe. Apart from the Dolby experiments which are occurring from time to time (see A.M.'s interesting piece on this subject in Dec '76 and also his comment with regard to the lack of precise compatibility), the Dolby FM radio will have little real value to the UK or European listener—that is, until such time as there is a change to Dolby FM. With the recent dbx rave-up, the wind of change may be blowing from a different direction.

However, the Dolby tape facility is immediately usable if you possess a tape machine devoid of Dolby—which these days is becoming progressively less likely. The Dolby switch also has positions for record and play (also an 'off' position), and the reference balance is achieved by two pairs of calibration presets on the front panel, which look like press-buttons. One pair calibrates left and right encode and the other pair left and right decode. The meter is switched for reference level setting over the left and right channels by an adjacent press-button, which looks like the calibration presets!

In practice, the scheme is fairly easy to set up and get going, and the family of curves in fig. 6 shows at (a) the encoding and at (b) the decoding, both from the 0 dB Dolby reference level down to -30 dB. These are reasonably compatible and conform to the Dolby parameters. Here the Dolby reference level was established on the meter.

The receiver has provision for the connection of two tape machines on circuits 1 and 2, the first having DIN terminations and the second RCA (phono) type sockets for left and right record and replay. Lever-type switches allow monitoring on either circuit relative to source and for dubbing from either tape machine to the other.

A dual concentric control is used for volume and channel balance, while similar controls for bass and treble give independent tone controlling of the left and right channels. The receiver can be connected to two pairs of loudspeakers, and front switching makes it possible to operate either or both pairs simultaneously. There are two more positions on the switch, one labelled 'quadro', for Hafler style surround sound, using the remote loudspeaker pair for difference signal, and the other muting the loudspeakers for headphone listening. Inputs and switching are included for microphone, magnetic pickup and auxiliary, the auxiliary source being by way of a DIN socket, the pickup by way of RCA sockets and the microphone via rear jack sockets. The tape circuit (No. 2) is also available for recording and replay at front jack sockets. It is also possible to remove the connections between the left and right pre- and power amplifiers for independent operation if required.

Relatively slow rate subsonic and high filters can be activated by press buttons, and on noisy stereo FM an improvement in S/N ratio can be obtained at the expense of separation by pressing a button marked 'hi blend'.

With the blend inactive the stereo separation is as shown by the lower sweep of fig. 4, which is quite acceptable. The upper sweep (ref. 50 $\mu$ s pre-emphasis) is that of FM stereo frequency response. There is sharp bass

roll-off but excellent pilot tone rejection. The IMD with 21 V rms of composite signal across our  $Z_1$  load is shown by fig. 5 spectrogram (notice that the 1 kHz difference frequency is almost 70 dB below either driving signal).

The tuning scale of the 'blacked-out-until illuminated' type is of useful length, with the second meter by the scale assisting accurate FM tuning. Aerial inputs at both 300 and 72 ohms are present, so no trouble here. MW AM is also included, and signal for this can be obtained from a rear ferrite rod aerial. Since this cannot be swivelled round it looks as though the designer expects the entire receiver to be turned to beam onto a station—which is next to impossible. The best plan would be to use an external AM aerial if necessary.

The FM section is less sensitive and generally less potent than that of either of the other (more expensive) two receivers. This is not to say that it is poor by any means—merely that the others are just that little bit better. All this sort of comparative information can be gleaned from the tabulations.

The receiver is a good one; it reaches spec. on all counts other than IHF sensitivity, which the test sample would not quite make. The Dolby facility would be useful for the tape enthusiast, particularly when he has a machine or two that is without Dolby and when inter-dubbing is a requirement. The FM section would not easily get into trouble in difficult situations and the amplifier has plenty of urge to produce high sound intensities in fairly large rooms.

## Rotel RX-1603

The audio section of this receiver is capable of producing 38+38 V rms across our  $Z_1$  load for a 1 kHz IM product about 66 dB below the driving signals, which is an extremely good result. It is, in fact, the most powerful of the three receivers, and if you buy one and wish to take it up to full output, please make sure that the loudspeakers are man enough for the job! It is a very substantial looking receiver, having a well laid out front panel with end handles, metal enclosure and massive heat-sinks for the power transistors at the two rear corners. Three pairs of loudspeakers can be connected to rear, convenient screw-clamp terminals with front panel press-button selection. The signal input sockets are accessible from the top of the receiver on a slanting panel, and the design is such that the pre- and power amplifier sections are completely separated, though, of course, integrated in the enclosure; switches provide independent or interconnected operation.

The treble and the bass controls each have two switchable turnover frequencies, and each switch has an 'off' position allowing either or both the treble and bass tone control circuits to be defeated. The tone control response characteristics at the two pairs of turnovers are shown by the centre family of sweeps in fig. 3, but unlike the NAD 300 each control operates both left and right channels together.

There is a switchable high filter which comes in at about 8 kHz and a low filter whose -3 dB frequency is switchable to 30

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Parameter	Measured result	Comment	Measured result	Comment	Measured result	Comment
Manufacturer's rated power 110+110 W	98+98 W 8Ω	20 Hz-20 kHz (4Ω man. spec.)	As specification	Ref. 0.1% THD/20 Hz-20 kHz	As spec.	Ref. 0.1% THD/20 Hz-20 kHz
Power to clipping over 20 Hz-20 kHz $R_L$	105+105 W	Ref. clipping	190+190 W	Ref. clipping	> 160+160 W	160+160 W/5 Hz-30 kHz
Temp. rise above Amb <sup>1</sup>	≈25 deg C	Internal heat sinks	≈30 deg. C	OK	≈35 deg. C	Sustained sinewave
Dist. factor 10+10 W $R_L$ (20 Hz/1 kHz/20 kHz)	0.04/0.023/0.06%	No crossover artefacts	0.03/0.016/0.017%	No crossover artefacts	0.016/0.01/0.02%	Very good
IM dist. $Z_L$ high output <sup>2</sup>	0.04% (1 kHz prod.)	Fig. 5, 21 V rms across load	0.05% (1 kHz prod.)	38 V rms across load	<0.1% (1 kHz product)	30 V rms across load
IM dist. $Z_L$ very low output <sup>2</sup>	0.022% (1 kHz prod.)	500 mV across load	0.05% (1 kHz prod.)	500 mV across load	<0.05% (1 kHz product)	Very good
Frequency response $R_L$ -3 dB	7 Hz-110 kHz	Excessive hf response	7 Hz-98.5 kHz	Extended hf response	<5 Hz-90 kHz	Slightly extended hf
Rise-time $R_L$ /settling-time $R_L/1 \mu F$	3 μs/20 μs	Overshoot only $R_L/1 \mu F$	3.5 μs/40 μs	Overshoot on settling	≈4 μs/30 μs	Fair
Slewing-rate $R_L$	11 V/μs	TDL unlikely	11.5 V/3 μs	TDL unlikely	9.5 V/μs	TDL unlikely
Damping factor $R_L$ 2 W 40 Hz/20 kHz	40/17	Bit low at hf	40/28	OK	40/30	OK
Inputs (sensit./ $Z_L$ /(S/N)) <sup>3</sup> low-level (PU)	3 mV/47 k/64 dB		2.4 mV/25; 50; 100 k/62 dB	Two PU inputs, one switchable	2.5 mV/50 k/75 dB	OK
high-level PU overload threshold 1 kHz $V_{peak}$	220 mV/50 k/88 dB	OK	152 mV/50 k/91 dB	OK	150 mV/50 k/90 dB	OK
Tape recording output	340 mV	Adequate	480 mV	Very good	720 mV	Incredible!
Tone control responses	200 mV nominal (2)	Also DIN at Tape (1)	300 mV (nominal)	Also DIN socket/standard	150 mV nominal	Also DIN socket/standard
Filter responses (-3 dB)	±10 dB 100 Hz/10 kHz	Independent left and right	Two turnovers (Fig. 3)	200/400 Hz; 2.5/5 kHz	Two pairs turn-overs	50 Hz/100 Hz and 10/20 kHz
Loudness response	38 Hz/6.2 kHz	6 dB/12 dB/octave	30 Hz/8 kHz (also 15 kHz)	Fig. 3 (6 dB/octave)	Low and high	12 dB/octave
Departure RIAA/separation PU	8 dB/100 Hz/4 dB/10 kHz	Fairly conventional	Conventional	Fig. 3	Loudness switch	Conventional response
Crosstalk to tape monitor <sup>4</sup>	±0.5 dB 20 Hz-20 kHz	OK/46 dB at 1 kHz sep.	±0.5 dB 20 Hz-20 kHz	OK/52 dB separation 1 kHz*	20 Hz-20 kHz ±0.5 dB	Good/≈60 dB separation
Insulation class BSI Dolby characteristics**	52 dB	Via PU	56 dB	Reasonable	> 60 dB	OK
	Presumably class I	Earth conductor present	Presumably class I	Earth conductor present	Presumably cl. II	No earth conductor

\* Depends on setting of volume control

\*\* Dolby ref. level set by meter provided

#### Notes

(1) Measured at heat-sinks when accessible, otherwise at accessible parts after preconditioning.  
 (2) Drive signals  $f_1 = 15$  kHz and  $f_2 = 16$  kHz equal amplitude. (3) With respect to measured power over 20 Hz-20 kHz. (4) With input at 20 dB above rated at 1 kHz applied to PU and amplifier in tape monitor mode.

#### Test conditions

240 V 50 Hz mains input. Preconditioning at one-third rated power for one hour prior to measurements in accordance with FTC (or BS415). Signal input to tape or auxiliary (high-level) and magnetic pickup (low-level). Loads  $R_L = 8$  ohms resistance,  $Z_L = 5.7$  ohms and 62° phase angle at 15 kHz and 1 μF in parallel with  $R_L$  for settling-time. Where applicable measurements made with input 20 dB above rated sensitivity. S/N ratios measured with CCIR weighting.

or 15 Hz. The top sweep in fig. 3 shows the 30 Hz and 8 kHz filters, which have a slow roll-off rate and hence may not be all that valuable; for the price of the receiver I would have thought that the designers could have come up with something more exciting in the way of filtering. There is, of course, the inevitable loudness facility whose response is shown by the lower sweep in fig. 3.

The FM frequency response is almost a straight line from about 10 Hz right to the top of the spectrum, where the response falls into a slightly mistuned notch designed for pilot tone rejection. The measured rejection is round 50 dB, but could be better with more accurate tuning. This sweep (with separation below) is given in fig. 2, where it will be seen that the separation is close to 35 dB over the important part of the spectrum.

FM stereo distortion at 100% modulation is shown in fig. 1, which is quite respectable, better than that of the NAD. This spectro-

gram also shows the pilot tone ref. 100% modulation at -50 dB and the IM products resulting therefrom. The distortion in all the other modes is given in the test results tabulation.

Stereo separation in the PU mode was found to vary depending on the setting of the volume control, but even the worst measured value is acceptable and would not detract from the stereo effect, the limit in this respect being governed by the separation of the pickup itself.

This receiver is also equipped with two tape circuits, with a switch for monitoring either circuit and another for transferring from either machine to the other.

The volume and tone controls are 'calibrated' allowing repeatable settings; the former operates over a series of clicks, while a click position identifies the centre position of the others.

Inputs and switching are available for two pickups and auxiliary and, like the NAD, a microphone can be used with the receiver; but here a gain control facilitates mixing.

Two below-tuning-scale meters provide relative signal strength indication and centre-zero for accurate FM tuning. A press-switch labelled 'multipath' provides an indication of the degree of reflected signals being received, allowing orientation of the aerial to minimise the resulting distortion. There is also a 'blend' button to reduce the noise of weak stereo signals at the expense of stereo separation.

The de-emphasis of the test sample was accurately set to 50 μs, the British requirement, but it is possible to reduce this to 25 μs by means of a front button for receiving

Dolby-encoded transmissions via an external decoder.

The receiver is extremely well engineered, and the controls and switches have that 'silky', smooth feel which our Japanese colleagues consistently provide. There are two headphone jacks and a light indicator which tells when the amplifier is being driven to overload. The tuning scale is long and clearly marked, and for non-fi reception there is a MW AM band taking signal from a ferrite rod aerial inconveniently placed at the top of the enclosure, within a vane provided by the sloping socket panel.

Certainly another very good receiver with a very sensitive and remarkably spurious-free FM section. The designer has achieved a good balance between audio and FM, both sections being truly state-of-art. It is a fine-sounding receiver which is insensitive to the electrical load of the loudspeakers and with an FM section highly suitable for serious DX-ing.

## Pioneer SX-1250

The FM section of this receiver is on par with that of the Rotel. Although remarkably powerful, it is not quite up to the full power of the Rotel but is more powerful than the NAD. We had no trouble in raising 30 V rms of signal across our  $Z_L$  load for a 1 kHz IM product of less than -60 dB (0.1%). Mid-dynamic-range distortion factor, too, was the lowest of the group at 1 kHz at least, and there was no sign of distortion increase with the analysed output running at noise floor! The pickup overload margin at 720 mV peak was also the highest of the three, though in this respect neither of the other two can be

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FM SECTIONS	NAD 300 RECEIVER		ROTEL RX-1603 RECEIVER		PIONEER SX-1250 RECEIVER	
<b>Measured Parameter</b>	<b>Measured result</b>	<b>Comment</b>	<b>Measured result</b>	<b>Comment</b>	<b>Measured result</b>	<b>Comment</b>
Usable sensitivity IHF (worst over band)	2.5 $\mu$ V	Good	1.1 $\mu$ V	Excellent	1.1 $\mu$ V	Excellent
Limiting -1 dB	1.5 $\mu$ V	Very good	0.7 $\mu$ V	Excellent	1 $\mu$ V	Excellent
50 dB S/N ratios	8 $\mu$ V(m); 80 $\mu$ V(s)	Very good	4 $\mu$ V(m); 40 $\mu$ V(s)	Excellent	5 $\mu$ V(m); 40 $\mu$ V(s)	Excellent
Ultimate S/N ratios/inputs (dB/ $\mu$ V)	69/200(m); 68 dB/1,500	Very good	67/100(m); 66/800(s)	Very good	69/100(m); 68/1,000(s)	Excellent
Front-end 3rd order IM <sup>1</sup>	72 dB	Very good	76 dB	Very good	72 dB	Very good
Capture ratio	$\approx$ 2 dB	Very good	< 2 dB	Very good	< 2 dB	Very good
Repeat spot suppression <sup>2</sup>	78 dB	Good	90 dB	Very good	94 dB	Excellent
Front-end selectivity <sup>3</sup>	60 dB	Very good	88 dB	Very good	> 100 dB	Excellent
Alternate channel selectivity IHF	> 74 dB	Excellent	> 76 dB	Excellent	> 76 dB	Excellent
Adjacent channel selectivity IHF	9 dB average	Good	9 dB nominal	Good	10 dB nominal	Good
AM rejection 1 mV input (100%FM 30%AM)	56 dB	Very good	57 dB	Very good	58 dB	Very good
Stereo distortion 100% modulation L/R	0.56%/0.56%	Fair	0.3%/0.3%	Good (Fig. 1)	0.3%/0.3%	Good
Stereo distortion 100% modulation L+R	0.5%	Fair	0.56%	Fair	0.2%	Good
Stereo distortion 100% modulation L-R	0.2%	Good	0.12%	Very good	0.32%	Good
Mono distortion 30%/100% modulation	0.3%/0.2%	Fair/good	0.17%/0.38%	Good/fair	$\approx$ 0.1%	Very good
Modulation hum <sup>4</sup>	-70 dB (3rd harmonic)	2nd harm. -75 dB	-70 dB	Very good	Down towards noise	Excellent
Pilot tone rejection (9% pilot tone)	-64 dB	Very good	-50 dB	Reasonable (Fig. 1)	-78 dB	Excellent
Stereo frequency response/separation	-3 dB 14 kHz/40 dB 1 kHz	Fig. 4	-3 dB 16 kHz/35 dB 1 kHz	Fig. 2	-3 dB 15.5 kHz/>>40 dB 1 kHz	Excellent
Output 100% modulation 1 kHz	See amplifier section	Suits sensitivity	See amplifier section	A trifle low	See amplifier section	Suits sensitivity
Muting/stereo switching levels	6 $\mu$ V/6 $\mu$ V	Log. preferred	1 $\mu$ V/1 $\mu$ V	Too linear	1.5 $\mu$ V/1.5 $\mu$ V	OK
Meter reading for 500 $\mu$ V aerial input	Maximum		8 (0-10 range)		$\approx$ $\frac{1}{2}$ full-scale	
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**Notes**  
(1) f1 = 94 MHz 100% modulated, f2 = 95 MHz unmodulated at 5 mV input level and parameter = 2f2-f1 in dB to f1 for 30 dB S/N ratio. (2) Input at 100 MHz increased for 30 dB S/N ratio on spurious signal at 94-65 MHz in dB ref. usable sensitivity. (3) f2 = 100 MHz at 50 mV unmodulated, f1 = 100 MHz minus the i.f. modulated 100% and parameter = the response at f1-400 kHz in terms of f1 input for 30 dB S/N ratio as a dB ratio ref. usable sensitivity. (4) Measured with a spectrum analyser ref. 100% modulation.

**Test conditions**  
240 V 50 Hz mains input. FM aerial input corresponds to pd across matched 72 ohms. All S/N and disturbance ratios measured with CCIR weighting. For FM receiver measurements the volume control set for 7.6 W into 8-ohm (R)<sub>L</sub> loads on 100% mono modulation.

criticised!  
As with the Rotel, there are two switchable turnover frequencies for bass and treble tone controls, but at more useful values. The 50 Hz turnover, for example, is handy for lifting the low bass without too much affecting the mid-range, to give that little extra bass urge required by some loudspeakers; it is also useful to be able to boost or cut the top of the spectrum without changing the response at middle frequencies too much.  
Switchable low and high filters at useful frequencies and 12 dB/octave rate are also present. The receiver is designed to accommodate three pairs of loudspeakers with switch selection (allowing two only to be operated simultaneously). The usual two meters are present, one for comparative signal strength and the other centre-zero for accurate FM tuning. As with the Rotel, the FM section includes a multipath switch which causes the signal strength meter to respond to AM and hence multipath components on

any tuned signal. The scheme is to operate this switch and then turn the aerial for the least reading and thus the least multipath distortion. In the multipath mode, incidentally, the FM section will receive AM transmissions.

As we have come to expect from Pioneer creations, the electronics and mechanical parts are beautifully engineered—a joy to measure and good to the touch.

About the only criticism that can be directed at the audio section is the extended hf response, but this applies to all the receivers. It is a pity that designers have to be so spec. dominated when by now it must be known that an extended hf response is more likely to detract from rather than enhance the listening experience.

Although the FM section of the Rotel is engineered to a very high order, that of the Pioneer is marginally better on certain parameters, as brought out by the comparative listings. In some cases we were measuring to the absolute extreme of our instruments—and these are state-of-art. For example, to extract the precise selectivity and certain rejection ratios we had to use an rf power amplifier between our vhf generators and the receiver aerial socket. Aerial inputs are available for both 72 and 300 ohm feeders, as with the NAD and Rotel.

This is the sort of receiver which would have significant appeal to the really serious FM DX-er. We have now reached, with receivers such as this Pioneer, almost the physically realisable maximum. For example, over the required bandwidth an increase in sensitivity would merely be within the realm of the thermal noise generated by the aerial!

The receiver produced the best sound of the group on live FM programmes and this, we feel, is helped by the really excellent pilot tone rejection ratio of 78 dB, putting in-band IM products resulting from this and the audio signal itself well below audibility.

Like the other two models, the Pioneer includes—for those who must have it—a MW AM band taking signal from a ferrite rod aerial which, in this case, can be swivelled for the best pick-up or best S/N ratio.

If you are in the market for a powerful receiver with a good FM section then any one of these receivers would suit you. The NAD has particular advantages where Dolby encoding and decoding could be of value; the other two gain marginally in terms of output voltage and FM aspects but cost more.

All models are substantially designed and would operate without distress at high drive for protracted periods. All are protected by fuses and relays, have a very good pickup overload margin and are plagued by an extended hf response and hence too small a small-signal rise-time. However, having said that, the fast power transistors used in all the models make it virtually impossible for bad TID to occur, in spite of the extended hf.

This has been a very interesting exercise which shows just how far receivers have advanced over the last few years. It seems unlikely that we shall improve much from these set standards over the years; in fact, with the information now becoming available it may be necessary to trim back some of the absolute engineering specifications to correlate more with the requirements of good listening! ●

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 SA5300 .. .. £69-00

SA6300 .. .. £78-00  
 SA7300 .. .. £130-00  
 SA7500 .. .. £192-00  
 SA8500 .. .. £220-00  
 SA9500 .. .. £294-00  
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**Tuners**  
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 TX7500 .. .. £152-00  
 TX9500 .. .. £211-00

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 PL115D .. .. £71-00  
 PL117D .. .. £102-00  
 PL510D .. .. £122-00  
 PL530 .. .. £180-00

**Cassette decks**  
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 CTF7070 .. .. £201-00  
 CTF8080 .. .. £242-00  
 CTF9191 .. .. £262-00

**TEAC**  
**Cassette decks**  
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 A400 .. .. P.O.A.  
 A420 .. .. P.O.A.  
 A460 .. .. P.O.A.  
 A650 .. .. P.O.A.  
 PC10 .. .. P.O.A.

**Dolby units**  
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 AN180 .. .. P.O.A.  
 AN300 .. .. P.O.A.

**DBX units**  
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 A119 A124 .. .. P.O.A.

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 TFM C-580 .. .. £32-50  
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 ICF C-800 .. .. £52-50

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 CF210L .. .. £66-25  
 CF440L .. .. £95-00  
 CF560S .. .. £130-00  
 CF580 .. .. £212-50  
 CF140L .. .. £50-00

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 TV144UK .. .. £104-00  
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 TC65 .. .. £37-50  
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TC182 .. .. £162-50  
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 TC520CS .. .. £136-50  
 TC525 .. .. £117-50

**Stereo Cass./Deck**  
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 TC135SD .. .. £117-50  
 TC136SD .. .. £134-00  
 TC138SD .. .. £185-00  
 TC153SD .. .. £175-00  
 TC177SD .. .. £387-00  
 TC186SD .. .. £178-50  
 TC204SD .. .. £152-50  
 TC206SD .. .. £170-00  
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 PS3300 .. .. £115-00  
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 SQA200 .. .. £95-00  
 SQD2010 .. .. £128-00

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 ST88 .. .. £62-00  
 ST2950F .. .. £95-00  
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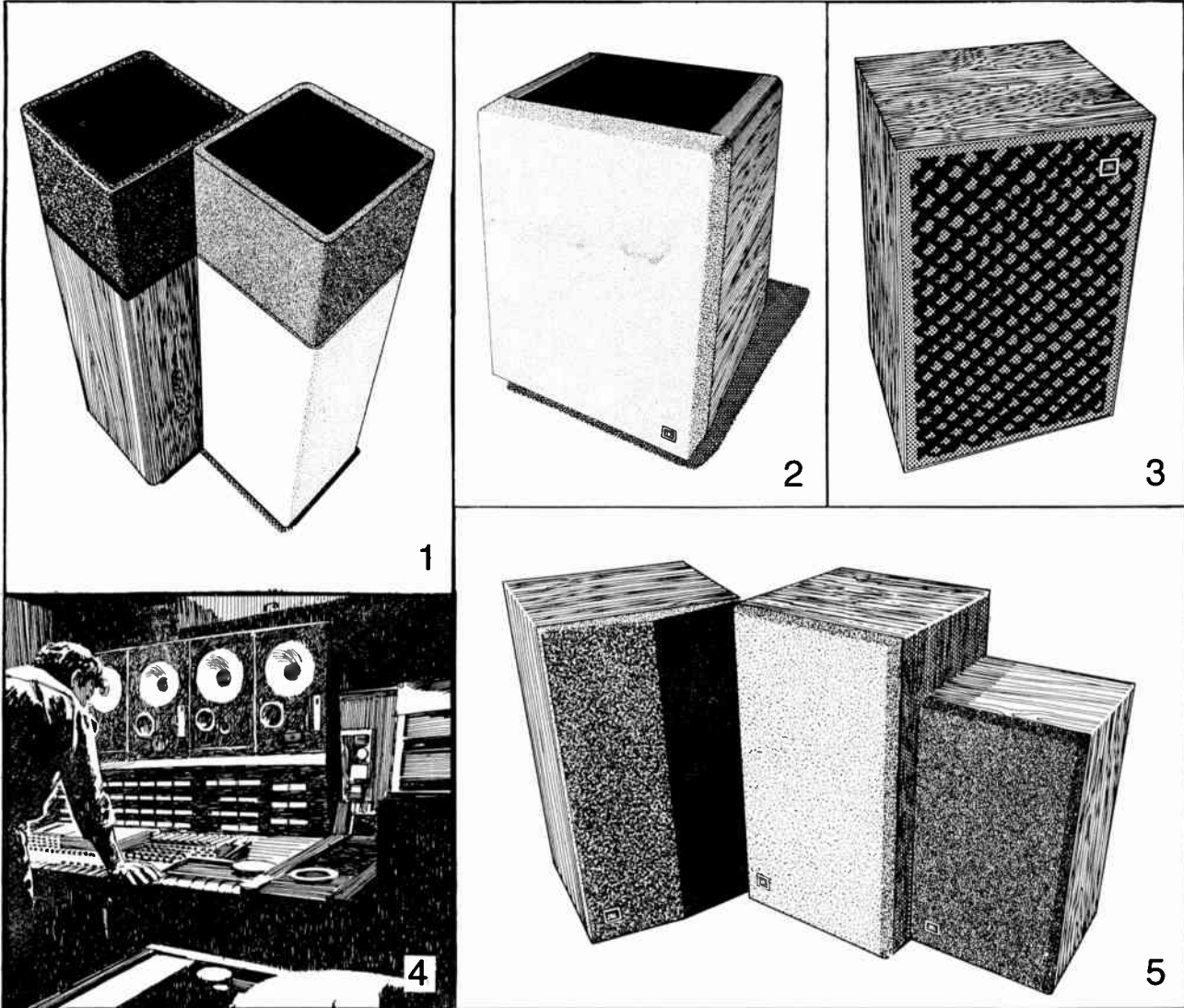
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**E. PIONEER CTF 2121A CASSETTE  
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2 XP SPEAKERS**

Two way bookshelf speakers which can reproduce sound you'd expect from larger and pricier speakers. Grilles can be removed, if preferred. Size 355 x 246 x 222mm. **£11.50** pr (teak). **£12.50** (walnut). (pp & ins. £2.20).

**H. AUDIOTRONIC CRITERION  
20 SPEAKERS**

3 way bookshelf speakers, real value for money. If you prefer, you can operate them horizontally. Size: 476 x 232 x 232mm. **£39.95** pr (walnut). (Pp & ins. £2.20.)

**I. CELESTION DITTON 44 SPEAKERS**

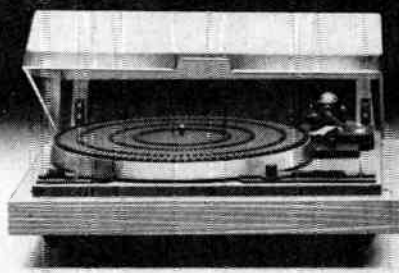
Free standing speakers noted for efficiency and high quality. Realistic listening levels even with inputs of only 5 to 10 watts. Size: 1000 x 380 x 290mm. **£154.95** pr (teak). **£184.80** (walnut). (Pp & ins. £2.20.)

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Smallest speakers in a new range that's real value for money. Two way with 200mm bass and treble units. **£49.00** pr (teak). (pp & ins. £2.20).

**N.B. All units shown are compatible, so it's simple to put together a system.**

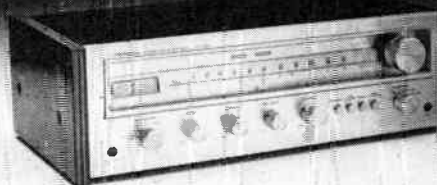
**A. £97.50**



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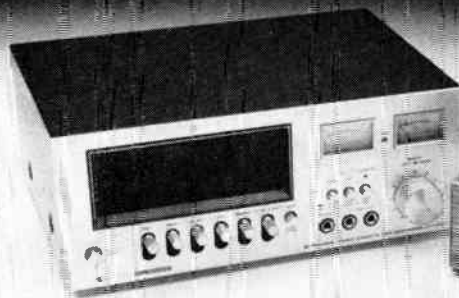
**C. £119.95**



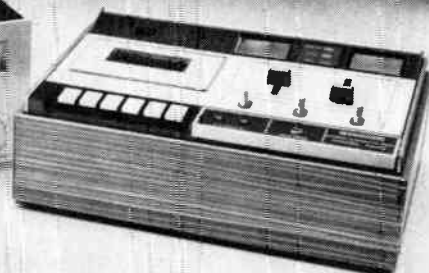
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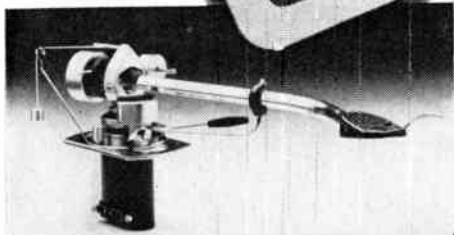
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GOOD NEWS FROM

# Connoisseur THE BD2/A



Based on the popular BD2, the new BD2/A offers the hi-fi enthusiast all the features usually associated with Connoisseur turntables, such as low rumble, wow and flutter, plus the addition of an automatic pick-up arm lift-off at the end of the record. This is achieved by an ingenious, though simple, electro-magnetic system, which avoids having any physical contact with the pick-up arm. It is possible, therefore, to use top quality cartridges, tracking at less than one gram, without putting any extra side pressure on the stylus.

The BD2/A comes either as a chassis model, or mounted on a slimline plinth, standing on rubber anti-vibration feet, finished in genuine American walnut, and fitted with a bronze, hinged dust cover. For those with restricted space, a compact plinth measuring only 13½" x 15½" x 5½" is still available.

**Specification**

Rumble - 65dB when measured in accordance with DIN 45539 using weighting network, referred to 7cm/sec. at 330Hz.

Wow and flutter Less than 0,1%.

Hum level - 80dB.

Ask your local hi-fi dealer, or write to the factory, for further details.

# Connoisseur

Manufactured by:- **A. R. Sugden & Co (Engineers) Ltd.**, Atlas Mill Road, Brighouse, West Yorkshire HD6 1ES.  
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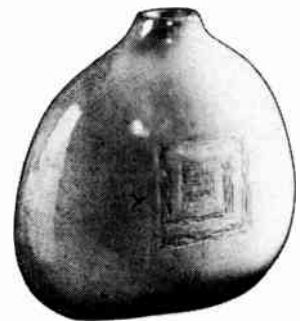
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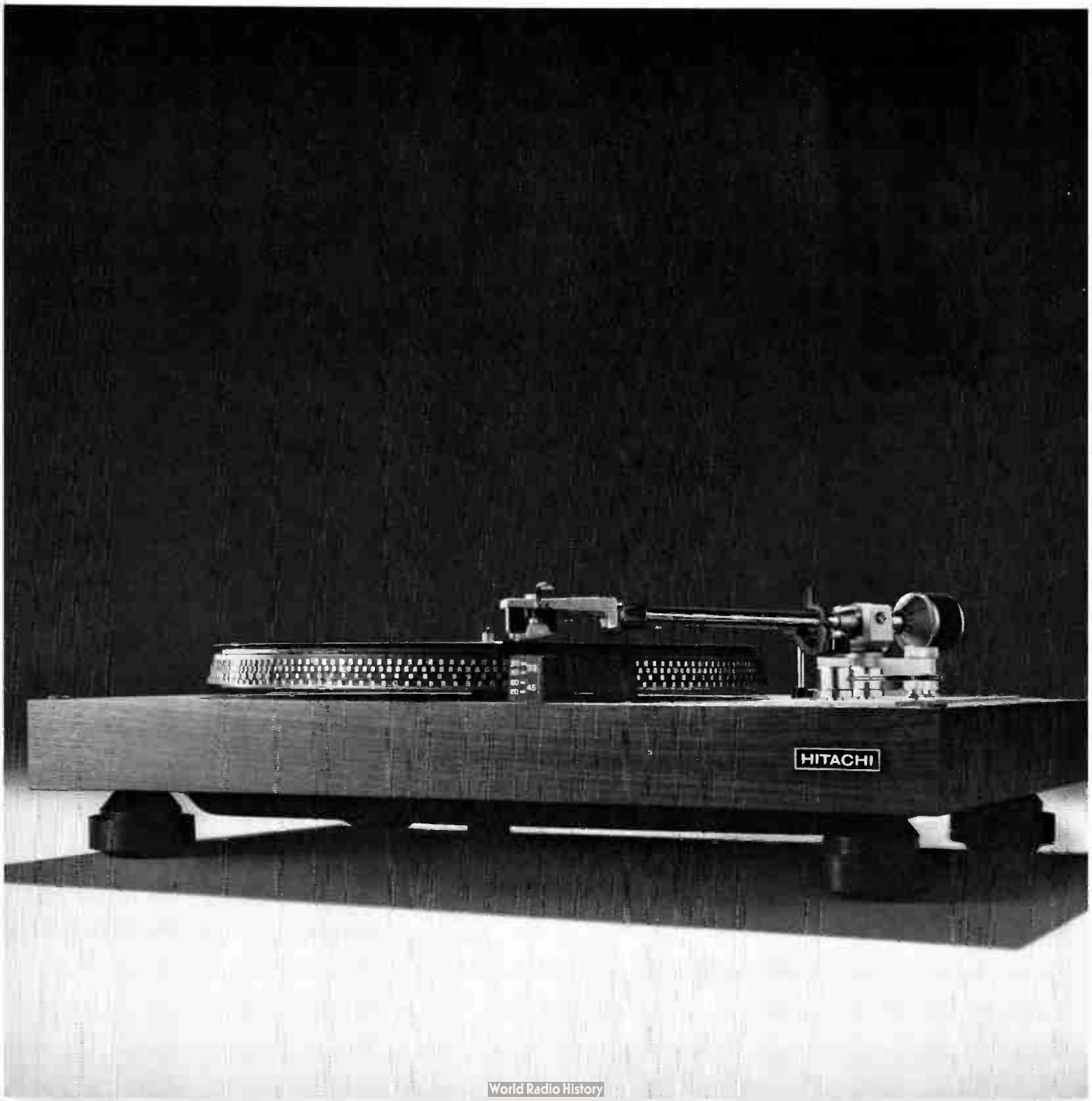
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# Have you noticed about your turn



# something weird table's vibrations?

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It eliminates those weird vibrations.**

When a turntable's speed is goofed up. Or the smoothness of rotation is even slightly off, your ear detects it immediately.

Hitachi has solved this problem with a flat DC servo motor called Unitorque.

Unitorque is smoother because the torque it supplies is unbroken. It uses two star shaped coils for balancing and distributing torque evenly.

This is unique.

Most turntables fluctuate in torque like this.



But Hitachi has two coils which balance torque evenly like this.



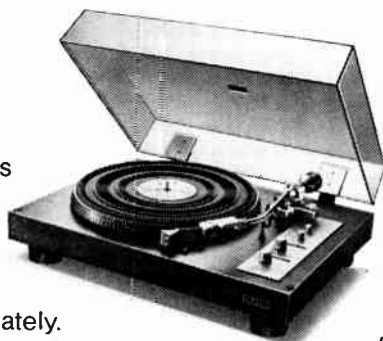
Speed is also critical to a turntable's performance. And again Hitachi has solved this problem with the utmost precision. In each revolution, speed is monitored at 72 points by advanced electronic circuitry and then regulated with superb accuracy.

Sound complicated?

Maybe the theory is but the parts themselves are extremely simple and reliable. Everything has been designed for maximum simplicity and stability.

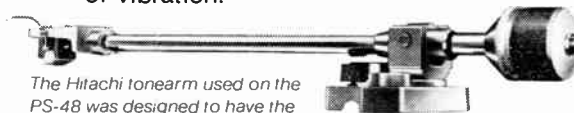
Consider our vibration damping system.

In the PS-48, scientifically designed parabolically shaped rubber legs support it.



PS-48

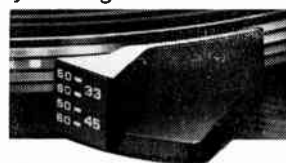
Even the tonearm is isolated from the turntable and base by means of a special rubber mounting that prevents the transmission of vibration.



The Hitachi tonearm used on the PS-48 was designed to have the lowest possible center of gravity. This greatly increases its stability and enables it to track perfectly with even the most sensitive cartridges.

Other less critical areas were also given considerable thought by our engineers. One control lever activates either a manual, oil-damped cueing device or an Auto-Cut, automatic arm return mechanism that functions independently at the end of a disc. There's a built-in neon lamp and speed control system, and even the lamp housing was designed so you can steady your hand on it while manually cueing a selection.

The Hitachi PS-48. It gives you the very best vibrations.



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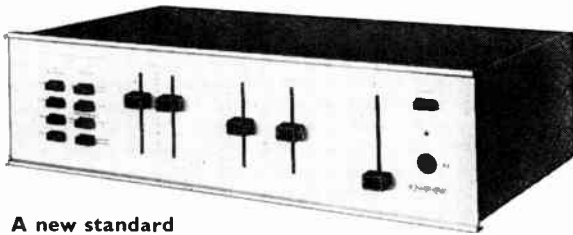
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S/N Ratio	60dB (50-60Hz)
Speeds	33 $\frac{1}{3}$ and 45rpm
Cartridge: (VFS-260)	
Frequency Response	20-20,000Hz
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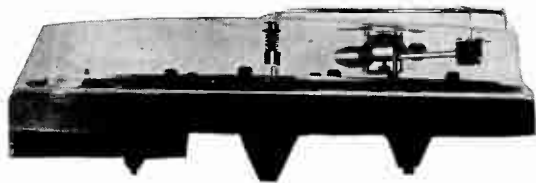
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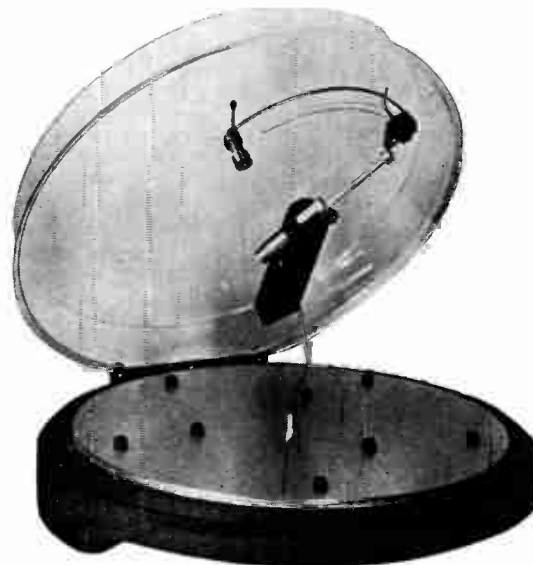
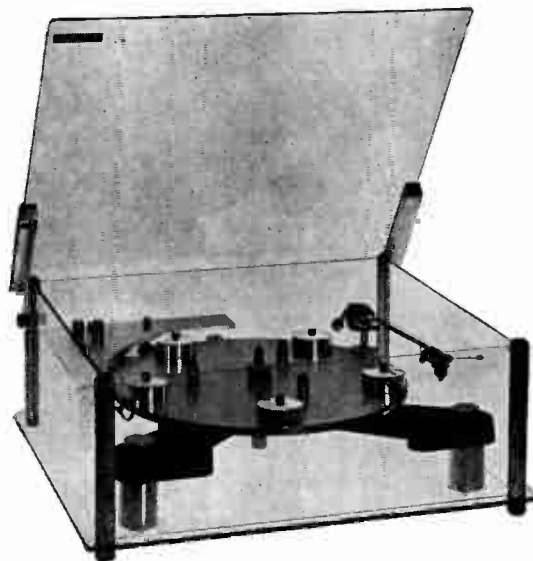


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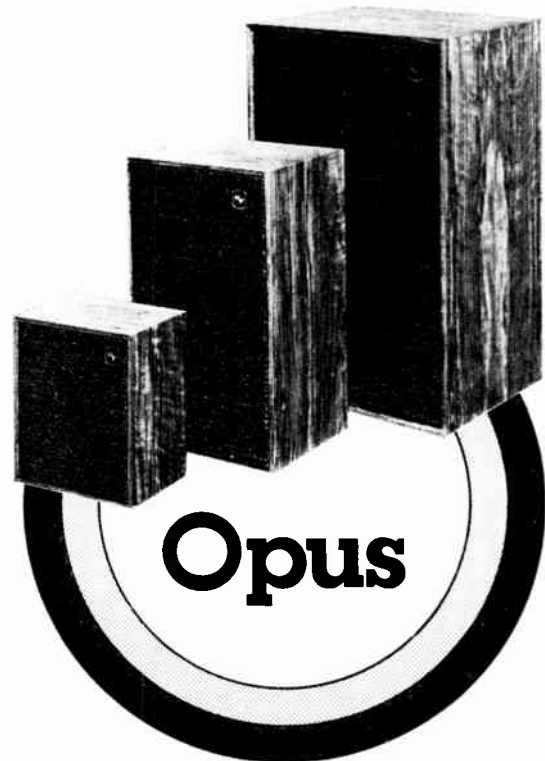
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**EXPORT**

**CREDIT TERMS ARRANGED — FANTASTIC BARGAINS THIS MONTH!**

### MUSIC CENTRES

Sony HMK 20 & 30  
Sony HMK 40A & 70  
Sony Ex 1K & Ex 2K  
National SG1020 & 1060  
National SG1070 & 2070L  
National SG2080  
Aiwa 5050  
Aiwa AF5080  
Toshiba SM3500 & SM3200  
Hitachi SDT2680 & 2690  
B & O NEW MODEL

### CASSETTE DECKS

Sony TC117 & 118SD  
Sony TC135 & 136SD  
Sony TC138 & 153SD  
Sony TC209 & 186  
Sony TC204 & 206SD  
Sony TC177SD  
Sony ELCASET EL5  
Sony ELCASET EL7  
Technics RS263 & 273  
Technics RS640 & 610  
Technics RS630 & 671  
Technics RS676

Pioneer CTF4141 & 5151  
Pioneer CTF2121 & 6060  
Pioneer CTF7070 & 8080  
Pioneer 9191  
Aiwa AD1250 & 1300  
Aiwa AD1600 & 1800  
Aiwa AD6300 & 6500  
Beocord 1100

### RECEIVERS

Sony STR7015 & 7025  
Sony STR7035 & 7055A  
Sony STR4800 & 5800  
Sony STR6800SD  
Technics SA5060 & 5150  
Technics SA5160 & 5360  
Technics SA5460  
Pioneer SX1250 & 950  
Pioneer SX850 & 750  
Pioneer SX650 & 550  
Pioneer SX450 & 300  
Aiwa AF3060 (Cassette)  
Aiwa AX7500  
Beomaster 901 & 1100  
Beomaster 2000 & 3400  
Beomaster 4000 & 6000

### AMPLIFIERS & TUNERS

Sony TA70 & ST70  
Sony TA88 & ST88  
Sony TA1630 & ST2950F  
Sony TA2650 & ST3950  
Sony TA3140F & ST5130  
Sony TA3650 & ST5950  
Sony TA5650 & ST5055L  
Sony TA8650 & ST5066  
Technics SU7200 & ST7200  
Technics SU3500 & ST7600  
Technics SU3500 & ST3500  
Technics SU8600 & ST9600  
Technics SU9600 & SE9600  
Pioneer SA5300 & 6300  
Pioneer SA7300 & 7500  
Pioneer SA8500 & 9500  
etc.  
Lecson

### TURNTABLES

Sony PS1350 & 1700  
Sony PS3300 & 4300

Sony PS6750  
Technics new models available  
Technics SL110  
Technics 10 Mk II  
Strathearn  
Beogram 1100 & 3400  
Beogram 4002 & 6000

### SPEAKERS

Celestion  
Ditton 11, 15, 33  
Ditton 44, 25, 66  
UL6, 8 & 10  
Acoustic Research  
AR10x, 11, 12, 14  
AR16, 7x, 4xa, etc.  
Tannoy  
Eaton, Devon, Cheviot,

Berkeley, Arden

Technics  
SB30, 40 & 102  
SB202, 302, 402  
SB501, 5000 etc.

Sony  
SS70 & 5088  
SS3050 & 5050  
SS8150 & 1030  
SS1050 & 2030  
SS2050 & 2070

Wharfedale  
Chevin, Denton,  
Linton, Glendale,  
Dovedale, Airdale, etc.

Also Mordaunt-Short JR149,  
B&W etc.

### COLOUR & PORTABLE TV's

13" Sony KV1340  
18" Sony KV1818 Mk II  
20" Sony KV2000 UB  
14" National TC48G  
18" National TC86G  
20" National TC261G  
14" Mitsubishi CPl41B

20" Mitsubishi CT203B  
19" Hitachi CTF202  
5" National TR505G  
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12" National TR602G  
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Sabre I



Sabre II



Appolo II

## BLANK RECORDING TAPES AT DISCOUNT PRICES

CASSETTES	C30	C45/48	C60/66*	C90/96*	C120		
AGFA New Super	—	—	£0.53	£0.72	£1.08		
AGFA 5FD* (5M)	—	—	£0.72	£0.96	£1.25		
AGFA CrO2 (5M)	—	—	£0.98	£1.23	£1.68		
AGFA Carat F/Chrom (5M)	—	£0.80	£1.17	£1.46	—		
AMPEX 20/20+	—	—	£0.85	£1.03	—		
BA5F LH (5M)	—	—	£0.57	£0.75	£1.02		
BA5F LH5 (5M)	—	—	£0.82	£1.10	£1.39		
BA5F CrO2 (5M)	—	—	£1.10	£1.37	—		
BA5F Ferrochrom (5M)	—	—	£1.42	£1.85	—		
FUJI FX	—	—	£0.96	£1.35	—		
MAXELL 5LN	—	—	£0.62	£0.80	£1.04		
MAXELL UD	—	—	£1.14	£1.29	£1.76		
MAXELL UDXL 1	—	—	£1.36	£1.74	—		
MAXELL UDXL 2	—	—	£1.49	£1.89	—		
MEMOREX Mr.X2	£0.62	£0.66	£0.69	£0.95	£1.30		
Memorex CrO2	—	—	£0.95	£1.35	—		
TDK Dynamic	—	£0.48	£0.55	£0.75	£1.00		
TDK Super Dynamic	—	£0.61	£0.70	£0.91	£1.31		
TDK Audua	—	£0.83	£0.95	£1.29	—		
TDK Super Avilyn	—	—	£1.02	£1.38	—		
REEL-TO-REEL	CINE D/P	CINE L/P	METAL L/P	CINE D/P	CINE L/P	NAB L/P	NAB D/P
	5 1/2" x 1800'	7" x 1800'	7" x 1800'	7" x 2400'	10 1/2" x 3600'	10 1/2" x 3600'	10 1/2" x 4200'
AGFA PE36	—	£2.90	—	—	—	—	£8.70
AGFA PE46	—	—	£3.60	—	—	—	—
AGFA PEM 368 M/B	—	£3.57	£4.15	£7.90	£9.50	—	—
AMPEX High/F	—	£1.80	—	£2.45	—	—	—
AMPEX 20/20+ M/B	—	£2.95	—	—	£8.10	—	—
BA5F LH	—	£3.70	—	£4.70	—	—	—
BA5F LH5	—	£4.20	—	£5.75	—	—	—
MAXELL	—	—	—	—	—	—	—
TDK Audua Std.	—	£2.65	—	—	£7.25	—	—
TDK Audua M/B	—	£3.10	—	—	—	—	—

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HFN/477



# COMET

Rec. Retail Comet  
Price Price  
Inc. VAT Inc. VAT

## Stereo Amplifiers

<b>AKAI</b>		
AM2200	121.00	84.90
AM2400	182.00	129.90
<b>ALBA</b>		
UA 700A	—	49.90
UA 900	—	75.90
<b>AMSTRAD</b>		
8000 Mk 3	—	28.90
IC 2000 Mk 3	—	42.90
<b>FERROGRAPH</b>		
F208 Mk II	121.50	79.94
F608 Mk II	209.25	139.94
<b>GOODMANS</b>		
Model 40-40	—	63.90
<b>LEAK</b>		
3900A	371.78	259.90
<b>MARANTZ</b>		
1030	96.47	79.90
1040	174.38	144.90
1060	150.90	124.90
1200B	518.83	299.90
1070	218.24	179.90
1150	398.09	334.90
1150D	495.70	419.90
3800 pre-amp	778.64	649.90
510 M pow. amp	1,065.97	889.90
3200 pre-amp	193.02	162.90
140 pow. amp	289.51	239.90
<b>PIONEER</b>		
SA 5300	85.86	66.94
SA 6300	105.71	79.94
SA 7300	162.62	129.94
SA 7500	238.14	184.94
SA 8500	271.22	199.94
SA 9500	363.80	259.94
SA 9900	539.80	424.90
<b>ROTEL</b>		
RA212	82.35	57.90
RA312	97.10	67.90
RA412	125.30	87.90
RA712	152.00	99.90
RA812	217.55	154.90
RA1312	390.00	274.90
RA1412	510.00	359.90
<b>SANSUI</b>		
AU 2900	100.01	68.90
AU 3900	143.06	97.90
AU 4900	173.38	119.90
AU 5900	246.53	168.90
AU 7900	337.71	237.90
AU 9900	559.29	389.90
<b>SOLAVOX</b>		
20. 10 watts. RMS per channel	45.53	24.94
30. 15 watts. RMS per channel	53.46	29.94
<b>TRIO</b>		
KA 1500	79.95	69.95
KA 3500	125.00	109.50
KA 5500	218.50	190.00
KA 7300	287.50	250.00
Mod 600	635.00	550.00

## Tuners

<b>AKAI</b>		
AT 2200	116.00	82.50
AT 2400	181.00	129.90
<b>ALBA</b>		
800A	—	54.90
<b>AMSTRAD</b>		
3000 Mk II	—	42.90
<b>FERROGRAPH</b>		
SFM 1 Mk II	147.38	99.94

## HOW TO CALCULATE VAT

All Comet prices include VAT at the current rates (12½% electronics, 8% blank tapes and Schreiber Furniture) but should a change in VAT be announced in the Chancellor's Budget (and assuming that it takes effect immediately) you can easily calculate the new Comet prices to include a revised rate of VAT by multiplying the Comet price listed here by the relevant constant listed below:

	Where existing rate of 12½% VAT applies	Where existing rate of 8% VAT applies
10% VAT:	× 0.97777	× 1.01852
15% VAT:	× 1.02222	× 1.06482
17½% VAT:	× 1.04444	× 1.08796
20% VAT:	× 1.06666	× 1.11111
25% VAT:	× 1.11111	× 1.15741

## Tuners—cont.

	Rec. Retail Price Inc. VAT	Comet Price Inc. VAT
<b>MARANTZ</b>		
104	110.06	99.90
112	209.79	174.90
150	502.27	414.90
<b>PIONEER</b>		
TX5300	96.40	74.94
TX7500	189.42	144.94
TX9500	261.87	199.90
<b>ROTEL</b>		
RT224	90.30	59.90
RT324	114.85	79.90
RT724	136.70	96.90
RT824	214.65	149.90
RT 1024	373.75	264.90
<b>SANSUI</b>		
TU3900	151.89	102.90
TU5900	223.84	149.90
TU7900	262.67	186.90
TU9900	411.15	279.90
<b>TRIO</b>		
KT5300	105.00	89.95
KT7300	230.00	199.95
Mod 600T	575.00	495.00

## Tuner/Amplifiers

<b>AKAI</b>		
AA 1010	178.50	123.90
AA 1020	219.50	149.90
AA 1030	245.00	172.50
AA 1050	393.75	284.90
<b>ALBA</b>		
1500	—	84.90
<b>AMSTRAD</b>		
5050	—	89.90
<b>FERGUSON</b>		
3491 stereo FM 2/4 channel tuner amplifier with SQ decoder, pan balance control 4 meters, 4 × 14 watts output	—	79.54
<b>GOODMANS</b>		
Module 90	—	134.90
Module 120	—	147.50
Module 150	—	212.90
<b>LEAK</b>		
3200	225.65	159.90
3400	282.74	199.90
<b>MARANTZ</b>		
4240	493.49	249.90
4400	986.97	819.90
2325	750.11	619.90
2275	650.09	539.90
2250	523.64	434.90
2235	401.69	229.90
2225	252.78	209.90
2220 BL	205.27	169.90
2216	184.28	152.90

## Tuner/Amplifiers cont.

	Rec. Retail Price Inc. VAT	Comet Price Inc. VAT
<b>MARANTZ</b>		
2215B	150.89	124.90
Superscope R1240	205.27	109.90
Superscope R1270	240.00	134.90
<b>PHILIPS</b>		
RH832 System, AM/FM/MPX Stereo tuner and pre-amplifier, turntable combination inc. two Philips RH532 Motional feedback loudspeakers.	—	474.94
RH743 AM/FM/MPX tuner pre-amplifier for use with RH541 or RH544 MFB speakers	—	119.94
RH851 AM/FM/MPX tuner amp. stereo cassette deck, DNL, with two speakers	—	169.90
RH752 Electronic search tuning	—	189.94
<b>PIONEER SX300</b>	104.90	77.50
SX450	161.40	117.90
SX550	199.37	144.90
SX650	271.26	214.90
SX750	322.80	254.90
SX850	430.45	337.90
SX950	494.20	387.90
SX1250 160 watts RMS per channel	757.80	589.90
<b>ROTEL</b>		
RX 102 Mk 2	120.45	84.90
RX 152 Mk 2	137.00	95.90
RX 202 Mk 2	156.75	104.90
RX 402	207.90	139.90
RX 602	273.90	192.50
RX 802	344.45	239.90
RX 1603	750.00	529.90
<b>SANSUI</b>		
221	141.62	79.90
331	155.76	104.90
551	209.21	129.94
661	268.14	169.94
5050	268.14	179.90
6060	322.05	219.90
7070	436.26	294.90
8080	502.48	339.90
9090	633.35	429.90
QRX 777 QS.CD4	737.29	509.90
<b>SANYO</b>		
DCX 1850	—	84.94
DCX 2000	—	114.94
DCX 4000	—	129.94
<b>TRIO</b>		
KR 2600	149.95	109.50
KR 3600	197.50	172.00
KR 4600	247.50	215.00
KR 5600	287.50	250.00
KR 6600	380.00	330.00
KR 9600	660.00	575.00

Rec. Retail Comet  
Price Price  
Inc. VAT Inc. VAT

## Turntables

<b>AKAI</b>		
AP001 inc B & C	96.00	69.90
AP006 inc B & C	249.50	179.90
<b>AMSTRAD</b>		
TP12D inc B and C	—	45.90
<b>CONNOISSEUR</b>		
BD1 kit	19.41	13.90
BD2 B & C	57.38	36.90
BD3 inc B & C	100.41	69.94
<b>GARRARD</b>		
SP25 Mk IV Chass	30.38	20.90
DD75 Direct drive inc. B & C	131.06	87.50
401 Chass	106.88	69.90
<b>GOLDRING</b>		
G103 PC Belt Drive inc B & C	54.00	35.90
L80PC inc B & C	78.75	49.94
L82PC Auto stop inc B & C	90.00	54.94
L84PC Auto return inc B & C	106.88	59.94
L90PC Electronic, Auto stop inc B & C	166.50	94.94
<b>LEAK</b>		
3001 inc P & C	131.09	94.90
<b>MARANTZ</b>		
6300 inc P & C	237.98	194.90
6320 inc P & C	187.56	154.90
6200 inc P & C	155.57	129.90
6100 inc P & C	84.45	69.90
<b>McDONALD</b>		
MP60 Chass	26.36	15.90
<b>PIONEER</b>		
PL112D	77.03	55.90
PL115D	96.77	69.90
PL117D	143.49	104.90
PL510A Direct drive	148.02	107.90
PL530 inc B & C Direct Drive	231.35	169.90
PL550 inc B & C Direct Drive	274.55	199.90
<b>ROTEL</b>		
RP1500 with b and c and arm	101.95	67.90
RP3000 less arm with b and c direct drive	140.70	102.50
RP3000 with arm with b and c direct drive	167.90	119.90
<b>SANSUI</b>		
SR222P inc B & C belt drive	83.25	56.90
FR1080P inc B & C belt drive auto return	116.53	79.90
SR525 Direct Drive inc B & C direct drive	188.40	129.90
FR5080P direct drive auto return inc B & C	262.43	179.90
929 crystal lock	435.92	299.90
<b>THORENS</b>		
TD166 Mk II inc B & C	106.87	88.90
TD160 Mk II inc B & C	122.62	99.90
TD160 Mk II BC inc B & C less arm	100.12	82.90
TD145 Mk II C inc B & C auto lift	145.12	119.90
TD126 Mk II C inc B & C auto lift	281.25	229.90
TD126 Mk II BC inc B & C less arm	223.87	182.90
<b>TRIO</b>		
KD 2055	99.50	86.00
KD 500 inc P & C less Arm	210.00	180.00
KD 500	235.00	205.00



**I promise you 12 months service, including parts and labour on all goods - without charge. After the initial free 12 month period you can still rely on us to keep your purchases in working order.** *Michael Hollingbery*

Chairman

**Turntables cont.**

THE FOLLOWING TURNTABLES ARE COMPLETE WITH BASE, PLINTH, COVER AND CARTRIDGE. FULLY WIRED AND READY FOR USE.

	Rec. Retail Price	Comet Price
ADC Accutrac 4000 Auto. computer	287.10	264.90
AKAI AP 003 with Audio Technica AT11, magnetic cartridge, auto return	137.50	94.90
GARRARD SP25 Mk IV with Shure M75/6/SM	54.84	34.90
125SB with Shure M75/6/SM	73.46	49.90
86SB Mk II with Shure M75/6/SM	104.23	63.90
GT55P with Shure M75EC	149.57	97.50
McDONALD MP60 TPD with ADC K8	52.72	31.90
BDS 80 TPD Belt Drive with ADC K7E	59.06	30.94
BDS 90 TPD Belt Drive with ADC K5E	62.21	32.94
BDS95 TPD Belt Drive with ADC Cartridge	54.83	34.90
SANYO TP700 SA Belt Drive Auto Arm Return	Sp. price	69.94
TRIO KD 1033 Belt Drive inc magnetic cartridge	78.50	54.50

**Speakers**

ALL SPEAKERS ARE PRICED AS PAIRS

AKAI SA800	135.50	79.94
SA1200	289.00	134.94
AMSTRAD Acousta 2500	—	41.90
CELESTION Hadleigh	Sp. price	35.90
Ditton 11	84.38	59.90
Ditton 15	135.42	94.90
Ditton 25	286.10	199.90
Ditton 33	209.42	147.90
Ditton 44	247.50	174.90
Ditton 66	412.08	289.90
FERROGRAPH S1	256.50	169.94
GOODMANS Achromat 100 Monitor	—	74.90
Achromat 250 Monitor	—	109.90
Achromat 400 Monitor	—	147.90
Stand for 400 (pair)	—	14.90
RB18	—	49.90
RB20	—	63.90
RB35	—	89.90
LEAK 2075	473.40	349.90
3020	119.42	84.90
3030	157.50	114.90
3050	218.00	157.90
3080	333.96	239.90
MARANTZ 4G	84.47	69.90
5G	124.67	99.90
HD44	159.03	129.90
HD55	219.31	179.90
HD66	311.45	259.90
HD77	447.44	369.90
HD88	644.22	539.90
PHILIPS RH451 Motional feedback (MFB) built in 30 watts RMS amps	—	169.50
RH544 (MFB) 60watts	—	249.90

**Speakers cont.**

	Rec. Retail Price	Comet Price
PIONEER CS313A	78.37	59.90
HPM40	186.12	139.90
HPM60E	252.86	194.90
HPM100	387.54	299.90
SANSUI ES200	221.36	149.94
SOLAVOX TK20	50.29	32.90
TK30	64.71	42.90
TK45	120.06	78.90
Speaker stands (pair)	16.99	12.50
TRIO LS202A	89.50	75.00
WHARFEDALE Chevin	40.12	28.50
Denton 2XP	59.15	41.90
Linton 3XP	84.62	59.90
Glendale 3XP	115.16	81.90
Dovedale SP	197.24	139.90
Airedale SP	320.40	227.90

**Speaker Kits**

GOODMANS DIN 20 NT kit (pair)	—	28.90
Mezzo twin kit (pair)	—	49.90
WHARFEDALE Linton 3 kit (pair)	47.90	34.50
Glendale 3XP kit (pair)	66.89	47.90

**Chassis Speakers**

PRICED AS SINGLE UNITS

GOODMANS Audiom 12P	—	15.90
Audiom 12PG	—	16.90
Audiom 12PD	—	17.50
Axent 100	—	7.50
Hi Fax 750P	—	16.75

**Cartridges**

All cartridges marked \* are suitable for CD4 and normal Stereo Records.

AUDIO Technica AT11EP	—	7.90
Technica AT13EA	—	12.90
*Technica AT12SP	—	13.90
*Technica AT14Sa	—	25.90
*Technica AT15Sa	—	36.90
*Technica AT20SLa	—	42.90
ADC *Super XLM	54.70	37.90
XLM	38.68	26.90
VLM	31.40	21.50
Q36	18.45	12.90
Q32	14.27	9.90
Q30	10.45	7.25
GOLDRING G800 Boxed	8.44	4.25
G800E Boxed	12.83	6.50
G800 Super E Boxed	19.58	9.90
G900 Super E	47.25	32.90
PHILIPS GP400	24.14	8.90
GP401	32.06	11.90
GP412	51.38	29.90
GP422	69.19	49.90
SHURE M55E	12.49	8.25
M75EJ	19.58	12.90
M75ED	23.29	15.50
M95EJ	20.25	13.25
M95ED	29.36	19.50
*M24H	37.80	24.90
V15-Mk 111	60.41	46.90
SONOTONE 9TAHC Diam/Saph	3.65	1.90

**Styli**

ADC RZL for Super XLM	23.81	16.90
RXL for XLM	15.69	11.25
RVL for VLM	13.49	9.75
RK5E for K5E	9.51	6.90
RK7E for K7E	7.57	5.50
RK8 for K8	5.51	3.95
GOLDRING D110 Stylus (G800)	4.22	2.50
D110E Stylus (G800E)	9.45	5.50
D110SE Stylus (G800 Super E)	14.51	8.50
SHURE N75-6 Stylus	7.76	5.90
N75EJ Stylus	11.48	8.40
N75ED Stylus	16.20	12.50
N95EJ	12.83	9.50
N95ED	21.94	15.50
VN35E Stylus (V15 111)	21.94	18.50

**Headphones**

AKAI ASE 11	18.45	12.90
ASE 22	27.35	18.90
K140	21.04	15.90
K240	33.98	25.90
GOODMANS OHP 10	—	18.50
KOSS Easy Listener	—	24.50
HV2	—	18.90
PRO-4AA	—	34.90
PRO-5LC	—	34.94
K6	—	14.90
K6/LC (with volume control)	—	16.90
K125	—	15.50
K135	—	18.90
K145	—	23.90
Phase 2	—	42.50
MARANTZ SD5	23.18	16.50
PIONEER SE205	12.69	9.90
SE305	19.82	15.90
ROTEL RH 930 Electret Condenser	41.85	24.90
SOLAVOX 300	5.67	4.90
SANSUI SH5	27.75	18.90
WHARFEDALE Isodynamic	28.00	17.94

**Pick-up Arms & Heads**

LUSTRE Pickup arm	41.46	22.90
AUDIO Technica AT1009	—	36.94
CONNOISSEUR SAU2	18.90	14.50
SME 3009 Ser 11 xfi ed head shell	56.70	39.90
S2 head shell	4.79	3.45

**Bases and Covers**

AKAI DC 44 for 4000 DS	10.00	6.50
CONNOISSEUR BD1 plinth & cover	17.72	13.90
GARRARD B15 Base and Cover	—	—
SP25	17.16	12.50
B20 Base and Cover	—	—
86SB, 100SB	20.70	14.90

**Hi-Fi Cassette Tape Recorders**

AKAI CS34D Dolby deck	144.85	96.90
CS705D Dolby deck front load	194.40	136.90
CS707D Dolby front load	242.00	169.90
GXC 39D Dolby deck	201.20	129.90
GXC 310D Dolby deck two capstans	241.50	144.90
GXC325D Dolby deck two capstans, three heads	355.50	229.90
GXC710D Dolby deck front load	311.45	219.90
GXC740D Dolby front load, three heads, dual capstan	448.80	314.90
GXC760D Dolby front load, three heads, dual capstan, three motors, servo control	564.05	394.90
AMSTRAD 7050 Dolby deck	—	79.90
7070 Dolby front load	—	89.90
BUSH BT8503 Stereo Deck	77.51	38.94
FERGUSON 3279 deck	64.95	47.90
3280 Dolby deck	89.95	69.90
GARRARD GC300 Dolby deck	157.44	104.90
GC350 Dolby deck front load	193.44	124.90
H.L./PHOENIX CTR1 deck	79.95	36.94
MARANTZ 5220 Dolby deck front load	229.42	189.90
5420 Dolby deck	293.90	244.90
5120 Dolby deck	217.35	179.90
5020 Dolby deck front load	205.27	169.90
PHILIPS N2511 Dolby, DNL deck	—	122.50
N2412 recorder inc. two loudspeakers	—	87.50
N2408 Ski slope, auto change deck inc. two 10 watt amps and DNL noise reduction	—	159.90
PIONEER CT 4141A Dolby deck	135.82	98.90
CT 5151 Dolby deck	154.22	112.90
CT F 2121 Dolby front load	181.59	136.90
CTF 6060 Dolby front load	242.56	179.90
CTF 7070 Dolby front load	263.10	194.90
CTF 8080 Dolby deck front load	317.03	249.90
CTF 9191 Dolby front load	374.13	294.90
ROTEL RD20 Dolby deck	226.90	149.90

**PLEASE NOTE**

There are no longer Recommended Retail Prices on some brands of Hi-Fi equipment, consequently some recommended Prices shown are prices recommended prior to the end of September 1976. These are left for your information to assist you in evaluating your purchase.

# COMET Budget Hi-Fi Systems

## SYSTEMS COSTING UP TO £150

Rec. Retail Price Inc. VAT	Comet Price Inc. VAT
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**SOLAVOX 20** amplifier 10 watts RMS per channel plus McDonald MP60 turntable de luxe base and cover, fitted with ADC K8 magnetic cartridge plus two Solavox TK20 loudspeakers.  
148.54 89.74

**AMSTRAD 8000 Mk 3** amplifier 10 watts RMS per channel plus McDonald MP60 turntable de luxe base and cover, fitted with ADC K8 magnetic cartridge plus two Solavox TK20 loudspeakers.  
— 93.70

**SOLAVOX 30** amplifier 15 watts per channel plus McDonald MP60 turntable de luxe base and cover, fitted with ADC K8 magnetic cartridge plus two Solavox TK30 loudspeakers.  
170.89 104.74

**AMSTRAD IC2000 Mk 3** amplifier 2 x 25 watts RMS plus McDonald MP60 turntable TPD1 de luxe plinth cover and ADC K8 magnetic cartridge plus two Solavox TK30 loudspeakers.  
— 117.70

**ALBA UA700A** amplifier 15 watts per channel with McDonald MP60 TPD1 turntable de luxe base and cover, ADC K8 magnetic cartridge plus two Wharfedale Denton loudspeakers.  
— 123.70

**AMSTRAD IC2000 Mk 2** 2 x 20 watts plus Amstrad TP12D belt drive turntable with a Shure M55E and two Amstrad 2500 loudspeakers.  
— 138.95

**SANSUI 221** tuner amplifier AM/FM/MPX 2 x 10 watts RMS with a McDonald BDS95 belt drive turntable base and cover fitted with ADC magnetic cartridge plus two Wharfedale Chevin loudspeakers.  
236.57 143.30

**ROTEL RX102 Mk II** AM/FM/MPX tuner amplifier 2 x 10 watts RMS plus McDonald MP60 turntable, TPD1 de luxe plinth and ADC K8 magnetic cartridge, with two Wharfedale Chevin loudspeakers.  
213.29 145.30

**SANYO DCX 1850** Tuner Amplifier 2 x 11 watts RMS with McDonald MP60 turntable, base, cover and ADC K8 magnetic cartridge plus two Wharfedale Chevin loudspeakers.  
— 145.34

**ALBA 1500** tuner amplifier 2 x 10 watts with MP60 TPD1 turntable de luxe base and cover fitted ADC K8 magnetic cartridge plus 2 Solavox TK20 loudspeakers.  
— 149.70

## SYSTEMS COSTING UP TO £200

**PIONEER SA5300** amplifier 2 x 12 watts RMS plus Garrard 125SB Belt drive, turntable plinth, cover, fitted with Shure M75/6/SM magnetic cartridge plus two Wharfedale Denton 2 XP loudspeakers.  
218.47 158.74

## SYSTEMS COSTING UP TO £200 Cont.

Rec. Retail Price Inc. VAT	Comet Price Inc. VAT
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**AMSTRAD 5050** tuner amplifier AM/FM/MPX 2 x 25 watts RMS with Garrard SP25 Mk 4 turntable with Garrard plinth, hinged lid and Shure M75/6/SM magnetic cartridge plus two Amstrad 2500 loudspeakers.  
— 166.70

**TRIO KA1500** Amplifier 2 x 25 watts RMS with TRIO KD1003 Belt Drive turntable complete with plinth, cover and Trio magnetic cartridge plus two Wharfedale Linton 3XP loudspeakers.  
243.07 184.35

**SANYO DCX 2000** Tuner Amplifier 2 x 13 watts RMS with McDonald BDS95 belt drive turntable, base, cover and ADC magnetic cartridge plus two Wharfedale Denton loudspeakers.  
— 191.74

**SANSUI 331** tuner amplifier AM/FM/MPX 2 x 15 watts RMS with a McDonald BDS95 TPD belt drive turntable base and cover fitted with ADC magnetic cartridge plus two Wharfedale Linton 3XP loudspeakers.  
295.21 196.70

**SANSUI AU2900** amplifier 2 x 17 watts plus McDonald BDS 95 belt drive turntable with base, cover, fitted ADC K5E magnetic cartridge plus two Celestion Ditton 15 loudspeakers.  
290.26 198.70

## SYSTEMS COSTING UP TO £250

**ALBA UA900** amplifier 2 x 33 watts RMS with McDonald BDS95 belt drive turntable fitted ADC magnetic cartridge plus two Goodmans RB35 loudspeakers.  
— 200.70

**GOODMANS Model 40-40** amplifier 2 x 30 watts RMS plus the new Garrard 125SB turntable fitted plinth, cover and Shure M75/6/SM magnetic cartridge plus two Goodmans RB35 loudspeakers.  
— 203.70

**AMSTRAD 5050** tuner amplifier 2 x 25 watts RMS with Amstrad TP12D belt drive turntable and Shure M55E magnetic cartridge plus two Wharfedale Linton 3XP loudspeakers.  
— 203.95

**ROTEL RA312** amplifier 2 x 18 watts RMS plus Rotel RP1500A turntable inc. base, cover plus Shure M75ED cartridge plus two Wharfedale Linton 3XP loudspeakers.  
306.96 211.20

**PIONEER SA6300** amplifier 2 x 22 watts RMS plus Pioneer PL112D turntable with base, cover and Shure M75ED magnetic cartridge plus two Wharfedale Linton 3XP loudspeakers.  
290.65 211.24

**ROTEL RX202** AM/FM/MPX tuner amplifier 2 x 20 watts plus Garrard 125SB belt drive turntable plinth, cover and Shure M75/6/SM cartridge with two Goodmans RB20 loudspeakers.  
— 218.70

## SYSTEMS COSTING UP TO £250 Cont.

Rec. Retail Price Inc. VAT	Comet Price Inc. VAT
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**PHILIPS RH851** AM/FM/MPX tuner amplifier 2 x 15 watts integral stereo cassette deck with Philips DNL circuit supplied complete with two Philips RH442 loudspeakers, plus Garrard 125SB belt drive turntable with base, cover and Shure M75/6S cartridge.  
— 219.80

**MARANTZ 1030** amplifier 2 x 15 watts RMS with Sansui SR222P belt drive turntable, base, cover and Shure M75ED magnetic cartridge plus two Marantz 4G loudspeakers.  
287.48 222.20

**SANYO DCX 4000** Tuner Amplifier 2 x 22 watts RMS with McDonald BDS 95 belt drive turntable, base, cover and ADC magnetic cartridge plus two Wharfedale Linton 3XP loudspeakers.  
— 224.74

**AKAI AA1010** tuner amplifier 2 x 14 watts RMS with Sansui SR222P belt drive turntable, base, cover and Shure M75ED magnetic cartridge plus two Wharfedale Denton XP loudspeakers.  
344.19 238.20

**TRIO KR 2600** AM/FM tuner amplifier 2 x 15 watts RMS with Trio KD 1003 Belt Drive turntable complete with plinth, cover and Trio magnetic cartridge plus two Trio LS202 A loudspeakers.  
317.95 239.00

**PIONEER SX450** AM/FM/MPX tuner amplifier 2 x 15 watts with PL112D belt drive turntable inc. plinth, hinged cover and Shure M75ED magnetic cartridge plus two Wharfedale Linton 3XP loudspeakers.  
346.34 249.20

## SYSTEMS COSTING OVER £250

**ROTEL RA412** amplifier 2 x 25 watts RMS plus Rotel RP1500 with arm, belt drive turntable base, cover fitted with a Shure M75ED magnetic cartridge plus two Wharfedale Glendale 3XP loudspeakers.  
365.70 253.20

**MARANTZ 2215B** tuner amplifier 2 x 15 watts RMS with a Phase Locked Loop FM demodulator plus Sansui SR222P belt drive turntable, base, cover and Shure M75ED magnetic cartridge with two Wharfedale Linton 3XP loudspeakers.  
342.05 257.20

**ROTEL RA712** amplifier 2 x 40 watts RMS plus Rotel RP1500 belt drive turntable, base, cover and Shure M95ED magnetic cartridge with two Wharfedale Glendale 3XP loudspeakers.  
398.47 269.20

**PIONEER SX550** tuner amplifier 2 x 20 watts plus Pioneer PL112D belt drive turntable and Shure M75ED magnetic cartridge with two Wharfedale Linton 3XP loudspeakers.  
384.31 276.20

**AKAI AA1020** AM/FM/MPX tuner amplifier 2 x 20 watts RMS plus Sansui SR222P turntable inc. base, cover and Shure M75ED magnetic cartridge and two Wharfedale Linton 3XP loudspeakers.  
410.66 282.20

## SYSTEMS COSTING OVER £250 Cont.

Rec. Retail Price Inc. VAT	Comet Price Inc. VAT
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**ROTEL RX402** AM/FM/MPX tuner amplifier 2 x 25 watts RMS plus Rotel RP1500 belt drive turntable, base, cover and Shure M75ED magnetic cartridge with two Wharfedale Glendale 3XP loudspeakers.  
448.30 305.20

**AKAI AA1030** AM/FM/MPX stereo tuner amplifier 2 x 30 watts RMS plus Sansui SR222P belt drive turntable, base cover and Shure M75ED cartridge plus two Wharfedale Glendale 3XP loudspeakers.  
466.70 326.80

**PHILIPS RH743** AM/FM/MPX tuner pre amplifier 4 wave band manual FM plus 5 pre set FM, with Sansui SR222P belt drive turntable fitted with Shure M75ED magnetic cartridge plus two 30 watts RMS motional feedback RH541 loudspeakers.  
— 361.84

**PIONEER SX650** tuner amplifier 2 x 35 watts RMS plus Pioneer PL112D belt drive auto return turntable and Shure M75ED magnetic cartridge with two Goodmans RB35 loudspeakers.  
— 376.20

**ROTEL RX602** AM/FM/MPX tuner amplifier 2 x 35 watts RMS plus Rotel RP1500 turntable and Shure M75ED magnetic cartridge with two Wharfedale Dovedale SP loudspeakers.  
596.38 415.80

**MARANTZ 4240** tuner amplifier 2 x 40 watts stereo fitted Dolby noise reduction system with Sansui SR222P belt drive turntable, base, cover and Shure M75ED magnetic cartridge plus two Wharfedale Dovedale loudspeakers.  
797.27 462.20

**ROTEL RX802** AM/FM/MPX tuner amplifier 2 x 50 watts RMS plus Rotel RP1500 turntable and Shure M75ED magnetic cartridge with two Wharfedale Dovedale SP loudspeakers.  
666.93 463.20

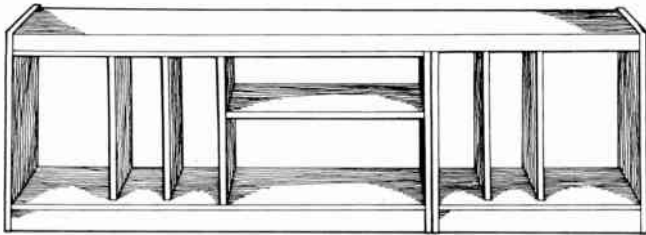
**GOODMANS Modüle 150** tuner amplifier MW/LW/FM/MPX with 8 pre set FM push button tuner, Garrard DD75 direct drive turntable with base, cover and Shure M95ED cartridge plus two Goodmans Achromat 400 loudspeakers.  
— 467.80

**PIONEER SX850** tuner amplifier 2 x 65 watts RMS plus Pioneer PL510A direct drive turntable with the Goldring G900 Super E 'micromass' magnetic cartridge and two Pioneer HPM60E loudspeakers.  
878.58 673.60

**PHILIPS RH832** Quadraphonic system LW/MW/SW/FM/MPX/AFC stereo tuner/amplifier with built-in SQ decoder, integral electronic controlled turntable fitted with Philips GP422 Super M 4 channel cartridge, with 2 RH544 front channels and 2 RH532 rear channel motional feedback speakers - giving a true 240 watts RMS power.  
— 724.84

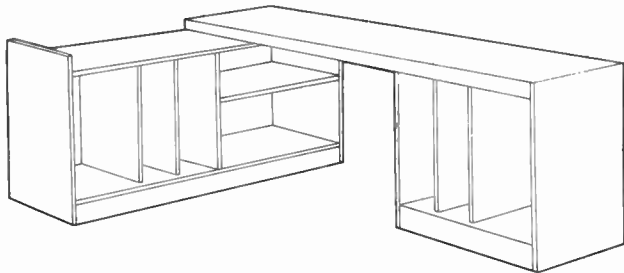
## Hi-Fi Storage Cabinets

Now, music really has a place in your home—thanks to Schreiber's latest range of easy-to-assemble Hi-Fi storage cabinets. Beautifully finished in either wood or white, they bring a new flexibility to your Hi-Fi installation.

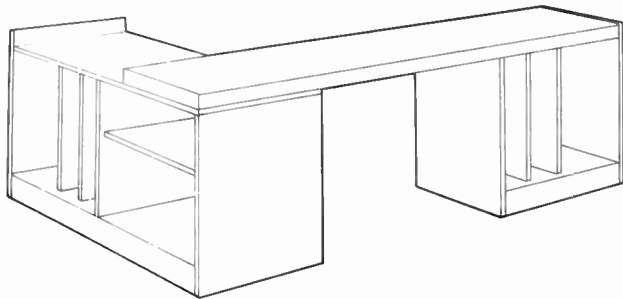


### 14 222 Extending Hi-Fi storage cabinet.

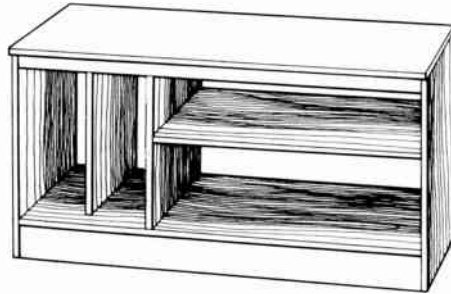
Closed, this unit measures 66" wide, 21" high and 16" deep — but can be extended to a width of 105" to accommodate the more ambitious Hi-Fi set-up. Supplied in neat take-away packets, it has other space-saving possibilities, too . . .



Above, you can see how the cabinet and extension make a 90° unit to fit into a corner of your room. Alternatively, the illustration below shows how the unit will fit *round* a corner, too.



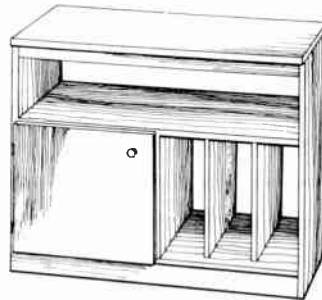
Rec Ret Price £62.95 inc VAT. **Comet Price £46.90** inc VAT (wood finish)  
Rec Ret Price £59.95 inc. VAT. **Comet Price £44.90** (inc VAT white finish)



### 14 219 Hi-Fi storage cabinet.

42" wide, 21" high, 17½" deep. An ideal 'first' unit with ample storage space for records and tapes.

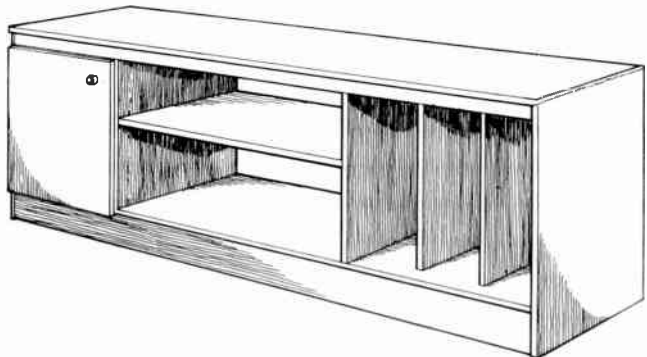
Rec Ret Price £32.95 inc VAT. **Comet Price £24.90** inc VAT (wood finish)  
Rec Ret Price £31.50 inc VAT. **Comet Price £23.90** inc VAT (white finish)



### 14 220 Hi-Fi storage cabinet with top shelf.

33" wide, 25½" high, 16" deep. Complete with cupboard, this compact unit gives the maximum of storage in the minimum of space.

Rec Ret Price £35.95 inc VAT. **Comet Price £25.90** inc VAT (wood finish)  
Rec Ret Price £34.50 inc VAT. **Comet Price £24.75** inc. VAT (white finish)



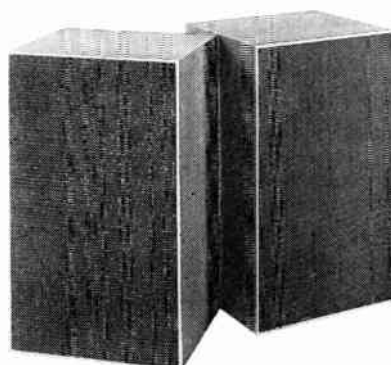
### 14 217 Hi-Fi storage cabinet with extra shelf in cupboard.

66" wide, 21" high, 17½" deep. Another elegantly-designed 'Take and Save' unit. Take it from Comet and save even more!

Rec Ret Price £54.50 inc VAT. **Comet Price £41.90** inc VAT (wood finish)  
Rec Ret Price £52.25 inc VAT. **Comet Price £39.90** inc VAT (white finish)

# the **SOLAVOX** range, inside and out

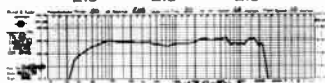
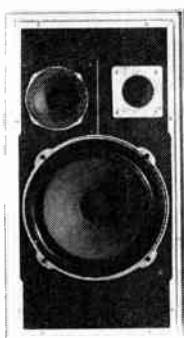
With their teak-veneered cabinets, black grilles and aluminium trim, the Solavox TK speakers look superb. But the inside story is even better. From the small 20-watt TK20 right up to the large 40-watt TK45, their sleekly-styled cabinets house speaker engineering of the highest order. Their sound is pure, crisp and clean, and thanks to Solavox technology they give small amplifiers



big ideas. At only 2½ watts the TK20 will fill your room with sound, and the TK45 will do the same on five. Which means that when it comes to making the most of your amplifier, these super Solavox speakers make very sound sense indeed. In fact, at Comet's super discount prices they're the bargains of a listening lifetime.

## **TK45** per pair

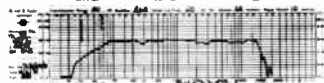
**COMET PRICE £ 78-90**  
REC. RET. PRICE £ 120-06



IMPEDANCE: 6-8 OHMS.  
MAX. PEAK POWER INPUT:  
80 WATTS DIN  
MAX. CONTINUOUS POWER  
INPUT: 50 WATTS DIN  
FREQUENCY RANGE:  
35-20,000 Hz.  
INPUT FOR 96dB AT  
1 METRE: 6 WATTS.  
BASS DRIVER: 250mm.  
MID. RANGE DRIVER IN  
TRANSMISSION LINE  
ENCLOSURE: 100mm.  
TWEETER: 25mm.

## **TK30** per pair

**COMET PRICE £ 42-90**  
REC. RET. PRICE £ 64-71



IMPEDANCE: 6-8 OHMS.  
MAX. PEAK POWER INPUT:  
40 WATTS DIN  
MAX. CONTINUOUS POWER  
INPUT: 30 WATTS DIN  
FREQUENCY RANGE:  
50-20,000 Hz.  
INPUT FOR 96dB AT 1  
METRE: 4.7 WATTS.  
BASS DRIVER: 200mm.  
TWEETER: 50mm.

## **TK20** per pair

**COMET PRICE £ 32-90**  
REC. RET. PRICE £ 50-29



IMPEDANCE: 6-8 OHMS.  
MAX. PEAK POWER INPUT:  
30 WATTS DIN  
MAX. CONTINUOUS POWER  
INPUT: 20 WATTS DIN  
FREQUENCY RANGE:  
60-20,000 Hz.  
INPUT FOR 96dB AT 1 METRE:  
2.4 WATTS.  
BASS DRIVER: 160mm.  
TWEETER: 60mm.

# **SOLAVOX**

Made in England

All prices include V.A.T.

Available from **COMET** at discount prices

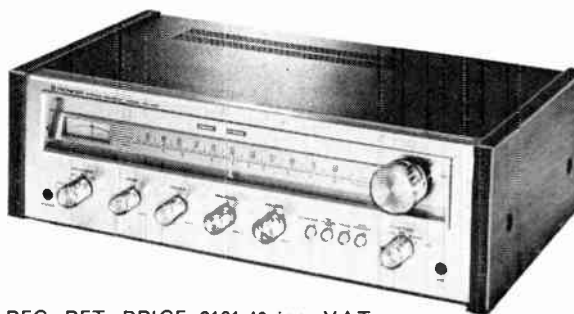
## SX-450 Stereo Receiver

With an output of 15 watts per channel RMS into 8 ohms, the budget priced SX-450 brings high quality, low-distortion sound into the average-sized listening room. The FM/AM section includes a PLL multiplex IC for wide and stable stereo separation, and there's a low-noise FET coupled with a frequency-linear 3-gang variable capacitor to increase FM sensitivity. Other features include a 5-stage limiter to eliminate AM noise, phono equaliser, and CR type tone control section.

### SPECIFICATIONS

Amplifier Section—Continuous Power Output is 15 watts per channel, min. RMS at 8 ohms  
Total Harmonic Distortion (20 to 20,000 Hertz, from AUX) No more than 0.5% (continuous rated power output) No more than 0.1% (1 watt per channel power output, 8 ohms) Input (Sensitivity/Impedance) PHONO 2.5mV/50 Kohms MIC 7.5mV/50 Kohms AUX 150mV/50 Kohms TAPE PLAY 150mV/50 Kohms TAPE PLAY (DIN connector) 150mV/50 Kohms Frequency Response PHONO (RIAA Equalization) 30 to 15,000Hz,  $\pm 0.5$ dB, 1dB AUX, TAPE PLAY 20 to 60,000Hz,  $\pm 1$ dB Hum & Noise (IHF, short-circuited A

network, rated power) PHONO 70dB TUNER, AUX, TAPE PLAY 90dB FM Tuner Section Usable Sensitivity Mono 11.2dBf (2.0uV) Stereo 20.0dBf (5.5uV) Frequency Response 30 to 15,000Hz  $\pm 0.2$ dB, 2.0dB Capture Ratio 1.0dB Alternate Channel Selectivity 60dB Image Response Ratio 65dB IF Response Ratio 85dB Stereo Separation 40dB (1kHz), 30dB (30 to 15,000Hz) AM Tuner Section—Sensitivity 300uV/m (IHF, ferrite antenna), 15uV (IHF, ext antenna) Selectivity 35dB Signal-to-Noise Ratio 50dB Dimensions 448(W)  $\times$  141(H)  $\times$  307(D)mm



REC. RET. PRICE £161.40 inc. VAT  
COMET PRICE £117.90 inc. VAT

## SX-550 Stereo Receiver

Outstanding circuit design contributes to the superb tonal quality of the SX-550, which delivers 20 watts per channel RMS into 8 ohms LSI printed circuits cut the loss of vital high frequency signals to practically zero. The impressive specification also includes phono equaliser, CR type tone control circuitry, versatile 2-deck tape monitor/dubbing facility, FET and IC equipped FM/AM section (with PLL IC stereo demodulator), and a host of other advanced features.

### SPECIFICATIONS

Amplifier Section—Continuous Power Output is 20 watts per channel, min. RMS at 8 ohms  
Total Harmonic Distortion (20 to 20,000 Hertz, from AUX) No more than 0.3% (continuous rated power output) No more than 0.07% (10 watts per channel power output, 8 ohms) No more than 0.07% (1 watt per channel power output, 8 ohms) Input (Sensitivity/Impedance) PHONO 2.5mV/50 Kohms MIC 7.5mV/50 Kohms AUX 150mV/50 Kohms TAPE PLAY 1 150mV/50 Kohms TAPE PLAY 2 150mV/50 Kohms TAPE PLAY 2 (DIN connector) 150mV/50 Kohms Frequency

Response PHONO (RIAA Equalization) 30 to 15,000Hz,  $\pm 0.3$ dB AUX, TAPE PLAY 10 to 60,000Hz,  $\pm 0.5$ dB, 1.0dB FM Tuner Section Usable Sensitivity Mono 11.2dBf (2.0uV) Stereo 20.0dBf (5.5uV) Signal-to-Noise Ratio (at 65dBf) Mono 70dB, Stereo 65dB Frequency Response 30 to 15,000Hz  $\pm 0.2$ dB, 2.0dB Capture Ratio 1.0dB Stereo Separation 40dB (1kHz), 30dB (30 to 15,000Hz) AM Tuner Section—Sensitivity 300uV/m (IHF, ferrite antenna), 15uV (IHF, ext antenna) Selectivity 35dB Signal-to-Noise Ratio 50dB Dimensions 448(W)  $\times$  141(H)  $\times$  307(D)mm



REC. RET. PRICE £199.37 inc. VAT  
COMET PRICE £144.90 inc. VAT

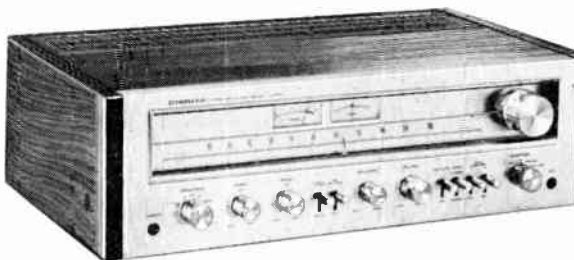
## SX-650 Stereo Receiver

Delivering a substantial 35 watts per channel RMS into 8 ohms, the SX-650 has power and to spare for the Hi-Fi enthusiast. For a competitive price you get click-stop tone controls with centre-defeat positions, high filter, tape-to-tape dubbing and much more. But the real value of this superb receiver lies in a specification that cuts out unnecessary frills, and concentrates on reliability and sheer quality of performance. This is the SX-650—a very sound example of Pioneer sound engineering.

### SPECIFICATIONS

Amplifier Section—Continuous Power Output is 35 watts per channel, min. RMS at 8 ohms  
Total Harmonic Distortion (20 to 20,000 Hertz, from AUX) No more than 0.3% (continuous power output) No more than 0.05% (18 watts per channel power output, 8 ohms) No more than 0.05% (1 watt per channel power output, 8 ohms) Input (Sensitivity/Impedance) PHONO 2.5mV/50 Kohms MIC 7mV/50 Kohms AUX 150mV/50 Kohms TAPE PLAY 1 150mV/50 Kohms TAPE PLAY 2 150mV/50 Kohms TAPE PLAY 2 (DIN connector) 150mV/50 Kohms Frequency Response PHONO (RIAA Equalization) 30 to 15,000Hz,  $\pm 0.3$ dB AUX, TAPE PLAY 10 to

50,000Hz,  $\pm 0$ dB, 1dB Hum & Noise (IHF, short-circuited A network, rated power) PHONO 70dB AUX, TAPE PLAY 90dB FM Tuner Section—Usable Sensitivity Mono 10.7dBf (1.9uV) Stereo 18.2dBf (4.9uV) Signal-to-Noise Ratio (at 65dBf) Mono 70dB, Stereo 65dB Frequency Response 30 to 15,000Hz  $\pm 0.2$ dB,  $-2.0$ dB Capture Ratio 1.0dB Alternate Channel Selectivity 60dB Stereo Separation 40dB (1kHz), 30dB (30 to 15,000Hz) AM Tuner Section—Sensitivity 300uV/m (IHF, ferrite antenna), 15uV (IHF, ext antenna) Selectivity 35dB Signal-to-Noise Ratio 50dB Dimensions 480(W)  $\times$  149(H)  $\times$  371(D)mm



REC. RET. PRICE £271.26 inc. VAT  
COMET PRICE £214.90 inc. VAT

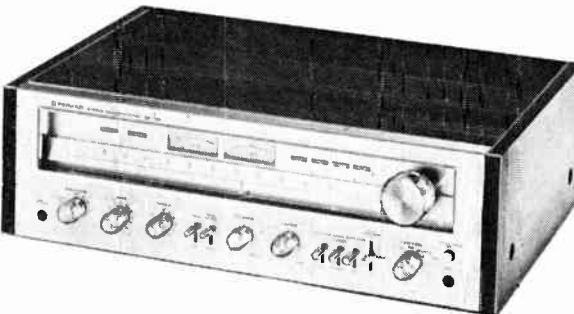
## SX-750 Stereo Receiver

Apart from delivering a big 50 watts per channel RMS into 8 ohms, the SX-750 delivers an astonishing amount of state-of-the-art perfection for a practical price. Its pre-amplifier, power amplifier and tuner sections give first-rate performance specifications that are equal in many respects to separate components. The dual gate MOS FET equipped FM front end gives high sensitivity and selectivity, and the IF section incorporates ICs for high signal-to-noise ratio and low distortion. A big value unit from Pioneer with a very big performance.

### SPECIFICATIONS

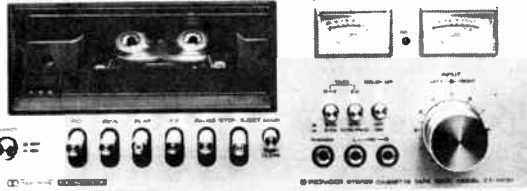
Amplifier Section—Continuous Power Output is 50 watts per channel, min. RMS at 8 ohms  
Total Harmonic Distortion (20 to 20,000 Hertz, from AUX) No more than 0.1% (continuous rated power output) No more than 0.05% (25 watts per channel power output, 8 ohms) No more than 0.05% (1 watt per channel power output, 8 ohms) Input (Sensitivity/Impedance) PHONO 2.5mV/50 Kohms MIC 5mV/50 Kohms AUX 150mV/50 Kohms TAPE PLAY 1 150mV/50 Kohms TAPE PLAY 2 150mV/50 Kohms TAPE PLAY 2 (DIN connector) 150mV/50 Kohms Frequency Response PHONO (RIAA Equalization) 30 to 15,000Hz,  $\pm 0.2$ dB AUX, TAPE PLAY 10 to 50,000Hz,  $\pm 1$ dB Hum & Noise

(IHF, short-circuited A network, rated power) PHONO 70dB AUX, TAPE PLAY 90dB FM Tuner Section—Usable Sensitivity Mono 10.7dBf (1.9uV) Stereo 19.0dBf (4.9uV) Signal-to-Noise Ratio (at 65dBf) Mono 72dB, Stereo 67dB Frequency Response 30 to 15,000Hz  $\pm 0.2$ dB,  $-2.0$ dB Capture Ratio 1.0dB Alternate Channel Selectivity 80dB Image Response Ratio 80dB IF Response Ratio 100dB Stereo Separation 40dB (1kHz), 30dB (30 to 15 kHz) AM Tuner Section—Sensitivity 300uV/m (IHF, ferrite antenna), 15uV (IHF, ext antenna) Selectivity 35dB Signal-to-Noise Ratio 50dB Dimensions 480(W)  $\times$  149(H)  $\times$  371(D)mm



REC. RET. PRICE £322.80 inc. VAT  
COMET PRICE £254.90 inc. VAT

# COMET PIONEER®



## CT-F2121 CASSETTE TAPE DECK

All the controls are at your fingertips on the front access panel of the CT-F2121. Built on the same chassis as the 5300, 6300 and 7300 amplifiers and ideal for stacking, it incorporates Dolby noise reduction and long-lasting 'Permalloy Solid' and 'Ferrite Solid' recording and erase heads. Other features include a tape selector switch, instant mode change switching, and a full auto-stop mechanism.

REC/PB Head 1 x Perm Solid Erasing Head 1 x Ferrite Recording System AC BIAS 85 kHz  
Frequency response (REC/playback) Standard tape/LH tape 30 Hz—13 kHz (40 Hz—11 kHz, ±3dB) Chromium Dioxide tape 30 Hz—16 kHz (40 Hz—12 kHz, ±3dB) Signal-to-noise ratio, unweighted at max. recording level 48dB (Dolby off) 58dB (Dolby on) Wow and flutter

(DIN) < 0.2% INPUTS (sensitivity/impedance) MIC 0.3—60mV/20 k Ω Line 63 mV—12 V/50 k Ω DIN jack 10 mV—2 V/10 k Ω OUTPUTS (output voltage/impedance) Line (max) 450 mV/50 k Ω DIN jack (max) 450 mV/50 k Ω Headphones 80 mV/8 Ω Dimensions (W x H x D) mm 350 x 142 x 282 Weight (kg) 6.6

Rec. Ret. Price £181.59 inc. VAT. **COMET PRICE £136.90 inc. VAT**

## CT-F6060 CASSETTE TAPE DECK

Low in wow and flutter, high in signal-to-noise ratio, this impressive Pioneer front-loader offers high quality performance at a practical price. An electronically regulated DC motor ensures stable tape travel, and amongst the host of advanced features are precision-engineered 'Permalloy Solid' and 'Ferrite Solid' recording and erase heads, Dolby noise reduction and large VU meters.

REC/PB Head 1 x Perm Solid Erasing Head 1 x Ferrite Recording System AC BIAS 85 kHz  
Frequency response (REC/playback) Standard tape/LH tape 30 Hz—14 kHz (40 Hz—13 kHz, ±3dB) Chromium Dioxide tape 30 Hz—16 kHz (40 Hz—15 kHz, ±3dB) Signal-to-noise ratio, unweighted at max. recording level > 52dB (Dolby off) > 62dB (Dolby on)

Wow and flutter (DIN) < 0.2% INPUTS (sensitivity/impedance) MIC 0.3—63 mV/23 k Ω Line 63 mV—12.6 V/100 k Ω DIN jack 10 mV—2 V/2.2 k Ω OUTPUTS (output voltage/impedance) Line (max) 700 mV/50 k Ω DIN jack (max) 700 mV/50 k Ω Headphones 50 90 mV/8 Ω Dimensions (W x H x D) mm 380 x 150 x 316 Weight (kg) 7.6

Rec. Ret. Price £242.56 inc. VAT. **COMET PRICE £179.90 inc. VAT**



## CT-F7070 CASSETTE TAPE DECK

This middle of the range front-loader is strong on handling convenience and musical quality. There's Dolby, of course, memory stop, MPX filter, wide-range preamplifier and large VU's included in an impressive specification. Another advanced feature is the Pioneer-perfected automatic chrome detection system which eliminates the guesswork when you use wide-range chrome tapes.

REC/PB Head 1 x Ferrite Solid Erasing Head 1 x Ferrite Recording system AC BIAS 85 kHz  
Frequency response (REC/playback) Standard tape/LH tape 30 Hz—14 kHz (40 Hz—13 kHz, ±3dB) Chromium Dioxide tape 30 Hz—17 kHz (40 Hz—15 kHz, ±3dB) Signal-to-noise ratio, unweighted at max. recording level > 52dB (Dolby off) > 62dB (Dolby on) Wow and

flutter (DIN) < 0.19% INPUTS (sensitivity/impedance) MIC 0.23—80 mV/23 k Ω Line 64 mV—25 V/100 k Ω DIN jack 10 mV—3.6 V/2.2 k Ω OUTPUTS (output voltage/impedance) Line (max) 800 mV/50 k Ω DIN jack (max) 800 mV/50 k Ω Headphones 60—100 mV/8 Ω Dimensions (W x H x D) mm 420 x 150 x 340 Weight (kg) 8.5

Rec. Ret. Price £263.10 inc. VAT. **COMET PRICE £194.90 inc. VAT**

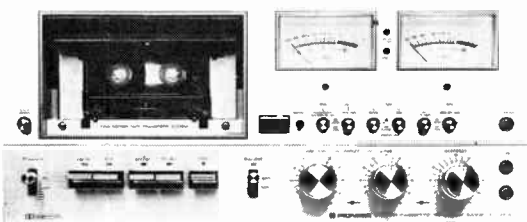
## CT-F8080 CASSETTE TAPE DECK

Here's a front loading, front-access cassette deck with a host of features that add up to superb sound quality. A special DC high-torque motor provides super-stable recording and playback and there's a separate motor for fast rewind and fast-forward operation. With Dolby, peak level indicator, Ferrichrome/Chrome/Standard Bias and EQ, and memory stop, this is a high-performance package at a very attractive price.

REC/PB Head 1 x Ferrite Solid Erasing Head 1 x Ferrite Recording System AC BIAS 85 kHz  
Frequency Response (REC/playback) Standard tape/LH tape 20 Hz—16 kHz (30 Hz—15 kHz, ±3dB) Chromium Dioxide tape 20 Hz—17 kHz (30 Hz—15 kHz, ±3dB) Signal-to-noise ratio, unweighted at max. recording level > 53dB (Dolby off) > 63dB (Dolby on)

Wow and flutter (DIN) < 0.17% INPUTS (sensitivity/impedance) MIC 0.22—100 mV/50 k Ω Line 60 mV—25 V/100 k Ω DIN jack 5.5 mV—3.6 V/8.7 k Ω OUTPUTS (output voltage/impedance) Line (max) 660 mV/50 k Ω DIN jack (max) 660 mV/50 k Ω Headphones 60 98 mV/8 Ω Dimensions (W x H x D) mm 420 x 165 x 334 Weight (kg) 12.8

Rec. Ret. Price £317.03 inc. VAT. **COMET PRICE £249.90 inc. VAT**



## CT-F9191 CASSETTE TAPE DECK

Pioneer have packed everything they know into the CT-F9191, which is designed for stacking with the 7500, 8500 or 9500 amplifiers. This unit has two motors, and a Dolby system which combines with tape selection facilities to give excellent frequency response and a signal-to-noise ratio which puts it at the top of its class. Features such as electronic instant-change mode switching, recording peak level indicator, switchable MPX filter, memory rewind and LINE/MIC mixing, make this the ultimate in front-loading cassette decks.

REC/PB Head 1 x Ferrite Solid Erasing Head 1 x Ferrite Recording system AC BIAS 85 kHz  
Frequency response (REC/playback) Standard tape/LH tape 25 Hz—16 kHz (35 Hz—13 kHz, ±3dB) Chromium Dioxide tape 20 Hz—17 kHz (30 Hz—14 kHz, ±3dB) Signal-to-noise ratio, unweighted at max. recording level 52dB (Dolby off) 62dB (Dolby on) Wow and flutter

(DIN) < 0.17% INPUTS (sensitivity/impedance) MIC 0.22—100 mV/30 k Ω Line 65 mV—25 V/100 k Ω DIN jack 10 mV/2.2 k Ω OUTPUTS (output voltage/impedance) Line (max) 530 mV/50 k Ω DIN jack (max) 530 mV/50 k Ω Headphones 40 65 mV/8 Ω Dimensions (W x H x D) mm 420 x 197 x 310 Weight (kg) 13.2

Rec. Ret. Price £374.13 inc. VAT. **COMET PRICE £294.90 inc. VAT**

## PL-112D

Here is a budget-priced belt-drive turntable that is packed with quality features. A vibration-free 4-pole synchronous motor contributes to an impressive performance, and is housed in a beautiful walnut grain finish cabinet. Other advanced features include an S-shaped pipe-arm with anti-skating device, lateral balancer, arm elevation and direct read-out stylus pressure counterweight.

### SPECIFICATION

#### Motor and Turntable

Motor: 4-pole synchronous motor  
Drive System: Belt-drive system  
Wow & Flutter: No more than 0.07% (WRMS)  
Signal-to-noise ratio: More than 63dB (DIN B)  
Turntable Platter: 12-inch (30cm)

diameter aluminium alloy die-cast

#### Tonearm

Type: Static-balance type S-shaped pipe arm

#### Additional features

Anti-skating device, Plug-in type headshell, Viscous-damped cueing device, Lateral balancer, Free-adjustable hinges

Rec. Ret. Price £77.03 inc. VAT. **COMET PRICE £55.90 inc. VAT**



## PL-115D

Meet the Pioneer PL-115D, a precision auto-return turntable that is high in performance and quality, and low in cost. Belt-driven by a 4-pole synchronous motor, it features a speed-detecting auto-return mechanism that returns the S-shaped pipe-arm to rest smoothly even with a warped record. Elegantly styled in attractive walnut grain finish, the strongly built cabinet is free from howl and resonance.

### SPECIFICATION

#### Motor and Turntable

Motor: 4-pole synchronous motor  
Drive System: Belt-drive system  
Wow and Flutter: No more than 0.07% (WRMS)  
Signal-to-noise ratio: More than 50dB (JIS)  
Turntable platter: 12-inch (30cm) diameter aluminium alloy die-cast

#### Tonearm

Type: Static-balance type S-shaped pipe arm

#### Additional Features

Automatic return tonearm system, Anti-skating device, Plug-in type headshell, Viscous-damped cueing device, Free-adjustable hinges, Lateral balancer

Rec. Ret. Price £96.77 inc. VAT. **COMET PRICE £69.90 inc. VAT**



## PL-117D

Both manual and automatic modes are incorporated in the PL-117D to give you the best of both worlds. Simply press the REPEAT button, together with the START button, and the tonearm performs the automatic lead-in, play and auto-return process again and again until the STOP button is pushed. This is only one of the many features of the PL-117D, a superb belt-driven turntable at a modest price.

### SPECIFICATION

#### Motor and Turntable

Motor: 4-pole synchronous motor  
Drive System: Belt-drive system  
Wow and Flutter: No more than 0.07% (WRMS)  
Signal-to-noise ratio: More than 63dB (DIN B)  
Turntable Platter: 12-inch (30cm) diameter aluminium alloy die-cast

#### Tonearm

Type: Static-balance type S-shaped pipe arm

#### Additional Features:

Fully automatic tonearm system, Anti-skating device, Plug-in type headshell, Viscous-damped cueing device, Free-adjustable hinges, Lateral balancer, Repeat play.

Rec. Ret. Price £143.49 inc. VAT. **COMET PRICE £104.90 inc. VAT**



# COMET

# Sansui

Low in price — high in musical quality! This is the Sansui 221 stereo receiver which is ideal for those whose fast-growing taste for music demands high-quality equipment at a price they can afford. A MOS FET FM front end, sensitive AM tuner, precise phono equaliser — all these features and an output of 10 watts per channel RMS add up to outstanding value for money.

## 221 STEREO RECEIVER

### SANSUI 221 STEREO RECEIVER

#### AUDIO SECTION

POWER OUTPUT (at rated distortion)  
CONTINUOUS POWER each channel driven  
10/10 watts into 8 ohms at 1,000Hz  
TOTAL HARMONIC DISTORTION OVERALL  
less than 1.0% at rated power output  
LOAD IMPEDANCE: 4 — 16 ohms  
FREQUENCY RESPONSE (at 1 watt)  
OVERALL (AUX to power output) 25 to  
30,000Hz +2.0dB -3.0dB  
DAMPING FACTOR: approximately 30 into  
8 ohms  
1HF HUM and NOISE  
Phono: better than 70dB  
Aux: better than 80dB  
INPUT SENSITIVITY AND IMPEDANCE  
(at rated output 1,000Hz)  
Phono: 2.5mV (50k ohms)  
Max. input capability 1.20mV RMS  
(THD less than 0.5%)

Aux 150mV (50k ohms)

#### TO NE CONTROLS

Bass: +12dB -12dB at 50Hz  
Treble: +10dB -10dB at 10,000Hz  
LOUDNESS: +10dB at 50Hz +8dB  
at 10,000Hz

#### TUNER SECTION

##### FM SECTION

TUNING RANGE: 88 to 108MHz  
SENSITIVITY (1HF): 13.2dBf (2.5 uV 1HF  
T-100)  
SIGNAL TO NOISE RATIO: better than 65dB  
SELECTIVITY: better than 60dB  
CAPTURE RATIO: less than 0.5dB  
STEREO SEPARATION: better than 35dB at  
1,000Hz

##### AM SECTION

TUNING RANGE: 535 to 1,605kHz  
DIMENSIONS: 424mm (16½") W, 125mm  
(5¼") H, 266mm (10½") D



Rec. Ret. Price £141.62 inc. VAT. **COMET PRICE £79.90 inc. VAT**

Pure Sansui tonal quality in a popular priced stereo receiver — this is the Sansui 331. It's free of unnecessary frills, but Sansui technology makes this stereo receiver a big hearted workhorse. With an output of 15 watts per channel RMS, it out-performs most of the competition in this bracket (and was featured as a 'best buy' in "Hi-Fi Choice Receivers").

## 331 STEREO RECEIVER

### SANSUI 331 STEREO RECEIVER

#### AUDIO SECTION

POWER OUTPUT (at rated distortion)  
CONTINUOUS POWER each channel driven  
15/15 watts into 8 ohms at 1,000Hz  
TOTAL HARMONIC DISTORTION OVERALL  
less than 1.0% at rated power output  
LOAD IMPEDANCE: 4 — 16ohms  
FREQUENCY RESPONSE (at 1 watt)  
OVERALL (AUX to power output) 25 to  
30,000Hz +2.0dB -3.0dB  
DAMPING FACTOR: approximately 30 into  
8 ohms load  
1HF HUM and NOISE  
Phono: better than 70dB  
Aux: better than 80dB  
INPUT SENSITIVITY and IMPEDANCE (at  
rated output 1,000Hz)  
Phono: 2.5mV (50k ohms)  
Max. input capability: 1.20mV RMS (THD  
less than 0.5% distortion)

Aux 150mV (50k ohms)

#### TO NE CONTROLS

Bass: +12dB -12dB at 50Hz  
Treble: +10dB -10dB at 10,000 Hz  
LOUDNESS: +10dB at 50Hz +8dB at  
10,000Hz

#### TUNER SECTION

##### FM SECTION

TUNING RANGE: 88 to 108MHz  
SENSITIVITY (1HF): 13.2dBf (2.5uV 1HF  
T-100)  
SENSITIVITY (DIN): 1.3uV (at 1,000Hz, MD  
30% S/N 26dB)  
SIGNAL TO NOISE RATIO: better than 65dB  
SELECTIVITY: better than 60dB  
CAPTURE RATIO: less than 1.5 dB

##### AM SECTION

TUNING RANGE: 535 to 1,605kHz  
DIMENSIONS: 424mm (16½") W, 125mm  
(4¾") H, 266mm (10½") D



Rec. Ret. Price £155.76 inc. VAT. **COMET PRICE £104.90 inc. VAT**

An outstanding receiver at an attractive price, the 551 is the ideal home stereo control centre. Both FM and AM sections are IC-equipped, and high-gained integrated circuits are used in the low-distortion phono equaliser. An output of 20 watts per channel RMS will drive the largest of home-sized stereo speaker systems.

## 551 STEREO RECEIVER

### SANSUI 551 STEREO RECEIVER

#### AUDIO SECTION

POWER OUTPUT (at rated distortion)  
CONTINUOUS POWER each channel driven  
20/20 watts into 8 ohms at 1,000Hz  
TOTAL HARMONIC DISTORTION OVERALL  
less than 0.8% at rated power output  
LOAD IMPEDANCE: 4 — 16 ohms  
FREQUENCY RESPONSE (at 1 watt)  
OVERALL (AUX to power output) 15 to  
30,000Hz +1.0dB -2.0dB  
DAMPING FACTOR: approximately 20 at 8  
ohms load  
1HF HUM and NOISE  
Aux: better than 80dB  
INPUT SENSITIVITY and IMPEDANCE (at  
rated output 1,000Hz) Phono: 2.5mV (50k  
ohms) Max input capability: 90mV  
(THD less than 0.5%)

Aux 150mV (50k ohms)

#### TO NE CONTROLS

Bass: +10dB -10dB at 50Hz  
Treble: +10dB -10dB at 10,000Hz  
LOUDNESS: +10dB at 50Hz +8dB  
at 10,000Hz (at 30dB)

#### TUNER SECTION

##### FM SECTION

TUNING RANGE: 88 to 108MHz  
SENSITIVITY (1HF): 2.5uV  
SIGNAL TO NOISE RATIO: better than 65dB  
SELECTIVITY: better than 60dB  
CAPTURE RATIO: less than 2.5dB

##### AM SECTION

TUNING RANGE: 535 to 1,605kHz  
DIMENSIONS: 424mm (16½") W, 135mm  
(5¼") H, 285mm (11¼") D



Rec. Ret. Price £209.21 inc. VAT. **COMET PRICE £129.94 inc. VAT**



# COMET

# Sansui



## SR 222

Despite its modest price, the SR-222 competes with even some of the most expensive manual turntables on the market. With its one-touch power/speed lever (Sansui patent pending), precision polished drive belt, sensitive S-shaped tonearm with acoustic absorbent damping, and slim-line cabinet, this turntable is an outstanding value-for-money buy.

### SPECIFICATIONS

Platter: Aluminium alloy die-cast diameter 300mm (12"). Motor: Four-pole synchronous. Performance: Wow and Flutter, less than 0.07% (WRMS). Rumble, better than -60dB (DIN-B). Tonearm: Statically-balanced S-

shape tubular tonearm with anti-skating device, direct readout tracking force dial, 4-contact plug-in heat, lateral balancer. Cartridge: SC37. Dimensions: 452mm W; 139mm H; 370mm D.

REC. RET. PRICE £83.25 inc. VAT  
COMET PRICE £56.90 inc. VAT



## FR 1080

Belt-driven from a stable 4-pole synchronous motor, the new FR-1080 is for the budget-minded listener who demands quality at a competitive price. Amongst the many features of this automatic/manual turntable are: full-sized aluminium alloy die-cast platter, statically-balanced S-shaped tonearm, bias adjuster and direct-readout stylus force dial. You just can't buy a better turntable for the money.

### SPECIFICATIONS

Platter: Aluminium alloy die-cast diameter 300mm. Motor: Four-pole synchronous. Performance: Wow and Flutter, less than 0.08% (WRMS). Signal to Noise Ratio, better than 50dB (1EC-B). Rumble, better than

-58dB (DIN-B). Tonearm: Statically-balanced S-shaped tubular tonearm with anti-skating device direct readout stylus force dial, 4-contact plug-in head. Cartridge: SC-37. Dimensions: 442mm W; 155mm H; 365.5mm D.

REC. RET. PRICE £116.53 inc. VAT  
COMET PRICE £79.90 inc. VAT



## SR 525

Here's a direct-drive electronic transcription turntable with a super-quiet power system that maintains precision speed at all times. Wow and flutter is practically unmeasurable, and a special knife-edge support system ensures the lowest friction tonearm performance ever seen. With features including stroboscopic pitch controls and electronic speed-change controls, the SR 525 is a significant breakthrough in turntable excellence.

### SPECIFICATIONS

Type: Manual single record playing transcription turntable. Motor: 20-pole, 30-slot DC brushless type. Drive: Direct spindle drive, electronically servo-controlled. Platter: 310mm aluminium die-cast weighing 1.4kg (3.1 lbs). Performance: Wow and Flutter, less than 0.03% (WRMS). Signal to Noise Ratio, better than 64dB (1EC-B). Rumble, better than -72dB (DIN-B).

Fine Speed Adjustment:  $\pm 3.5\%$  (separate knobs 33 $\frac{1}{3}$  and 45rpm). Speed Control: Illuminated stroboscope with markings on the platter periphery. Tonearm: Statically-balanced S-shaped resonance-free tonearm with knife-edge support, height adjustable. Cueing: Separate lever at arm base. Cartridge: SV-27A. Tracking Force: 1.5 to 2.0 grams. Dimensions: 469mm W; 150mm H; 375mm D.

REC. RET. PRICE £188.40 inc. VAT  
COMET PRICE £129.90 inc. VAT



## FR 5080

The Sansui FR 5080 combines direct-drive precision with automatic convenience — without sacrificing musical performance or high fidelity standards. A transistorised differential servo-amplifier ensures that the direct-drive DC motor maintains perfect platter speeds at all times. No speed drift — wow and flutter practically non-existent. Fully automatic lead-in, cut, return, repeat and shut-off is yours at the touch of one simple control.

### SPECIFICATIONS

Type: Two-speed, single-play, direct-drive automatic turntable. Motors: 20-pole, 30-slot DC brushless for platter drive 16-pole (3rpm) geared synchronous for automatic operation. Drive System: Direct spindle drive, electronically servo-controlled. Platter: 310mm (12 $\frac{1}{4}$ ") aluminium die-cast weighing 1.4kg (3.1 lbs). Performance: Wow and Flutter, less than 0.03% (WRMS). Signal to Noise Ratio, better than 62dB (1EC-B).

Rumble, better than -70dB (DIN-B). Fine Speed Adjustment:  $\pm 3.5\%$  (separate knobs 33 $\frac{1}{3}$  and 45rpm). Speed Control: Illuminated stroboscope with markings on the platter periphery. Tonearm: Statically-balanced S-shaped resonance-free tonearm with two-point pivot support. Cueing: Separate lever at base.

Dimensions: 470mm (18 $\frac{1}{2}$ ") W; 154mm (6 $\frac{1}{4}$ ") H; 375mm (14 $\frac{3}{4}$ ") D.

REC. RET. PRICE £262.43 inc. VAT  
COMET PRICE £179.90 inc. VAT

## AU-2900 AU SERIES INTEGRATED STEREO AMPLIFIERS

Crisp, clean sound, with an output of 17 watts per channel RMS — this is the AU 2900 stereo amplifier from Sansui. Low in distortion, high in power performance, and practically priced. In short, you're not paying for features you don't need.

### SANSUI AU-2900

#### AUDIO SECTION

Power Output (at rated distortion)  
CONTINUOUS RMS POWER  
CHANNELS DRIVEN 17 watts per channel  
into 8 ohms at 1,000Hz  
TOTAL HARMONIC DISTORTION OVERALL  
(AUX to speaker terminals), less than 0.3% at  
rated power output  
POWER BANDWIDTH (1HF) 10 to 40,000Hz  
at rated distortion  
LOAD IMPEDANCE 4 to 16 ohms

FREQUENCY RESPONSE OVERALL (AUX to  
power output) (at 1 watt) 10 to 40,000Hz  
+ 0.5dB - 2.0dB  
CONTROLS  
Bass: +12dB -12dB at 50Hz  
Treble: +12dB -12dB at 15kHz  
LOUDNESS: 10dB at 50Hz 8dB at 10kHz  
FILTER (High): -3dB at 7,000Hz (6dB/oct)  
DIMENSIONS: 400mm (15½") W, 120mm  
(4¾") H, 240mm (9½") D

Rec. Ret. Price £100.01 inc. VAT. **COMET PRICE £68.90 inc. VAT**



## AU-3900 AU SERIES INTEGRATED STEREO AMPLIFIER

A superb specification, without one unnecessary extra, this is the thinking behind Sansui's new AU range. The AU 3900 delivers 25 watts per channel RMS of pure undistorted sound — at a price that even the most budget-conscious Hi-Fi enthusiast can afford.

### SANSUI AU-3900

#### AUDIO SECTION

POWER OUTPUT (at rated distortion)  
CONTINUOUS RMS POWER  
CHANNELS DRIVEN 25 watts per channel into  
8 ohms at 1,000Hz  
TOTAL HARMONIC DISTORTION OVERALL  
(AUX to speaker terminals), less than 0.15%  
at rated power output  
POWER BANDWIDTH (1HF) 10 to 40,000Hz  
at rated distortion  
LOAD IMPEDANCE 4 to 16 ohms

FREQUENCY RESPONSE (at 1 watt)  
OVERALL (AUX to power output): 10 to  
40,000Hz +0.5dB -1.5dB  
CONTROLS  
Bass: +12dB -12dB at 50Hz  
Treble: +12dB -12dB at 15kHz  
LOUDNESS: 10dB at 50Hz 8dB at 10kHz  
FILTER (High) -3dB at 7,000Hz (6dB/oct)  
DIMENSIONS: 400mm (15½") W, 120mm  
(4¾") H, 240mm (9½") D

Rec. Ret. Price £143.06 inc. VAT. **COMET PRICE £97.90 inc. VAT**



## AU-4900 AU SERIES INTEGRATED STEREO AMPLIFIER

You don't have to pay a high price for low distortion — as the powerful AU 4900 is ready to prove. With an output of 35 watts per channel RMS, and a specification that includes large OCL power section, low-noise phono equaliser and tone control amplifier section, this unit sets new standards of tonal quality.

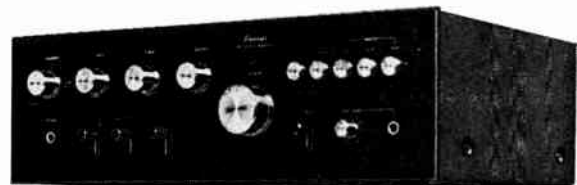
### SANSUI AU 4900

#### AUDIO SECTION

POWER OUTPUT (at rated distortion)  
CONTINUOUS RMS POWER  
CHANNELS DRIVEN 35 watts per channel into  
8 ohms at 1,000Hz  
TOTAL HARMONIC DISTORTION OVERALL  
(AUX to speaker terminals), less than 0.15% at  
rated power output  
POWER BANDWIDTH (1HF): 10 to 40,000Hz  
at rated distortion  
LOAD IMPEDANCE 4 to 16 ohms  
FREQUENCY RESPONSE (at 1 watt)

OVERALL (AUX to power output), 10 to  
40,000Hz +0.5dB -1.5dB  
CONTROLS  
Bass: +12dB -12dB at 50Hz  
Treble: +12dB -12dB at 15kHz  
LOUDNESS: 10dB at 50Hz 8dB at 10kHz  
FILTERS  
Low: -3dB at 100Hz (6dB/oct.)  
High: -3dB at 7,000Hz (6dB/oct)  
MUTING (AUDIO) 0dB -20dB  
DIMENSIONS: 400mm (15½") W, 120mm  
(4¾") H, 240mm (9½") D

Rec. Ret. Price £173.38 inc. VAT. **COMET PRICE £119.90 inc. VAT**



## TU-3900 FM/AM STEREO TU SERIES TUNER

A stereo tuner that matches the AU 2900 3900/4900 amplifiers in looks and performance, the TU 3900 is packed with a host of advanced features. The sum total is brilliant reception and performance in even the most remote areas.

### SANSUI TU-3900

#### FM SECTION

TUNING RANGE 88 to 108MHz  
SENSITIVITY  
1HF 11.2dBf (2.0uV 1HF T-100)  
DIN 11uV  
TOTAL HARMONIC DISTORTION  
MONO less than 0.3%  
STEREO less than 0.4%  
SIGNAL TO NOISE RATIO, better than 70dB  
SELECTIVITY, better than 60dB  
CAPTURE RATIO, less than 2.0dB  
STEREO SEPARATION, better than 40dB at  
1,000Hz

FREQUENCY RESPONSE 30 to 15,000Hz  
ANTENNA INPUT IMPEDANCE 300 ohms  
balanced 75 ohms unbalanced -20dB  
FM ANTENNA ATTENUATOR -20dB  
AM SECTION  
TUNING RANGE: 5.35 to 1,605kHz  
SENSITIVITY (Bar Antenna), 53dB/m at  
1,000kHz  
OUTPUT LEVEL  
OUTPUT: 775mV at FM 100% modulation  
DOLBY: 250mV at FM 100% modulation  
DIMENSIONS: 400mm (15½") W, 120mm  
(4¾") H, 240mm (9½") D

Rec. Ret. Price £151.89 inc. VAT. **COMET PRICE £102.90 inc. VAT**



## RB 18



A 2-way speaker system with 200mm longthrow bass unit with foam surround and 26mm dome HF unit linked by a five element crossover network to give this compact speaker clean, undistorted sound.

Specification:  
Frequency Range (DIN): 60 -20,000 Hz  
Recommended Amplifier Impedance: 4 or 8 ohms  
Recommended Amplifier Music Power: 10 -40 Watts  
Sensitivity (DIN): 5.6 Watts  
Drive Units: 200mm Bass  
26mm dome HF  
Crossover Frequency: 2,000 Hz  
Effective Internal Volume: 18 litres

**COMET PRICE £49.90 inc. VAT.**

## RB 20



A 3 speaker design utilising 200mm longthrow bass unit, 26mm dome HF unit, plus an 85mm mid-range unit in its own sealed enclosure, linked by a seven element crossover network, giving the RB20 big power handling capability — up to 50 watts music power.

Specification:  
Frequency Range (DIN): 50 -20,000 Hz  
Recommended Amplifier Impedance: 4 or 8 ohms  
Recommended Amplifier Music Power: 10 -50 Watts  
Sensitivity (DIN): 5.5 Watts  
Drive Units: 200mm Bass  
85mm Mid-Range  
26mm dome HF  
Crossover Frequencies: 1 and 6 kHz  
Effective Internal Volume: 20 litres, includes 0.4 litres for mid-range unit

**COMET PRICE £63.90 inc. VAT.**

## RB 35



Big brother of the RB range still only measures approx. 24ins. x 12ins., but can handle up to 60 watts undistorted music power! Sharing the same mid-range and HF units as the RB20, the RB35 incorporates 260mm bass unit for extended low frequency response and greater power handling.

Specifications:  
Frequency Range (DIN): 40 -20,000 Hz  
Recommended Amplifier Impedance: 4 or 8 ohms  
Recommended Amplifier Music Power: 10-60 Watts  
Sensitivity (DIN): 5.4 Watts  
Drive Units: 260mm Bass  
85mm Mid-Range  
26mm dome HF  
Crossover Frequencies: 1 and 6 kHz  
Effective Internal Volume: 35 litres includes 0.4 litres for mid-range unit.

**COMET PRICE £89.90 inc. VAT.**

# COMET ROTEL®

## RX 102 MK II RECEIVER

★ 10 watts per channel min. RMS both channels driven into 8 ohms. ★ Smooth flywheel action ★ Signal strength tuning meter ★ Tape monitor and loudness switches ★ Stereo beacon ★ IC and ceramic filters in FM IF.



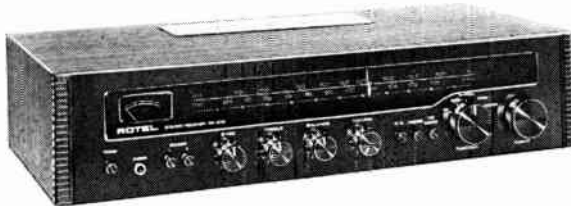
**AMPLIFIER SECTION**  
Continuous Power Output Min. RMS power per channel into 8 ohms 10 watt  
Total Harmonic Distortion (maximum) 1.0%  
IM Distortion 1kHz at rated power output -1dB 0.2% Frequency Response ±3dB at 1 watt per channel min. RMS 20-50,000Hz  
Phono Section Signal-to-Noise Ratio 65dB Sensitivity and Impedance 2.8mV/47k High Level (TAPE AUX TUNER) 85dB

Signal-to-Noise Ratio Sensitivity and Impedance 150mV/50k  
**TUNER SECTION**  
FM Sensitivity 4uV Signal-to-Noise Ratio 60dB Harmonic Distortion: Mono/Stereo 0.5%/1.0% Capture Ratio 4.0dB Stereo Separation at 1kHz 35dB AM Sensitivity: 1HF 300uV/m Dimensions: Overall 475(W) x 115(H) x 270(D) mm

RRP £120.45 inc. VAT. **COMET PRICE £84.90 inc. VAT**

## RX 202 MK II RECEIVER

★ 20 watts per channel, min. RMS, both channels driven into 8 ohms. ★ Phase-Lock-Loop MPX. ★ IC and ceramic filters in FM IF. ★ Terminals for 2 pairs of speakers. ★ Signal strength tuning meter. ★ Hi filter tape monitor and loudness switches. ★ Surround sound switch.



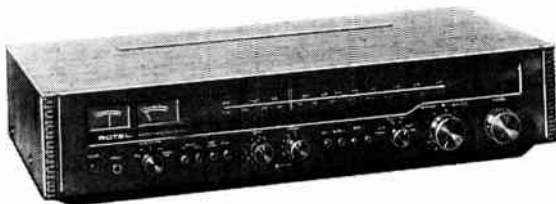
**AMPLIFIER SECTION**  
Continuous Power Output: Min. RMS power per channel into 8 ohms 20 watts  
Total Harmonic Distortion (maximum) 1.0%  
IM Distortion 1kHz at rated power output -1dB 0.2% Frequency Response ±3dB at 1 watt per channel min. RMS 20-70,000Hz  
Phono Section Signal-to-Noise Ratio 70dB Sensitivity and Impedance 2.2mV/47k High Level (TAPE AUX TUNER) Signal-to-

Noise Ratio 85dB Sensitivity and Impedance 150mV/50k  
**TUNER SECTION**  
FM Sensitivity 2.5uV Signal-to-Noise Ratio 65dB Harmonic Distortion: Mono/Stereo 0.3%/0.8% Capture Ratio 3.0dB Stereo Separation at 1kHz 35dB AM Sensitivity: 1HF 200uV/m Dimensions: Overall 475(W) x 115(H) x 270(D) mm

RRP £156.75 inc. VAT. **COMET PRICE £104.90 inc. VAT**

## RX 602 RECEIVER

★ 35 watts per channel, min. RMS, both channels driven into 8 ohms. ★ Less than 0.5% total harmonic distortion. ★ Extra wide FM linear dial. ★ Silk-smooth flywheel tuning. ★ Twin tuning meters. ★ Hi/low/loudness/muting switches. ★ Tape dubbing facilities. ★ Super-sensitive FM front end.



## RX 152 MK II RECEIVER

★ 15 watts per channel, min. RMS, both channels driven into 8 ohms. ★ Phase-Lock-Loop MPX. ★ Big flywheel tuning. ★ Signal strength tuning meter. ★ Terminals for 2 pairs of speakers. ★ Tape monitor and loudness switches. ★ Surround sound switch.



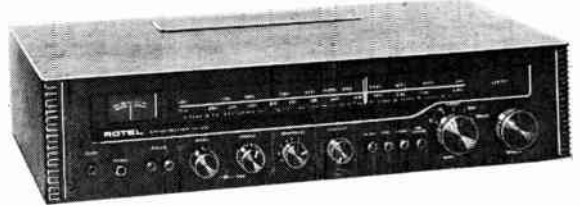
**AMPLIFIER SECTION**  
Continuous Power Output Min. RMS power per channel into 8 ohms 15 watts  
Total Harmonic Distortion (maximum) 1.0%  
IM Distortion 1kHz at rated power output -1dB 0.2% Frequency Response ±3dB at 1 watt per channel min. RMS 20-60,000Hz  
Phono Section Signal-to-Noise Ratio 65dB Sensitivity and Impedance 2.8mV/47k High Level

(TAPE AUX TUNER) Signal-to-Noise Ratio 80dB Sensitivity and Impedance 150mV/50k  
**TUNER SECTION**  
FM Sensitivity 4uV Signal-to-Noise Ratio 60dB Harmonic Distortion: Mono/Stereo 0.5%/1.0% Capture Ratio 5.0dB Stereo Separation at 1kHz 35dB AM Sensitivity: 1HF 250uV/m Dimensions: Overall 475(W) x 115(H) x 270(D) mm

RRP £137.00 inc. VAT. **COMET PRICE £95.90 inc. VAT**

## RX 402 RECEIVER

★ 25 watts per channel, min. RMS, both channels driven into 8 ohms. ★ Less than 0.5% total harmonic distortion. ★ Hi-performance FM FET front end. ★ Phase-Lock-Loop MPX. ★ Muting, Hi, loudness, tape monitor switches. ★ Terminals for 2 pairs of speakers. ★ Signal strength tuning meter.



**AMPLIFIER SECTION**  
Continuous Power Output: Min. RMS power per channel into 8 ohms 25 watts  
Total Harmonic Distortion (maximum) 0.5%  
IM Distortion 1kHz at rated power output -1dB 0.1% Frequency Response ±3dB at 1 watt per channel min. RMS 15-75,000Hz  
Phono Section Signal-to-Noise Ratio 70dB Sensitivity and Impedance 2.4mV/60k High Level (TAPE AUX TUNER)

Signal-to-Noise Ratio 85dB Sensitivity and Impedance 150mV/50k  
**TUNER SECTION**  
FM Sensitivity 1.9uV Signal-to-Noise Ratio 65dB Harmonic Distortion: Mono/Stereo 0.3%/0.5% Capture Ratio 2.0dB Stereo Separation at 1kHz 40dB AM Sensitivity: 1HF 200uV/m Dimensions: Overall 475(W) x 115(H) x 320(D) mm

Rec. Ret. Price £207.90 inc. VAT. **COMET PRICE £139.90 inc. VAT**

**AMPLIFIER SECTION**  
Continuous Power Output: Min. RMS power per channel into 8 ohms 35 watts  
Total Harmonic Distortion (maximum) 0.5%  
IM Distortion 1kHz at rated power output -1dB 0.1% Frequency Response ±3dB at 1 watt per channel min. RMS 10-75,000Hz  
Phono Section Signal-to-Noise Ratio 70dB Sensitivity and Impedance 2.5mV/60k High Level (TAPE AUX TUNER) Signal-to-

Noise Ratio 90dB Sensitivity and Impedance 150mV/50k  
**TUNER SECTION**  
FM Sensitivity 1.8uV Signal-to-Noise Ratio 65dB Harmonic Distortion: Mono/Stereo 0.3%/0.5% Capture Ratio 1.5dB Stereo Separation at 1kHz 40dB AM Sensitivity: 1HF 200uV/m Dimensions: Overall 570(W) x 135(H) x 330(D) mm

Rec. Ret. Price. £273.90 inc. VAT. **COMET PRICE £192.50 inc. VAT**

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1 The amplified voice of  
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2 Such perfect pitch, it can  
shatter glass.



3 We played back a recording of  
Ella on Memorex tape.



4 Memorex too shattered glass.  
Incredible!

## GLOSSOP ROAD GOSSIP

April is here, and Sugden have promised us some amplifiers and tuners, you might be lucky and be able to get one ex-stock, Jim Sugden tells that he simply cannot meet demand. Another British company in the same boat is Celef Audio they've moved into a new factory but still cannot meet demand, no small wonder when they are producing such fine speakers as the Mini Professional S.M.'s, the detail on these speakers is so incredible, and when you take in consideration the price they are more unbelievable, bring a record along and give yourself a treat.

Ferroglyph's Logic 7 is now with us, and seems to be a great improvement on the Super 7, like all Ferroglyphs, built like a battleship, built to last, and this one is very easy to use, why not arrange a comparison dem. with us against a Revox, both fine machines, both totally different in concept.

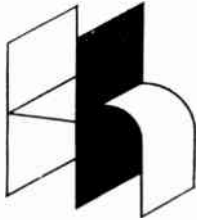
Gale Records are selling well, if Ira Gale reads this can we please have a wider selection, talking of Gale, their 401 loudspeakers deserve a mention, like all Gale Products finished to the highest order, a very detailed and accurate sound, we have both the normal chrome and black speakers and all the new improved wooden-finished models.

Our new showroom is nearly complete, we will have one of the new Micro Seiki Turntables, which talks 3 P.U. Arms for 'deming' cartridges and arms, alongside the musical and I tell the whole truth. Linn Sondek, the claims they make for it are true, we will demonstrate it to you, we don't make it an argement, but turn it into a friendly discussion.

Pioneer Car Stereo units, will turn your motoring into a pleasure, we rate them as the best, first impressions they look expensive, but once you have owned one for a short period, you realise how good they are, and what incredible value for money they offer, we have fitted in all our cars, one rather special one which I will tell you more of later in the year.

We have KEF 104AB's in stock, along with Castle Richmonds and Kendalls, IMF Monitors, ALS 40's, TLSS0, TLS80's, J.B.L.'s for the 'Pop' fans, Fons CQ30's in choice of finish . . . yes choice of finish, Armstrong receivers, plus the full range of Yamaha and Nakamichi.

We are only a small firm, so we can give you that extra personal service, but it seems that we are building a big, big reputation for ourselves as one of the best hi-fi shops in the country . . . anyone want a Sony TC177 cheap gives us a ring.



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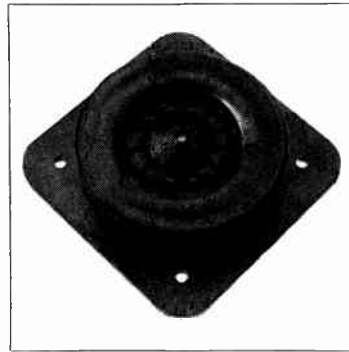
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Mail Order Special Discount—For orders over £100 for a single item, when payment is Cash or Cheque—No Extra Charge for Mail Order (Speakers not included). All prices include VAT at 12½%. Prices correct on 0/0/77, but subject to change without notice. Access and Barclaycard accepted. Cheques up to £30 accepted accompanied by cheque card from personal callers. All items brand new and guaranteed for 12 months parts and labour. HP and Credit facility to personal callers for balances up to £225. Immediate delivery if the person holds £30 cheque card or credit card. Tax free personal export. Open: Monday—Saturday 9.00am—5.30pm; Wednesday up to 1.00pm.

**SPEAKER DEMONSTRATION** EASTCOTE HI-FI  
112 & 96 FIELD END RD, EASTCOTE, PINNER, MIDDX. HA5 1RP  
01-868 2946

# NEW 3000 TWEETER



## Technical Data

**Frequency response:**  
2 Kc/s to 15 Kc/s within 3 dB

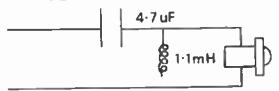
**Impedance:**  
15 ohms or 8 ohms

**Flux Density:**  
10,000 gauss

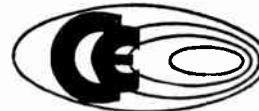
**Dimensions:**  
2½" (70.2 m/m) dia. x depth  
o/all 1⅞" (37.5 m/m)  
sq. fixing flange 3¼" (86.8 m/m)  
Front or Rear Mounting  
4 screw holes @ 2¼" cntrs  
(60.3 m/m)

**Power Handling:**  
For use on 30–50 watt  
Amplifiers

**Suggested Crossover:**



Combine your favourite bass driver with our brand new 3000 tweeter to produce a sound both smooth and immediate, with an openness and clarity that will astound you. S.A.E. for suggested arrangement.



**Coles  
Electroacoustics Ltd.**

Pindar Road Hoddesdon EN11 0BZ  
Telephone Hoddesdon 66685/60060

## NEW FLEXIBLE CABINET SYSTEM FOR YOUR AUDIO UNITS



48" CABINET ILLUSTRATED

Use the flexibility of **Addon** Cabinetry to Eliminate your updating problems

Three lengths of cabinet shelves to suit any equipment and you decide how much record or cassette space you want, using this easily assembled system. Conceals untidy wiring, the drop flap door provides a handy surface when open, whilst giving a neat appearance when closed.

Basic cabinets are available with adjustable wall fixing strips and shelving can be added on as desired, or alternatively, these can be supplied with solid bases or attractive underframe.

All units are obtainable in 36", 48" or 60" lengths in white or teak melamine finish.

Send your name and address for free information leaflet and price list.

NAME .....

ADDRESS .....

**E. & D. NICOLL (FORFAR) LIMITED**  
Craig o' Loch Road, Forfar, Angus DD8 1BU  
Telephone: FORFAR 3645/3268

# An Antistatic Device that Cleans Records

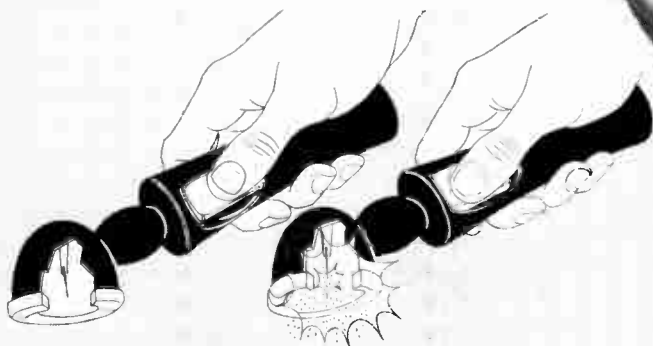
## The **E A R C** Electronic Antistatic Record Cleaner

is the most up-to-date protection your records can have.

In a single sweep over your record, the EARC effectively neutralises any static charge and gently removes the loosened dust – all at the same time.

Your records stay clean and dust-free much longer. Prolonging the life of your records and stylus.

The EARC cleaner uses high reliability, completely safe, piezo-electric techniques for antistatic protection and long life. Batteries are not needed, it's designed for long service and backed with a 3 year guarantee.



Available now from your hi-fi or record centre at £11.50 (R.R.P. incl. V.A.T.).  
In case of difficulty contact:  
Sounds Professional, 49 Theobald Street,  
Boreham Wood, Herts. WD6 4RZ.

**E A R C**  
Electronic Antistatic  
Record Cleaner

**SAVE  
££'S  
ON LEADING  
MAKES**

# Hi-Fi at

# Audio Spectra

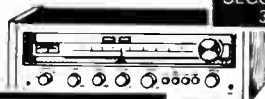
**EFFICIENT  
AFTER-SALES  
SERVICE**

"Audio Spectra's list shows many attractively low prices which appealed to us but the kind of low prices which usually indicate a warehouse type set up. Not so it's a good, old-fashioned shop (in the best possible sense of the phrase) offering the rare combination of reasonable prices and good advice and service. Customers can expect to have any item in stock demonstrated to them on the premises in a friendly, civil atmosphere."

PRACTICAL HI-FI & AUDIO, OCTOBER 1976

## PIONEER SX 450

AM/FM stereo receiver. 15 watts per channel RMS.



**OUR PRICE  
£118.95**  
SECURICOR  
3-50

## SME

The best pick-up arm in the world

**OUR PRICE**  
SME 3009 S2 ... £43.95  
SME 3009 fixed ... 39.95  
Post  
90p each.



**marantz**  
SEE & HEAR THE DIFFERENCE AT

## Audio Spectra

**DOLBY  
CASSETTE  
DECKS**

**WE STOCK**

## SHURE CART.

Post and Packing 15p

M44/7	£6.95
M44E	7.25
M55E	8.25
M75B	10.25
M75/6	7.25
M75EJ/2	12.75
M95EJ/2	13.25
M95EJ	13.25
M95ED	18.95
V15/III	45.50

## JVC

**CD-1635 II stereo Cassette**  
one of the best ever Portables of its kind  
Frequency response 30-16,000 Hz (CrO2)  
Wow and flutter 0.08% (WRMS). Fitted with the new Sen-Alloy Head and Super A.N.R.S.

Price on application.



## NAD

A really superb range of Amplifiers and Receivers. Hi-Fi at its best. See them at **AUDIO SPECTRA—its worth it.** Catalogues and Prices on application, 8½p stamp please.



Amstrad 7050	£74.95
Amstrad 7070	94.50
Aiwa 6300	P.O.A.
Akai 39D	122.95
Akai CS705D	132.95
JVC 1740	82.50
Neal 102 Mk II	212.50
Pioneer 2121	138.50
Rotel RD20	155.25
Rotel RD12F	155.25
Sansui	
SC2000/2	167.50
SC3000/3	187.50
Teac A170	P.O.A.
Securicor	£3.50 each

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AIWA  
AKAI  
ALPHA  
ATRON  
AMSTRAD  
BASF  
BOSE  
CELESTION  
COLTON  
CONNOISSEUR  
DIRECT DESIGNS  
FERROGRAPH  
GARRARD  
GOLDRING  
GOODMANS  
HARMAN-KARDON  
HCL  
J.V.C.  
KEF-KITS  
K.L.H.  
KOSS  
LEAK  
MARANTZ  
MICRO  
NAD  
NEAL  
ORTOPHON  
PIONEER  
PLUSTRONICS  
QAS  
RAM  
ROTEL  
SANSUI  
SCOTCH  
SENNHEISER  
SHARP  
SHURE  
SME  
STANTON  
STAX  
SONOTONE  
TANNOY  
TDK  
TEAC  
TELETON  
THORENS  
TOSHIBA  
TRIO  
WHARFEDALE  
VAC-O-REC  
VIDEOTONE  
etc., etc.

## ROTEL

### AMPLIFIERS

RA212	£56.50
RA312	66.50
RA412	85.75
RA712	103.95

### TUNER AMPS.

RX152	£85.50
RX202/II	107.25
RX402	141.95

### TURNABLES

RP1500	£69.75
RP3000	114.95

Securicor £3.50 each

## Sansui

**OUR PRICE  
£109.50**  
CARRIAGE  
3-50



## PIONEER

331 Receiver (331 L)  
15 W x 2 RMS.

### SPEAKERS

Just a few of our selection. Prices per pair.

Celestion	
Ditton 11	£60.75
Ditton 15	97.00
Ditton 33	150.95

Leak	
3020	£94.95
3030	124.95

Wharfedale	
Chevin	£28.50
Denton 2XP	42.90
Linton 3XP	59.95

Carriage £3.50 per pair.

### TUNER AMPS.

SX550	£146.75
SX650	214.00
SX750	255.00

AMPLIFIERS	
SA5300	67.95
SA6300	83.50
SA7300	128.50

TURNABLES	
PL112D	56.50
PL115D	69.95
PL117D	105.50

### CASS. DECKS

CTF2121	138.50
CTF6060	178.50
CTF7070	193.50

Securicor £3.50 each

**OUR PRICE  
£59.95**  
CARRIAGE  
3-50

## Sansui

SR-222

Two speed belt drive turntable. Statically balanced S-shaped tone-arm. 4-pole synchro motor.



## ROTEL

RX 202 Mk II

**OUR PRICE  
£107.25**  
CARRIAGE  
3-50

**TUNER AMPLIFIER**  
20 watts RMS per channel  
40-20,000 Hz both channels driven.

### AMSTRAD

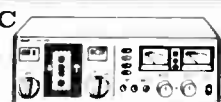
AMPLIFIERS	
IC 2000 Mk 3	£41.75
IC 8000 Mk 3	27.50
TUNER 3000 Mk 2	41.75
TUNER AMPLIFIERS	
5000	£69.75
5050	82.75

Securicor £3.50 each.

We stock much more than we can find room for on this page, if you don't see the item you are interested in, write or ring us.

## TEAC

A-400



Front Loading Cassette Deck  
Dolby; DC servo motor; Wow and Flutter 0.08% WRMS; Frequency response 30-16 kHz with CrO2. Price and leaflet on application, 8½p stamp please.

**TANNOY** on demonstration.  
HEAR THE DIFFERENCE AT **AUDIO SPECTRA**

## TOSHIBA

SR-370



Direct drive turntable without arm. Features \* Audio insulators \* Stroboscope \* A.D. Solid base \* Wow and Flutter 0.04% WRMS \* Cut-out for SME arms \* Price and leaflet on application, 8½p stamp please.

# Audio Spectra

ELECTRONICS

202 & 204, High Street, Hornchurch, Essex RM12 6QP

Telephone: Hornchurch 50221

**PLEASE NOTE**  
ALL PRICES INCLUDE VAT AT 12½%  
Prices subject to change without notice. E. & O. E.

Phone your Access/Barclaycard No. over with your order for prompt delivery.



# April is TANNOY month at REW



Come to REW's new premises at 230 Tottenham Court Road to see and hear the complete range of Tannoy products. Hear the mighty Tannoy Arden; see the new Micro turntables including the fabulous DDX1000 and the value for money MB10. The complete new Harman Kardon range will also be on demonstration with the Ortofon magnetic and moving coil cartridges. You will find our staff knowledgeable and friendly and all equipment is of course backed by REW's famous after sales service.

# REW Audio Visual ©

230 Tottenham Court Road, London W1. Tel.: 01-637 2624/5.

Centrepont, 20-21 St. Giles High Street, London WC2. Tel.: 01-240 3066/7.

Professional Audio: 146 Charing Cross Road, London WC2. Tel.: 01-240 3064/5.

Mail Order: REW House, 10-12 High Street, Colliers Wood, London SW19. Tel.: 01-540 9684/5/6.

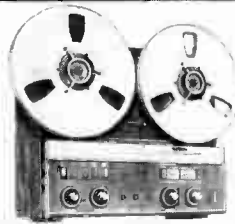
# Get it together with KJ...

**JVC**



Receivers with unconventional appearance. Love them or hate them you can't deny they give great value for money with in built graphic equalisers on the JRS 200 up. Also outstanding value are the JAS 11 amp. (33 watts for around £80), JLA 15 semi auto deck and the CD 1740 cassette deck at about £95

**Revox**



Quite simply the best pedigree for open reel tape equipment. All branches stock the A77 series. Wigmore Street carries the A700 tape deck, A720 digital tuner, pre amp and A740 power amp

**SONY.**

Low cost high powered amps. and receivers, direct drive turntables, cassette decks, Elcaset and music centres all feature in a strong line up from this well established manufacturer. All branches hold good stocks at competitive prices.

STR 4800	£202.50	ST 2950F	£100.90
STR 5800	£254.60	PS 3300	£113.00
STR 6800SD	£303.00	TC 377	£161.50
TA 2650	£109.95	TC 186SD	£134.95
TA 3650	£147.90	TC 206SD	£175.65
TA 5650	£236.80	HMK 70	£387.60

other models stocked.

**IMF**

With their own distinctive sound the IMF range has always proved to be very popular with our customers. From the Compact 11 to the Professional Monitor Mk IV each of the models has an inherent musical quality which is most satisfying over long periods of listening



**Technics**



The SL 2000 direct drive turntable illustrated is a real break through in price, being just under £100 and this strengthens yet again Technics domination of the turntable market. Amps, tuners, receivers, cassette decks all feature strongly in the Technics line up.



**RAM**

Outstanding value British speakers. There are three models starting with the bookshelf monitor at about £95 (pr), then the RAM 1 at about £130 (pr) (about Kef Cadenza size), and the STL 4 Studio Transmission line: the flagship of the range. Fine products we wholeheartedly recommend.



**AIWA**



Still the most popular specialist cassette deck manufacturer and with good reason - they always sound good. We are also very impressed with the two Dolby music centres now available.

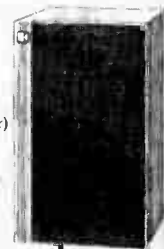
<b>ROTEL</b>	RX 202 Mk II	£109.90
	RX 402	£144.90
	RA 312	£ 67.95
	RA 412	£ 87.95
	RM 3010	£349.65



Denton 2xP (pr)	£42.50
Kit for above (pr)	£22.90
Linton 3xP (pr)	£59.90
Kit for above (pr)	£34.90
Glendale 3xP (pr)	£79.90
Kit for above (pr)	£46.80



All branches keep a wide selection of these popular speakers. Speaker Kits (Per Pair)  
Kit 1 £63.90  
Kit 3 £119.90  
104 AB Mod £43.80  
Chassis speakers stocked subject to availability.



\*Ask about our FREE modification service.

ADC, AIWA, AKAI, AMCRON, AR, ARMSTRONG, AUDIOMASTER, BGW, CELEF, CELESTION, DBX, DIRECT DESIGNS, DUAL, FIDELITY RESEARCH, FONS, GALE, GARRARD, GOODMAN, IMF, J. E. SUGDEN, J. R. LOUDSPEAKERS, JVC, KEESONIC, KEF, LENTEK, LEAK, LECSON, LUX, MAYWARE, MICRO ACOUSTICS, MONITOR AUDIO, MORDAUNT SHORT, NAKAMICHI, ORPHEUS, PHASE LINEAR, PIONEER, QUAD, RADFORD, RAM, REVOX, ROTEL, SMC, SME, SONY, SONUS, SPENDOR, STRATHEARN, STANTON, STAX, TANDBERG, TANGENT, TANNON, TEAC, TECHNICS, THORENS, TRIO, VIDEOTONE, WHARFEDAILE, YAMAHA.

# KJ Leisure Sound

AN AUDIBLE DIFFERENCE

Opening Hours Monday - Saturday 9.30 am - 5.30 pm  
Thursday late night until 8pm

<b>HARROW</b>	- 27, Springfield Road	Tel: 01-863 8690
<b>UXBRIDGE</b>	- 278, High Street	Tel: Uxbridge 33474
<b>WATFORD</b>	- 101, St. Albans Road	Tel: Watford 45250
<b>LONDON W.1.</b>	- 48, Wigmore Street	Tel: 01-486 8263



# ...and take the PUZZLE out of hi-fi

**TRIO**



Excellent value high powered amplifiers would seem to be Trio's strong point but their 'top end' receivers are also competitively priced. Both Watford and Wigmore Street are class "A" Trio centres with a wide range on demonstration.

**CELEF**



From the Domestic series which are ultra efficient and will produce high sound levels from a very few watts to the Studio Professional which is a no compromise monitor we have a range of well planned and attractively priced speakers to suit most tastes and budgets.



**KJ 4 STAR PURCHASE PLAN**

- \* **Extended parts and labour service guarantees:**  
3 years on Amplifiers, Tuners and Receivers.  
2 years on Turntables, Cassette Decks, Tape equipment and Music Centres.  
5 years on Speaker systems.
- \* **7 day exchange privilege on purchases of major hi-fi equipment.**
- \* **FREE connecting leads for your home installation.**
- \* **Part exchange guarantee** - KJ will take back any major equipment previously purchased from us provided you repurchase under the 4 star plan.



**Iecron**



Combining brilliant performance with unusual modern styling Iecron can rightly claim to be amongst the best of British hi-fi. Apart from the non-integrated amplifier with a choice of power amps, there is also a matching tuner which will have facility for adding a digital readout.

**PIONEER**

PL 112D	£ 57.95
PL 115D	£ 63.50
SX 450	£116.50
SX 650	£209.00
CTF 2121	£136.90
Plus other models	

**THORENS**

TD 160 BC Mk II	£ 71.50
TD 160 BC SME 3009	£115.50
TD 160 C Mk II	£ 87.50
TD 126 BC	£172.90

**KJ BUDGET PLAN**

For customers wanting to keep initial investments as low as possible KJ offer very keen prices with a minimum 12 months parts and labour guarantee (longer if specified by the manufacturer).

**PERSONAL EXPORT WELCOME**

All our branches are able to supply goods on the 'over the counter' export scheme. If you are visiting the U.K. we will be pleased to assist you in obtaining your requirements

**INSTANT CREDIT -**

now possible with low deposit easy repayment terms on the U.K. mainland only.

**SEND BY MAIL -**

adding any relevant postage and packing charges and enclosing cash with order or simply quote your Access or Barclaycard number. Post to: KJ Leisuresound Ltd., Dept. HFN, Bridle Path, Watford, Herts. WD2 4BZ.

**TELEPHONE ORDERS**

can be accepted where payment is made by Access or Barclaycard - Simply telephone our order desk on WATFORD 45248 (No technical advice).

**CARRIAGE & INSURANCE CHARGES -**

Amplifiers, Tuners, Receivers, Cassette Decks, Speaker Kits £2.75; Turntables £1.95; Speaker Systems (per pair), Tape Decks £3.75; Music Centres £4.50.

**PRICES -** quoted in this advertisement are based on the KJ Budget Plan and include VAT. Obviously 4 star purchase plan prices reflect the extra service included and customers are asked to enquire at their nearest branch for further details. Prices were correct at date of going to press but are subject to change without notice. Orders are accepted subject to the price ruling at date of despatch or collection.

**CATALOGUE**



The 24 page KJ catalogue is published each month. Packed full with information, special offers and a newsletter to keep you up to date with new products. You can get a copy from any of our branches or if you are unable to call send for a copy enclosing 10p for postage to KJ Leisuresound Ltd., Bridle Path, Watford, Herts. WD2 4BZ or it's FREE with orders.

**FONS**

The CQ 30 Mk II belt drive turntable has a strong following which is wholly justified. An excellent British product.  
CQ 30 Mk II less arm £ 93.60  
CQ 30 Mk II with SME 3009 £134.95



**J. E. SUGDEN**

Since introduction of the A48 Mk II amplifier interest has never been stronger in this fine value class A amplifier. It really does sound excellent and at around £175 it gives most of its Japanese competition a hard time. There is also a tuner to match the amplifier and the C51, P51 non-integrated still finds a ready market.



The new AR 17 at just under £130 (pr) looks to be another big selling addition to the established AR range. The AR 7x must be one of the most popular budget price speakers on the market. You will find most of their popular speakers on demonstration at any of our branches.



**Audiomaster**

One of our best selling bookshelf speakers the Image 2 looks very competitive at under £120 (pr) compared with many other products. Its clean uncoloured performance must be heard to be appreciated. Also from the Audiomaster stable comes the LS3/5A BBC designed small monitor speaker.



**YAMAHA**



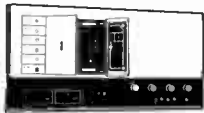
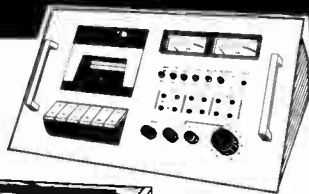
Yamaha's introduction of the TC 511S front loading cassette deck will please many who can now get a cassette deck to match their existing equipment. We still feel Yamaha to be some of the best hi-fi on the market today. Yamaha Yes!

# ASK TELESONIC TO TRANSLATE 'NAKAMICHI'

Nakamichi means the ultimate in cassette recording. And in reproduction. At Telesonic, you'll find knowledgeable, friendly staff who realise the full meaning of Nakamichi. Such as no-compromise transport mechanisms. Three tape heads on desk-top units. State-of-the-art electronics. Plus lots, lots more.

**NAKAMICHI DT600**  
Deck featuring 2 heads, unique 1M distortion suppressor, 40-18,000 Hz  $\pm$  3dB, 0.08% wow and flutter, and user-adjustable bias.

**£338-00** inc. VAT



**NAKAMICHI 700**  
3-head deck with Dolby and off-tape monitoring.

**£598-40** inc. VAT



**NAKAMICHI 1000**  
3-head deck with Dolby B, plus DNL, and reel-to-reel performance.

**£848-15** inc. VAT



**NAKAMICHI 550**  
Portable deck which out-performs all other 2-head units.

**£338-00** inc. VAT

## But there's more to Telesonic than Nakamichi

When you visit Telesonic look around. Take a look at the window display for a start. Carefully styled to let you see the equipment. A certain professional touch which quietly reassures you. Now step inside. Notice the unobtrusive staff. And the soft background music. Walk around at your leisure. Appreciate the quality of the products. By top names. Like Sony, National Panasonic, Lux, Nakamichi, National Technics, Quad, Britain's blue-chip hi-fi manufacturer. Listen to a selection of systems – on comprehensive demonstration facilities. They're all part of Telesonic – the different hi-fi store in Tottenham Court Road.

**MAIN AGENTS FOR**  
Armstrong, Aiwa, B&O, Lux, Nikko, Nakamichi, National Panasonic, Sonab, Sony, Technics, Tannoy. Plus other leading names

# TELESONIC

FOR MORE INFORMATION CONTACT TELESONIC LTD.  
92 TOTTENHAM COURT ROAD, LONDON, W1. TELEPHONE: 01-636 8177  
Open 9am – 6pm Monday to Friday ★ Saturdays 9am to 4pm

# LISTEN TO SHEER GENIUS...

## Griffin 85

# Studio Electronic



Listen to the sheer loudspeaker genius of Griffin 85, a five speaker system with level controls, variable enclosure damping, three built-in power amplifiers – one for treble, one for mid-range, one for bass – and the special Griffin tandem-line bass system. Just to set you thinking, here's an outline specification – Tandem-line bass system  
Frequency response of 22Hz–30kHz–4db  $\pm$  2db in a room of 3,000 cubic feet  
Damping factor greater than 100 over the entire range  
Height: 33 inches – 44 inches with stand  
Width: 13 inches  
Depth: 11.5 inches minimum  
13 inches maximum  
Weight: 110 lbs with stand

Griffin 85. A sound source for ease of listening.  
Price: £628-00 per pair including stands, plus V.A.T.  
To listen to sheer genius is worth a little effort. Post the coupon today.

### H. K. GRIFFIN & CO. (ELECTRONICS)

High Fidelity Equipment Manufacturers,  
Dept AD  
Siddons Factory Estate,  
Howard Street,  
West Bromwich,  
B70 05U

Please send me further information on the complete Griffin range of equipment and where I can hear it.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Postcode \_\_\_\_\_

H. K. GRIFFIN & CO. (ELECTRONICS), High Fidelity Equipment Manufacturers  
Dept. AD Siddons Factory Estate, Howard Street, West Bromwich B70 05U

Hours  
**MONDAY—SATURDAY**  
 9.30—5.30 p.m.  
**CLOSED THURSDAY**  
 Tel. (0480) 65052



**12 THE BROADWAY**  
**ST. IVES**  
**HUNTINGDON**  
**CAMBS.**

**HOW TO ORDER**

Before calling or ordering, please phone to check stock and price. Some prices go up every month or two (this advert was placed six weeks ago).

Customers sending cash: goods will be despatched within 24 hours.

Customers sending cheque: goods will be despatched within 24 hours of cheque being cleared.

Unless requested otherwise, all equipment will be tested before despatch by us (excluding speakers).

Access on most items (but not special offers). Just phone us your details.

We have good demonstration facilities and callers are most welcome.

**TURNTABLES**

<i>Carriage £3.00</i>	
Pioneer PL112D ..	£57.00
Technics—Full range ..	P.O.A.
Fons CQ30 Mk II ..	£79.50
Reference+Arm ..	£138.00
Reference cut SME ..	£112.50
Electronic+Arm ..	£155.50
Electronic cut SME ..	£129.00
Dual CS704 ..	£164.00
CS601+V15/III ..	£141.50
CS510+M95/B ..	£114.50
Sansui SR222P ..	£60.00
Toshiba SR220 ..	£60.25
Toshiba SR255 ..	£96.50
Toshiba SR355 ..	£109.00
Toshiba SR370 ..	£121.50
Thorens TD160C II ..	£93.00
TD160B/C II ..	£75.85
TD145C II ..	£110.00
Lux PD121 ..	P.O.A.
Lux PD131 ..	P.O.A.
Lux PD282 ..	P.O.A.
Accutrac 4000 ..	£235.00
Trio KD1033 ..	£51.50
Yamaha YP450 ..	P.O.A.
Yamaha YP511 ..	P.O.A.
Nat Pan SL18 ..	£62.50

**ARMS**

<i>Postage 75p</i>	
SME 3009 Detachable headshell ..	£46.00

**CARTRIDGES**

<i>Postage 50p</i>	
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ST7600 ..	P.O.A.
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CT610 ..	P.O.A.
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Luxman T88V ..	P.O.A.
Luxman T110 ..	P.O.A.
Rogers T75 Mk 2 ..	£89.00

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<i>Carriage £3.00</i>	
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SU7600 ..	P.O.A.
SU3500 ..	P.O.A.
SU8600 ..	P.O.A.
Quad 405 ..	Personal callers only
303 ..	
33 ..	
Lecson AP3+ AC1 ..	P.O.A.
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Lux L100 ..	P.O.A.
Lux C1000 ..	P.O.A.
Lux M4000 ..	P.O.A.
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Sugden C51 ..	£83.50
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**TUNER AMPLIFIERS**

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Technics—Full range ..	P.O.A.
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SX550 ..	£146.75
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TC800GL ..	P.O.A.
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RS610US ..	£92.00
RS630AUS ..	P.O.A.
Teac A170 ..	£136.00
A400 ..	P.O.A.
A420 ..	P.O.A.
A440 ..	P.O.A.
A460 ..	P.O.A.
A650 ..	P.O.A.
PC10 ..	P.O.A.
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 KEF Reference 104 with Stands P.O.A.  
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 Leak 3020 £81.00  
 Leak 3030 £105.00  
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 Akai AP003 and AT11 (Sp. off.) £74.00  
 Akai AP006 £171.00  
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 BSR BDS95 Module ex. Cart. £35.00  
 BSR MP60 Module ex. Cartridge £25.00  
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 Garrard 865B Mk 2 Module and M75-65 new model £65.00  
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 Garrard GT55 Module and M75EDT2 £99.50  
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 JVC JLA45 P.O.A.  
 Leak 3001 £89.00  
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 Micro Seiki DD20 Direct Drive P.O.A.  
 Monitor Audio Direct Drive P.O.A.  
 Monitor Audio ET1000 P.O.A.  
 Philips GA222 £86.50  
 Philips GA312 £162.50  
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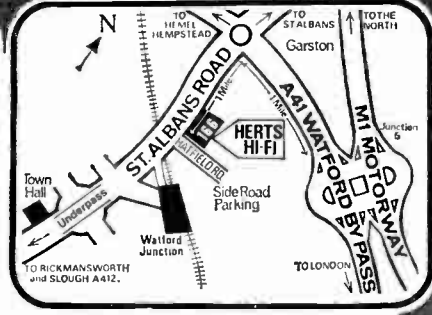
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A survey of scenic programme music compiled by John Crabbe.

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Peter Adamson looks at the 78 rpm disc and suggests how to do it justice with modern equipment.

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A guide to hi-fi brand names.

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Atkinson, Hi-Fi News, April 1976  
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Rogers, Hi-Fi, Ans., August 1973  
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