

hi-fi news & record review



IDENTIFYING MUSICAL SOUNDS

RECORD STORAGE—A SURVEY OF CABINETS

THE CUSTOMER IS ALWAYS RIGHT


MANY MUSICAL AND RECORD FEATURES


STEVENS POWER AMPLIFIER—CONSTRUCTIONAL DETAILS


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 ... when they buy from Imhofs, no matter what part of the world they live in, they can order by post with confidence. For those who cannot visit us, we publish our catalogue "This Year of Hi-Fi" which costs 15p (3/-) post free to residents in the U.K.—but it's free and surface post free to people living overseas. In it you will find not only details of the equipment and services we offer, but also


helpful notes on choosing hi-fi to enable you to make your choice in the comfort of your own home. More detailed information can always be sent on any items of particular interest and the advice of our technical staff or an unbiased opinion is yours for the asking.

 ... if they do live overseas, they can rely on Imhofs guaranteed export service. They can be sure we will arrange safe, swift delivery to any address in the world, that we handle all necessary paperwork so they have no customs or shipping worries and, of course, that all items for abroad are sent free of purchase tax. If they live in Great Britain, then all equipment is delivered free of charge.

 ... when they buy from Imhofs, they know that their equipment is covered by the famous Imhof Guaranteed After Sales Service. This service has won us many friends since, even after the normal guarantee period, we will still undertake to service your equipment. Minor repairs can usually be dealt with at the Service Shop on the second floor here at Imhof House (here too you can have an "IM" stylus fitted while you wait and choose from an extensive range of spares and accessories). For longer jobs there is a special Service Department with skilled engineers to call on you.

 ... they know that if they want a special installation, that Imhofs engineers are fully experienced in installing equipment not only into contemporary cabinets (of which Imhofs have an exclusive range) but also into valuable antique chests, bureaux and commodes. They are also able to install equipment discreetly into homes, offices, clubs, hotels, libraries, restaurants, ships, etc.

 ... they know that at Imhofs they can also buy all their other listening requirements—radios, T.V. (monochrome and colour), radiograms, planned audio systems, Eddystone short wave receivers, etc. That they can choose from a massive selection of records, pre-recorded tapes, cassettes and 8-track cartridges.

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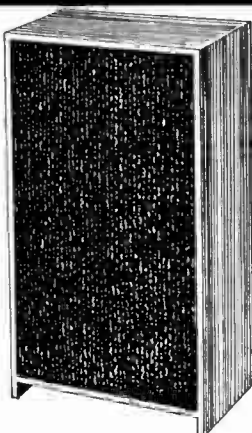
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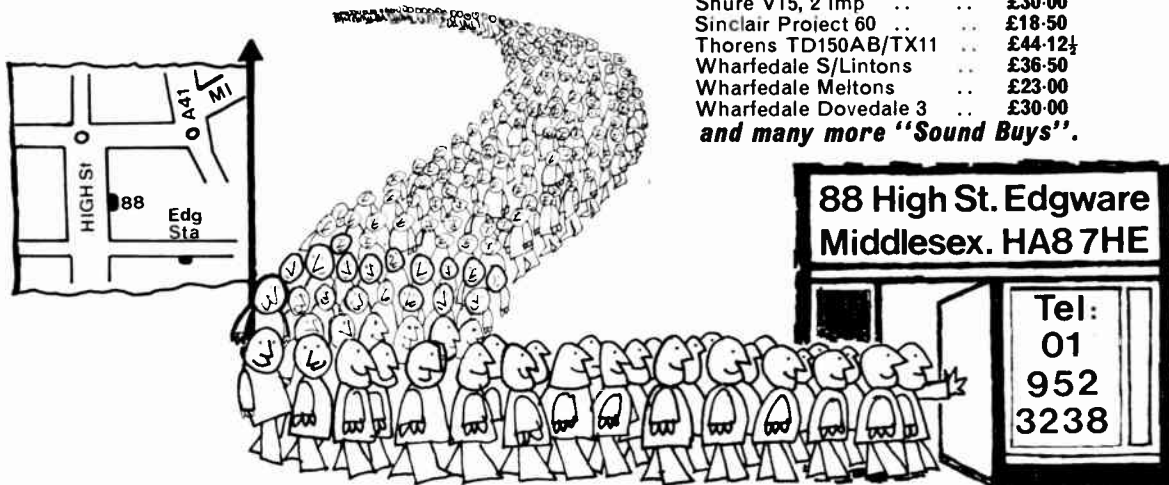
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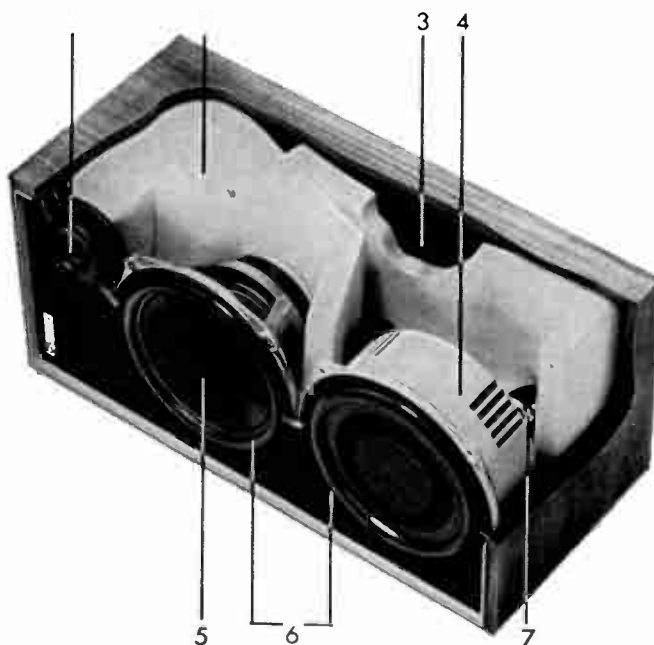
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SW-170 A



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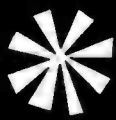
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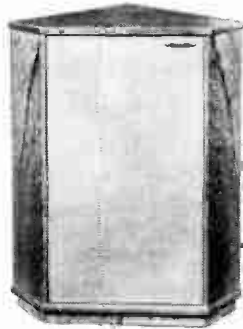
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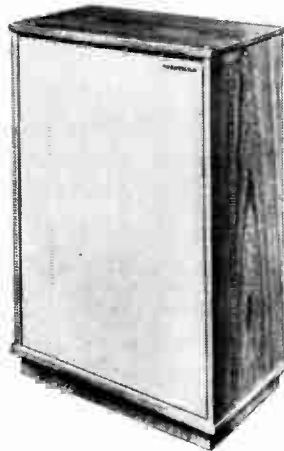
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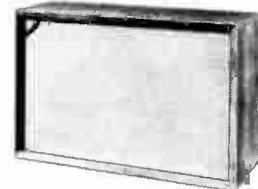
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Ferrograph F307	£59.00
Quad 33 and 303	£98.00
Metrosound ST 20	£36.00

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ARMSTRONG 526 £104.71

£14.71 DOWN and 8 monthly payments of **£11.25** or **£35.59 DOWN** and 12 monthly payments of **£5.76** or 24 of **£2.88**. NO INTEREST CHARGES!

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Sansui 300	£105.00
Sansui 600L	£182.84
Wharfedale 100.1	£135.25
Tandberg SS 1171	£92.75
Trio KR2120	£98.00
Trio KR4140	£139.00
Trio KR6160	£185.00
Nivico 5010	£135.92
Tandberg Huldra 9D	£142.15
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TUNERS

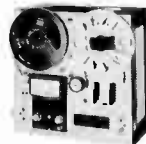


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There isn't one! It's all very simple! For a decade now, we've been giving our Clients unbiased advice, so that they only buy equipment which is specially tailored to their individual—and sometimes very peculiar—needs. As a result, we have a vast number of satisfied clients and an equal number of very good friends. You see, we believe that supplying equipment is only a beginning. If something goes wrong, it must be put right—and quickly. So, although everything you buy will have been tested, to try and jump on teething troubles, a breakdown can still occur and we keep a squad of highly trained Engineers, to look after YOU—the Client—and nobody else. Everything that leaves Studio 99 (bar styli) carries a FULL GUARANTEE, for parts and LABOUR for twelve months and, thereafter, as we still have your interests at heart, we want to go on looking after you, for ever and a day, at COST.

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Simple! A long time ago, we realised that YOU, the Customer, were our best advertisement. That's why over half our new friends have come to us—through recommendation. We also realised, at an early stage of our existence, that, for every £100 of equipment we sold, we made a certain amount of profit. Whether it's good or bad equipment, the profit's the same. But, we won't sell

bad equipment. We can't afford to. Not when we depend for our livelihood on YOUR recommendation and certainly not when we guarantee all our equipment.

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Again, simple. We only sell that equipment which we consider the BEST at each price level. That's why you can buy, with confidence, a complete High Fidelity Stereo system for as little as £80. You can also buy a system for £800. Or for any sum between. The £800 system will last no longer, nor will the £80 system keep breaking down. Certainly, the £800 system will sound better, but that's the only difference. So before you decide, listen. LISTEN to systems at £80, or £100 or £150 or £200 or even £800. But LISTEN. Here, at STUDIO 99, every piece of equipment is ready for demonstration.

WE WANT YOUR EARS TO DECIDE FOR YOU, NOT OUR SALES STAFF. They will discuss the equipment with you, they will advise you, but they will not try and SELL to you. OUR equipment and YOUR ears will do that. You'll be surprised how YOU will hear the difference between a speaker from K.E.F. or from Leak, or Tannoy or Wharfedale or Amplifiers from Quad or B & O, or Trio or Leak. Which is the right cartridge for you? Or turntable? Or tape recorder? Your ears will give you the answer.

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Studio 99 and colour television

Take Colour Television as an example. Several of our old friends asked our advice. We didn't give any glib answers. We kept them waiting till we found the right sets. Colour Television sets where people don't look like Red Indians, and grass really looks like grass. And even then, when we had found the right sets, we didn't sell them. Before that, we made quite sure that we had sufficient trained engineers on our staff to set up and maintain the sets.

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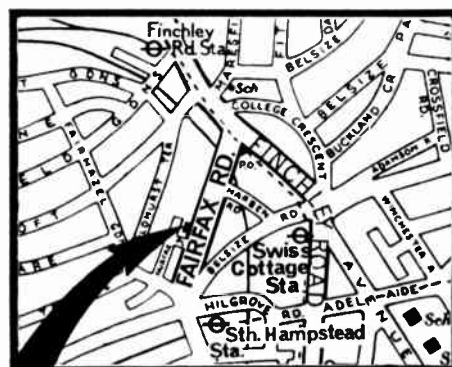
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Radford audio is expensive.

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These amplifiers carry one year's free service and are available only from specialist dealers. Radford has also introduced a range of loudspeakers to the same exacting standards as Radford amplifiers.

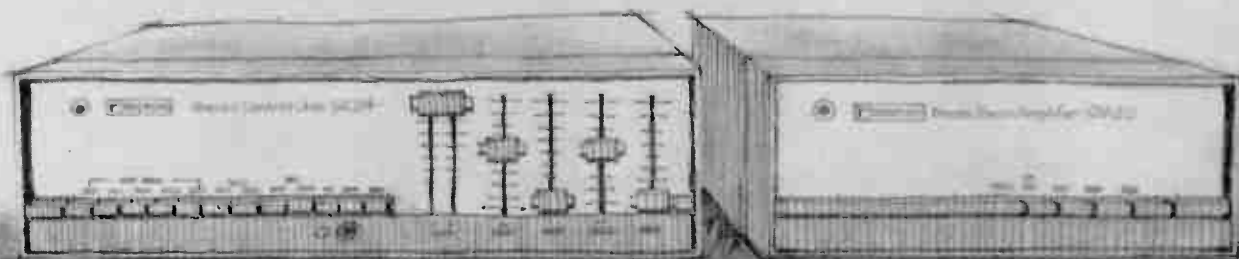
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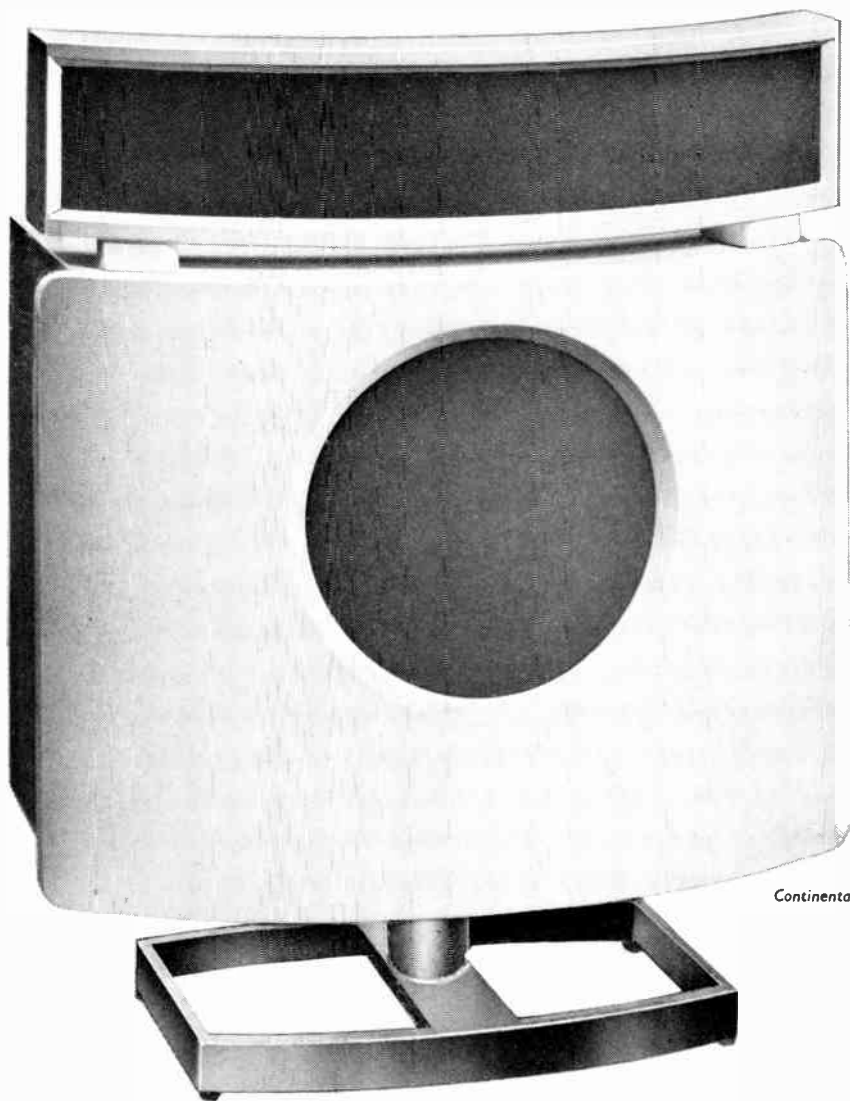
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SPA50
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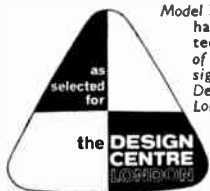


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Small—hardly Bigger than an LP sleeve—but powerful. With a performance seldom achieved by even much larger speakers. Choice of satin white; teak, walnut or rosewood veneer. £32.

Model 70 Continental has been accepted by the Council of Industrial Design for the Design Centre, London.



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- DM1
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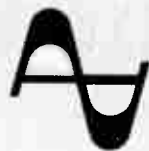
'The overall performance
of the 521 is impeccable
and I could find
no fault' *from Hi-Fi Sound Magazine*



The Armstrong 521 Stereo Amplifier (shown on the left, together with the 524 FM Tuner) has been widely praised in the technical press both in Britain and abroad. The review from which the above is quoted goes on to say '... this example is not unduly costly when one takes into account its extreme flexibility, a genuine high fidelity performance and excellent engineering.' To find out more about the entire Armstrong range of Tuners, Amplifiers and Tuner amplifiers post the coupon below (or write quoting the coupon reference number).

Recommended retail prices	£	s	d
521 Stereo Amplifier	56	0	0
523 AM-FM Tuner	53	15	0
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525 FM Tuner amplifier	91	17	9
526 AM-FM Stereo Tuner amplifier	104	14	3
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Prices include purchase tax where applicable



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Sansui recommends employing the QS-1 in a system with the new 3-motor

4-head SD-7000 stereo tape deck, the 85 watt AU-555A solid state control amplifier (for the front channels), the 40 watt 3-way 3-speaker SP-150 and 25 watt 2-way 2-speaker SP-50 speaker systems, the SR-1050C manual turntable, and either the 90 watt BA-90 or 60 watt BA-60 power amplifier (for the rear channels).

Stop in soon at your nearest authorized Sansui dealer and ask about the system that awed them at Dusseldorf. And get ready for the audio experience of a lifetime.



Sansui



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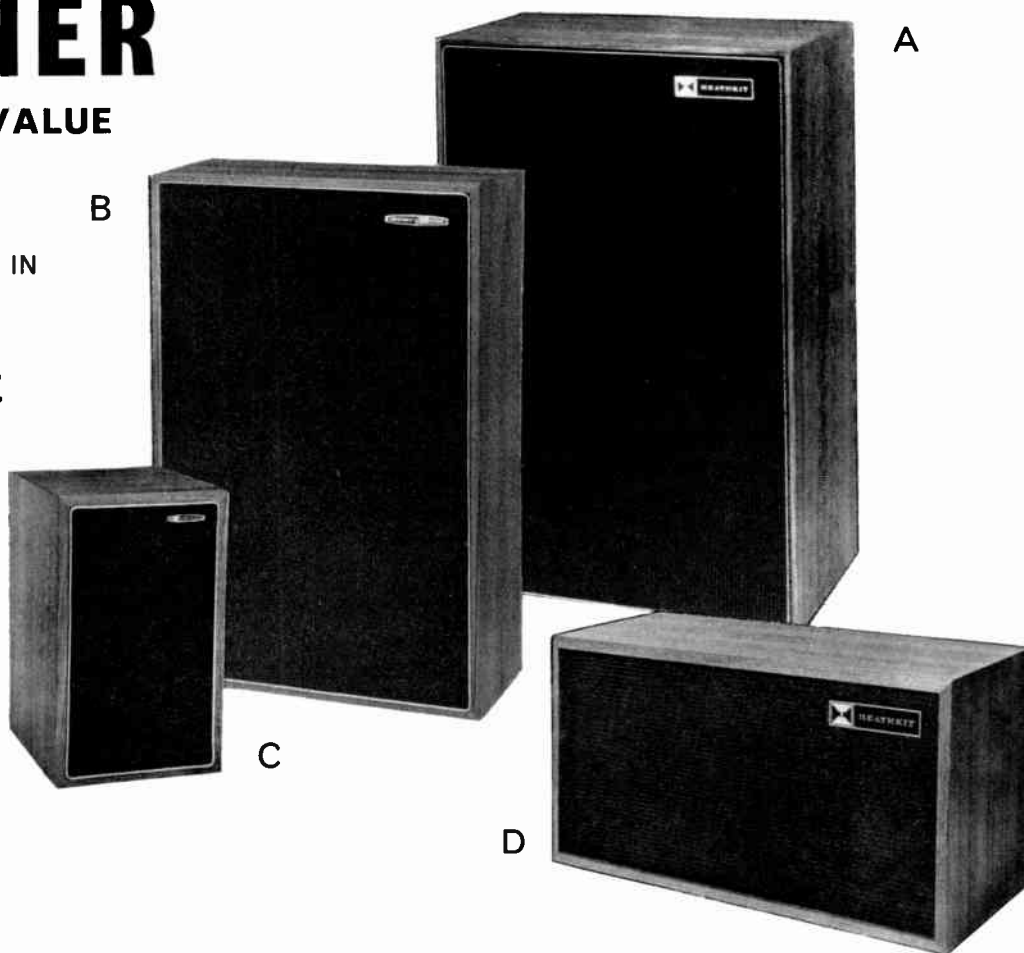
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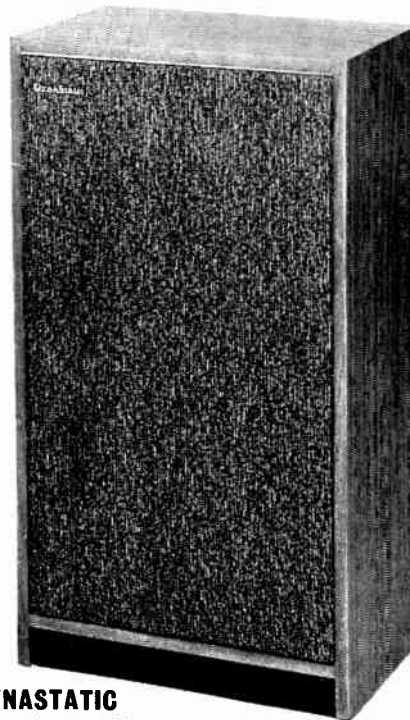
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TANDBERG 4000X

To Farnell-Tandberg Ltd., Farnell House, 81 Kirkstall Rd., Leeds LS3 1HR. Please send me details of all Tandberg products including the Tandberg 4000X recorder

Name.....

Address.....



Stereo, the ultimate test.

Next Sunday ask someone to play the sitar for you. This is Lyn Dobson who used to play with the Soft Machine; he might do it. Note the way the sound hovers in the air, floats, envelopes you. Delicate and elusive. Remember that sound.

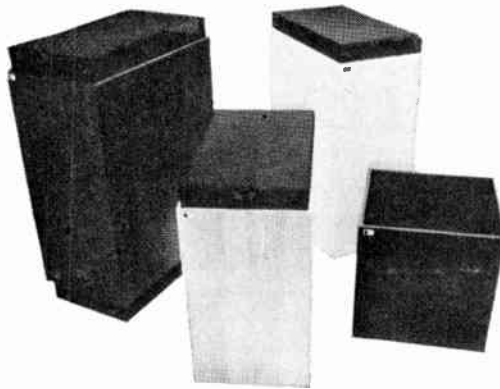
Then play an Indian record on your stereo system. Note the way the sound is channelled at you in two beams. Destroying the ethereal quality. Try to recall the magic of the live performance. There'll be no comparison between the two. The quarter tone scale of Indian music is too much for most systems.

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Unless you've got Sonab speakers. Sonab speakers were created by Stig Carlsson, formerly Professor of Acoustics at the Royal Institute of Technology in Stockholm. After years of research into sound reproduction.

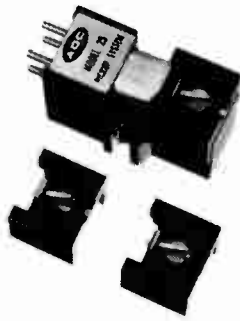
What are Carlsson speakers really like? They fill a whole room with sound. Wherever you sit, however much you move around, you're surrounded with stereo sound. Immersed in it. No other speaker in the world gives you that.

Sonab have been in Britain a very short time. Only a few of the better dealers have our equipment. So telephone or write to us and we'll let you have the name and address of your nearest Sonab stockist. And some literature. SONAB—You've never heard anything like it.



Sonab

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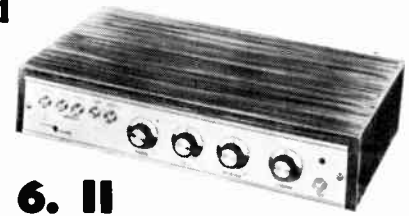


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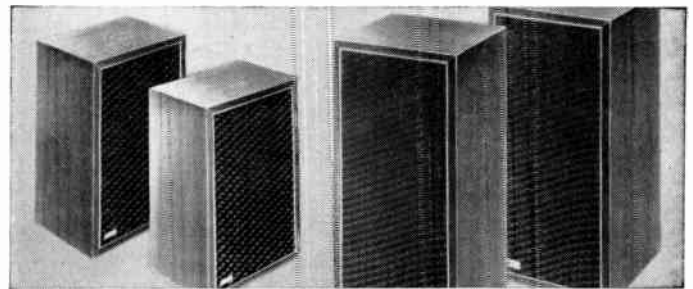


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Metrosound 8-track Stereo Cartridge Players



448 High Fidelity Stereo Tape Cartridge Player

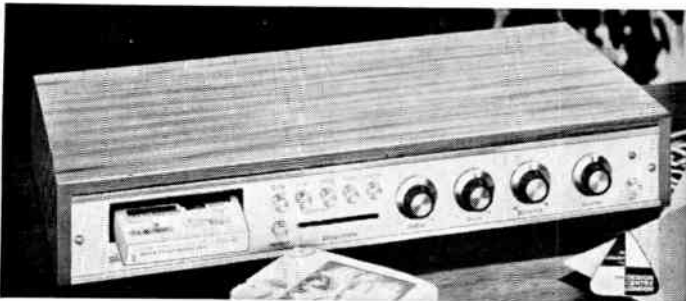
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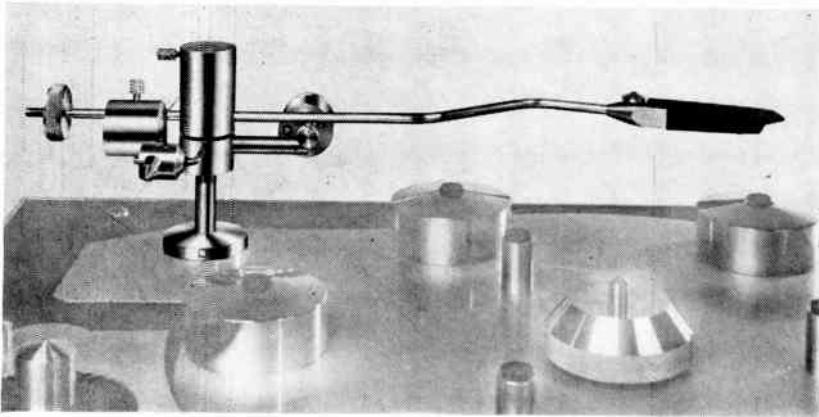
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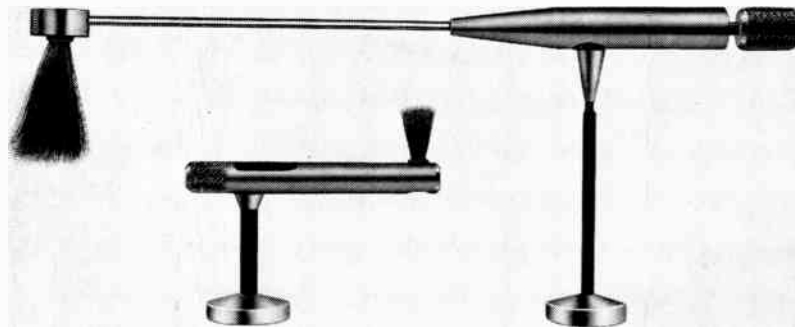


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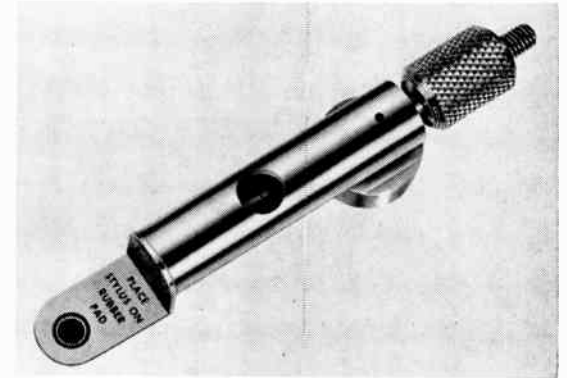
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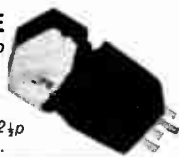
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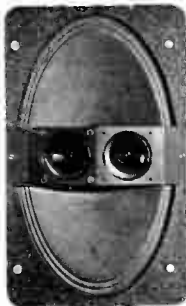
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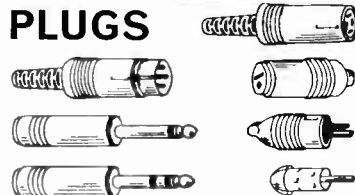
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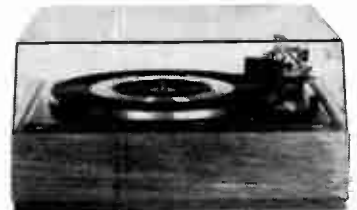
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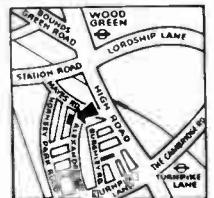
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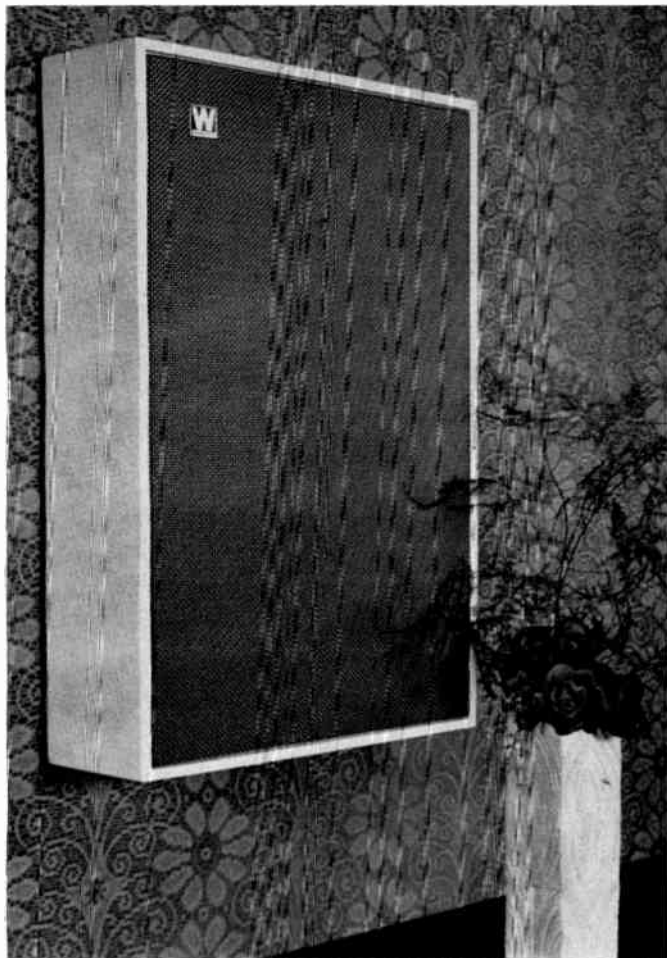
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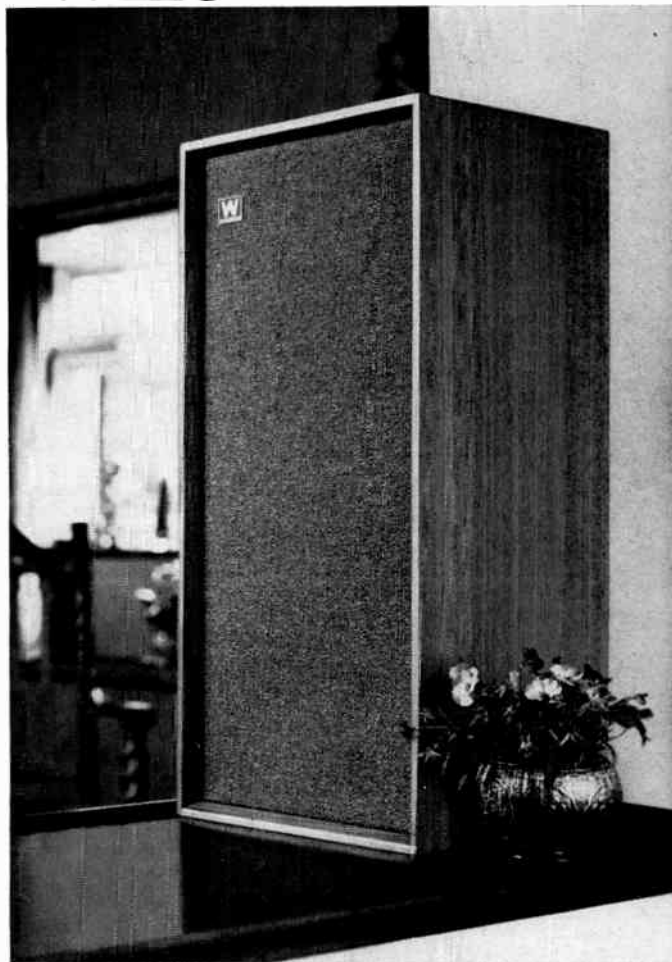
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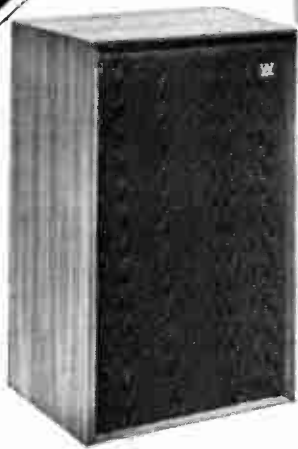
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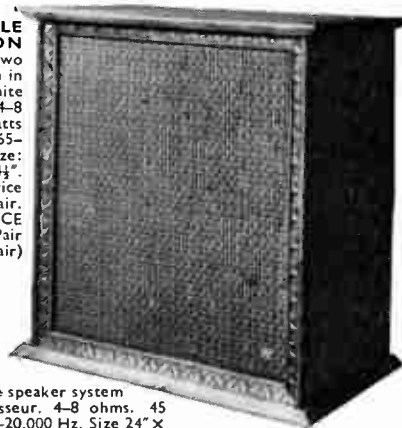
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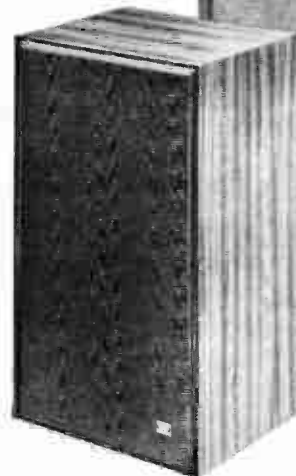


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Offered by Lind-Air Audio, at a special low price—limited number available. The 200 incorporates all of Sansui's sophisticated audio know-how, and Lind-Air Audio make it now possible for you to move up into the world of professional stereo.

Solid state 17 watts (IHF) music power. Fully tuneable over Medium wave and VHF/FM Stereo. Inputs for gram and tape etc. and a wealth of outstanding Sansui features—details on request.

Rec. Retail Price
£89/19/10

LIND-AIR PRICE
£75.12.0

P. & P. 10/-

GREAT NEWS FOR TAPE ENTHUSIASTS!

AKAI STEREO TAPE RECORDERS AT SPECIAL LIND-AIR PRICES

WHARFEDALE DOLBY TAPE CASSETTE MACHINE MODEL DC9.

Adapted by Wharfedale for use with home hi-fi equipment from a similar machine previously used by professional recording studios when recording master tapes. The DC9 operates at 1½ ips, the recording heads have reduced wow and flutter to minimal figures and the high frequency response is now approximately equivalent to that of a 7½ ips reel to reel tape machine.

Lind-Air Price £114.0.0.

Be the first to own one of these revolutionary machines—reserve yours now from the first stock delivery.

Technical details on request.

AKAI 4000 STEREO TAPE RECORDER

2 speeds 3½ & 7½ i.p.s. full stereo recording and play back facilities.

List Price £124.18.0
Carr. & Ins. 35/-

LIND-AIR PRICE
99 gns.

AKAI 1710L STEREO TAPE RECORDER

3 speeds. Output 4 watts per channel. Stereo recording and play back.

List Price £89.
Carr. & Ins. 35/-

LIND-AIR PRICE
69 gns.

AKAI 4000D STEREO TAPE DECK

The ideal stereo tape deck for use with existing hi-fi stereo systems.

List Price £89.19.1
Carr. & Ins. 35/-

LIND-AIR PRICE
69 gns.

GARRARD

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5P25 Mk III with base £16.12.0
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2025 T/C with stereo cartridge £8.19.6

3000 with Sonotone 9TAHCD stereo cartridge £10.19.6

5P25 Mk III £12.19.6

5L65B £15.19.6

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AP76 £19.10.0

SL72B £24.19.6

SL75B £28. 7.0

SL95B £39. 9.0

Base and cover for above £8.19.6

401 £28.10.0

P & P Decks, 12/6. Base & Cover, 10/-.
Deck/Base/Cover, 17/6.

LIND-AIR AUDIO Hi-Fi Catalogue
Covers all leading makes plus accessories etc. and full details of Lind-Air money-saving systems from 39½ gns. Over 100 pages, fully illustrated plus 8-page section of P.A. equipment

5/-
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Full range of accessories available.
 Carriage 7/6 extra each item.



SPECIAL GARRARD OFFER!
 SP25/III fitted Goldring G800 cartridge,
 wooden plinth and cover. Ready wired.
 Total list £35. OUR PRICE £22/10/-.
 Carr. 10/-.

GOLDRING SPECIAL OFFER!
 GL69/2 Deck complete with luxurious
 base, cover and G800 Cartridge. Total
 Rec. List £50/16/- OUR PRICE £39.
 Carr. 20/-.

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LA-324 STEREO AMPLIFIER
 12.5-12.5 watt R.M.S. Mag/Cer/Tuner/
 Tape Inputs. Excellent performance.
 Recommended. List £28. OUR PRICE
 £24. Carr. 7/6.



LA-450 AMP/LT225T AM/FM TUNER
 Complete Stereo Matched pair. 16.5 watt
 R.M.S. per channel. List £92/6/- pr. OUR
 PRICE £72 pr. Carr. 20/-.



LA-85T STEREO AMPLIFIER
 30+30 watts r.m.s. Mag/Cer/Tuner/Tape
 inputs/Tape out. Loudness control/Filter.
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LA-750 STEREO AMPLIFIER
 20+20 watts r.m.s. Mag/Cer/Tuner/Tape
 inputs/Tape out. Loudness control/Filter.
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 Matches LA-750. 4 IC's - 2 FET's 1.7 μ V
 sensitivity. Tape out jack, built in aerials
 etc. List £52/6/- OUR PRICE £45. Carr.
 10/-.



**LR775 AM/FM STEREO TUNER
 AMPLIFIER**
 Latest Model. 25x25 watt R.M.S.
 Excellent FM sensitivity 1.7 μ V. Full range
 of inputs. List £94/10/- OUR PRICE £85.
 Carr. 10/-.

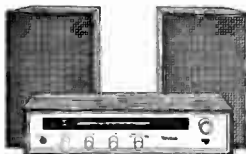
TELETON SPECIAL OFFERS



SAQ203E STEREO AMPLIFIER
 Output 10 watts, Music Power 6 watts
 R.M.S. per channel. Magnetic or ceramic
 inputs. List £28/15/- OUR PRICE
 £19/19/6. Carr. 7/6.
 Also available with Garrard 2025 T/C
 Record Changer, plinth, cover and stereo
 cartridge and a pair of Goodmans 3005
 teak speakers. Total Rec. Price £75/4/8.
 OUR PRICE £51/19/6. Carr. 20/-.



SAQ50IS STEREO AMPLIFIER
 25+25 watts r.m.s. Full range of inputs.
 Scratch and rumble filters. Loudness and
 tape monitor controls. List £52/10/-.
 OUR PRICE £36. Carr. 10/-.



**CR10T AM/FM STEREO TUNER
 AMPLIFIER WITH MATCHING
 PAIR SA1003 SPEAKER SYSTEMS**
 Output 4 watts per channel. Excellent
 reception AFC, built-in MPX. Cer/XTAL
 Input. Total List £50/5/- OUR PRICE
 £29/19/- Carr. 12/6.
 Also available with Garrard 2025T/C
 Record Changer, Plinth, cover and stereo
 cartridge. Ready wired. £45. Carr. 20/-.



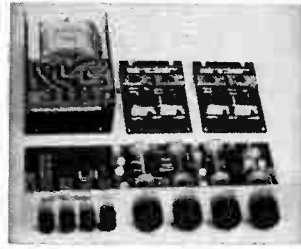
**F.2000 AM/FM STEREO TUNER
 AMPLIFIER**
 Probably the most popular budget Tuner/
 Amp on the market. Now offered at a
 ridiculous low price. 5 watts R.M.S. per
 channel. Tape/Cer phono inputs. AFC/
 Built in MPX. List £51. OUR PRICE
 £32/10/- Carr. 10/-.

Also available with Garrard 2025 T/C
 Record Changer, plinth, cover and stereo
 cartridge and a pair of Goodmans 3005
 teak speakers. Total Rec. Price £97/14/8.
 OUR PRICE £64/10/- Carr. 20/-.

HOSIDEN DH-085 DELUXE STEREO HEADPHONES



Features unique
 mechanical 2 way
 units and fitted ad-
 justable level con-
 trols. 8 ohm imped-
 ance. 20-20,000 cps.
 Complete with
 spring lead and
 stereo jack plug.
 £7/19/6. P/P 2/6.



**SINCLAIR EQUIPMENT
 PROJECT 60 PACKAGE OFFERS**
 2x Z30 amplifier, stereo 60 pre-amp.
 PZ5 power supply. £19/- Carr. 7/6.
 Or with PZ6 power supply £21. Carr. 7/6.
 2x Z50 amplifier, stereo 60 pre-amp.
 PZ8 power supply. £21/10/- Carr. 7/6.
 Transformer for PZ8, 59/6 extra.
 Add to any of the above £4/17/6 for active
 filter unit and £16 for a pair of Qli
 speakers.
 Project 60 FM Tuner, £20/19/6. Carr. 7/6.
 All other Sinclair products in stock.
 2000 Amplifier, £23. Carr. 7/6.
 3000 Amplifier, £36/- Carr. 7/6.
 Neoteric Amplifier, £46. Carr. 7/6.

SINCLAIR PACKAGE DEAL

2000 Amplifier; SP25 ; Plinth and Cover; M3DM Cart. Two Lafayette CR50 Speakers.
 Total Rec. List £91/-/4. OUR PRICE £72/9/- Carr. 30/-.

GOODMANS SPECIAL OFFERS



MAXAMP 30
 Hi-Fi 15x15 watt
 R.M.S. amplifier.
 List £54. OUR
 PRICE £38/19/6.
 Carr. 10/-.



**STEREOMAX
 AM/FM TUNER**
 To match Maxamp
 30. List £82/10/5.
 OUR PRICE £65/19/6
 Carr. 10/-.



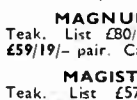
3000 STEREO FM TUNER AMPLIFIER
 List £77/14/7. OUR PRICE £55/19/6.
 Carr. 10/-.



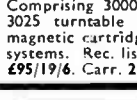
3005 SPEAKERS
 To match 3000 Tuner
 Amp. List £25 pr.
 OUR PRICE
 £16/19/6 pr. Carr. 10/-.



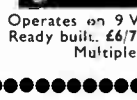
**MEZZO III
 SPEAKERS**
 Teak
 List £61/16/- pr.
 OUR PRICE £46 pr.
 Carr. 20/-.



**MINISTER
 SPEAKERS**
 Teak List
 £44/19/- pair
 OUR PRICE
 £35/18/- pair.
 Carr. 10/-.



MAGNUM-K SPEAKERS
 Teak. List £80/4/- pair. OUR PRICE
 £59/19/- pair. Carr. 20/-.



MAGISTER SPEAKERS
 Teak. List £57 each. OUR PRICE
 £37/19/6 each. Carr. 20/-.



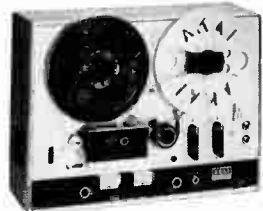
MAMBO SPEAKERS
 Teak. List £44/13/- pair. OUR PRICE
 £32/10/- pair. Carr. 10/-.



300 MUSIC AUDIO SUITE
 Comprising 3000 tuner amplifier, Model
 3025 turntable with plinth, cover and
 magnetic cartridge, pair of 3005 speaker
 systems. Rec. list £140/9/4. OUR PRICE
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F.M. TUNER
 6 Transistor High
 Quality 6" x 4" x
 2 1/2". 3 I.F. stages.
 Double-tuned
 discriminator.
 Ample output to
 feed most amps.
 Operates on 9V battery. 88-108 Mc/s.
 Ready built. £6/7/6 P. & P. 2/6.
 Multiplex Adaptor, 99/6.



**AKAI 4000 D
 STEREO TAPE DECK**
 This superb deck features 3 heads for
 A/B monitoring, Sound on Sound, etc.
 £69/19/6. Carr. 10 -
 4000 Recorder £99/19/6. Carr. 10/-
 1710L Recorder £74/19/6. Carr. 10/-.

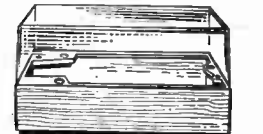
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 G850 £5/2/6. G800 £7/10/- G800E
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 2/6 any type.

PLINTH AND COVERS



FOR GARRARD DECKS—TEAK BASE
 AND PERSPEX COVER

1. For SP25, SL65, SL55, 3000, 2025T/C,
 2025, 1000, £3/19/6.
2. For AP75, SL75, £5/19/6.
3. For SP25, etc. to operate with lid in
 place, £5/19/6.
4. For BSR McDonald range, £3/19/6.
 Carriage 7/6 extra each type.

LEAK SPEAKERS SPECIAL OFFERS!

- SANDWICH 8 ohm. (List £91 pair.)
 Teak £62/10/- pair. Carr. 20/-.
 Walnut £59/19/6 pair. Carr. 20/-.
 MINI-SANDWICH 8 ohm. (List £59/10/-
 pair); Teak £43/10/- pair. Carr. 15/-.
 Walnut £42/10/- pair. Carr. 15/-.

All brand new and fully guaranteed.

G. W. SMITH & Co. (Radio) Ltd.

ALSO SEE OPPOSITE PAGE

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All items brand new in makers cartons and fully guaranteed. Shop personally at any of our three Central West End Shops or order by mail. Carriage & Packing 10/- extra. Arms only 5/-, Cartridges only 2/6.

STEREO AMPLIFIERS		
Armstrong 521	£45	19 6
Arena F212	28	0 0
Cambridge P.40	65	0 0
Cambridge P.50	79	10 0
Dulci 207	17	0 0
Dulci 207M	20	19 0
Ferroglyph F.307	47	0 0
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Leak 30+ Chassis	45	19 6
Leak 30+ Case	50	9 6
Leak 70 Chassis	55	19 6
Leak 70 Case	61	10 0
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Metroound ST20	28	16 0
Nikko TRM30	29	19 6
Nikko TRM40	39	10 0
Nikko TRM50	49	10 0
Nikko TRM120	84	0 0
Pioneer SA500	44	19 6
Pioneer SA700	72	10 0
Pioneer SA900	99	19 6
Pioneer Reverb.	33	19 6
Rogers Ravensbrook II Chassis	38	10 0
Rogers Ravensbrook II Case.	41	10 0
Rogers Ravensbourne Chassis	47	12 0
Rogers Ravensbourne Case	51	5 0
Rotel 100 Amp.	35	10 0
Rotel R4840	61	0 0
Sacon SA.500	24	0 0
Sinclair 2000	23	0 0
Sinclair 3000	36	0 0
Sinclair Neoteric	46	0 0
Sugden ASI/C21	89	10 0
Sugden A21 Mk II	49	10 0
Trio—see opposite page.		
Trio—Full range in stock.		

TUNERS		
Armstrong M8 Decoder	£7	19 6
Arena F211 with Decoder	38	0 0
Armstrong 523 AM/FM	45	10 0
Armstrong 524 FM	35	17 6
Dulci FMT7	20	10 0
Dulci FMT7S Stereo	28	10 0
Goodmans Stereo Max.	65	19 6
Leak Stereofetic Chassis	55	19 6
Leak Stereofetic Case	61	10 0
Nikko FAM 12	58	0 0
Nikko FAM 14	82	10 0
Pioneer TX 500	63	19 6
Pioneer TX 900	124	19 6
Rogers Ravensbrook Chassis	39	19 6
Rogers Ravensbrook Case	42	19 6
Rogers Ravensbourne Chassis	51	19 6
Rogers Ravensbourne Case	56	0 0
Rotel 1205T	39	19 6
Teleton GT101	39	0 0
Trio—Full range in stock		

PICK-UP ARMS		
AD309K with AD76K Mag Cart	£8	19 6
Audio Technica AT-1005	16	5 0
Decca MK I Super Arm	7	2 6
Decca International	21	6 0
Goldring L75	10	7 6
Goldring L69	7	19 6
Neat G.30	9	15 0
Neat G.30B	12	10 0
Ortofon RS.212	25	17 7
SME 3009 II with Shell	27	19 6
SME 3012 II with Shell	29	19 6

STEREO HEADPHONES		
Akai ASE	£7	6 0
Koss K6	10	10 0
Koss PRO4AA	23	16 0
Pioneer SE30	9	9 0
Pioneer SE50	14	19 6
Rotel RH711	7	9 6

COMPACT SYSTEMS		
Decasound 603	£1	0 0
Goodmans 3000 Audio Suite	95	19 6
Metroound 10-10	65	0 0
Teleton 2S60F	56	0 0
Wyndor System	45	0 0

TUNER AMPLIFIERS		
Alpha Arena R500	£71	0 0
Arena T1500F Ceramic MPX	63	0 0
Arena T1500F Magnetic MPX	65	0 0
Arena T2400 MPX	72	10 0
Arena T2500F MPX	87	10 0
Arena T2600 MPX	92	10 0
Arena T2700 MPX	85	0 0
Arena T9000	260	0 0
Armstrong 525 FM	77	10 0
Armstrong 526 AM/FM	87	10 0
Goodmans 3000	55	19 6
Nikko STA301	83	10 0
Nikko STA501	107	10 0
Nikko STA701	119	10 0
Philips RH781	59	0 0
Pioneer KX330	66	19 6
Pioneer SX440	90	19 6
Pioneer LX440	94	19 6
Pioneer SX770	129	19 6
Pioneer SX990	154	19 6
Pioneer SX1500	177	19 6
Rotel No. 130	67	10 0
Rotel FAX 88A	80	0 0
Rotel FAX 330	82	10 0
Rotel FAX 350	104	0 0
Rotel FAX 660	112	10 0
Sansui 2000	145	0 0
Teleton CR10T	25	19 6
Teleton R4200	37	10 0
Teleton F2000	32	10 0
Teleton R4300	42	10 0
Teleton R4300L	45	0 0
Teleton F2300	43	0 0
Teleton TFS50	59	19 6
Teleton 71T1	88	0 0
Teleton 7AT20	88	0 0
Teleton CR55	100	0 0
Teleton IOATI	130	0 0
Wharfedale 100-1	122	10 0
Trio—Full range in stock.		

MAGNETIC CARTRIDGES		
All stereo with diamond		
Teleton NM33	£2	19 6
Orbit NM22	3	15 0
Eagle LCOS	4	7 6
Eagle LCO7	6	2 6
Audio Development AD76K	4	0 0
Audio Development AD96K	5	2 6
B and O SPI	5	10 0
B and O SPI4	6	19 6
Neat V60 MH	7	4 6
Neat V60 MHE	9	16 0
Neat V70	3	19 6
Neat V70E	6	16 0
Goldring G-850	5	2 6
Goldring G-800	7	10 0
Goldring G-800H	7	2 6
Goldring G-800E	11	19 6
Goldring G-800 Super E	16	16 0
Audio Technica AT66 L/C	5	2 6
Audio Technica AT66.5	5	2 6
Audio Technica AT66.7	5	2 6
Audio Technica AT21	7	6 0
Audio Technica AT21.S	7	6 0
Audio Technica AT33	9	7 6
Audio Technica AT21X	13	0 0
Audio Technica AT35	16	10 0
Audio Technica AT35X	20	0 0
Shure M3DM	5	5 0
Shure M-31-E	9	9 0
Shure M-32-E	8	15 0
Shure M-44-5	8	10 0
Shure M-44-7	8	4 6
Shure M-44-C	8	4 6
Shure M-44-E	9	19 6
Shure M-55-E	10	10 0
Shure M-75-E Type 2	16	10 0
Shure M-75-EJ Type 2	15	19 6
Shure M-75-G Type 2	11	19 6
Shure M75MB(6) Type 2	11	19 6
Shure V-15-Type II	30	0 0
Shure M75E-95G Type 2	17	19 6

Send S.A.E. for full discount price list and package deals list. Please send enquiries for any item not listed. Quotations given.

SPEAKER SYSTEMS		
Arena HT.19	£6	19 6
Arena HT.21	9	4 0
Arena HT.14	13	7 6
Arena HT.17	13	7 6
Arena HT.7	16	16 0
Arena HT.10	18	10 0
Arena HT.20	26	10 0
Arena HT.18	30	19 6
Arena HT.26	65	0 0
Arena HT.25	130	0 0
Arena HT.27	13	19 6
Arena HT.28	12	19 6
BW.DM3	53	0 0
Cambridge R.50	87	10 0
Celestion Ditton 10	17	5 0
Celestion Ditton 15	22	10 0
Celestion Ditton 25	46	19 6
Decca Deram pair	29	0 0
Dulci AS3	6	19 6
Dulci AS5	11	10 0
Elac E6S	8	7 6
Goodmans Maxim	15	19 6
Goodmans 3005 (pr.)	16	19 6
Goodmans Mambo (pr.)	32	10 0
Goodmans Mezzo III (pr.)	46	0 0
Goodmans Magnum K (pr.)	59	19 0
Goodmans Minister pair	35	18 0
Goodmans Magister	37	19 6
KEF Cresta	18	5 0
KEF Celeste II	18	5 0
KEF Concerto	34	0 0
KEF Concerto	41	19 6
Keleton KN654/3	7	19 6
Keleton KN824/3	9	9 0
Keleton KN124/3	16	16 0
Lafayette Minuette II	8	5 0
Lafayette CR25	9	19 6
Lafayette CR50	13	10 0
Lafayette CR150	20	0 0
Leak 200 (pr.)	38	19 6
Leak 300 (pr.)	49	19 6
Leak 600	38	10 0
Metroound HSF10 pair	22	10 0
Metroound HSF20	14	16 0
Richard Allan Chacone	16	8 6
Richard Allan Pavane	26	0 0
Rogers Ravensbrook (pr.)	39	10 0
Rogers Ravensbourne	26	10 0
Wharfedale Denton (pr.)	31	10 0
Wharfedale Super Linton (pr.)	41	19 6
Wharfedale Doveedale III	32	10 0
Wharfedale Melton	25	12 6
Wharfedale Rosedale	51	19 6
Wharfedale Aston Pair	41	19 6
Wharfedale Triton Pair	46	19 6

SPEAKER KITS		
Richard Allan Twin Assembly	£8	15 0
Richard Allan Triple Assembly	15	5 0
Richard Allan Super Triple	17	19 6
Wharfedale Unit 3	10	15 0
Wharfedale Unit 4	14	9 6
Wharfedale Unit 5	20	5 0

RECORD DECKS		
B.S.R. McDonald MP60	£10	19 6
B.S.R. McDonald 610	13	19 6
B.S.R. McDonald 510	11	15 0
B.S.R. McDonald 310	9	12 6
Decca de Luxe	16	7 0
Decca Studio Turntable	34	8 10
Garrard—see separate section		
Goldring GL69/2	22	4 0
Goldring GL69P/2	29	14 0
Goldring Plinth 69	6	2 10
Goldring Lid 69	3	10 8
Goldring G.99	20	0 0
Goldring C.99	9	17 6
Goldring GL75	29	19 6
Goldring GL75P	39	19 6
Goldring Plinth 75	7	0 0
Goldring Lid 75	3	8 0
Pioneer PL12AC	39	19 6
Thorens TD150A Mk II	37	0 0
Thorens TD150AB Mk II	40	19 6
Thorens TD125	61	19 6
Thorens TXII Cover	3	13 6

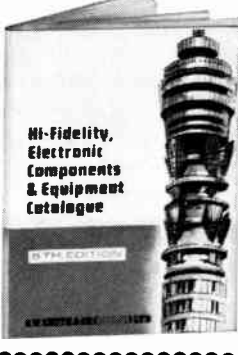
CHASSIS SPEAKERS		
Goodmans 8P	£4	8 0
Goodmans 10P	4	15 9
Goodmans 12P	9	5 6
Goodmans 15P	15	0 0
Goodmans 18P (91/100)	25	10 0
Goodmans Twin Axiom 10	7	10 4
Goodmans Axiette 8	5	19 3
Goodmans Twin Axiette 8	6	14 7
Goodmans Axiom 10	7	0 11
Goodmans Twin Axiom 10	7	10 6
Goodmans Axiom 201	10	1 9
Goodmans Axiom 301	14	5 9
Goodmans Audiom 51	9	2 3
Goodmans Audiom 61	13	4 0
Goodmans Audiom 81	22	4 9
Goodmans Audiom 91	25	4 9
Goodmans Trebax 100	6	0 0
Goodmans Trebax SK/20XL	6	15 0
Goodmans Midax 650	9	0 9
Goodmans XO5000	1	17 2
Goodmans XO950	5	3 4
Goodmans XO950/5000	6	16 4
Goodmans Attenuator	2	9 6
Goodmans ARU 172	3	2 8
Tannoy Monitor Gold 12"	31	0 0
Tannoy Monitor Gold 15"	36	10 0
WB. HF 812	5	2 0
WB. HF 816	8	10 0
WB. HF1012	6	4 0
WB. HF1016	10	5 0
WB. HF1016 Major	13	5 0
WB. HF1214	13	0 0
WB. T816	8	2 6
WB. T10	5	12 6
WB. T359	4	5 0
Wharfedale 8" Bronze RS/DD	4	5 0
Wharfedale Super 8 RS/DD	7	5 0
Wharfedale Super 10 RS/DD	11	15 0

SLOT STEREO		
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Metroound SS30	68	1 2
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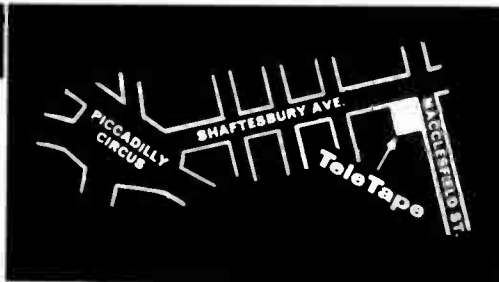
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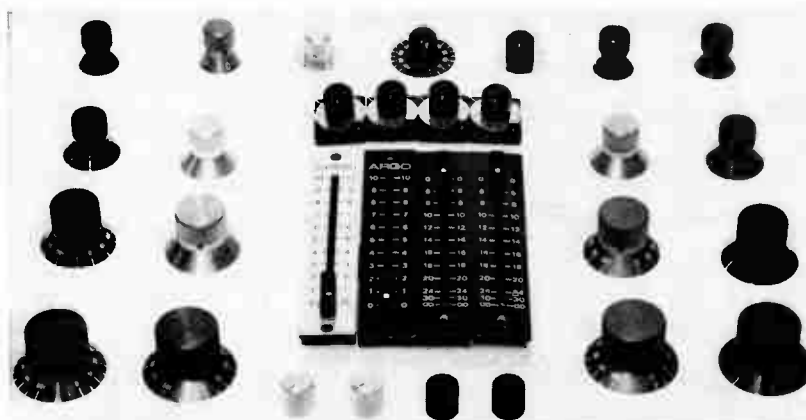
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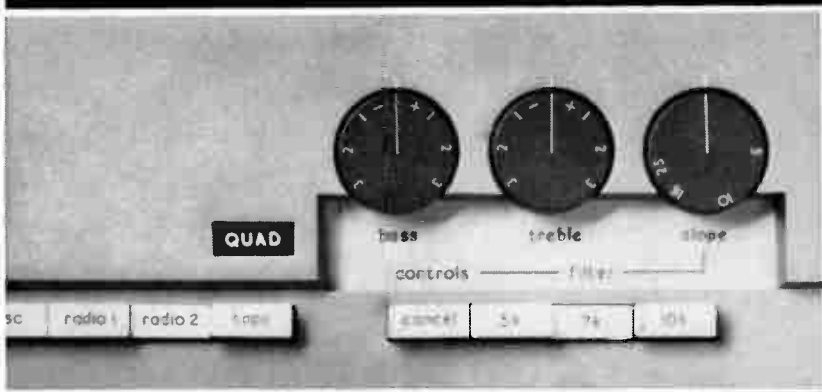
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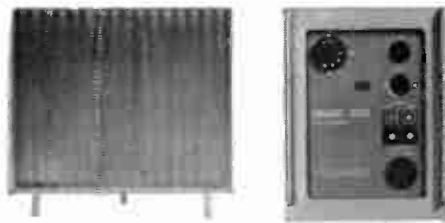
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COVER PICTURE

Relaxed winter evening, large record collection, good hi-fi equipment. What shall he play? The costume drawings in Decca's excellent *Rosenkavalier* booklet are appealing, but so is the cover of Philips' *Trojans* box. What about Vaughan Williams' *Tudor Portraits* from EMI, or perhaps some mandolin music by Vivaldi on a recent WRC release? Whatever the decision, music and technology will surely join hands to good effect, especially as all those discs are correctly stored in two *Hi-Flex* cabinets by Record Housing. This is one of a number of record storage cabinets detailed in a survey on page 288.

TECHNICAL TERMS

Specialised words and abbreviations used in *Hi-Fi News & Record Review* are defined in our *Audio Talk* booklet. Over 1000 terms are explained in this handy publication, and we advise all hi-fi beginners to obtain a copy straight away. *Audio Talk* costs 12½p (inclusive) from Link House.

SUBSCRIPTION RATES

Annual U.K. subscription rate for *HFN/RR* is £2.50 (overseas, £2.65 or \$6.30). The rate for our associated journal *Studio Sound* is £1.80 (overseas £2.10 or \$5.0).

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BINDERS

Loose-leaf binders for annual volumes of *HFN/RR* are available from: *Modern Bookbinders*, Chadwick Street, Blackburn, Lancs.

A POPULAR if controversial feature absorbed into our pages from *Record Review* is the 'Record Rating' scheme. This is popular because many people mistrust meandering reviews which seem never to pass any sort of judgement, preferring compact reports neatly summarised at the end; it is controversial because subjective appraisals do not easily lend themselves to rigorous classification by numbers, letters or stars. Also, busy readers can be tempted by a 'best buy' philosophy, rushing out to order any recording which receives a high score—perhaps without bothering to read the review.

We sympathise with this objection, and if our reviews had the rambling musicological wordiness prevalent in some quarters we would quite understand readers skipping the prattle and jumping to the prognosis. But now that we have settled down and geared our team of critics to an average review length that serves both common-sense and page planning, we think it highly unlikely that many discs will be bought on the strength of a rating alone. And what of those few records which *are* so bought? If a number or letter honestly summarises a critic's findings, then the reader would surely make the same choice if he paused to read the full review. A more informed and thoughtful choice, of course, but hopefully the vast majority of people who buy a magazine like *HFN/RR* prefer to be informed and thoughtful when it comes to building up a record collection.

Few ideas are perfect at birth, and the Record Ratings have undergone several changes since they started in *RR* three years ago. Now, with this issue, we introduce a further and perhaps final rationalisation, details of which are given by Peter Gammond on page 295. Briefly, we have broadened the categories so that: (i) reviewers are not obliged to dither, say, between silly figures like 37½ and 43 because the conductor can be heard grunting at bar 106; and (ii) less than top marks for recording or performance does not signify disaster. Also the new system should be easier to remember, while its broader groupings on the musical side may cause those few 'best buy' stragglers to start reading the full reviews after all!

Another new feature, which crept in last month, unannounced, is *Positive Feedback*, a forum for technical discussion arising from equipment reports, articles, design matters,

and so on. This will be open for contributions by letter from manufacturers whose products have been reviewed recently, from interested engineers with a point to make, or indeed from anyone who feels an urge (preferably a constructive one!) to contribute views or evidence on theoretical or design aspects of high fidelity.

Sometimes it may happen that a current audio fad is so contentious or wrongheaded as to provoke purely critical remarks. One such fad—emanating at present from both the U.S.A. and Europe—is the craze for omnidirectional loudspeakers; or rather, not so much the things themselves as certain claims made for them regarding reproduction of two-channel stereo signals. Last month we published a comment on this from Mr. A. H. M. Hytch, with whom we entirely agree. He stated, in essence, that the aural phenomenon known as 'precedence-effect' ensures that a nominally central sound-source will broaden and shift towards one side for a listener who moves off the line bisecting a pair of speakers.

Any experienced stereo listener is aware of this effect, which can only be overcome by polar radiation patterns giving a lower sound intensity as one moves laterally *nearer* to either speaker. Due to frequency-dependent beaming and other features, there is always some compromise with practical loudspeakers, and it is perfectly legitimate and a matter of personal taste if a listener prefers not to bother either with a 'stereo seat' or with experimental angling of speakers to broaden the usable seating area. If someone likes solo violins or voices which never sound as small as real violins or voices, and whose positions move with their audience, that is his concern.

What is *not* legitimate is the suggestion made in some advertisements that omnidirectional speakers solve this problem. They most emphatically do not. They ensure, not that one will hear proper stereo all over the listening room, but that it won't occur *anywhere*—not even on the bisecting line in most rooms! 'Omnis' may please by exciting local room reverberation and masking some anomalies in multi-miked recordings, but they reduce the spatial information content of stereo signals and put us on the road back towards an undifferentiated 'wedge' of sound that has little to do with real stereophony.

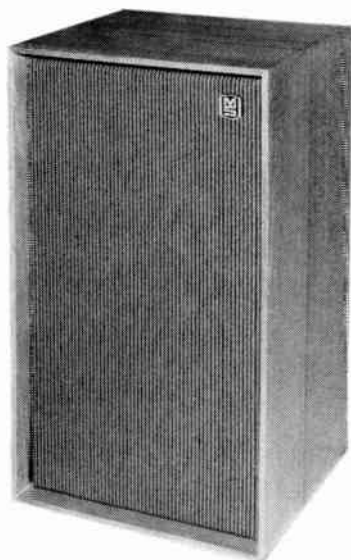
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This advisory service cannot deal with requests for information about manufacturers' products when these details are available from the maker, nor can we accept responsibility for the consequences of any advice given, although every effort is made to ensure accuracy. Letters should be as clear and concise as possible, with queries on separate subjects written on separate sheets of paper, and on no account contain matter for the attention of other departments. Very particularly, please do not send any money unless in response to a specific request from these offices or for purchase of advertised Link House items such as the *Audio Annual* or *Audio Talk*. We regret that technical and editorial queries cannot be answered by telephone.

Articles or suggestions for features on all aspects of high quality sound recording and reproduction will be received sympathetically. Manuscripts should be typed or clearly handwritten and submitted with rough drawings where appropriate. We are happy to advise would-be authors on matters of style, length, etc.

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audio and record news

AUDIO AWARD 1970

IN AN AWARD-RIDDEN WORLD any additional award, particularly one not trying to make itself known with a roll of drums on an international basis, might seem superfluous. Although our AUDIO AWARD has been around for a few years now (it came to HFN/RR with RR), we have never expected its presentation to make the headlines. It is not given, in any case, to the best record or records of the year in the ordinary commercial sense. It is quite simply given as a mark of appreciation for an outstanding achievement in the British recording world. It is given on behalf of our magazine and its reviewers, as a group of professional admirers, and on behalf of such bodies as the Composers' Guild of Great Britain, the Mechanical-Copyright Protection Society, the National Federation of Gramophone Societies, the National Music Council, the Performing Right Society, and the Songwriters Guild of Great Britain—all of whom helped to initiate the award and then left us to administer it.

The emphasis is on the British or British based recording field and participating British artists; also, where feasible, on the promotion of British music—though this last is not an essential consideration. It does, of course, cut out some fine productions from abroad, but these are well taken care of by other award-giving bodies; and it would be pointless to give our kind of award to notable productions that have already received plenty of acclaim in this way.

This year and in future years we are giving one award only and will be giving it, whenever possible, to an individual rather than to a record company as an appreciation of not only a particular record but of a sustained and notable contribution to British recording. On this basis, there was little difficulty in deciding that our award this year would go to NEVILLE MARRINER, partly because the St. Martin's recording of Bartok's *Music for Strings and Divertimento* (Argo ZRG657) was mentioned more than any other in our choice of the year

published last month; partly for other consistently highly-rated recordings on the Argo, Decca and EMI labels; and partly for his constant awareness of the special demands of the art of recording.

AUDIO AWARD 1970—to Neville Marriner for Argo ZRG657 and other recordings, and for his services to the gramophone.

Finally, a list of other recordings that were short-listed by our award panel this year:—Schubert: *Lieder* Vol. 1 (DGG 643547/58); Britten: *The Prodigal Son* (Decca SET438); Britten: *Cello Suites* (Decca SXL6393); Arne: *Thomas and Sally* (Pye GSGC14125); Debussy: *Pelléus et Mélisande* (CBS 72845/7); Schutz: *Resurrection Story* (Argo ZRG639); Meyerbeer: *Les Huguenots* (Decca SET460/3); Vaughan Williams: *Symphony No. 5/Serenade to Music* (HMV ASD2538); Berlioz: *The Trojans* (Philips 6709002/1-5); Monteverdi/Gesualdo: *Motets* (Argo ZRG645).



Neville Marriner

1971 AUDIO ANNUAL

TO BE PUBLISHED on February 12th, this year's *Audio Annual* will carry the usual comprehensive selection of major feature articles, supported by equipment review reprints from *Hi-Fi News & Record Review* and *Studio Sound*.

Michael Gerzon discusses the history and philosophy of quadruphony in *Whither Four Channels?*, while Rex Baldock takes a look at our *Auditory Apparatus*; composer/arranger/educator Tristram Cary conducts a fascinating tour through the developing art of *Electronic Music*; R. V. Leedham discusses the modern techniques used in *Concert Hall Simulation* while from the old-guard backbone of British audio, Stanley Kelly looks ahead in *Cassettes and the Future of Commercial Recording*; and finally, our Music Editor Peter Gammond asks, rather provocatively, *What is Good Recorded Sound?*

Review reprints cover 28 items, including six loudspeakers, four amplifiers, six tape recorders and three pickup cartridges. Also included is a complete index of all other equipment reviewed during 1970 in both our two audio magazines.

Audio Annual '71 may be obtained (after February 12th) from newsagents and book-stalls for 40p (8/-), or post-free from Link House Publications Ltd.

MISSING ADVERTISERS' INDEX

WE APOLOGISE for the omission of an Advertisers' Index from last month's HFN/RR. This was included in the main contents list but had to be left out as production problems arose when later sections of the magazine went to press.

SONEX '71 PROGRESS

HARD ON THE HEELS of last month's news story about the Sonex exhibition planned for 1971,

a meeting of exhibitors was held recently in London to discuss details. It was announced that manufacturers' demonstrations would be supplemented by lectures, film shows and other supporting attractions, that the catalogue would be in the form of a programme/guide rather than a massive book—and would be free, and that in addition to being available through the normal trade channels, entrance tickets will be given away free with the April issue of *Hi-Fi News & Record Review*. This preview issue will be published on Saturday 27th March, four days before the show's opening on 31st March. Sonex '71 will run until Sunday 4th April at the Skyway Hotel near London Airport (as last year), the first two days being for trade visitors only. More details in later issues.

CONTENTS AND REVIEW INDEX

SOME NEW READERS, particularly those who came with the *Record Review* transfer, have commented on the difficulty of finding the record review section in HFN/RR, particularly the REVIEW INDEX. We appreciate the point, but would draw readers' attention to the general CONTENTS LIST which always appears conveniently inside our front cover—just lift the cover and there it is. Regular items are always listed in the same order here, so that one soon becomes accustomed to finding favourite features. Very particularly, the record review index is the top right-hand entry on the contents page, so that any reader wishing to go straight to the reviews can be there in a couple of seconds.

We apologise for the length of our contents list, but we believe in offering readers plenty of substance and variety for their money.

RECORD RATINGS

AMONG THE IDEAS taken over from *Record Review* is the 'Record Rating' scheme. This has been rearranged slightly in this issue, details to be found on page 295 and some more general comment in the Editorial on page 245.

AMBIOPHONY IN SURREY

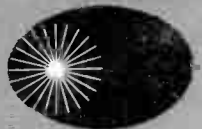
ABOUT THREE DOZEN audiophiles gathered for a replay of ambiophonic recordings at the University of Surrey on November 29th. The object—to listen to similar material recorded and reproduced by quadruphonic techniques of both the tetrahedral and 'lateral' variety, to assess the extent to which additional spatial information enhances listening enjoyment, and to gain some experience of the problems involved.

The playback facilities comprised a TRD 4-track $\frac{1}{4}$ in. recorder, loaned by Bob Willford, a Crown 4-track $\frac{1}{4}$ in. recorder and amplifiers, lent by Ian Marshall of Carston Electronics, Ravensbourne amplifiers, contributed by Jim Rogers, and KEF Concorde and Concerto speakers, provided by Raymond Cooke.

The material played included excerpts from *The Messiah*, recorded in the Alexandra Palace



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World Radio History

using tetraphonic microphones (see HFN, August 1970, p. 1117). This was followed by parts of a church service, an organ voluntary and a folk group, recorded partly tetraphonically and partly laterally, using six microphones, of which the rear four were switched to give the required pattern. During playback four rear speakers were similarly switched, using tonebursts added to the tape as cues. All these recordings, made by Sid O'Connell, Granville Cooper and Bob Woolford, contained appreciable vertical information, both from the general ambience, and also from defined sources such as the sparrows in the A.P. and the church organ in its rear gallery. Also heard were a few samples of the commercial $\frac{1}{4}$ in. 4-track Vanguard tapes issued in the U.S.A., which are in lateral quadraphony.

The playback was followed by a discussion, centred mainly round the interaction between the recording and replay acoustics. Most hearers agreed that the impossible was being attempted (just as with ordinary stereo!), but that the results were very worthwhile in terms of the added listening pleasure—amounting to excitement at times. There was no clear-cut preference for either system, and it was clear that much spadework remained before a proper comparison could be made. The Vanguard tapes also had a mixed reception. 'Impressive' was one comment, and 'Why is Joan Baez forty feet away from her guitar?' was another. It is hoped that a further session will be arranged when some of the suggestions arising from this get-together have been explored.

TETRAHEDRAL QUADRAPHONY

RELATING TO the above piece, and to follow up our news item on four-channel terminology published in December (p. 1885), we have recently come across some confusion of terms in relation to tetrahedral recording and replay techniques. The expressions 'tetrahedral recording' or 'tetraphony' have been used in some quarters as if quite distinct from quadraphony. We regard the latter as a generic term covering all forms of four-channel operation, whether 'lateral' (microphones and/or speakers in the same plane) or tetrahedral (a solid triangle to encompass the height element). We propose to maintain this usage, and will thus regard a four-channel tetraphonic recording as a particular type of quadraphonic recording—an etymological sub-species rather than a mutant!

IMPROVING STEREO RECEPTION

CROSSOVER'S REPLY to A.W.B. of Stratford-on-Avon as printed on page 147 of our January number, might possibly mislead Gloucester and Cheltenham readers into believing that Churchdown Hill relays acceptable Radio 3 stereo signals locally. In fact this is one of several stations which does *not* put out what the BBC regard as an acceptable retransmission of such broadcasts, although it will cause stereo indicator lamps to light when receivers are tuned to the Radio 3 frequency, in this instance 91.2 MHz.

Despite this minor possible confusion, readers needing general guidance on reception matters, whether mono or stereo, local or distant, may find it worthwhile to take advantage of the 'Crossover' service which, on occasion, has been able to provide a more comprehensive reply than either the BBC or a local dealer. Tape recordings are very helpful

to us in assessing noise or other interference problems. Details of how to write to 'Crossover' are given at the bottom of page 245.

NEXT AUDIO FAIR

THIS YEAR'S International Audio Fair will again be held at Olympia—Dates are Tuesday, 26th October to Saturday, 30th October, with a trade and press preview on October 25th.

SURROUND SOUND—MISSING CIRCUIT

WE APOLOGISE to readers of I. J. Kampel's article *Living with Surround Sound* (page 58 last month) for omission of Fig. 10. We had intended to remove the reference to this illustration and modify the text accordingly, as the point made was fairly simple.

If the buffer amplifier is to derive its power from the positive HT line in an existing device (a supply voltage in excess of 11 V is needed), a series resistor (R_x) must be connected between the two rails, and a decoupling capacitor (C_x) in parallel across the buffer end of the supply.

To calculate R_x , take the voltage difference

between 9 V and the external supply and divide this figure by 2.6 to give the approximate value in $K\Omega$. Then divide the value of R_x (in $K\Omega$) into 100 to give the minimum permissible value of C_x in μF .

MONITORING ROOM DESIGN

SECOND OF a series of lectures organised by the new AES British section (see p. 1881, December, for background details) will be by Kenneth Shearer on *Acoustic Design of Monitoring Rooms*. Mr. Shearer is the man responsible for the highly successful conversion of the Royal Albert Hall acoustics. This talk will take place at 7.15 p.m. on Tuesday, 9th February, at the Mechanical Engineering Department, Imperial College, Exhibition Road, London, S.W.7. The meeting is open only to AES members, though non-members may obtain an invitation to attend by writing to: *The Secretary, Audio Engineering Society, British Section, 10 Museum Street, London, W.C.1.* Details of membership may also be obtained from the same address.



VITAVOX STILL WITH US

WE APOLOGISE to Messrs. *Vitavox Ltd* for a misleading remark in Mr. Bramham's article *The Good Old Days* published last month. He implied that Vitavox were no longer producing loudspeakers and we failed to notice the error when preparing the piece. In fact the firm produces several models, all listed in the current *Hi-Fi Year Book*, in addition to manufacturing a great deal of professional audio gear—for which they are renowned.

STAX IN BRITAIN

WILMEX LTD. (Stax division), of 24 Ensign Street, London E.1. (01-949 2545), is now handling distribution of *Stax* electrostatic headsets and other audio products. Stockist list and prices on request.

DOLBY 'B' AT THE BKSTS

A LARGE AUDIENCE, including some notable names such as Scroggie, Walker and Williamson, assembled at the World-Wide Films Theatre on December 16th, to hear Dr. Ray Dolby present the first UK lecture on his type 'B' noise reduction system. With demonstrations under the control of David Robinson, he gave a comprehensive account of noise reduction principles, including techniques designed to take advantage of hearing threshold and

masking phenomena, and also outlining some of the schemes used prior to the advent of the Dolby 'A' system in 1966.

Dr. Dolby then illustrated how the 'B' system operates only in the audio spectrum above 1.5 kHz, utilising both fixed and programme controlled filter frequencies. Graphs were also shown of the dynamic characteristics, and permissible processing and playback tolerances were discussed. Demonstrations were then given of the noise reduction achievable, via KEF BBC-type monitor loudspeakers, the signal source being a high quality tape machine and Professional 'A' music recordings. In all cases the noise reduction obtained was very noticeable, but the programme examples used varied considerably in original quality, making it difficult to assess whether the system may introduce any audible anomalies. However, using the 'B' system with a suitable cassette recorder—commercially available for the 'B' characteristic tapes now on sale—immediately showed that its noise performance was lifted from the 'ordinary' to 'hi-fi' bracket, without any noticeable disadvantages.

The following question period was both lively and extremely searching, but Dr. Dolby answered everything with clarity, competence and candour. It was revealed that a system for

Try mixing it with the Sony TC-366... Sony's new 4-track, 2-channel tape deck for stereo/mono recording and playback.

Superb finish on the outside and SONY expertise on the inside – this model is for the enthusiast who knows what he's doing: allows simultaneous mixing from two separate microphone and auxiliary recording controls, and there's a professional three-head system for tape/source monitoring. When

the tape breaks or ends, a mechanical shut off device will automatically stop the tape and return the lever to neutral position.

Model TC-366 – for the man who is something more than an enthusiast.

Recommended retail price £110.0.0

SPECIFICATION

System 4-track stereo/mono recording and playback.

Power requirements AC 100, 110, 117, 125, 220 or 240 V, 50 or 60 Hz.

Power consumption AC 30 watts.

Tape speed $7\frac{1}{2}$ ips (19 cm/s), $3\frac{3}{4}$ ips (9.5 cm/s), $1\frac{7}{8}$ ips (4.8 cm/s).

Reel capacity 7 in. (18 cm) or smaller.

Frequency response 20 – 25,000 Hz at $7\frac{1}{2}$ ips; 30 – 20,000 Hz \pm 3 dB at $7\frac{1}{2}$ ips; 30 – 17,000 Hz at $3\frac{3}{4}$ ips; 30 – 9,000 Hz at $1\frac{7}{8}$ ips.

Signal-to-noise ratio Better than 52 dB (normal), 55 dB (SLH).

Wow and flutter Less than 0.09% at $7\frac{1}{2}$ ips; less than 0.17% at $3\frac{3}{4}$ ips.

Harmonic distortion Less than 1.2% at normal recording level.

Level indication Two VU meters.

Fast forward and rewind time Within 1 min, 40 sec (1,200 ft. tape).

Inputs Microphone input, sensitivity -72 dB (0.19 mV), impedance 600 ohms, auxiliary input, sensitivity -22 dB (0.06 V), impedance approx. 100k ohms.

Outputs Line output, output level (0.775 V), impedance 100k ohms, headphone impedance 8 ohms.

Dimensions $16\frac{7}{8}$ in. (w) x $8\frac{5}{8}$ in. (h) x $14\frac{1}{8}$ in. (d).

Weight 22 lb. 8 oz.

Accessories Empty reel R-7A, connecting cord RK-74 (2), head cleaning ribbon, reel caps, dust protector, non-skid pad (1 set), motor pulley, "SLH" sample tape.

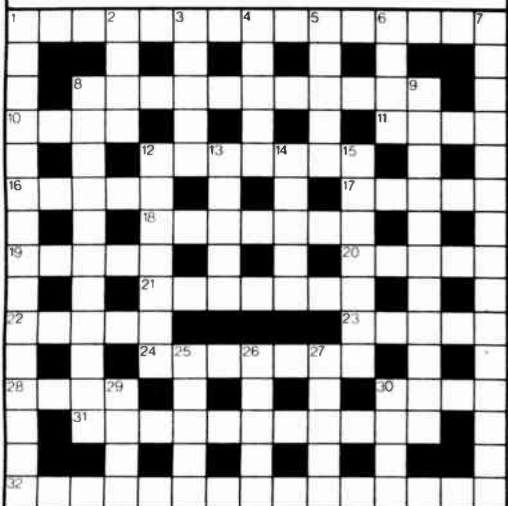
Recommended optional accessories Telephone pick-up TP-4S, microphone ECM-21, F98 or equivalent (600 ohms), stereo headphone DR-4A, DR-5A, microphone mixer MX-6S, rec/PB connector cable RC-2, magnetic connecting cord RK-66.



SONY
RESEARCH MAKES THE DIFFERENCE

SONY (U.K.) LTD
Pyrene House,
Sunbury Cross,
Sunbury-on-Thames, Middlesex

MUSICAL CROSSWORD



devised by
bryan corrie

ACROSS

- 1 Her first husband was one Glavari. (3, 7, 5)
- 8 Could be a rather positive sort of chaser moving between notes. (11)
- 10 His fiancée threw herself off a cliff in one of Dick's epics. (4)
- 11 Beethoven's precondition for Op. 129. (4)
- 12 It does, you know, especially for this antipodean baritone. (7)
- 16 Choreographic racial prejudice? (5)
- 17 Is the third white note rather quiet for this accompanist? (5)
- 18 No, not the ray man, but this Dutchman did know Brahms, Liszt and Grieg. (7)
- 19 Francesco Zecchiale Ermenegildo Cavaliere (with Demelli at the far end if you are really fussy!). (5)
- 20 An ancient city turns a fool into a Rossinian prince. (5)
- 21 Flautist who has appeared in quite a lot of recordings—a nice lot, and varied too. (7)
- 22 In Paris, he made the first part of 8 down. (5)
- 23 Part of anatomy replaces these in the brass section. (5)
- 24 Refer to Helmholtz if you wish to design one of these simple instruments. (7)
- 28 No doubt Berlioz pronounced it like this, but either way the character didn't appear in his Shakespearianised Virgil. (4)
- 30 Sometimes exists physically, sometimes only in the mind, frequently given with a stick. (4)
- 31 Died when J.S.B. was still in the womb, but rose (linked by a small printer's measure) to a grinding stone. (11)
- 32 Hew David Stewart Powell solves this particular puzzling fourteenth. (6, 9)

DOWN

- 1 The one written by 4 down will do. (15)
- 2 Papa often had one of these, but that in Op. 64 is more onomatopoeic than most (and VW made it go up!). (4)
- 3 Somewhat inaccurately, I sang Cowen's opera. (5)
- 4 This French composer sounds very English after the first person singular. (5)
- 5 He arranged Wagner's Meistersinger for piano, but otherwise is found among the lesser musical lights. (5)
- 6 Yaroslava's husband. (4)
- 7 I'e'n taxi to Proms—an improvised arrangement. (15)
- 8 He's human (not necessarily a softie), but reverse the words and it's a machine. (5, 6)
- 9 You name the day, and Beethoven has the work—but it wasn't performed until the next year. (11)
- 12 In dying the end's there and finally—nothing. (7)
- 13 Whether you have a B.Mus. or an M.B., this will come into your first major degree. (5)
- 14 Don't make it plural, or you may get mixed up with Karl Marx. Actually, this was his pianist contemporary and he was Carl. (5)
- 15 To be frank, there's evil at the art gallery. (7)
- 25 Inventor of a machine for 7 down, so we are led to believe. (5)
- 26 The right spirit leads to a degree for this dance. (5)
- 27 Leave off that ubiquitous middle note from 17 across and you have the first half of a famous ice cream. (5)
- 29 A modern Italian composer? Apparently not! (4)
- 30 Leading 19th century concert organist with a name to match. (4)

A £2 record token will be awarded for each of the first three correct solutions picked from those which have arrived by February 3rd.

AUDIO & RECORD NEWS *cont.*

disc noise reduction was being investigated, but because it required both LF and HF operation it would radically differ from both the 'A' and 'B' systems if it was to be commercially useful; the 'B' system adoption raises the price of a good quality cassette player by around £20.

A comparative demonstration of the S/N performance obtainable from iron oxide and chromic dioxide tape, showed that the latter was about 2 dB better because of the higher magnetisation permissible and improved by a subjectively more favourable spectrum. These low-noise results prompted the chairman, H. D. Harwood of BBC Research Dept., to ask Dr. Dolby finally whether his systems might one day be superfluous, but he replied that he was confident that most users would continue to exchange noise performance for more recording tracks (e.g. 16 tracks give 12 dB worse S/N individually than one of their aggregate width), using his systems to quieten them to the required degree!

DEVELOPMENTS AT POLYDOR

FROM EARLY this year Polydor are handling the *MGM-Verve* and *Stax* labels, having signed contracts with a number of groups. They will also be introducing a new range of LPs under the *Select* name at £1.99, including 'easy

listening' and film theme material. Price cuts feature in the new year's plans as well, with reductions on many multi-record pop sets; but top-price cassettes and LPs as well as pop singles will be increased. A new mid-price cassette—retailing at £1.75—is announced, however, catering for the pop repertoire and softening the blow a little. Dealer mark-ups on cassettes are also increased.

IETE LECTURES

TWO LECTURES on audio and related subjects are being sponsored by the Institution of Electrical and Electronics Technician Engineers during February. The first on the 8th at 7.30 is by G. Nathan of Decca, at Crosfields in Warrington on *Records Past and Present*; and the second on the 17th on *Modern Trends in Hi-Fi* by M. M. Tiley of Wharfedale is at the Cleveland Scientific Institute, Middlesbrough, at 6.30. Anyone interested in attending should contact the local branch secretary of the IETE or the secretary of the IETE, 2 Savoy Hill, London WC2R OBS.

GET STONED

'AT LAST Electro Harmonix has developed a device that can literally get you stoned electronically. This revolutionary accessory, the STEREO PULSE MODULATOR, can be conveniently attached to any stereo system, be it components, console or a compact set.

Two pulses of existing music are continuously regenerated per channel, each with a

separately adjustable speed and volume control. It is the mix of these four pulses with their intermittent beat frequencies that will give you a new high or reinforce the one you already have.

'The master volume control aids in balancing stereo pulse pairs with your existing music.

'Every object and sub-object has a *resonant frequency*. The high achieved by the STEREO PULSE MODULATOR is a result of tuning in to your own resonant frequency.

'... We absolutely guarantee you'll get stoned using the STEREO PULSE MODULATOR. Buy it and try it.'

Quote from an advertisement for the latest in \$50.00 accessories available in the States. Sub-objects of the world unite, you have nothing to lose but your money.

RECORD NUMBERS

ALTHOUGH GREAT care is taken in the preparation of the record review headings, we regret that errors occasionally occur. Consequently readers are recommended to order records from reviews by quoting the number *and* the title, artist or works. Normally shops will assist in confirming this information.

A case in point: we learn that the record *Marching with the RAF* reviewed in December, was given the number CSD 3678. This should be CSD 3679, and we apologise to one Kingston reader who unwittingly purchased one of the Great Cathedral Organ series—and for W. H. Smith who refused to change it.

part 2

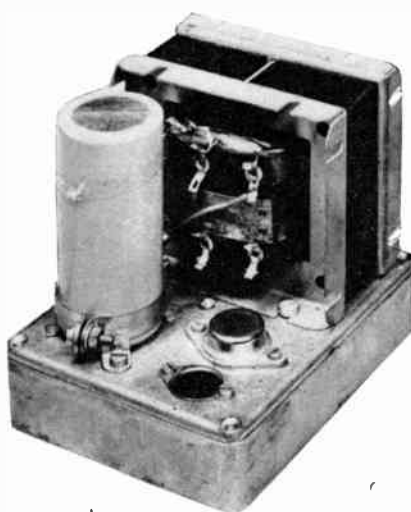
A Low Distortion Power Amplifier

Circuitry & Constructional Details

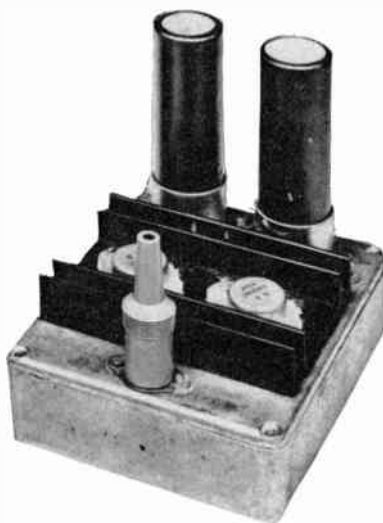
IN December the desirable features of a high-quality amplifier were examined, and a general specification evolved in the light of current circuits and improvements that may be expected in the course of time. This month circuit diagrams for an amplifier and power supply will be given together with constructional details. However, before each circuit is described in detail, the interface between power supply and amplifier, and amplifier and speaker needs some explanation.

Consider the output coupling circuit shown in fig. 1(a). The output of the common emitters is taken to the supplies via a coupling capacitor C and the speaker R_L . The power supply may be represented by a battery supplying a voltage V_{CC} , and an AC generator simulating ripple and hum voltages V_R present on the supply rail, as shown to the right of the dotted line. Then, assuming TRs A and B are a complementary pair (actual or simulated), half the rail voltage, i.e. $V_{CC} + V_R/2$ will appear at the output, and, assuming the reactance of the coupling capacitor C is negligible, half of the supply ripple-voltage must appear across the speaker terminals. Even with a stabilised supply ripple-voltage of 1 mV RMS this would give rise to a signal-to-noise ratio of only 92 dB (15Ω load ref. 30 W) which would be further degraded by hum or noise introduced by earlier stages. In fig. 1(b) the output capacitor is split into two forming a potential divider for the ripple voltage. Provided TRs A and B and C1, C2 form a perfect bridge, no ripple voltage will appear across the speaker terminals. In practice, perfect balance will not occur. Nevertheless, hum voltages will be greatly reduced.

This bridge effect also greatly reduces the voltage surge on the speaker that often occurs when an amplifier is switched on. If this circuit is used then the speaker sits at a DC



Power supply



Single channel amplifier

BY G. A. STEVENS*

* Solartron Laboratories

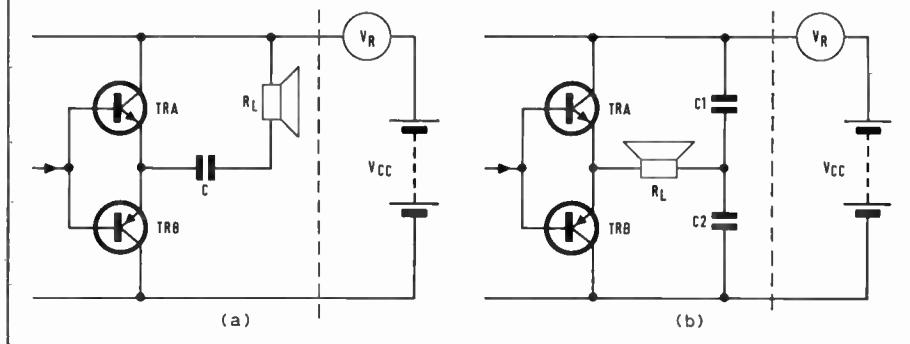
potential half way between the supply rails; for several reasons it is preferable to have one side of the speaker earthed, and this requirement dictates a balanced power supply, since a twin stabilised supply would be prohibitively expensive. However, the amplifier has a large amount of feedback controlling it. Its gain is very well defined and will not vary greatly, so the DC level of its output can be set by applying a pre-set offset voltage between its input terminals, as shown in fig. 2.

In practice the input differential is applied between the base and emitter terminals of TR1; there is a standing potential of 0.7 V between them anyway, so VR1 needs only to supply a negative potential centered about 0.7 V. The voltage across VR1 is stabilised to about 1.2 by two forward biased diodes D7 and D8 whose temperature coefficient also tracks TR1.

Another advantage of this scheme, not immediately apparent, is that the feedback is sampled across the load only, instead of the coupling capacitor as well. This means that the I.F. response is extended by the feedback and the cut-off of 1.5 Hz is determined solely by the input time constant R1, C1. The junction of C9, C10 is held at earth potential and the signal current flowing into these components at low frequencies causes the voltage across them to vary. This causes both voltage rails to fluctuate at LF, but the only practical effect is to reduce the voltage swing available at frequencies below about 10 Hz or so at the rate of 6 dB/octave. At those frequencies full output should not be required in any case. Having covered the interfaces, the circuits can now be dealt with in detail.

The amplifier is run between balanced supply rails of ± 35 V so allowing for a full 60 V peak-to-peak output swing for 30 W into 15Ω (in practice a power of 34 W is attainable before clipping occurs). The input signal is applied

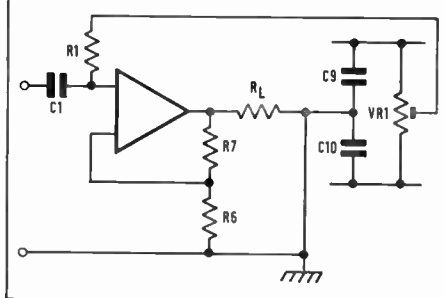
FIG. 1 BASIC OUTPUT STAGE CONFIGURATIONS



to the base of a *p-n-p* transistor (TR1) via an isolating capacitor C1. The base of TR1 is maintained at a potential of about -0.65 V by VR1 as explained above. This transistor has extremely low noise (about 0.8 dB) and is run at a collector current of $25\text{ }\mu\text{A}$ to take full advantage of its characteristics; its emitter goes to earth via R6 which is the summing point for the feedback. Its output is directly coupled to TR2, which supplies the remaining voltage gain of the amplifier and drives both triplet output stages. Together, TRs 1 and 2 provide a voltage gain of about 12,000 or 82 dB; but there is a slight voltage loss from the collector of TR2 to the output, and the overall gain is reduced to 10,000 or 80 dB. The collector of TR2 goes to C7 which maintains HF stability and to the bases of TR3 and TR6 (via C6).

The series combination of D4, VR2, and D3 provides the correct biasing for the output stage. VR2 is adjusted to give a standing current of 125 mA under no-signal conditions in the output stage, and is most easily set up by adjusting VR2 to give 0.25 V across R13 and 14 in series. The driver load resistor R10 is taken to the $+60\text{ V}$ rail in order to provide adequate drive at HF and R15 and C4 decouple the line whilst C8 is the output capacitor of the voltage-doubler in the power supply. The triplet output stages TRs6, 7, 8 and TRs3, 4, 5 are by now well enough known not to need further explanation; suffice it to say that they can be considered as simple *n-p-n* and

FIG. 2 ADJUSTMENT OF D.C. CONDITIONS

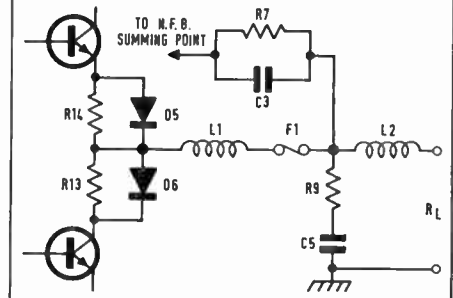


p-n-p transistors with very high current-gain respectively. The network R13, R14, D5 and D6 provides a DC stabilising network for the output transistors, whilst avoiding power-loss under maximum output drive. The diodes also obviate the need to change the value of the resistors to suit the impedance of the speaker, and the high value of the standing current means that, up to about 250 mW or so, the amplifier is operating under Class A conditions; since it is at these levels that the ear is most sensitive to distortion the improvement is quite apparent at normal listening levels.

The output coupling network is very important for reasons of stability and overload protection and is shown in fig. 3.

R9 and C5 trim the phase-response if the

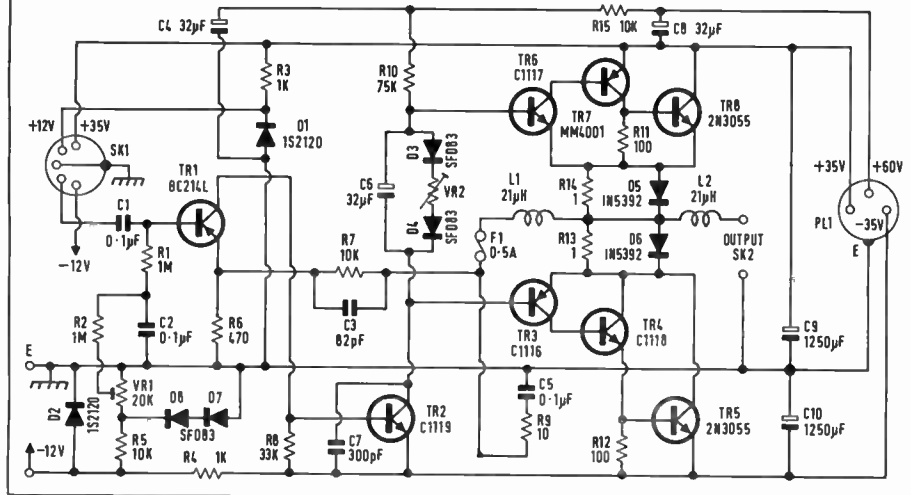
FIG. 3 ARRANGEMENT OF OUTPUT COMPONENTS



speaker is disconnected, whilst L2 isolates the capacitance loading of the speaker at HF. L1, being located before the feedback take-off point, has a different effect to L2; its function is to modify the phase response *within* the feedback loop, even for capacitance levels of up to $0.5\text{ }\mu\text{F}$ at the output terminals. The total inductance of L1 and L2 is about $42\text{ }\mu\text{H}$ which would normally give an HF roll-off of 65 kHz for a $16\text{ }\Omega$ load (or 32 kHz for $8\text{ }\Omega$ and 16 kHz for $4\text{ }\Omega$), but since the feedback take-off point is at the centre tap these frequencies are doubled. In practice C3 is selected to give a 100 kHz overall roll-off with a $15\text{ }\Omega$ load.

The junction of L1 and L2 is at very low impedance due to the feedback and so the output Z is almost entirely due to L2, i.e. $21\text{ }\mu\text{H}$ and $0.2\text{ }\Omega$. In the event of the amplifier being

FIG. 4 POWER AMPLIFIER CIRCUIT DIAGRAM



DUETTE

*for lovers
of pure Sound*



1. **Duette SA-400 Stereo Amplifier.** Power output 6 watts RMS per channel. Frequency response 30-20,000 Hz ± 1.5 dB. Impedance 4-8-16 ohms. **£32.19.6**
2. **Duette SAT-4370 Stereo System.** Tuner Amplifier with VHF and MW wavebands. Total Music Power 10 watts. Two matching speakers each of 8 ohms impedance. **£49.19.10.**
3. **Duette SA-500 Stereo Amplifier.** Power output 10 watts RMS per channel. Frequency response 20-20,000 Hz ± 1 dB. Impedance 4-8-16 ohms. **£39.19.6.**
4. **Duette SAT-460 AM/FM Stereo Tuner Amplifier.** Power output 12 watts RMS per channel. Built-in Multiplex. Sensitivity FM: 2mV for 20 dB quieting. Frequency response 20-25,000 Hz ± 0.5 dB. **£99.13.8.**
5. **Duette SAT-260 AM/FM Stereo Tuner Amplifier.** Power output 12 watts RMS per channel. Built-in Multiplex. Sensitivity FM: 3.5mV for 20 dB quieting. Frequency response 20-25,000 Hz ± 0.5 dB. **£73.17.9.**

Write for free leaflet containing full details of the complete range of Duette Audio Equipment and Silver Radios.

Sole U.K. Distributors: **J. J. SILBER LTD., 11 Northburgh Street, London, EC1V OAU**

Before you even look
at Rotel hi-fi
equipment
get one thing
clearly in your
head...

The Sound

We promise you that all Rotel equipment is clean-lined, good-looking and handsome enough to please the most critical wife.

But, before we even give you a sight of it, we want you to hear something first. For example, that Rotel, still a fairly new name on the hi-fi scene, is building a reputation for the best value-for-money equipment available. That Rotel sports some technical features surprisingly advanced for its price range. That Rotel equipment is being handled and serviced in the UK by The Rank Organisation. And that the Rotel sound sounds right to even the keenest ear.

For starters, we've shown you the details of two Rotel amplifiers and one tuner. If you write to the address below, we'll send you all the information we have on the whole of the big-value range. Or better still, drop in on your dealer.

But whichever you do, do it soon, d'you hear?



ROTEL

Rank Audio Products
Rank Audio Visual Ltd
PO Box 70 Great West Rd Brentford
Middlesex Telephone 01-568 9222

RA 310 Stereo Amplifier

Power output: 15 watts RMS per channel into 8 ohm.
Frequency response: 20-30,000 Hz + 0 - 1.5.
Input sensitivity: Mag 3 mV, Aux 200 mV, X'tal 100 mV,
Tape Monitor 300 mV.
Hum and noise: Phone 60 dB, Aux 65 dB, Tuner 65 dB.
Separate bass and treble control. Tape monitor
switch. Provision for two pairs of speakers (perfect for
parties, or upstairs-downstairs listening).

£42.10.0 (rec. retail price).

RT 320 Stereo AM/FM Tuner (Matching Tuner to RA 310).

Sensitivity: 2.5 μ V.
Signal to noise: 60 dB.
Stereo separation: 35 dB.
Price complete with stereo decoder

£54.10.0 (rec. retail price).

RA 610 Stereo Amplifier

Power output: 30 watts RMS per channel into 8 ohm.
Frequency response: 20-50,000 Hz + 0 - 1.5.
Input sensitivity; Mag 3 mV, Aux 200 mV, X'tal 100 mV,
Tape Monitor 300 mV.
Hum and noise: Phono 60 dB, Aux 70 dB, Tape 70 dB,
Tuner 70 dB.
Separate bass and treble slide controls for each channel.
Additional facilities include: 2 Phono inputs,
2 auxiliary inputs, low and high filters (which pretty well
makes you the owner of a discotheque).

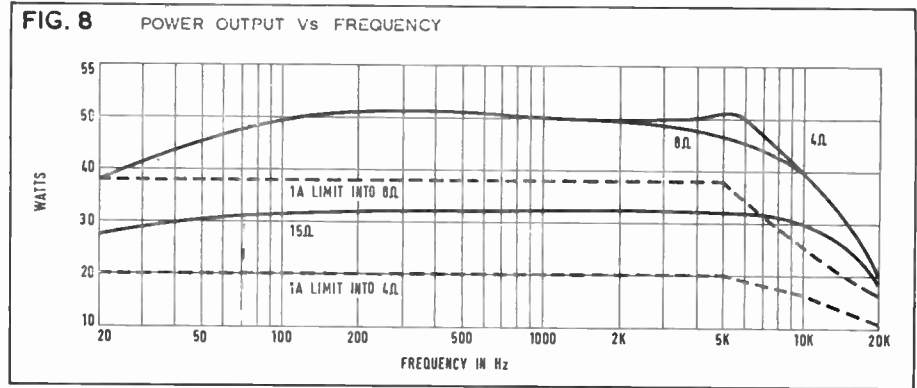
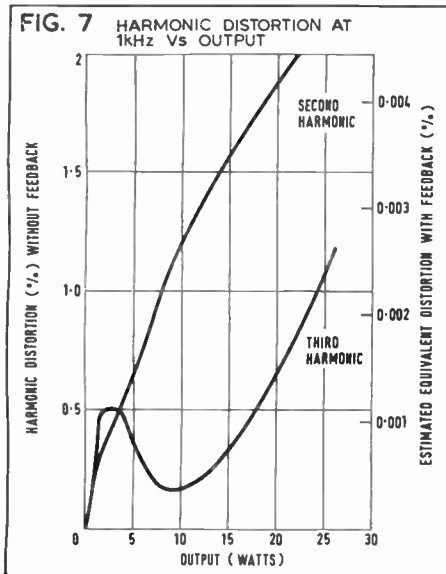
£69.0.0 (rec. retail price).



RA 610

RA 310

RT 320



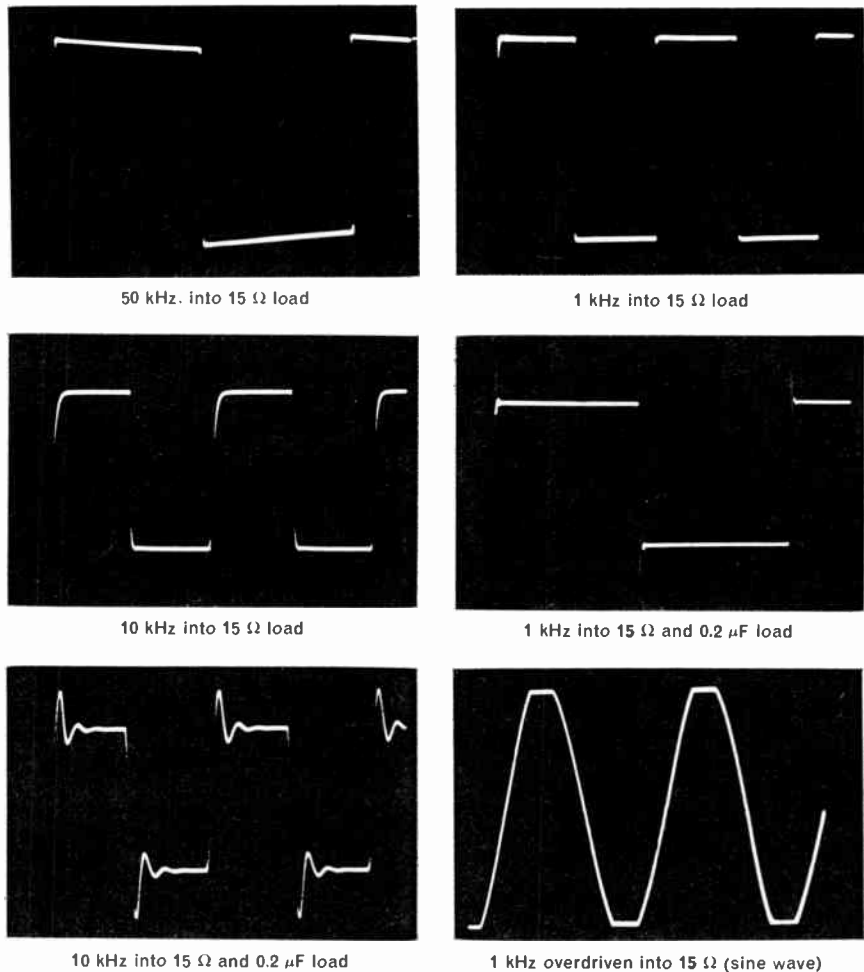
is larger than needed for this amplifier, many others could benefit from a stabilised supply and so the range was extended to include other designs. If a reduced output is required the secondary tap on the transformer should be adjusted to give a voltage across TR4 greater than about 5—but within that limitation as low as possible in order to reduce the dissipation under maximum output conditions. The higher voltage rail is derived from a voltage doubler C5, D1, D2 and C8 (in the amplifier). R9 is included to reduce the output voltage to the level required, and also to limit the current surge through the diodes. As stated in Part 1 the supply is floating with respect to earth and the mains earth is taken through R3 to reduce induced hum should any other item in the audio system be taken to a mains earth.

Both amplifier and power supply are mounted in an ITT diecast box. This provides a simple robust unit that is at the same time well screened, and it also reduces cost by using existing items that do not have to be specially made. The number of different values of resistors and diodes have been kept to a minimum consistent with good design, again to help keep the cost down. However, considering the total cost of an audio system it would be a mistake to try using inferior components. For this reason metal-oxide resistors have been selected; the printed circuit boards should be made of fibreglass and only the specified electrolytic capacitors and semiconductors should be used.

It may be noticed that the type numbers given for TRs2, 3, 4 and 6 in the amplifier are unfamiliar. They are in fact 'house' numbers given by the manufacturers, *Micro Electronics*, to specially selected devices for this design. Since this selection involves the use of a £1500 curve tracer, transistor surplus dealers will not be able to select (and therefore supply) these devices, which should be purchased directly from *Micro Electronics* or *Intrinsic Developments*, the latter firm being able to supply all the specified components including glass fibre printed circuit boards and undrilled diecast boxes.

The layout of the components on the printed boards should be obvious from the drawings.

FIG. 9 SQUARE WAVE PERFORMANCE etc.



The boards are mounted on the underside of the diecast lids, the power-supply board held by four 6 BA screws (two being countersunk and mounted beneath the heatsink) and the amplifier board by two 4BA screws that hold the transformer, and one 6BA screw that is also used to provide the earthing point for the box. The 2N3055 transistors in both the amplifier and power supply *must* be insulated

from the metalwork by their mica washers and insulated bushes, which should be mounted on the underside of the lid passing up towards the transistors.

Since the space inside the boxes, particularly in the amplifier, is restricted, the lid of the box and the inside of the tray should be covered with insulation. The copper side of the boards should be spaced from the lids of the

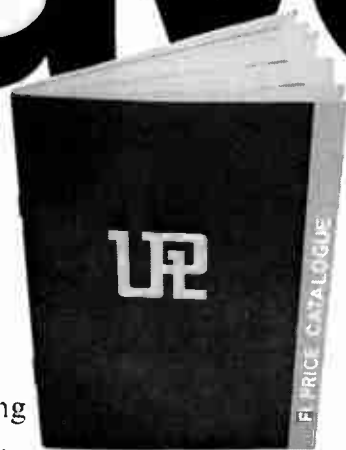
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HFN2

FIG. 10 POWER SUPPLY LAYOUT

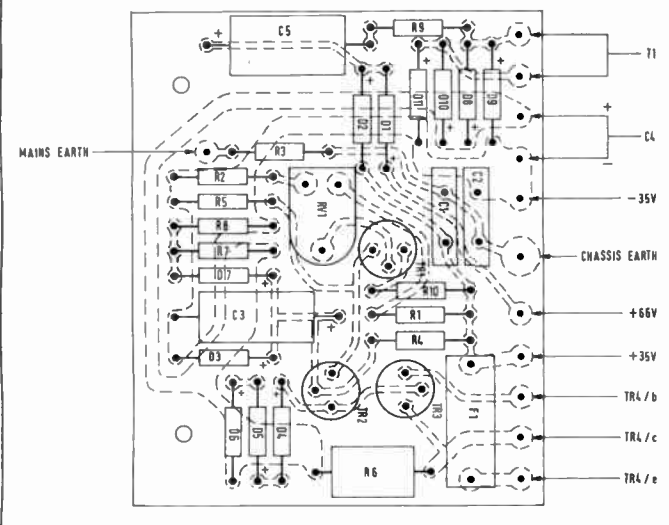
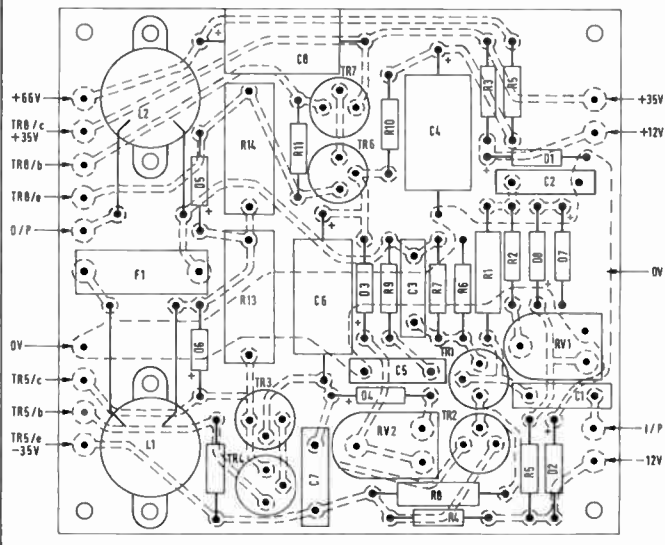


FIG. 11 POWER AMPLIFIER LAYOUT



COMPONENTS (Amplifier each channel)

Resistors all values in ohms

R1 1M 1%	R4 1K	R7 10K	R10 75K	R13 1 w/w	(Erie)
R2 1M	R5 10K	R8 33K 1%	R11 100	R14 1 w/w	10%
R3 1K	R6 470	R9 10	R12 100	R15 10K	10%

All resistors Welwyn unless stated. 1% types metal-film, others metal-oxide unless stated.

Capacitors all values in μ F unless stated

C1 0.1 Ceramic, 30V	C5 0.1 Ceramic, 30V	C8 32 64V Elec.
C2 0.1 Ceramic, 30V	C6 32 Elec. 64V	C9 1250 40V Elec.
C3 82pF Ceramic, 250V	C7 300pF Ceramic, 250V	C10 1250 40V Elec.
C4 32 Elec. 64V		

All Mullard electrolytic and Erie ceramic capacitors

Transistors and diodes

TR1 BC214L(C) Texas	TR6 C1117 Micro-Elec.	D3 HS 1395 Hughes
TR2 C1119 Micro-Elec.	TR7 MM4001 Motorola	D4 HS 1395
TR3 C1116 Micro-Elec.	TR8 2N3055(6) Ates	D5 IN5392 Westinghouse
TR4 C1118 Micro-Elec.	D1 IS2120 Texas	D6 IN5392
TR5 2N3055(6) Ates	D2 IS2120	D7 HS 1395 Hughes
		D8 HS 1395

Figures in brackets refer to h_{FE} grouping by manufacturer.

Miscellaneous

VR1 20K preset, Morganite	DIN Sockets (5-, 3- and 2-pole)	00 Fuseholder PCB mounting
VR2 470 preset, Morganite	Heatsink Jermyn	0.5A HRC fuse
L1 21 μ H, 0.2 ohm Intrinsic	Capacitor clips Mullard	Miscellaneous nuts etc.
L2 21 μ H, 0.2 ohm Intrinsic		
Printed board Intrinsic	Note: The inductors may be wound of 68 turns of	
Die-cast box ITT	26 s.w.g. wire on a $\frac{1}{4}$ in. Neosil 3530/N/10RA former	

POWER SUPPLY (two channels, see text)

Resistors all values in ohms

R1 33K	R3 10	R5 33K	R7 75K	R9 10K
R2 33K	R4 10	R6 1 w/w 10%	R8 33K	R10 33K

All resistors 2% metal-oxide Welwyn unless stated. Wirewound types are Erie.

Capacitors all values in μ F

C1 0.1 Ceramic 30V	C3 32 Elec. 64V	C5 32 Elec. 64V
C2 0.1 Ceramic 30V	C4 1000 Elec. 100V	C6 0.1 Ceramic 750V

All ceramic capacitors Erie. Electrolytics Mullard except C4, Radiospares.

Transistors and diodes

TR1 BC107 Mullard	D2 IN914 Texas	D7 HS 1395 Hughes
TR2 2N1990W(6) Ates	D3 IS2300 Texas	D8 IN5392 Westinghouse
TR3 MM4001 Motorola	D4 HS 1395 Hughes	D9 IN5392
TR4 2N3055(6) Ates	D5 HS 1395	D10 IN5392
D1 IN914 Texas	D6 HS 1395	D12 IN5392

Figures in brackets refer to h_{FE} grouping by manufacturer.

Miscellaneous

Printed board Intrinsic	3-pole DIN socket
T1 Mains Transformer Douglas MT126AT	Capacitor clip Mullard
Diecast box ITT	00 PCB fuse holder
0.5A ARC fuse	VR1 1K Preset Morganite

Fuse values given will blow on full-power sine-wave drive and are intended for music and speech. All components are available from Intrinsic Developments, 84 King's Road, Berkhamsted, Herts. Price lists available upon request. Please enclose a self-addressed stamped envelope.

boxes by locknuts on the mounting screws so that they are just clear of mounting nuts or other projections on the lids. Similarly the two leads soldered to the speaker output socket should be fitted with rubber sleeves to prevent shorting components when the lid is fitted to the box. If these precautions are taken, bearing in mind that a potential difference of almost 100 V exists in each unit, then no trouble should be experienced in the construction. The only point that should be noted is that each side of the mica insulating cushions must be liberally smeared with silicone grease to enhance the thermal resistance of the 2N3055 transistor cases to the metalwork: their electrical insulation should also be checked when mounted.

When all the components have been mounted on their respective PCBs they should be carefully inspected to check for shorts or errors, particular care being taken with polarised components such as diodes and capacitors. Whilst all mounting holes for transistors conform to the standard TO5 configuration, this is not necessarily the case for all transistors, and care should be taken to pre-form leads to fit correctly. The flying-lead supplying the power to the amplifier should obviously be long enough for each individual case, and the other end of the cable supplying the 35 V rails and the earth line should be connected directly to the tags of C8 and C9, another wire from these tags going to the amplifier PCB.

Having completed the final assembly and double checked the wiring, the units are ready for setting up. Without plugging the amplifier, turn on the power supply, set the output voltage to 70 across the two ± 35 V rails, preferably with about 200 mA being drawn from the supply. The mains is then turned off, and *only when C4 has discharged* the amplifier power lead is plugged into the power, supply socket. With the amplifier's input shorted, the mains is again turned on. RV1 on the amplifier is set to give balanced supply rails with respect to earth (i.e. ± 35 V) and VR2 is adjusted until the total voltage across R13 and R14 is 0.25. The units are now ready for use after the lids are firmly screwed to the boxes.

Sometimes you'd think we were just part of the furniture.

We don't mind. After all, at Grundig we design our stereograms to blend in with the rest of your furniture. Elegantly and gracefully. So elegantly that you might just overlook their best feature: the Grundig sound.

Good sound is our first principle. And we stick to it right through from our fully transistorised system to our superphon speakers. Then we build a cabinet around it. And call it a Grundig Stereogram.

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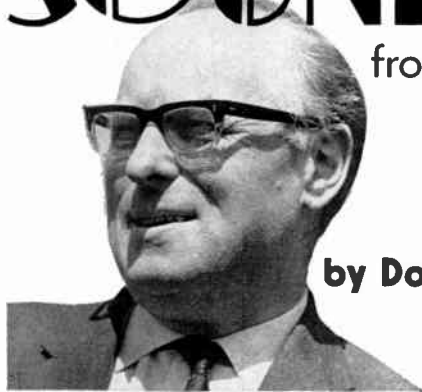


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SOUNDINGS...

from an Audio logbook



by Donald Aldous

AFTER A SURFEIT of scribbling, it is a salutary exercise to go into the battle zone and, under the pressure of time, actually do a job of installing a sound system. Something one has been advising others for years in articles and talks how to do, it entails in practice trying to get the optimum performance from the particular equipment employed.

This is an experience I have had recently when—with the approach of Christmas—a professional public-address engineer friend was so hard-pressed as to be in danger of failing to fulfil a commitment for fitting a sound reinforcement system in a restaurant and club, that I agreed to lend a hand.

Siting and fixing line-source loudspeakers in the ceiling void before drapes covered them, soldering DIN plugs and XLR microphone connectors, checking the phasing of microphones and loudspeakers (wish I had had one of Keith Monk's *Phase-Rite* units for this), running three microphone cables through conduiting and, at the last minute, finding that the record player deck (used on an earlier system for interval music between the 'live' sessions) was suffering an ailment (!) known as beer corrosion. Such was the order of the day! Too many glasses spilled over the player, and the magnetic cartridge output was far too low to feed the amplifier PU input, and so I had to replace it quickly with a ceramic.

After tests, surrounded by workmen hammering away, electricians fitting lighting brackets, carpets being cut and fastened, painters daubing on the impressive coloured walls, we managed to make some practical checks and, thank Heaven, it worked! Three two-way dynamic microphones, cardioids with 20 dB front-to-rear discrimination, were employed and, by judicious setting up of the microphone controls, a reasonable balance of the band and vocalist was obtained.

But my troubles were not over by any means. The principal performer at the opening cabaret

was a well-known singer who, in a previous incarnation perhaps, must have been a sword-swallower! He insisted on mouthing his songs close to the microphone and twirling the lead like a lasso whilst gyrating around the floor! Summoning up my diplomatic approach, I suggested that his performance would register better if we fitted a wind-muff. With the foam rubber shield on, the explosive noises were tamed, but still he was not happy that his full bass quality was being heard by the paying customers! I lifted the bass a 'notch' or two, and his listening entourage nodded approval.

By now the rehearsal for the first night must surely be over, I think. Alas, no! Our singing friend is bothered that he cannot hear himself properly, and so cannot give of his best, but edging up the overall sound level threatens to initiate howl-back. As he had got accustomed to hearing himself in big reverberant theatres or other halls, this highly damped room upsets his aural appreciation of his own reproduced voice. Any student of telephony or acoustics will be familiar with this problem of *side-tone* so I promised to rig up a foldback feed loudspeaker—at low level but oriented towards the performer—and he at last concedes that all should now be well on the night. Such is show-biz PA!

There is a happy ending to this story, as his opening performance was received vociferously, and the great man thanked the 'sound experts' afterwards for their contribution. As some of my readers will know, I am a proponent of better sound in public auditoria, as domestic hi-fi standards are now high or can be, and the customers are beginning to expect first-class audio in theatres and clubs. There is no excuse today for bad sound, as the know-how and equipment are available, and the admirable Association of Public Address Engineers will offer guidance and recommend suitable members for an installation. The rub is cost, admittedly, as so many potential purchasers of sound reinforcement systems are loath to

spend a reasonable amount for the right system. The installation I worked on cost around £750.

ANOTHER DEPARTURE from the strictly hi-fi scene has lately been attracting my interest and possibly would have an appeal to many HFN/RR readers. 'Music on the move', whether from a car radio or cassette/cartridge system, is what I am referring to. With an estimated figure I have seen of only about one quarter of the ten million cars on our roads fitted with radio sets, the idea can hardly be said to have caught on. Charles Bovill, Technical Adviser to the Radio & Television Retailers' Association's recent investigation into FM/VHF reception (made on the London-Addlestone route) found reception quality was 'disappointing' and that 'if commercial radio is confined exclusively to VHF it could be a commercial flop'. In contrast, I have found that around the West Country, including Bristol, FM/VHF performance, whilst experiencing patches of bad interference and fading, was acceptable at a much greater percentage than the 50 quoted by Mr. Bovill—whose experiments, let us admit, were by no means rigorously conducted. But my own tests confirm that VHF interference can be serious from nearby cars when in a heavy traffic situation.

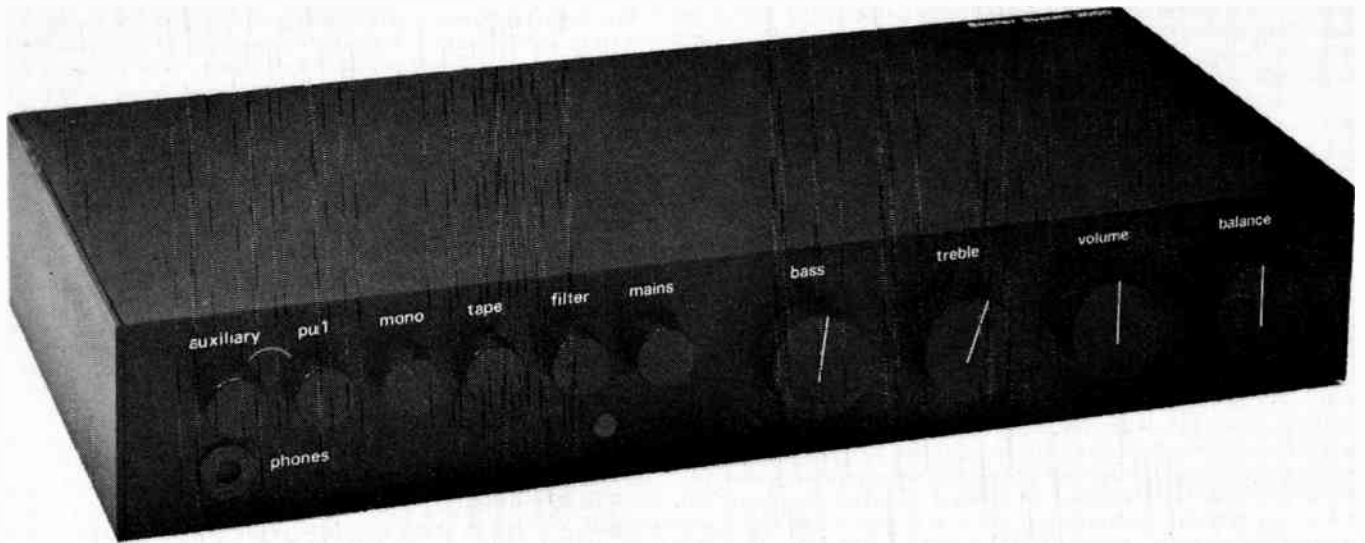
Proper installation and adequate suppression are obviously essential and Mr. Bovill's radios were fitted professionally so one should have no quarrel on this score, though he apparently used a model of car known to be particularly troublesome with self-generated static! My own experiments show that the aerial system is perhaps the most important factor—apart from an efficient design of receiver, which in my case was of Japanese origin—and although a single telescopic vertical aerial is really unsuitable for horizontally polarised FM/VHF transmissions, I found—in common with the RTRA's findings—that this polarisation problem seemed not to produce any real difficulties. I have not yet been able to assess the effects of 45-degree slant polarisation, as adopted by several BBC local radio transmitters, but this arrangement could improve results.

The findings of J. G. Spencer, of the BBC's Research Department, on some tests of mixed polarisation for VHF sound broadcasting, were published in *BBC Engineering* for July 1970, and provide some interesting information. One conclusion is that for car radio or outdoor portable reception, a change to any form of mixed polarisation (of the transmitter aerial system) would be equivalent on average to an increase of transmitter power of 6 to 9 dB.

A Plymouth car radio specialist, John Preece, recently showed me a large box of discarded faulty or badly fitted aerials which he has had to remove from vehicles before the sets could achieve a worthwhile performance. An aerial length of at least 30 in. is necessary for good signal pick-up.

Fortunately, the RTRA, whilst recommending that a commercial radio licence should be allowed to broadcast simultaneously on FM/VHF for 'at home' reception and on low-powered AM/MW for 'in car' listeners, they

Sinclair System 3000



A new high fidelity amplifier

The Sinclair System 3000 amplifier is an entirely new design offering a performance which is matched by the products of only two or three other companies in the world and by none at less than twice the price. Total harmonic distortion is less than 0.04% at full output at 1 kHz and is less than 0.1% at all power levels and frequencies in the audio spectrum. The output power is 17 watts per channel RMS continuous sine wave with both channels operating (34 watts total). The circuit features a stabilised power supply with automatic overload protection making the amplifier virtually indestructible.

The amplifier incorporates every feature ever likely to be required, including the usual tone, volume and balance controls, two pick-up inputs, radio and tape inputs, tape output, scratch filter, speaker muting switch, headphones socket and switched mains outlet.

The circuit uses silicon transistors exclusively.

The amplifier case is black anodised aluminium superbly finished and extremely robust.

Specifications

Output power: 2×17 watts RMS continuous into 8 ohms.

Power bandwidth: 25 Hz to 25 kHz

Frequency response: 25 Hz to 35 kHz ± 3 dB. 40 Hz to 25 kHz ± 1 dB.

Total harmonic distortion: 0.04% at 1 kHz and full output.

Intermodulation: 0.1%.

Signal to noise ratio: 65 dB at maximum gain.

Damping factor: 55.

Inputs

Pickup 1 (magnetic): 3 mV into 47 kohms.

Pickup 2 (ceramic): 30 mV into 220 kohms.

Auxiliary/radio: 100 mV into 100 kohms.

Tape: 125 mV into 1 kohm.

Controls: Inputs selected by push buttons; on/off push button; mono/stereo push button; tape monitor push button; volume control (rotary); balance control (rotary);

treble control ± 13 dB at 10 kHz; bass control ± 13 dB at 100 Hz; speaker muting push button at back; mains voltage adjustment at back.

Outputs: Switched mains socket (2 pin US standard); tape output 125 mV at 10 kohms (DIN socket); speaker outputs (DIN sockets), stereo headphones ($\frac{1}{4}$ inch jack socket).

Power: 110 to 240 volts at, 50 or 60 Hz, 60 watts.

Recommended retail price £45.

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FM DIARY

BY AUSTIN UDEN

THE BBC's increasingly desperate financial position has been made more than clear, not only with the publication towards the end of last year of its *Annual Report and Accounts*, but also from a follow-up article by Director-General Charles Curran published in *The Times* during November. A deficit of £7m had been forecast by April this year, and of £13m by 1974. But following new pay agreements and rising costs generally, the accumulated deficit could be nearer £50m by 1974 even assuming a reasonable control of inflation.

Just where does all the money go then? The DG gives the answers convincingly and succinctly, thus: 'Wages and salaries account for half our costs. Fees to artists are another third. Four-fifths of our costs are therefore payments to people for work done. In the next few years we shall have no money, for example, for the *development* of programmes, which is always necessary to foster new ideas and without which a broadcasting service loses its vitality. And the extension of stereophony, as important in many ways to radio as colour to television, is among the things which will suffer.'

Since stereo seems always to have suffered, there is nothing new here, but this observation will serve to strengthen the belief already held by some listeners that the chances of even the present *Radio 3* stereo output reaching the south coast of England and east Anglia, let alone Scotland or Wales, are as far off as ever.

In his article, Mr. Curran cites some of radio's running costs. For example, *Radio 1* is the cheapest network to run. To scrap it as some 'interested parties' have argued, would save no more than £750,000. *Radio 4* is the most expensive. Plays on 4 (or *Radio 3*), cost about £600 an hour. Live (or BBC recorded) orchestral music works out at £1,200 an hour. For a typical *Radio 1* programme the figure is £160 an hour, so there would be no significant saving to the BBC if it left the majority popular appeal broadcasting to commercial interest and concentrated on the minority programmes. 'The right question to ask at this moment is not "What should the BBC be doing?" but: "How can the BBC's finances be put on a stable basis?"'

The message is clear enough, but suppose the Minister for Posts and Telecommunications fails to heed it? Suppose Mr. Chataway does not quickly raise the combined radio and black-and-white TV licence fee beyond the forthcoming 50p? Suppose those of you reading me now remain apathetic and give no support to this by writing both to the Minister and your MP? What then? Well, without additional income the BBC will be slowly but surely squeezed out of existence, or nearly so. Still more repeats of old programmes, a reduction in *Radio 3* output to weekday evenings and weekends. A reduction in artists and orchestras. No new, good light entertainment

shows. Year by year the squeeze would continue until between five and ten years from now BBC radio could be back to basically two programmes.

This is not a figment of my imagination. Whatever they say or write in public, I suspect BBC Management are quietly nodding agreement in private. They must already realise in their heart of hearts that they face the possibility of an apathetic public and the actions of a bloody-minded Minister committed to carrying through his Government's silly Manifesto, combining to bring about the early demise of BBC radio if not the Corporation itself.

There is much about network and local broadcasting I don't personally like and want to see improved, but getting rid of some of the administrators (and bad local radio station managers) is not going to reduce significantly the Corporation's rapidly increasing deficit. Only a licence fee of £8-£10 can do that, and it has to come without silly, childish political wranglings within the next year. I have an illustrated feature lined up on BBC local radio for publication shortly, because whatever *your* personal views or experiences of it may be it could have profound effects on network radio or whatever eventually remains. Meantime,

SOUNDINGS *continued*

do consider that VHF/FM should be unceasingly promoted on the grounds of technical superiority, both mono and stereo. And let us not forget that on the Continent FM/VHF radio in cars has long been accepted as a practical proposition.

TURNING NOW to cassette/cartridge tape systems for the car, it is apparent that a big marketing push has been started in this country by the major manufacturers, Motorola, Philips, and Smiths Industries (who make Radiomobile and Courier units), and the growing repertoire of music in all categories makes the method more attractive to the critical music lover than when the bulk of releases was simply background sounds or 'pop'.

I will not now discuss the other musical pros and cons of these enclosed tape media—particularly the closed-loop cartridges where one can never simply choose and play a particular piece of music—but if you are a hi-fi enthusiast who has, so far, dismissed the method with a sniff, I suggest you go along to a car showroom or specialist supplier and hear a properly fitted car stereo system. Of course, your domestic rig is superior, but in a reasonably sized car, and spacing the speakers as far apart as is practicable, the results are very satisfying—and no interference or fading snags to overcome. Though of course the recorded dynamic

please read the DG's article. It's on page 10 of *The Times* for Thursday, November 12, 1970, and is headed *Defending the BBC Budget*. Something I hope every one of you will do! And remember, radio is still the cheapest entertainment medium, even if it goes up by the price of two long-playing records!

Incidentally, space considerations are the *only* reason for being unable so far to describe here my exciting experiences with the *Trio KT7000* tuner. Briefly, it's a good tuner in its price range and, honestly, I could find no obvious RF performance advantages between it and a costlier Japanese tuner recently lauded in the technical press. But then, I'm only interested in practical everyday user experience in a wide variety of receiving situations, not just what can be favourably demonstrated on a test bench! What, I wonder, do *you* look for in tuner review reports, and what basic measurement standards do you think should be adopted?

Finally, I must mention the excellent German-made *Hirschmann U6* FM aerial imported here by *Audio Workshops Ltd.* For some months past I have been getting most favourable reports from readers who have installed this fine aerial, which is lighter than our counterparts here. Having just measured its performance under practical working conditions, I feel very confident it is the best commercially-available wideband (87.6-104 MHz) array in the UK at the present time. It could, of course, be fixed vertically rather than horizontally for those wanting optimum reception of Fire's vertically polarised FM transmissions. The only difference will be in the broader acceptance angle limits in the vertical receiving mode.

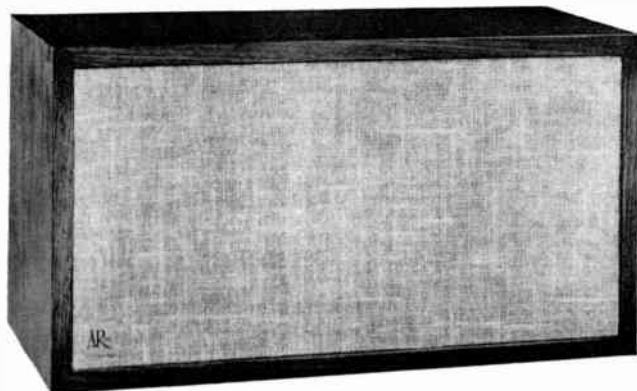
range has to be limited because of the high background noise in most cars. Even the problem of purchase cost of cassettes and cartridges—varying from £1.50 to £2.50 or so—has been tackled in some areas by hire facilities offered at certain centres (usually linked with a garage) where the tapes can be exchanged for a fee of 37½p or 50p.

EARS TO THE GROUND DEPARTMENT. As I seem this month to have been tackling the 'fringe' aspects only of real hi-fi, let me end with some news about the coming of better TV sound for the audiophile. Conceding the difficulties in the compromise acoustic environment of a TV studio, the limitations of the average television receiver—with its inadequate speaker system, etc—degrade the sound signal far more than the transmitting end. The spread of TV signals on the UHF bands offers the opportunity of significantly improving sound quality, and I hear that at least one major British manufacturer is about to produce a push-button UHF TV sound set. This may be shown at the 1971 Sonex exhibition, and before that date Bob Bourhill, of Motion Electronics Ltd., is planning to market several TV sound tuners for feeding a signal to one's hi-fi equipment. The models, vari-cap tuned, include a straight UHF design, a UHF/VHF type, and a simple VHF unit. No prices fixed, as far as I know at the moment, but around £30, including purchase tax, for the UHF type is the likely cost.

AR-4x speaker

£39. 19. 0.*

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The AR-4x is less expensive than the other Acoustic Research speaker systems. But in smoothness and uncoloured musical quality it holds its own with any of them. Even with the AR-3a.

Size: 10" x 19" x 9" deep

Finish: oiled teak

Suggested amplifier power: 15 watts rms per channel minimum

Impedance: 8 ohms

As evidence of the accuracy of the AR-4x Acoustic Research offer technical specifications, frequency response and distortion curves on request. Every AR speaker is tested in an anechoic chamber before despatch and guaranteed to meet its published specifications for five years.

The AR-4x three-way speaker system is made by Acoustic Research exclusively for Bell & Howell. Write for more information about Acoustic Research speaker systems and a list of dealers.

*recommended retail price

Press comment

"the frequency response curves . . . were better than those published by the manufacturers . . . there is an audible output from 30Hz upwards, the AR-4x reaches its full output at 50 Hz and sounds remarkably smooth through to the limit of audibility."

John Gilbert, The Gramophone.

"excellent performance . . . a steady frequency response which many more expensive systems would find it difficult to equal . . . this unit, measured objectively, confirmed fully what I expected to find after listening to it with a wide range of programme material. The AR-4x is a loudspeaker of very high quality, made and designed to high technical standards. It is not very often that one finds such a completely successful enterprise as this."

Roger Driscoll, Records & Recording.

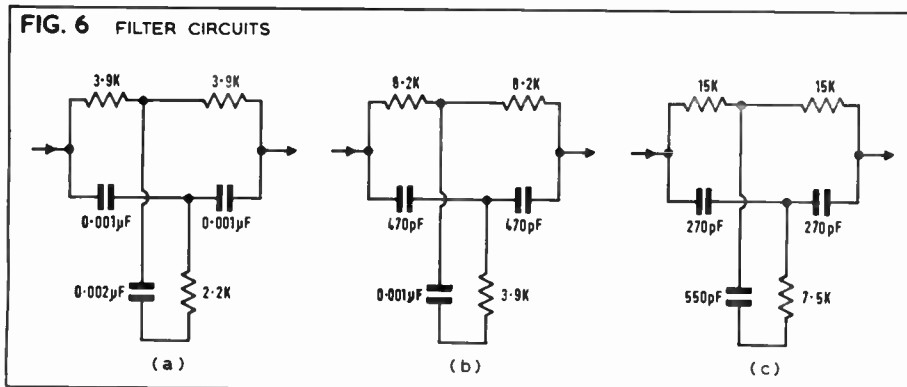
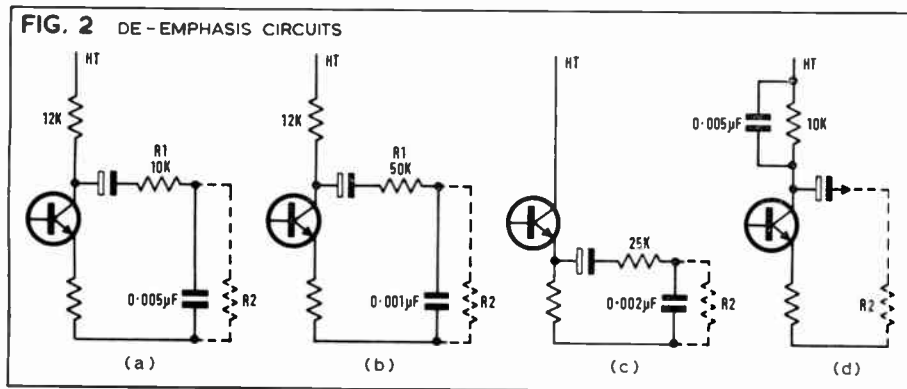
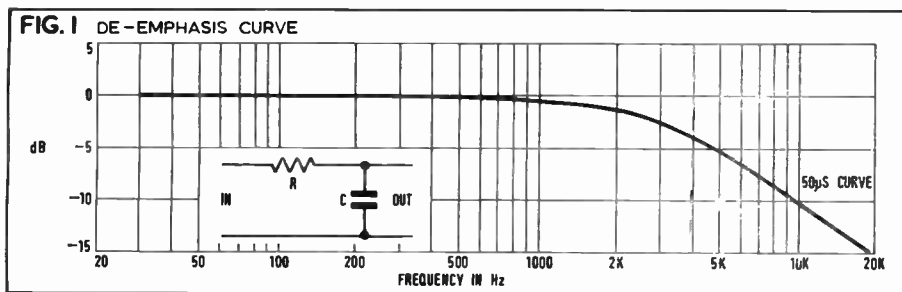


Bell & Howell Ltd., Audio Products Division, Alperton House, Bridgewater Road, Wembley, Middlesex HAO 1EG Tel: 01-902 8812

De-emphasis in FM Tuners

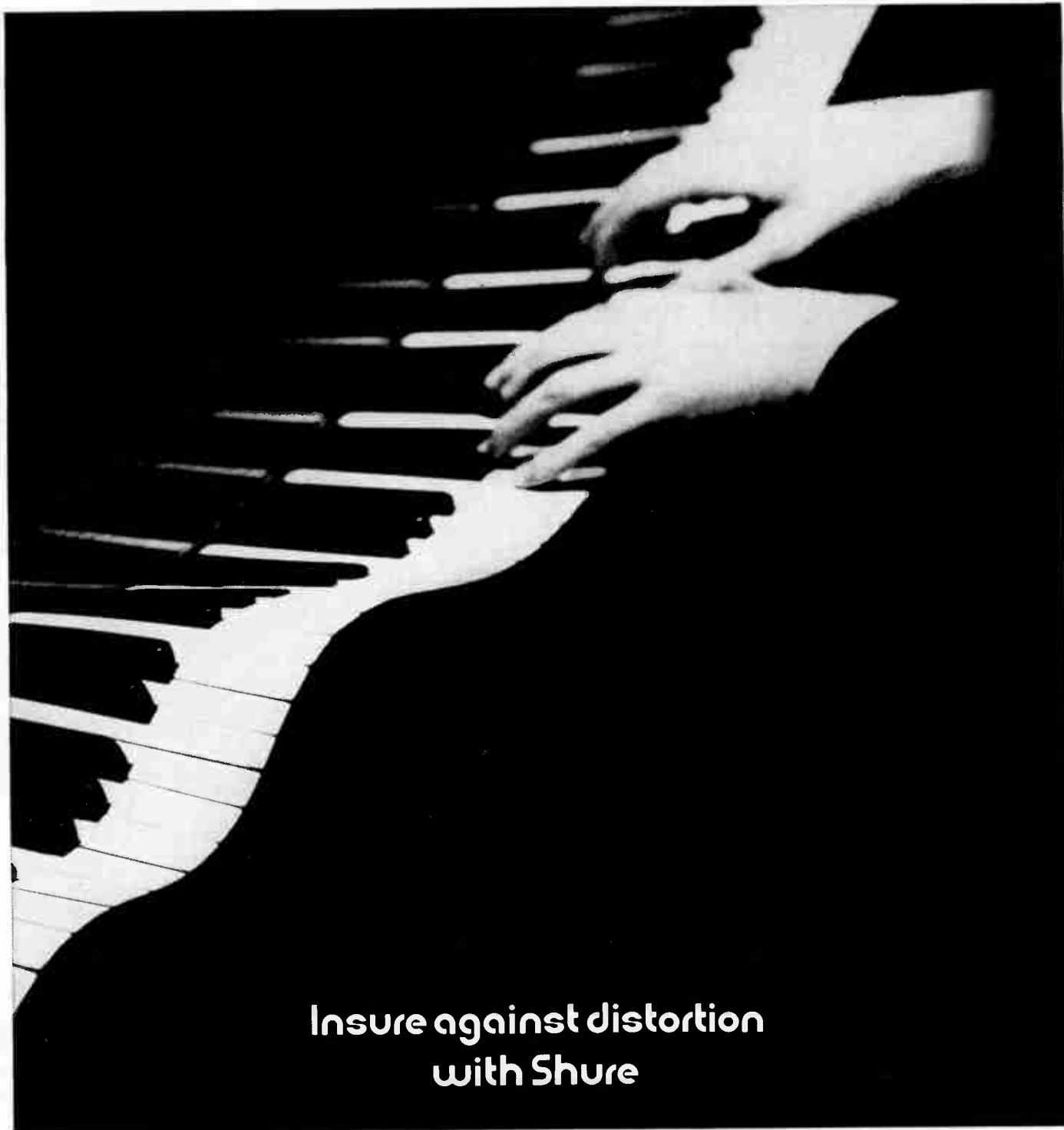
some points of design

BY W. WINDER



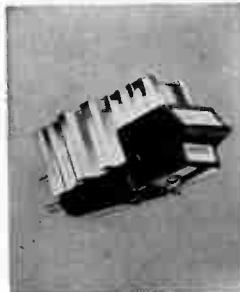
FOR good and sufficient reasons the BBC transmits its VHF programmes with top lift—that is with the higher audio frequencies emphasised. In order to get a balanced frequency response to our loudspeakers it is therefore necessary to de-emphasise the signal from FM receivers, by attenuating the higher audio frequencies, and this of course must be done to compensate exactly for the changes made at the transmitter. The BBC quotes a $50\mu\text{S}$ (microsecond (μS) = $1/1,000,000$ of a second) de-emphasis, but before examining the snags of taking this at its face value, some readers may like to clear up the apparent mystery of why combinations of resistance and capacitance can be expressed in terms of time. The advantage of so doing is that a $50\mu\text{s}$ time-constant can cover any combination of resistance and capacitance, either in series or in parallel, as long as their product in ohms and farads is 50×10^{-6} . The intended changes will occur at the same frequency in such a circuit whether the combination is 50 K and 1,000 pF, or 10 K and 5,000 pF, or any other combination whose product is 50×10^{-6} , remembering that $1\mu\text{F}$ equals one millionth of a Farad, and 1 pF equals one millionth of that again. But why measure this in microseconds?

It all goes back to the fundamental dimensions of mass (M), length (L) and time (T) in which physical properties can be expressed. So, the only dimension of distance is L, and that of area is L^2 ; speed, which is distance divided by time will therefore be L/T . Acceleration, which is speed (L/T) divided by time will be L/T^2 , and so on. Force, which is defined as that which will accelerate mass becomes $M.L/T^2$. The derivation of the 'dimensions' of electrical quantities is more complex, and outside the scope of this article, but in an electromagnetic system those of capacitance are T^2/L , and those of resistance L/T . If we multiply these together we get the Ls cancelling and we are left with plain T. It is therefore scientifically correct to measure such a product in units of time. It boils down to this: any given CR product may be represented by a particular time-constant, which happens in practice to be the time



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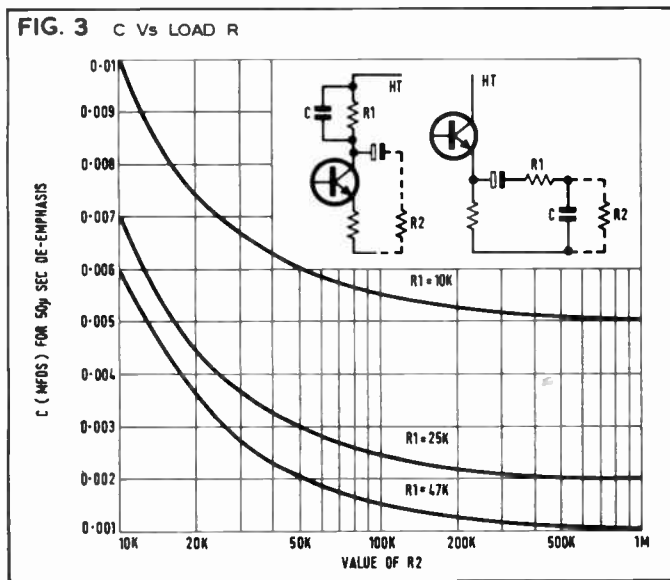
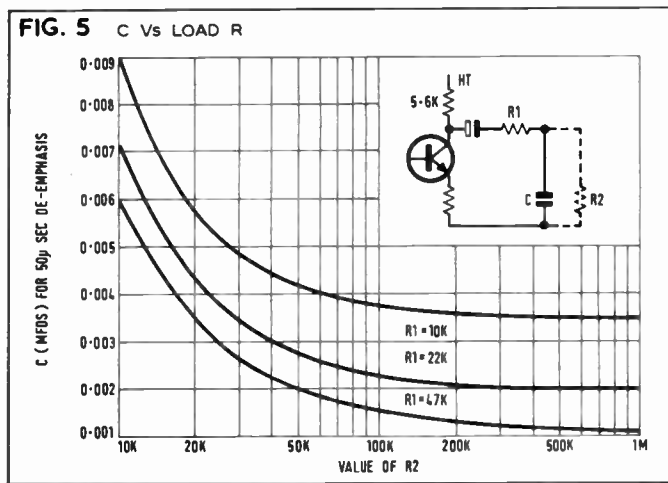
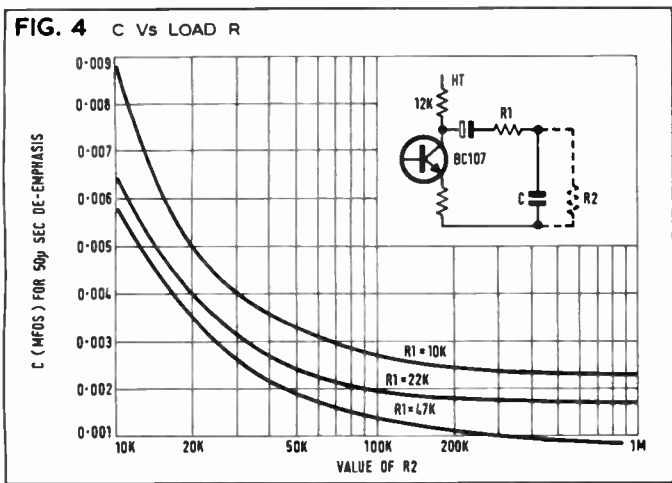
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taken for the circuit to discharge to 36.8% of its initial value.

To return to de-emphasis, **fig. 1** shows a simple resistance-capacitance filter, the attenuation in decibels at any frequency being $10 \log (\omega^2 T^2 + 1)$, where ω is 2π times the frequency in Hertz and T is the time-constant in seconds. **Fig. 1** also shows the curve of $T = 50 \mu\text{s}$ and it will be seen that it has a flat response up to about 1 kHz, falling by 10.4 dB at 10 kHz and 13.7 dB at 15 kHz. It is this range of losses that the receiver designer has to cater for, and it is surprising how many published designs merely introduce a $50 \mu\text{s}$ filter and leave it at that—assuming that the overall de-emphasis will thereby be correct; in many cases it will not be!

Fig. 2 gives four such circuits, of these A and B are bound to give the wrong result to a greater or lesser extent because the filter is shunting the collector load resistance, reducing the effective load by an amount varying with frequency, therefore making the stage gain frequency dependent. Thus a high note loss will be occasioned before the potential dividing effect of the filter itself does its intended task, and the net result is a loss of more than the 10.4 dB at

10 kHz. The necessary compensation is added by reducing the value of the capacitance in the filter.

Figs. 2(c) and 2(d) do not suffer this trouble. In **2(c)** the emitter follower has such a low output impedance, that the variation of filter load with frequency has negligible effect, and **2(d)** uses a varying collector load with frequency. Over a useful range of values the stage gain of the collector load, and since the impedance of a parallel combination of resistance and capacitance is governed by the time-constant, so also is the stage gain.

So far we have considered the effect of the stage preceding the filter, but what about the input impedance of the following stage? This will affect the characteristics of the networks too, calling for compensating modifications. For instance, add a resistor (R_2) across the output of any of the circuits in **fig. 2** and it becomes obvious that the output will be modified. It is apparent in **fig. 2(d)** that such a resistor would be effectively in parallel with the collector load R_1 and the time-constant will now become the product of the capacitance and R_1 and R_2 in parallel. It is not so obvious in

fig. 2(c) that the effective time-constant will also be the product of the capacitance and R_1 and R_2 in parallel, but this is the case. The curves in **fig. 3** show the correct capacitance to use with differing combinations of R_1 and R_2 ; the shunting effect of R_2 in **figs. 2(a) and 2(b)** is exactly the same as in **2(c)**, but in circuits of this kind the effective time-constant must be less than $50 \mu\text{s}$ to compensate for the high note loss in the stage gain, referred to earlier. **Figs. 4 and 5** give a guide to the correct de-emphasis capacitance to use for collector loads of 12 K and 5.6 K respectively.

There is another case where time-constants need to be modified. That is a stereo decoder, where a 38 kHz signal is generated as part of the decoding process, and then has to be eliminated before the signal is passed on to the preamplifier. This is often done by a twin-T filter, and although tuned to 38 kHz the skirts of the rejection curve still have some residual effect on the higher audio frequencies. The magnitude of the effect will vary with the components of the filter and the input resistance of the following stage. **Fig. 6** shows three possible twin-T filters tuned to 38 kHz, and their behaviour was examined with a termination of 47 K, which is the sort of input impedance offered by a transistorised preamplifier. They were all fed from a BC 107 with a collector load of 10 K and a de-emphasis capacitor in parallel. If no account were taken of the high note loss due to the use of the 38 kHz filter the de-emphasis capacitance would be $0.005 \mu\text{F}$ ($10 \text{ K}/0.005 \mu\text{F} = 50 \mu\text{s}$). By empirical means it was found that with filter A the capacitance had to be reduced to $0.001 \mu\text{F}$, and for B and C $0.003 \mu\text{F}$ and $0.004 \mu\text{F}$ respectively. With these combinations the overall high note losses followed the correct de-emphasis curve within less than 1 dB up to 10 kHz, with an unavoidable loss of an extra 2 to 3 dB at 15 kHz. Filter A gives the smallest insertion loss, but its rejection at 38 kHz is 6 dB less than B or C.

Not all decoders incorporate twin-T filters, but of those that do, more than one puts a full $50 \mu\text{s}$ de-emphasis circuit in as well. The result is an overall extra loss at 10 kHz of from 3 to 5 dB, depending on various factors, which is not catastrophic, but is among the little factors which can, with others, add up to something less than satisfactory listening.

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PICKUP ARM DESIGN

Part 2—mainly about resonances
by Jack Bickerstaffe

IN the previous article we concluded that a gravity loaded unipivot arm offers a very sound basis for design, and because of its simplicity is the obvious choice for the home constructor. The choice of a unipivot suspension inevitably raises the question of what to do about (induced) torsional motion and in an early design of the author's, i.t.m. due to warped and eccentric discs was controlled by a dynamic balancing technique in which the inertial coupling between the torsional mode and the lateral and vertical modes was reduced, by the addition of small stabilising masses, to such an extent that even a fairly low torsional pivot friction was sufficient to control i.t.m. This scheme worked very well, but there were snags in that (1) the design was tricky and not amenable to later modification, (2) the stabilising masses slightly increased inertia, and (3) pivot friction could not be safely reduced below a specific minimum value.

Over the past few years I have slowly come round to thinking that the old idea of using viscous damping to control i.t.m. offers a simpler solution and is perhaps better in that inertia and friction can be made as small as is practically possible. The main snag from the home constructor's point of view could be the difficulty of obtaining a small quantity of suitable damping fluid, but as will be seen later this difficulty need not arise.

Having decided to control i.t.m. by a viscous fluid in the pivot of the arm, we need next to decide whether to arrange for the fluid also to damp efficiently the LF resonance formed by the pickup's inertia and stylus compliance. This could be done in two ways:

- by direct damping of vertical and lateral movements of the arm, or
- by damped i.t.m. as outlined in the June 1968* and January 1970† issues of HFN.

The second idea requires an unusually high torsional resonant frequency which would involve complications, and it would also be awkward to arrange for efficient damping in the vertical plane—so the idea was rejected. (There will, incidentally, be one plane of movement in which no damping at all could be achieved, but we need not go into all that!)

Direct damping as in (a) would be relatively easy to arrange, but one runs up against the problem of how much can be applied before the pickup's ability to track warps and eccentricities becomes impaired (see the first reference just mentioned). It is thought that a good

workable compromise would be quite feasible in an arm intended to be used with a specific cartridge, but in the case of a universal arm to be used with cartridges of widely differing mass and compliance, the problem becomes aggravated to the extent that there can be no really satisfactory answer.

If we cannot efficiently and safely damp the LF resonance, the next best thing would be to locate it out of harm's way. Now the sources of excitation which can cause trouble of one kind or another are:

- irregularities in the record surface—including, of course, groove modulation;
- movements of the player due to shaky floors, etc;
- movements of the pivot relative to the turntable due to motor vibrations.

Motor vibrations in (c) will normally occur at frequencies greater than 20 Hz, whilst from experience troublesome player movements in (b) seem usually confined to frequencies around the cabinet's 'rock' resonance, thus leaving a gap between, say, 6 and 20 Hz. As regards excitation from source (a), the lowest frequency normally recorded will be around 30 Hz, whilst surface irregularities are usually assumed to be confined to frequencies below 10 Hz. So it would appear that there will be no major source of excitation between 10 and 20 Hz, which is apparently very convenient for, with a little luck, we could place the LF resonance within this frequency range. However, the late C. E. Watts revealed that ripples in the record surface can occasionally occur at frequencies as great as 50 Hz, and it is reasonable to

suppose that such ripples will occur more frequently at the lower frequencies between 10 and 20 Hz. There is therefore no gap wherein we can place the LF resonance with most present-day cartridges with absolute certainty that it will never be excited.

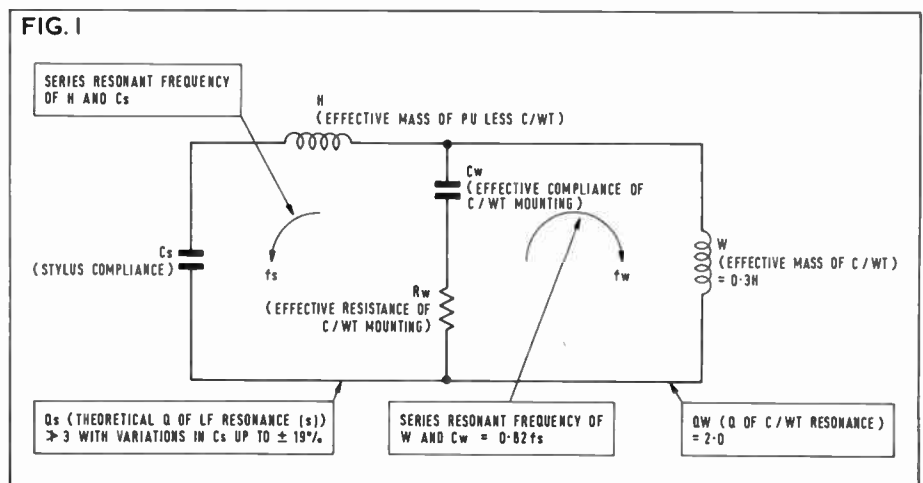
So, what can we do? From the point of view of general stability the arm should have as low an inertia as possible, which will mean that the LF resonance with most present-day cartridges will come out at around 10 Hz where ripples are likely to form the main source of excitation. We can therefore adopt one of two courses:

- damp the LF resonance reasonably heavily and hope that tracking ability does not suffer as a result, or
- rely on the limited amount of damping inherent in most cartridges together with a small amount of viscous damping in the arm and hope that relatively large sustained ripples never occur at the LF resonant frequency.

Either scheme leaves us with a sense of uneasiness, but both have been (and still are) used in commercial arms without producing floods of condemnation, so it is possible to get away with either! With the first scheme a damping fluid with a very low temperature coefficient of viscosity is essential if reliable results are to be expected, and suitable fluids (e.g. silicone fluids) are expensive and not easily obtained in small quantities. If, however, we try to control only i.t.m. as in the second scheme, this snag can be avoided as can best be shown by considering the torsional and vertical Q requirements.

The requirements are a torsional Q low enough to control i.t.m. and a vertical Q high enough not to degrade warp tracking. Suppose we start with a very small amount of damping in the pivot, then as the damping is increased the vertical and torsional Qs will decrease and eventually torsional Q will reach the maximum required for adequate control of the torsional resonance. From the articles in the January, March and August 1970 issues of HFN,‡ this will typically be of the order of 2 to 3. Now at any given frequency the vertical Q will be at least ten times the torsional Q, so at frequencies around the torsional resonance (typically between 1–3 Hz) the vertical Q will at this stage be at least 20 to 30 and far too

‡ *Torsional Motions in Pickups, Parts 1, 2 and 3.*



* *Induced Torsional Motions in Pickups.*

† *Torsioned Motion in Pickups, Part 1.*

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PICKUP ARM DESIGN

high to affect the tracking of warps—we could increase damping ten times or more before there was any danger of upsetting warp tracking.

It is therefore apparent that there is a very wide difference between the minimum amount of damping required for adequate torsional control and the maximum permissible from the point of view of good warp tracking; hence damping is not at all critical. This eases things for the home constructor for he need not scrounge around for a suitable silicone fluid but can use a common-or-garden motor oil. The author's arm, for instance, uses half a thimbleful of heavy gear oil nicked from a local garage when the proprietor's back was turned. Perhaps Mr. D. R. Driver (July 1968 HFN)* acquired the oil for his pickup similarly!

Incidentally I was sorry to see Mr. Driver repeat a piece of (what seems to me) 'misinformation' implying that the damping fluid should be located at record level. I have never yet seen a valid reason given why this should be so and quite frankly I don't think there is one! As far as I can see it matters not a hoot at what height the fluid is located as long as it provides the right damping torque. Perhaps the idea started off as a plausible advertising gimmick and has since become accepted as fact.

Before we leave the question of damping we might briefly consider two possible means of LF damping which consist of inserting a damping compliance in the arm, the first being the so-called 'decoupled' counterweight. Until recently I had been very suspicious of the effectiveness of this idea, since the effective mass of the counterweight of a normal pickup seemed to be too small in relation to the effective mass of the head and arm to provide good damping by this means. However, after going into the idea a little deeper I am now satisfied that good damping is theoretically 'on', but the required conditions are fairly critical and consequently the scheme is not really applicable to universal arms. The more advanced experimenter wishing to build an arm to suit a particular cartridge of known mass and compliance might find the analogue of fig. 1 a useful basis for his work.

In passing I think it should be mentioned that the term 'decoupled counterweight' is an unfortunate choice because it implies that the mass of the counterweight is effectively detached from the arm, resulting in lower inertia. This will of course be true at frequencies higher than the resonant frequency of the counterweight on its compliance, but it will not be true at frequencies below it. Over a range of frequencies just below the counterweight resonance, inertia will in fact be *greater* with a 'decoupled' counterweight than with a fixed counterweight, so 'decoupled' should not be taken too literally in this connexion. I would prefer 'compliantly mounted' or simply 'compliant' counterweight to 'decoupled' counterweight.

A useful purpose to which a compliantly mounted counterweight can confidently be put in a universal arm is to control what I continue to call by the old name of 'tone-arm' resonances. The pickup arm itself will have a number of different resonant modes which, when excited, will tend to produce a rise in crosstalk and irregularities in the pickup's response. The main source of excitation will be groove modulation via the stylus, though luckily the 'shunt' stylus impedance (which will normally tend to decrease somewhat with increasing frequency over the t.a. resonant frequency range) and the series, or 'blocking' inertial reactance of the head (which will increase with frequency) constitute a 'filter' tending to decouple the arm from the groove.

The amount of decoupling will normally increase pretty rapidly with frequency above the LF resonance, and in consequence the higher frequency resonant modes would need to be of extremely high Q before having any noticeable effect on pickup response. The lower frequency modes (occurring often in the range 100–200 Hz) are not so effectively decoupled and these are the ones likely to be troublesome unless steps are taken to ensure fairly low Q values. Experiments revealed that mounting the counterweight on a small compliance was by far the most effective (and simplest) way of doing this and the actual compliance does not appear to be particularly critical as long as the resonant frequency of the counterweight on its mounting falls within spitting distance of the lower tone-arm resonant frequency range.

An effective way of avoiding possible trouble from tone-arm resonances can be summarised as follows. First ensure that the arm is as stiff as possible (compatible with low inertia) so as to push its inherent resonant modes to as high a frequency as possible, where they will be more effectively decoupled from the groove, and then damp the lower frequency modes as indicated above.

Fig. 2 illustrates how a strip of car inner tubing (about $\frac{1}{8}$ in. thick and $\frac{1}{4}$ to $\frac{3}{8}$ in. wide) can be used as a good compliant mounting for a counterweight. The hole size and/or the length of the strip should be chosen so that the counterweight has a fairly firm hold on the arm when the locking screw is tightened.

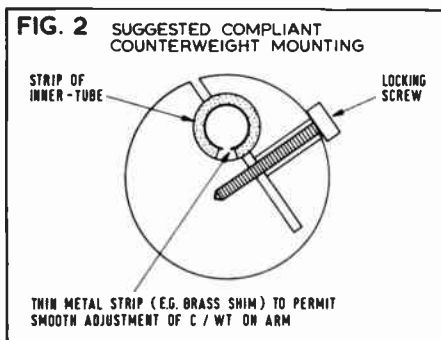
Returning now to LF damping, the second idea of using a compliance for this purpose is the—once again!—so-called 'decoupled' head or cartridge. I have found it rather difficult to analyse this scheme and a couple of half-hearted attempts to derive analogues were unsuccessful, so I cannot offer an enlightened opinion. The half-heartedness crept in because I believe there is a serious snag to the idea in that to achieve good damping a high compliance close to the cartridge will probably be needed, and this will mean that the cartridge settles at widely different angles to the record surface with various tracking weights. Also, as will be gathered later, the effective tracking weight will vary on warps, so even if we arrange for the cartridge to settle at the correct angle with a given tracking weight on a flat record, the angle will not remain correct on a warped record. However, my original hunch concerning 'decoupled' counterweights having been proved wrong, I am a little hesitant about condemning 'decoupled' cartridges, so let's leave the subject for the pundits to mull over!

Since this article has turned out to be mainly concerned with resonances, we may as well consider a final one associated with pickups and finish with them for good. If the head of a pickup, which is balanced horizontally, is depressed and then released it will oscillate up and down at some very low frequency determined by the pickup's vertical inertia and the restoring torque of the centre of gravity towards its mean position directly below the pivot. At the frequency of oscillation, which will be well below that of the LF resonance, the stylus can be considered rigid, and to forces applied to the stylus tip the pickup will appear as a mass (the vertical M1) in 'series' with a compliance (the vertical restoring torque). If the stylus is constrained to move at the frequency of the 'free' vertical resonance there will be no reaction produced (assuming no resistance present in the arm pivot). When constrained to move at frequencies higher than that of the free resonance the stylus will exert an inertial reaction, whilst at frequencies below the free resonance it would exert a stiffness reaction.

Setting the tracking force by shifting the counterweight forward a little would cause the pickup's centre-of-gravity to move slightly forward from beneath the pivot and this, in general, will have little significant effect on the vertical resonant mode except that now there will be a constant downward force—the tracking force—on the stylus. The total downward force will be the sum of the tracking force and the reaction produced by movements of the pickup. Inertial forces produced when tracking warps of higher frequency than the 'free' resonance will reach maximum *upward* values on the peaks of warps and the inertia of the pickup should therefore be as low as possible in order that these upward forces never exceed the downward tracking force, otherwise the stylus will leave the groove.

When tracking warps of lower frequency than the free resonance, the stiffness forces produced will reach maximum *downward* values on the peaks, so to prevent excessive total downward forces the centre-of-gravity of the pickup should be as little below the pivot height as possible (compatible with adequate torsional balance).

An interesting point is that when tracking warps of the *same* frequency as the free resonance there will be no danger of excessive or insufficient total downward force because there will be no reaction to these movements and the downward force will be that of the tracking force alone. So the free resonance constitutes no danger of any sort and it could be argued that it is best left undamped. In



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BBC STEREO



QUITE unwittingly and unobtrusively, the BBC presented a historic stereo broadcast on Tuesday afternoon, December 15, in which the very first completely Dolby'd signal from source was transmitted via Wrotham, without 'decoding', to be received by stereo listeners who may have wondered why the sound was so unusual. I would imagine that I may well have been the only listener, having a Dolby A301 system, who knew about the broadcast in advance, and for this reason I recorded the item. Perhaps I ought now to let the cat out of the bag, for it was a transmission of a record of Bruckner's *Four Orchestral Pieces* on Unicorn UNS210. The first few pressings of this disc were sent out with the *Orchestral Pieces* side cut directly from the Dolby'd master tape without de-Dolbying, although the original test cut of the other side (*Requiem in d*) had been correctly done. Strangely, not only did the quality control department of the company which did the cut for Unicorn pass the record, but to my knowledge no reviewer noticed the strange sound on one side of what will perhaps one day be a valuable record. [*The matter was mentioned in passing in last month's Editorial—Ed.*]

The sound when played back through a Dolby was quite remarkable, all extraneous noise apart from an occasional click completely vanishing, showing what could be done if a noise reduction system were applied to stereo radio.

Some BBC staff who I had asked to listen were completely baffled at the time, and in fact the right channel was increased by 3 dB part way through the broadcast. It was suggested to me that perhaps the original had been fake stereo since the image was shifting all the time. I feel the amusement was genuine when I told them after the broadcast the reason for the strange sound: the opportunity was too good to miss. For this reason I must apologise to my BBC friends for not telling them in advance about this amusing mistake, as it could obviously have been corrected by inserting a Dolby in the equipment for this one item. Finally, I ought to explain that John Goldsmith of Unicorn Records is not to blame for this mistake, since he passed the original cut which was done correctly, and did not hear the result.

For some weeks, Sunday lunch-time listeners have been enjoying the excellent recordings of all Beethoven's Piano Sonatas played by Alfred Brendel. The hiss level seems to have varied from one occasion to another, and also I got the impression that some have had a little more sparkle than others; but there can be no doubt that Brendel is among the finest living expo-

nents of Beethoven and it is most encouraging to see the BBC sponsor such excellent broadcasts. I dare say that listeners have used a few thousand miles of tape recording them for posterity. I sincerely hope that the series will be repeated on week-day evenings shortly, since some people find the timing inconvenient at the moment.

Of the solo vocal and instrumental recitals given recently, I found Janet Baker's song recital quite outstanding, with excellent diction and the right amount of clarity with good perspective. The recording was made at a public concert in Malvern in May 1970.

Another recital which gave me a lot of pleasure was Richter's Festival Hall one, in which he scrapped his entire Beethoven programme, admitting that he had become temporarily tired of this composer, and substituted a long Sonata by Schubert and works by Prokofiev, Bartok and Szymanowski. In general the transmission was good, but I would have preferred a closer piano sound which would have given more clarity in the complex Prokofiev Sonata. How annoying it is to hear continuous sniffs, coughs and fidgets which are so noticeable when a distant microphone is used. To be fair, however, it is possible that Richter might have objected to a mike being closer and therefore more visible.

Tippet's new Opera *The Knot Garden* was transmitted on December 5 and the sound balance was exceptionally fine. I noticed a particularly wide frequency range and a very fine balance between the singers and orchestra. The hiss level was amongst the lowest that I have heard on live stereo broadcasts. I had the impression that closer mikes than usual were used, which helped to give an especially fine string sound.

Poulenc's extraordinary telephone opera *La Voix Humaine* had a welcome airing, performed at the Camden Festival and conducted by Roger Norrington. The Park Lane Group Orchestra accompanied Anne Pashley in her gigantic telephone monologue. The sound was fairly reverberant but always clear, and the tape noise quite acceptable.

Andrew Davies took over conducting at very short notice from Inbal in the concert given by the BBC Symphony Orchestra at the Festival Hall on November 18. He began with Dvorak's *Symphonic Variations*, which sounded well except for slight ticky hum from the Wrotham transmitter on the left channel. In the second half he gave an excellent performance of Janacek's *Glagolitic Mass*. The sound was very smooth and wide with a good choral balance. I particularly noticed better-than-

usual woodwind sound with clean strings, giving the impression of slightly closer microphones than usual, although I suspect the presence of some backward facing reverberation mics.

This last month has been most interesting for stereo, though there were some rather bleak patches. How disgraceful, incidentally, that the BBC had no standby generator functioning at Wrotham at the beginning of the power cuts, although they managed to get one from their Brookmans Park transmitter to Wrotham to keep *Radio 4* on the air. However, the stereo chain should not be jeopardised again since a permanent standby generator is shortly to be installed. Excellent hindsight!

BBC STEREO FOR FEBRUARY

- Feb. 1st: Royal Festival Hall. Amadeus String Quartet, Schubert, *Trout*.
- 3rd: Royal Festival Hall. BBC Symphony Orchestra, Verdi, *Requiem*. Conducted by Rossi.
- 5th: Queen Elizabeth Hall. Polyphonia Orchestra/Boult. Berkeley, Havergal Brian.
- 6th: Queen Elizabeth Hall. Bach *Mass in B minor*.
- 8th: Handel: *Acis and Galatea*. St. John's Smith Square.
- 13th: Covent Garden. *Eugene Onegin*.
- 14th: Festival Hall. Mozart, Britten, Mahler (4th Symphony).
- 17th: Royal Festival Hall. BBC Symphony Orchestra/Boulez.
- 22nd: (i) BBC Symphony Orchestra/Okko Kama Sibelius, Beethoven.
(ii) Schutz and Monteverdi, St. Stephen's Walbrook.
- 23rd: Royal Festival Hall. London Philharmonic Boult, Beethoven and Vaughan Williams.
- 24th: Royal Festival Hall. English Chamber Orchestra/Anda, Mozart Piano Concertos.
- 25th: Bach, *Brandenburgs*, St. John's Smith Square.
- 26th: London Coliseum. Janacek. *The Makropoulos Case*.
- 27th: (i) BBC Symphony Orchestra, Schumann
(ii) Verdi, *Il Corsaro* (Studio production).

PICK-UP ARM DESIGN *continued*

practice, however, applying torsional damping will inevitably result in its being quite heavily damped.

Those readers who have followed previous arguments on warp tracking may now suspect their validity, since they were based on the assumption that vertical movements produced only inertial forces. In a typical case, however, the frequency of the free vertical resonance will be below 1 Hz and warps could only occur at higher frequencies and so produce only inertial forces as assumed. This fact may now tempt readers to query the necessity for minimising stiffness forces—after all, why bother to ensure small stiffness forces if none will be produced? Well, all the preceding talk has assumed that warps will have an approximately sinusoidal shape when in fact we will get some pretty queer shaped ones. Those with a flat top, no matter what the frequency, will produce a downward stiffness force whilst the pickup is riding along the top. So it is still wise to keep the pickup's centre-of-gravity as high as possible to enable it to cope with large odd-shaped warps.

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hi-fi

An encouraging tale for modest hi-fi beginners

BY G. B. GILLIE

HAVING a very modest audio set-up, driving a pair of Goodmans Twin Axiettes in home-made enclosures, my appetite was whetted by an advertisement for the Sinclair Project 60, and I decided to assemble this stereo amplifier and build a turntable from a Connoisseur BD-I kit, using the SAU-2 pickup arm and a Shure cartridge.

I have no knowledge of electronics and only minor skill as a Do-It-Yourselfer, but I managed in the end to produce an excellent amplifier and turntable which would take some beating at three times the outlay. The system (see photos) would I suppose be described as medium-fi by many, but its performance as heard represents outstanding value for money.

The components for the P.60 arrived after some delay and I decided to follow the lay-out suggested by Sinclair in their booklet. I was impressed by the high quality of workmanship of the modules and control unit, and hoped my final wiring, etc, would not disgrace me. The instruction booklet made everything very clear. As suggested by the makers, I made the edge connectors by soldering in dressmaker's pins and cutting them down. This from my point of view was a big mistake: soldering in the pins was easy and they looked good, but when I attempted to solder on the connections I ran into trouble. My iron had a bit a little too large for the job in hand, the steel pins were very rigid, and my soldering technique not so good, with the result that some pins broke away and in one case the end of the copper track was fractured. I repaired this by flattening the end of a piece of copper wire,

which I then bent at right-angles, passing the wire up through the circuit board and soldering the flattened end to the copper track. This seemed a much better method, so I unsoldered all the pins and replaced them with copper wire and had no trouble with the connections after that.

My next minor criticism of the assembly concerns the front panel. The instructions for mounting it were very precise, but the aluminium panel is finally fixed on a wooden mounting panel with adhesive, which does not allow for any movement or errors which novices like myself may make. Once there it is fixed to stay. I feel it would be better to fix it with a couple of screws or some clips so that it can be removed if necessary.

After I had made a metal box the assembly proceeded smoothly. The box was made in two halves from 18 gauge aluminium, which was easily bent to shape on the bench with a wooden mallet. The two easily assembled halves make for easier servicing, etc. The front panel was made from a piece of $\frac{1}{4}$ in. ply and the 'sleeve' from scrap ply, the intention being to make a permanent one after tests. The back of the box was drilled to take the main

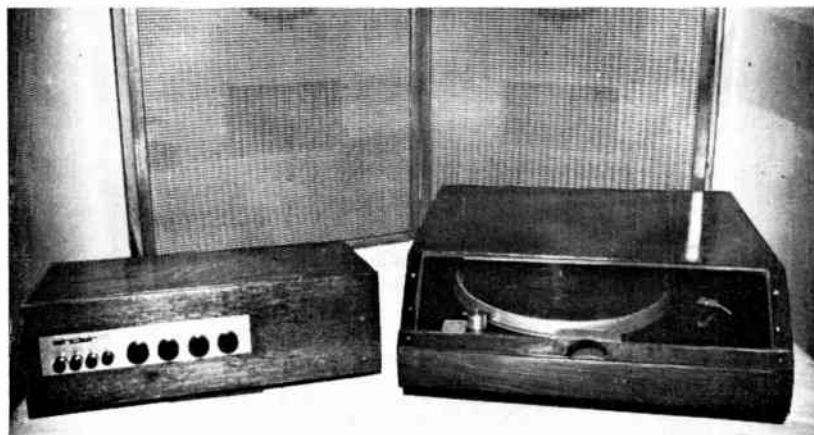
fuse, the 5-pin and 3-pin sockets for the inputs, and two loudspeaker sockets. To provide a heat-sink, the Z30 amplifier modules were mounted on a strip of $\frac{1}{2}$ in. square aluminium. It was also found necessary to mount the output capacitors vertically because of lack of space.

The wiring was completed and the whole assembly looked reasonable. The only question was: would it work? The Connoisseur BD-I and pickup arm had not yet arrived and I did not want to disturb my previous set-up, so the only way I could test was with a microphone of unknown characteristics. However, I set it up and—low and behold—it worked; of course I could not judge the quality of reproduction, but the signs were favourable.

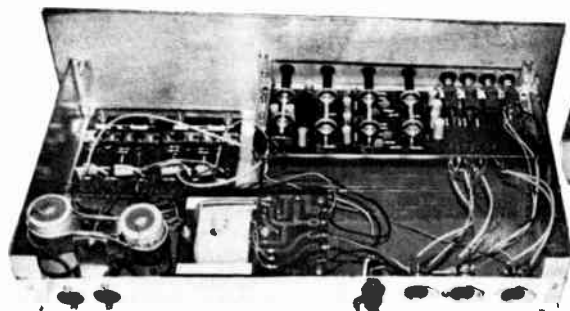
Before the BD-I arrived I had made a plinth and got a piece of $\frac{1}{4}$ in. Perspex ready to mount the turntable and arm. The assembly was simplicity itself, and mounting the arm on the Perspex (painted black underneath) presented no difficulties. The arm was then fitted with a Shure magnetic cartridge. I can find no praise too high for this unit: the motor and turntable are completely silent, the SAU-2 arm is excellent, and the cartridge sounds smooth and clean. I wasted no time in connecting up and the result was, as my teenage friends would say, 'fantastic'.

I made a temporary cover for the turntable from scrap wood, as can be seen in the photos. It will be useful as a pattern when I make a permanent cover, as also will the present sleeve for the amplifier.

The whole cost of this effort was around £60, for which I have a first-class transportable stereo system. I hope to add a tuner later. I am now in the process of building a couple of larger capacity loudspeakers as the P.60 can easily overload the Goodmans Twin Axiettes and I feel that some upgrading is now called for at this end of the chain. Perhaps this, my second stereo system, will prove to be simply part of a longer trail, but I am greatly encouraged at the results obtainable for a very modest outlay—and with a tyro contributing the DIY!



low cost



Sinclair Project 60 (left) and Connoisseur BD-1 turntable with SAU-2 arm (above)

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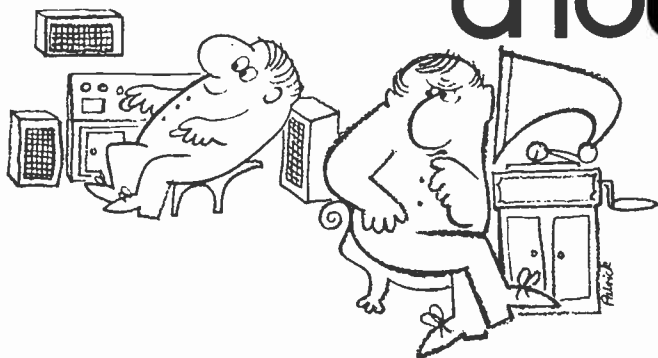
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a touch of the GRIPES

Peter Turner has a good old moan about technical progress

IT'S too much: I don't think I can bear it. I have a turntable, a pickup, an amplifier and two loudspeaker systems. They are all good of their kind—candidates, certainly, for state-of-the-art classification; and all, it seems, with the exception of the turntable and arm, are obsolescent. Having just re-assessed them for the purpose of insurance, I am stunned. Like a Charlie, I had blithely supposed that I could now sit back for a few years, awaiting the advent of equipment not only claimed to be better, but actually being better. Then I could start to worry—and, despite what the advertisements say, such things don't happen all that often.

When stereo burst upon us, I was an objector. Why the hell, I said, should anybody want anything better than good mono? In the end I gave way (and, God help me, probably shall again) and stereo has become for me, as for most other addicts, the norm. There is no doubt about it: stereo enhances the illusion that one is there. More importantly, it gives musical sounds which are a 'closer approach to the original'. All right. Stereo has also, beyond question, encouraged the development of pickups, amplifiers and loudspeakers which are in many cases vastly superior to those of the mono era, so that even those brave backwoodsmen—and I wish I had the guts to join them—who stick to mono are getting better mono than they did fifteen years ago.

All right; but I have never lost a horrible doubt. We are getting better sound, but are we getting higher musical appreciation and enjoyment? I take leave to doubt it. An expert listener, armed with the score, may argue that he can follow the strands more readily; but most of us are not experts, and follow the score, if at all, only with the aid of a wet towel and a bottle of Scotch. And whether the experts really need to be so helped is also a matter of doubt. Do I enjoy music more on my present rig than I did from the Edison cylinders with which I started? The other day I put on a test-tape and found to my surprise that I can still hear a 15 kHz tone; so it isn't just that I'm getting old and can't tell the difference. All that din in the background has gone; but we didn't take any notice of it, whereas today the small blemishes which accompany every record, however carefully bugged and preened, are distracting.

The difference, I believe, is that in early days we accepted reproduced music as reproduction: today we are encouraged to go all out for reality. And it can't be done. Even when we reach the stage—and we shall—when our present gear is as crude by comparison as the acoustic sound-box is today, we shall still be sitting in our little rooms, listening to a gramophone, call it what we may. When Zubin Mehta has joined Sir John Barbirolli—and may that be a very long time—his successors will still not be here: we shall be listening to equipment still.

We can go to what lengths we choose: we can disguise speakers behind acoustically-transparent curtains so that we do not see them; we can look forward to discs or tapes or something else which will play a whole concert without attention; and we shall still be at home, the performers will still not be present. All we shall have done will be to have added to—the illusion. Now, T. S. Eliot has warned that human-kind cannot bear very much reality; and illusion becomes insanity only when we cease to realise what it is—but it remains illusion. We know that we are listening to mechanico-electronic gadgetry; and we always shall. The question is: how much illusion do we desire, and how much are we prepared to pay for it?

I have just been listening to Sir John's last recording: Strauss' *Ein Heldenleben*. In my judgement, as a recording it is stunning, as a performance a masterpiece. I rejoice that a career should end with such a memorable triumph. But . . . has my appreciation of the work been enhanced, or am I being bewitched by technical achievement? Well, Barbirolli does shed new light on the work: all great conductors do, even when one humbly disagrees with them. But I don't need superb reproduction, I don't need even stereo, to appreciate what Barbirolli has to say about this work: a tiny transistor-set would tell me that much. If I now rate the work more highly than I did, I owe that to Sir John, not to the engineers. I bless them for doing him justice in the present state of the art; but I could have received the primary blessing even had they done less well than they have.

And so I come back to what I call in my mind the illusion of the illusion. Not long ago I heard a world-famous equipment manufac-

turer say that he derives his bread and butter from compulsive neurotics: from people who simply must have the newest equipment, because it might be better than what they already have. Now, God wot, I suffer from withdrawal symptoms too; but when I give way to them I know what I am doing. There is nothing morally wrong with pursuing a hobby—nothing wrong with seeking an end that is unattainable. My plea is that we should not confuse that with the enjoyment of music; that we should not suppose that when we have advanced another thousand miles in the perfection of reproduction we shall know any more about its essential mystery. The sudden over-hearing of a forgotten masterpiece over a tinny oriental toy can pierce the soul more than a carefully-chosen record from a cherished collection. May I long revel in beautiful sound; but may I never confuse that with the enjoyment of music.

Well, this tirade has been produced as a result of the advent of four-channel stereo. Two channels, it seems—and I am sure it is so if They tell me so—are not enough. Our esteemed Editor (and Mr. Kampel last month) has already found that when he switches back from four- to two-channel reproduction, all goes flat by comparison. I can tell him that he will get the same result when, one of these days, he switches from eight back to four, and then from sixteen back to eight, and eventually when he goes back to whatever was the previous figure from a separate channel for every instrument. Then, indeed, we shall have an orchestra in our homes! We shan't, of course, be able to get into those homes; but the orchestra will be there—or, more strictly, *the illusion* of the orchestra will be there; and the mystery of music will be no nearer to solution.

And so, back to my poor equipment. From being state-of-the-art stuff, it already has on it the black stains of obsolescence. Soon I shall need another pair of speakers, hung on the walls behind me; I shall need—I presume—a four-channel amplifier and a four-channel pickup or tape-deck. I look ahead to the days when we use inch-wide tape, with about thirty channels on it: that will really be something like. Something like, yes; but so is my poor old stereo. All right then: more like. Indeed, but the Late Quartets will still be what they always were, and I don't believe that I shall know them any better for my thirty channels.

I just feel that I can't be bothered; that I want to be left in peace, to get on with my music. I remember one chap who gave up when stereo was introduced: from a speaker set in plaster-of-Paris and suspended from the roof (God knows why) he went back to a good-quality radio set—and began once again to listen to music. I have a sneaking feeling that he was right.

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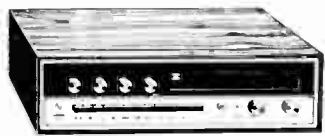


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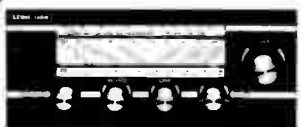
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The Customer is Always Right...

(even when he's wrong)*

By P. N. Heidenström

GLANCE into many British amplifiers, especially one made in the days before printed circuits, and there you will see a remarkable sight—everything stowed in the most shipshape fashion, wires neatly strapped together, gangways clear; a sight, in fact, that would soften the heart of the toughest 'Chief' in the Royal Navy. All this is mostly unnecessary, of course, and is seldom even looked upon. But it engenders confidence. It shows the hand of a perfectionist. That confidence has persuaded many a buyer, both inside and outside your country (the writer is a New Zealander), that where amplifiers are concerned the best policy is—buy British.

Most of the best-known British amplifier manufacturers are small businesses. They were founded by perfectionists, men who were themselves enthusiastic over the virtues of high fidelity sound reproduction. May they (to echo a recent correspondent) always remain perfectionists—and small! But this perfectionism has one notable drawback. Instead of the customers' requirements dictating the design of equipment, there has been a 'Mother-knows-best' attitude, a certain 'These-things-are-not-for-you-my-children' mentality. Its most obvious manifestation is of course the obdurate refusal of most British amplifier makers to incorporate a *loudness* control in their products.

Now, I agree with the arguments against this feature and would not use it even if it was available on my amplifier. But the fact that it is included in the vast majority of amplifiers made in the United States, Japan, and Europe (which means the vast majority of *all* amplifiers) would seem to indicate that there is a sizeable demand for it.

Like the Boy Scout who insisted on helping the old lady across the street—when the old lady did not *want* to cross the street—we must realise that even the highest of motives do not always give us the right to dictate to others what is best for them. Moreover, in these days when advanced thinkers are breaking down the laws against pornography, homosexuality, drug-taking, abortion, and similar delights, how much harm will really come of allowing a few record collectors to indulge in the wickedness of a *loudness* control?

It was a similar shortcoming that made up my mind, some years ago, when trying to choose between two amplifiers, both of them British. In amplifier A the output to a tape recorder was taken from before the tone controls; in B it came after. Since it was my intention to transfer to tape a number of valuable 78 r.p.m. discs, B was the obvious choice: any filtering of surface noise could be done before the transfer, thus obviating the inconvenience of having to fiddle with tone controls every time these tapes were later played.

Messrs. A, however, consider such inconvenience to be less important than the possibility of spoiling the transfer by inadvisable tone correction. There are three answers to this. First, we all have the right to make mistakes and to benefit from the added knowledge gained thereby; second, any owner of that amplifier who does not want to apply correction before the transfer can use the 'cancel' switch so thoughtfully provided by the makers of this particular amplifier; and third, a man who buys amplifiers at about £100 a throw (recommended retail price, of course) may well be a steaming great nit, but he may also object to such an implication on the part of a salesman who, to quote Anscombe, prides himself on knowing the difference between output and record.

Well, in the event amplifier A (although recommended for use with speakers that require mains power) did not possess any AC outlets, a primitive state of affairs that, much as I coveted A, disposed me further towards B.

Thus, while British amplifiers are justly renowned for their exemplary design, manufacture and performance in the purely electrical sense, in the provision of facilities there appears to be a high old disregard for that venerable tenet of better business, 'The Customer is Always Right'.

Since we're talking about amplifiers, and have, perhaps, caught the ear of a manufacturer or two, this prospective customer would like to outline the features that would be significant enough to wean him from his present amplifier and from the money he would dearly like to spend on a new one.

Just before anyone produces a fistful of 2N 3055s as a helpful gesture, let's consider, in the hard light of day, the advantages of transistor equipment as propounded by a well-known maker, viz:

● "52% lighter" ... do you carry your's about with you?

● "57% smaller" ... the space that mine occupies would not even interest the family cat in its most exploratory mood.

● "More reliable" ... in nine years my only repairs have been to whip out a valve or two—and you try replacing a transistor in five seconds flat.

And some other claims:

● "cooler running" ... who sits on an amplifier?

● "lower hum level" ... but more RF breakthrough!

● "lower power consumption" ... hurrah, hurrah!

● "no warm-up time" ... no comment.

Moreover, for equivalent performance

especially in *apparent* power capability it seems that transistor amplifiers have to cost considerably more. No, someone will have to do better than this if the transistor is to prove much more than an expensive red herring across the trail towards higher fidelity.

But back to those tone controls. If any manufacturer feels it his humanitarian duty to preserve his customers from the unnatural effects of *loudness* controls, does this mean that 10 dB of treble boost or bass cut, which you can find on any amplifier, is therefore *not* unnatural? Half of this range, surely, is ample for anyone. I would gladly swap three-quarters of it for the much greater utility of being able to vary each channel independently to take care of the inconsistencies of balance inherent in many listening rooms. This facility, again, is not uncommon on Japanese and American equipment, and it is significant that Ferrograph, evidently one of the few British audio firms to conduct detailed research into their customers' requirements, have incorporated it in their F307. Additionally, independent volume controls (eliminating the need for a balance control, of course) would permit the complete muting of each channel. Many balance controls do not, even on the most expensive equipment, thus depriving their owners of a valuable help in checking crosstalk and tracing faults.

Those bass and treble controls should first take effect only at the frequency extremes, since that is where correction is most often needed. As more correction is applied, so its application becomes wider. This, many readers will recognise as what used to be called the familiar Baxandall configuration—alas very far from being familiar these days. Even better would be the sophisticated and versatile Körting tone control circuit, for besides performing the functions of both passive and feedback tone controls it can stand in for *loudness* and *presence* controls, and even filters. Unfortunately it would probably apply a steep-cut attenuation to the buyer's bank balance as well.

Versatile HF filters (or low-pass, if you prefer that devious expression) are a commendable feature of the best of present amplifiers, but the improving quality of modern discs, pickups, and speakers calls for some change in turnover frequencies. A 4 kHz filter is still useful for those with classic 78s, but further turnovers at, say, 8 and 12 kHz might be more useful than the present 6–7 and 9–10 kHz.

These higher figures were in fact introduced some years ago but the attenuation slope was insufficient to realise their full benefits. In this respect the continuously variable 0–20 dB slope on the Rogers *Ratensbourne* is a model

(continued overleaf)

* The Editor does not necessarily agree, etc.—Ed

of its kind, and the Quad's versatility is also very well known.

An LF filter is also required. This should be built-in, like the Ravensbourne's 30 dB/octave below 20 Hz. A second, switchable filter operating from about 50 Hz might be an advantage with lower-grade turntables—about which more later. All these controls (except for volume) should also modify the tape output as explained earlier. Here a simple Cancel switch like the Quad's would be of value when a linear transfer was required.

The chief shortcomings of amplifiers are, however, not in tone controls but in the choice of input facilities. My own requirements have ranged from a sensitivity of 1V to 2 mV, which should not be at all unusual, yet there was only one amplifier versatile enough for my purposes. Indeed it was more than adequate, having four pickup inputs and six others. By contrast, another model that has come under consideration was summarily dismissed because its flat inputs give no choice of sensitivity or impedance—it has, in effect, only one such input!

The duplicate pickup sockets on my present amplifier have been invaluable in comparing different cartridges. With two arms mounted on the motor board, a flick of the switch provides an A-B comparison, the ideal way of obtaining an immediate assessment of any prospective purchase. Similarly, anyone with a duplicate turntable and arm (a record-

changer, say, for the younger members of the family) can couple both permanently to the one amplifier.

The *Leak* range was one of the first to provide this facility. It was dropped from the *Stereo 30* but, significantly, has been reinstated on the new *Stereo 30 Plus*. The value of such a second input is out of all proportion to its cost, which is after all, only a few pence for a pair of sockets, an inch or two of wire, an extra wafer on the switch and a few minutes with a soldering, iron.

For that second turntable (or pickup) an input properly tailored for ceramic cartridges would enable them to give of their best, as they rarely can. That implies a high impedance, uncorrected, or a carefully designed equivalent—but of course, just about no one ever bothers.

The remaining inputs, for radio, tape replay, and so on, should preferably give a choice of sensitivity, at least one being adjustable to meet special demands. If cost is now running higher than desirable, microphones and tape heads could well be catered for by optional pre-amplifiers.

A few elementary conveniences and our amplifier is complete: A couple of AC outlets, unswitched so that ancillary equipment can be used independently of the rest of the setup, and turntable idler wheels protected from accidental switching off while still engaged.

Headphone sockets—at least two, for married couples with young children!—should be properly terminated, and controlled by a three-position switch giving phones, speakers, or both. As Mr. Baldock has pointed out,

really deep bass is felt rather than heard, and headphone listening can be subtly enhanced if the speakers are operating at the same time!

A tape monitor switch, for A-B checks while recording, and a phase-reversal switch are also worthwhile too. It is all very well to say that care should be taken in connecting up, but what if you pay a minor fortune for one of the 'top three or four' pickups and discover after many frustrating hours (as I did) that its output is wrongly phased?

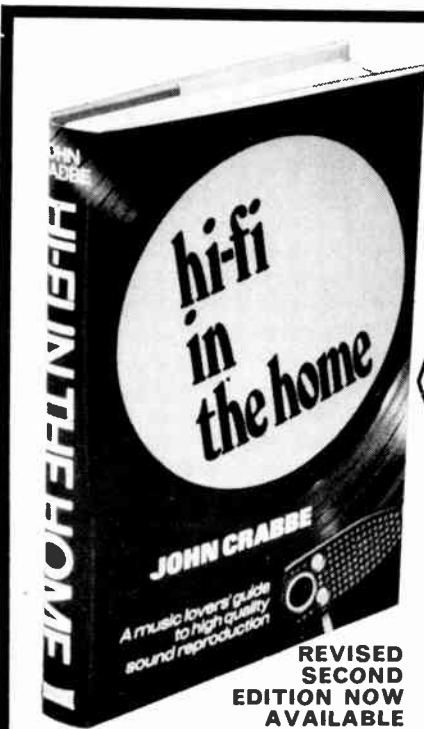
To sum up now, our amplifier would have the following minimum (facility) specification:

Inputs

1. Low-level, RIAA
2. Low-level, RIAA
3. Flat, high-impedance.
4. Flat, say 100 mV into 100 K.
5. Flat, say 200 mV into 100 K.
6. Flat, variable sensitivity and impedance

Controls

7. Input selector.
 8. Mode selector (stereo, reverse, mono, L only, R only).
 9. Volume control.
 10. Bass boost and cut.
 11. Treble boost and cut.
- (Nos. 10 and 11 acting initially at extreme frequencies; Nos. 9 to 11 independently variable on each channel).
12. LF filter, built-in, steep cut below 20 Hz.
 13. LF filter, switchable (below, say, 50 Hz).
 14. HF filter, turnover at, say, 5, 10, and 15 kHz.
- (continued opposite)*



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 "One of the big helps . . . covers every aspect for beginners and experts."—*Evening News*

BOOK REVIEWS

TUNERS AND AMPLIFIERS (How to Choose and Use Tuners and Amplifiers). By John Earl. 187 pages, many line and tone illustrations. Price £2.10 Published by Fountain Press Ltd.

THE NOM-DE-PLUME adopted by the author of this useful book conceals the identity of one of the most prolific writers on radio and electronics, and a regular reviewer and contributor to this magazine. After an introductory chapter describing in detail the various elements that make up a modern domestic hi-fi installation, with the desirable features and standards—and a critical reference to the DIN standards—the second chapter entitled *The State of the Art* establishes the essential value of the book right away.

It begins with a comprehensive examination of current development techniques in AM/FM receiver design, followed by an equally thorough survey of trends in audio amplifier circuitry, including a topical discussion on the Class Problem: why crossover distortion is subjectively more objectionable than most other forms, and the design techniques favoured by various schools of thought in seeking to eliminate it.

Successive chapters deal helpfully with the problems of choosing suitable equipment, the use of a hi-fi installation with special attention to tuners, how FM stereo works, and the difficulties associated with the satisfactory reception of a multiplex signal. One chapter is devoted exclusively to systems and compacts, guiding the reader skilfully through such pitfalls as 'advertised' watts and *real* watts, amongst other confusing euphemistic language that is the stock-in-trade of our advertising experts.

The last of the eight chapters is specially valuable and deals with amplifier and tuner specifications, explaining what they mean in lucid and easily understood terms.

Throughout, the author has drawn upon his considerable experience as a reviewer, copiously illustrating the text with diagrams, circuits of commercial products, and photographs that include a large number of oscillograms. As one might expect in an up-to-date book of this kind, modern semiconductor devices are mentioned, such as ICs (integrated circuits), field-effect transistors, and, in tuners, the trend towards crystal and ceramic filters in the IF strip and the use of variable capacity diodes in the RF stages. In all instances, the role of these new devices in modern AM/FM tuners and audio amplifiers is examined in detail, usually accompanied by a point-to-point explanation of circuit operation.

There is some evidence that the writer's forte is mainly in RF techniques, but this is in no way intended to belittle the sections devoted to the audio side; these have a more than adequate coverage and virtually nothing is omitted in looking at current thinking on the subject.

It is inevitable for one so active in technical journalism, that stylistic standards are difficult to sustain (as this reviewer knows only too well). Despite a surprisingly 'stiff' start in the opening chapter, a few personal Pet Hates, and sentences that begin or include 'It is noteworthy that . . . the text soon relaxes into the more

familiar, personal approach one usually associates with this writer, an easy and very readable style that is maintained to the last of the book's 187 pages.

Newcomers and old hands alike to the hi-fi game will find this book chock full from chapter to chapter with both factual information and expert opinion. A most valuable addition to the bookshelf, warmly recommended.

R. Williamson

The Technique of the SOUND STUDIO by Alec Nisbett. Second edition, revised and enlarged. 559 pages, numerous line illustrations. Published by Focal Press. Price £3.50.

THIS SECOND EDITION of Alec Nisbett's book, first published in 1962, is now brought up to date and enlarged by the inclusion of new material on TV sound, four-channel reproduction, sound-on-film, and basic sound theory.

The major content is a comprehensive and authoritative account of operational studio techniques, covering all aspects from the original studio design to the editing of its eventual output. In this field, its attention to detail is outstanding, and there can be few amateur recordists (not to mention the pros!) who cannot find something new in it, or benefit from the profusion of practical tips for improving techniques, avoiding subtle pitfalls, and coping with the unexpected. One technical omission, however, is any mention of Dolby noise-reduction.

Not surprisingly, in view of the author's background, many of the situations dealt with are peculiar to broadcasting organisations—few of us will ever need (or, dare one say, *want*) to record a televised discussion—and the book is based almost entirely on BBC equipment and procedures; but the material offered has a wide application. Much can be learned about microphone placement, for example, the cases discussed covering everything from one saxo-

phone to a complete opera—with the notable exception of the solo pipe organ!

The least valuable chapter is, perhaps, the first one on the fundamentals of sound. The material is unduly condensed, and some parts could even confuse the beginner. Perhaps it was this compression that led to the unfortunate statements on pp. 16 and 18 that the velocity of sound varies substantially with air pressure. Overall, however, the accuracy is commendable, and lucid explanations are backed up by clear diagrams and bold print. A short bibliography and a useful glossary of terms are included, and the index is sensible and adequately cross-referenced. Eminently readable, and a useful reference work, this book can be recommended to the keen recordist, and to anyone interested in the technical workings of a vital communications medium.

Trevor Attewell

THE ART OF RECORD BUYING 1971. Sixteenth edition, 310 pages. Price £1.75, available only from the publishers (by post £1.85). Published by E.M.G. Handmade Gramophones Ltd., 26 Soho Square, London, W1V 6BB.

ONCE AGAIN, the inimitable services of E.M.G. and their *Monthly Letter* are summarised in book form for the busy classical record buyer who wants concise but reliable recommendations. The monthly reviews in the 'Letter' produce a steady shuffle of current top ratings; but each year these changes are transfixed for a while in this book so that one can refer to any work by any composer, easily and alphabetically between hard covers.

A particular feature of E.M.G.'s reviews (and HFN/RR's!) is their concern for recorded sound quality in addition to music and performance. This is reflected in the ratings, which are repeated with details of performers, etc, in *The Art of Record Buying*. Of course, on the musical side no one person could agree with every recommendation here, and I regret one or two omissions (Barbirolli's *Otello* for instance); but it is in the nature of music criticism to regard contrary opinions as perverse! For what is essentially a catalogue the price is rather high (10s. up on last year), but it still costs less than most LPs and remains the most reliable general guide to the whole classical record field.

John Crabbe

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as uncluttered as possible. For my part, amplifiers are objects that should be heard and not seen.

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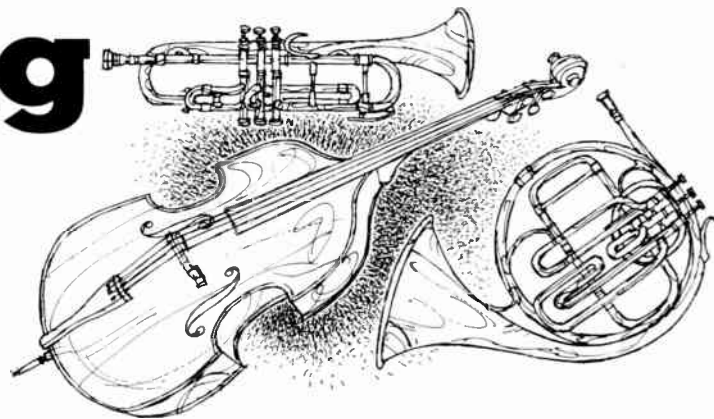
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Identifying Musical Sounds



Vivian Capel discusses some factors in instrumental tone-colour and describes an interesting subjective listening test

WHEN a succession of notes that we call a melody is played on a musical instrument, the sequence can be recognised, and if we feel like it we can hum or whistle the same tune. This is because: (a) each note has a definite pitch—that is, our sensation arises from vibrations occurring at a certain number per second; and (b) each such note is part of a scale with which we are familiar. In other words, the ear, being frequency conscious, identifies different vibrations as notes of a different pitch, at the same time noting, in some mysterious fashion, the relationships between a succession of such notes. Harmony, the 'vertical' element in music, is produced when different melodic lines are played together, the resulting chords comprising (in diatonic music) groups of harmonically related notes—that is, notes with a fairly simple mathematical relationship between their frequencies. Such relationships are also at the root of the diatonic scales, accounting partly for our sense of melody.

This is the basis of music, melody and harmony (except for certain modern types where either or both are conspicuously absent!), so it can be seen that the ability of the ear to identify pitch and pitch relations is essential to the enjoyment of music. Rhythm, the timing and duration of notes, is also important, although this is not dependent on frequency distinctions. However, music that consisted only of rhythmic patterns without any frequency variations would be rather dull after a time, although for short periods, such as a solo drum passage, it can be stimulating.

The ear can distinguish a recognisable pitch from about 16 vibrations per second (16 Hz) to about 16 thousand (16 kHz). This varies with individuals and is curtailed somewhat as age increases. The fundamental musical tones in common use range from about 27.5 Hz to 4186 Hz. This is the range of the piano from its lowest to highest notes, and all the normal pitched orchestral instruments except the piccolo (top note = 4699 Hz) fall within this span. The organ is the one major Western instrument with a more extended range, its lowest note sometimes going down to the

limit of hearing at 16 Hz, and the highest to over 8 kHz.

This may be familiar ground to many readers, but it is the next stage of identification which may prove less easy to understand. How does the ear distinguish between the various instruments? If a note being played is just an air vibration at a certain frequency, how can we tell whether it is a violin or clarinet producing that note when they are oscillating at the same frequency?

The explanation most commonly advanced to account for this is the presence of overtones along with the basic note frequency. If any physical object is set vibrating, whether it be a violin string or column of air in a pipe, in addition to the basic frequency—termed the fundamental—it will vibrate also at twice, three times, four times, etc, that frequency. These are known as the second, third, fourth harmonics and so on. The strength of these harmonics relative to the fundamental varies from one instrument to another.

In addition to these main harmonic overtones, other parts of the instrument come into play to add further colorations. Thus the various wooden parts of the violin, the belly, back, bass bar, sound post, bridge, as well as the enclosed air all vibrate at their natural or resonant frequencies as well as that of the vibrating string, adding sound energy which may not be harmonically related to the fundamental tone. When these additional overtones are concentrated in particular frequency bands, which are thus emphasised, they are said to produce 'formants'. All in all, it can be seen that a very complex waveform is built up, consisting of a large number of frequencies in addition to the fundamental, when any particular note is being played.

Each instrument has its own characteristic pattern of overtones and harmonics, often varying in different parts of its overall compass. For example, the clarinet has prominent odd-numbered harmonics, while the even ones are weak. This gives a rather nasal sound, and is due to properties of the reed as well as the shape of the instrument and air column. The violin has a large number of harmonics extend-

ing up to and beyond the thirtieth in some cases. Generally they diminish in strength gradually and smoothly the higher they go, but the fifth and seventh are usually more prominent. Another note-worthy instrument is the flute: the harmonics are few (in its higher register they do not go beyond the second), and they are almost perfectly proportioned with none over-emphasised. It has a very pure, clear tone which is unmistakable.

Thus we have what appears to be a neat and simple explanation of how the ear can tell the differences between various instruments: it simply recognises the characteristic harmonic and overtone patterns. Unfortunately there are one or two facts which tend to throw a spanner in the works. It is observed, as hinted earlier, that when comparing the upper, middle and lower register of many instruments, the harmonic pattern is completely different.

As we have seen, the flute has only one significant harmonic in its upper register, yet in its lower register it can generate up to ten. The bassoon has a fairly conventional upper harmonic pattern with a strong fundamental and harmonics of gradually diminishing strength, yet the middle register has a weak fundamental with the second harmonic actually much stronger and the following harmonics irregular in strength—the tenth and fifteenth being particularly strong. The lowest register is completely different again, with a very weak fundamental and the harmonics actually getting stronger up to the fifth and then decreasing, but with different strengths from the preceding registers.

The same is true of many instruments, with the number and proportion of overtones being so different between registers, that the patterns could have been made by completely different instruments! Yet in spite of this we still recognize these instruments: they possess the same subjective tonal characteristics. A bassoon still sounds like a bassoon whatever part of its range it is playing; if it plays up the scale, it doesn't drastically change its musical character at some point.

There is yet a further complication. It can be shown that when an instrument plays either

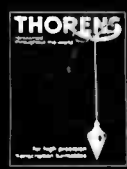


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soft or loud, the change in volume is accompanied by a change in harmonic content. This is especially the case with the piano: the harmonic pattern of a note played softly is completely different from one played loudly, even though it is the same note. The loud note has many more harmonics and a large number of overtones that are not harmonically related. The presence of the latter helps to explain why a piano that is 'thumped' often sounds unpleasant.

Again, as with the various registers in other instruments, although there may be detectable differences in timbre, the instrument still sounds the same and is recognizable as such (although admittedly in the case of some pianists, only just).

From this it can be deduced that the overtone patterns generated by various instruments, whether harmonic or inharmonic, do not tell the whole story and that there is something else which helps the ear to make its identifications. There is a theory that harmonics are of little importance in identifying musical sounds, and that the most important factors are the starting transients, the 'shape' of the middle portion and the finishing characteristic of each note.

I will take these in turn. The way a note starts varies according to the instrument producing it, and depends to some extent in many cases on the manner of playing. The sudden disturbance of the vibrating medium produces steep fronted waveforms which are characteristic of that instrument; with piano, celeste, glockenspiel, tympani and other percussive instruments, the note is produced by something being hit, and the impact gives a very steep, high-amplitude start to each note. The attack of the bow on the string is also quite characteristic, as is the way the reeds and lips start to vibrate in woodwind and brass instruments respectively.

The manner of continuance or decay, the middle part of the note, is markedly different between percussion and other instruments. The piano and its associates cannot increase in volume or even fully sustain the same level from beginning to end of a note. From the time the strings are hit, the note decays and the level decreases. With the wind and strings, volume can be maintained or increased at the will of the performer.

The way a note terminates is also characteristic of the instrument, although this can be altered by the performer playing in either legato or staccato style.

A further aid to identification is the vibrato used by string players. This is a slight variation of pitch around the true note, which gives 'expression'. Of the wind instruments, the trombone with its slide is the only one that can easily produce vibrato, and of course the piano, harp, celeste, etc, cannot do so at all. The flute can produce a similar effect, but this is more of an amplitude variation or tremolo, rather than frequency variation.

The ear comes to accept these effects and so associates them with the appropriate instrument. This is why piano records are good for checking wow: we never hear a piano played with vibrato or with glissando effects between its fixed notes, and so wow is instantly detected. But admittedly we can still easily recognise a violin, played with or without vibrato, so this is not a major factor.

The question, then, is which factors are really responsible for our ability to recognise musical sounds—the harmonic content, or the starting, decay and terminating characteristics?

In order to throw some light on the subject I devised an experiment with the aid of an amateur orchestra in which I play. Six instruments were chosen which were unlike in tone, normally easily recognised, and whose range would permit them to play the same passage. They were: trumpet, French horn, B-flat clarinet, glockenspiel, violin and piano.

The players tolerantly cooperated by each playing in turn an ascending scale of C-major starting at middle-C. The pace was deliberate, rather more than one second for each note, and the result was recorded on tape at $7\frac{1}{2}$ i/s. Then came the tedious part. Each note of each scale was marked on the tape and the beginning and end erased with a small permanent magnet. Thus we were left with only the middle part of the notes—no starting transients and terminating characteristics, but of course retaining the overtones. Because of taking the 'middle cut' without the head and tails, there was no detectable decay with the two percussive instruments due to the short duration of what was left.

Would the instruments be recognisable? To test this, a number of persons were asked to hear the tape and try to identify the instruments. They were told in advance what the instruments were, but were required to put them in their order as the tape was played. They were further asked not to guess, or to arrive at an identification of the later ones by eliminating the ones already identified, but to put down what they genuinely thought the instruments were. To eliminate inhibitions, all the answer sheets were unnamed.

Those invited to take part in the tests were members of the orchestra, including those making the original recording, a choir with which the orchestra often performs, and a number of gramophone enthusiasts. Thus all were familiar with the sounds of the instruments and could make an instant identification of them played normally.

The results were illuminating. Of those taking the test, only 25% correctly identified all the instruments, and no one instrument was recognised by all the participants. A breakdown of the results is as follows: trumpet 65%; horn 85%; clarinet 85%; glockenspiel 85% violin 45% piano 70%.

The trumpet was not too difficult, but undoubtedly sounded strange; nevertheless it was surprising that more did not get it right. The horn to my ears was still unmistakable, as seen by the large number with correct recognition. The clarinet was generally much more difficult, but was given away by a slight breathiness on one or two notes; without this, undoubtedly fewer would have had it right.

Coming to the glockenspiel, this was I feel

a rather misleading score. Just one note gave the game away due to a slight tinkle, perhaps an insufficient erasure of the start. The other notes were extremely difficult, the effect being a clear, pure, steady tone very much like a flute. The starting transients are particularly heavy with this instrument; it was difficult to record because while the start of each note caused gross over-modulation of the recorder, the rest of the note was barely sufficient in level. Placing the microphone at a greater distance helped somewhat.

The violin seemed to give the most trouble. The player used no vibrato at all, just steady notes. Many confused it with the clarinet, and certainly they were difficult to tell apart. It was even mistaken for the trumpet and piano.

A most peculiar effect was given by the piano and a large number (30%) were foxed by it. The sound was as though made by a mellow brass wind instrument; probably an organ with appropriate stop setting would be the nearest equivalent.

All those who participated, even those with an all-correct score stated that identification was difficult, and many who gave correct answers said they were uncertain on some of the instruments. This type of experiment is not unique, incidentally, and I acknowledge the work of Dr. W. H. George, Gilbert Briggs and others, but it was interesting and gratifying to find that a simple private investigation could be so revealing.

What then can we conclude from all this? Without a doubt the starting and terminating characteristics are of great importance, more than is perhaps generally believed, otherwise error and uncertainty would not have been evidenced among persons accustomed to hearing the instruments. Incidentally, the orchestra and choir members' sheets were analysed separately from the gramophone enthusiasts to see if there was any greater degree of accuracy, but results were approximately the same.

However, it must not be overlooked that there were a large number of correct answers, more than could be expected from chance. Thus there was sufficient character left in the sounds after they had been 'topped and tailed' to enable some recognition to be made. So the overtone content, despite its variable nature relative to register and volume, is still individual enough to give each instrument some of its characteristic timbre. Both factors are evidently necessary for positive identification. It appears that with some instruments the overtone content predominates, as for example the horn, whereas for others such as the violin and percussive instruments the starting transients and terminating waveshape are most important.

One thing of interest to the owners of hi-fi equipment is that the experiment underlines the importance of a good transient response!

MATERIAL FOR FURTHER READING

Briggs, G. A.	Musical Instruments and Audio	Rank Wharfedale
George, W. H.	The Sounds of Music (ten articles)	HFN, Dec. '64–Nov. '65
Olson, H. F.	Music, Physics and Engineering	Dover Publications
Taylor, C. A.	The Physics of Musical Sounds	English Universities Press
Wood, A. (revised Bowsher)	The Physics of Music	Methuen

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Name and Address..... HFN/37/JP

OUR READERS WRITE . . .

. . . about plug-in cartridges

From: E. J. Winning, Hill House, Hunts Hill, Blundsdon, Wiltshire.

DEAR SIR, I am forwarding the undermentioned details in the hope that you will publish in your Readers' Letters:—

I recently purchased an S.M.E. Arm and Shure V15 Cartridge. Both of these pieces of equipment are individually superb but the method of joining them into a single unit, in common with most other cartridges and arms is, to say the least, primitive.

I think I can safely say I am a fairly practical person, but must admit that fitting a cartridge accurately into a shell is not a simple job and I feel sure that some of the 'all fingers and thumbs' brigade must find it impossible.

I think readers will agree that what is needed is a standard plug fitting so that cartridges can be fitted directly to the arm. This has both practical and technical advantages. Firstly, it removes the above fitting problem and eliminates alignment error between cartridge and shell. Secondly, and most important, it enables a very significant reduction in mass to be made, since it eliminates the head shell and those horrible tags and pieces of wire, plus the likely soldering operation involved. A plug as used on the S.M.E. shell would appear to be ideal since it provides an excellent mechanical and electrical connection.

Imagine the simplicity of changing cartridges if they all had this 'built in' plug on the back.

Yours faithfully

Note: *We agree in principle, and have advocated this idea in the magazine . . . but just try to create a new standard almost anywhere!—Ed.*

. . . about rumbled advertisements

From: Sam. T. Olatoye, Cwrw Mawr, Aberystwyth.

DEAR SIR, I would like to appeal to equipment manufacturers to reduce the rumbles, distortions and bias at present only too obvious in their advertisements. They should stop telling us about speakers that reveal the truth, the whole truth and nothing but the truth, about amplifiers which have completely solved the distortion problem, etc.

I am convinced that such adverts, more than any other factor, contribute to the would-be purchaser's confusion. I am inclined to believe that the best adverts are those that advise the prospective buyer to hear the equipment and decide for himself.

One other type of advert I find most offensive is that in which the maker, in praising his new creation, dwells so long on its improvements on the previous model that some who had bought the latter feel they are stuck with inferior materials. What one finds is that while the earlier product was still on the market it was described in superlatives! Another gimmick is to quote reviewers out of context; any adverse criticism the reviewer has made is carefully omitted.

I am not, of course, suggesting that equip-

ment should not be advertised; but as things stand at present I cannot help feeling that there is often more hum and noise that signals.

Yours faithfully

. . . about Luxembourg, Geronimo and national surveys

From: Jimmy Parsons, Radio Luxembourg Limited, 38 Hertford Street, London, W1Y 8BA.

DEAR SIR, Having read with some alarm an article by Adrian Hope in your December issue, I feel that I cannot let certain remarks pass without some comment on behalf of Radio Luxembourg.

I assume that Mr. Hope must have quite recently carried out a nationwide survey to be able to announce with authority his opinion that 'most' people think Luxembourg 'is as bad if not one hundred times worse than Radio 1'.

I would like to point out the following inaccuracies: Our latest audience survey shows quite accurately that between our transmission hours, 7.30-3 a.m., at least as many people—if not more—tune in to our station for a longer period than stay tuned to any other broadcast received in the U.K.; also, as many people stay tuned to Radio Luxembourg as watch any of the television networks. Can Mr. Hope therefore justify his remarks to over 14,000,000 who listen to Radio Luxembourg?

I must say that the writer's seeming 'love' for a now defunct so-called broadcasting service which specialised in the use of obscene language was most surprising.

Yours faithfully

Adrian Hope comments: Well, it all depends on what you mean by 'good' and 'bad' doesn't it? In the present context good can really only mean 'I like' and 'bad' can only mean 'I don't like'. Whether regular HFN/RR readers agree with my likes and dislikes is something that can only emerge from their letters, and so far no one except Mr. Parsons has taken me to task on this. And is Mr. Parsons a regular reader or has he merely, as Luxembourg Press Officer, had the cutting drawn to his attention? My article was written for and directed at the type of people who read HFN/RR, and when I talk about 'most people' I mean 'most readers'. I haven't conducted a nationwide survey, but have Luxembourg conducted a survey through our readers?

Finally, about my 'love' for a 'so-called broadcasting service which specialised in the use of obscene language'. I'm certainly not advocating obscenity for the sake of it, and to be honest I think Geronimo pushed their luck too far. On the other hand, I'm sick of sanitised radio. Let me give you an example: one radio station (not Luxembourg as far as I know) went to the trouble of re-taping a John Lennon recording which included a mild blasphemy. They lifted the relevant word out of the tape and spliced it in back-to-front so that the final result as played over the air was still rhythmically correct but unintelligible. That's what free radio is *not* all about.

. . . about artists and courage

From: Basil Ashmore, 7 Misbourne House, Chalfont St. Giles, Buckinghamshire.

DEAR SIR, Though Shostakovich's defenders are generally petulant, they are usually clear. Mr. Valentine's arguments (January issue) are so muddled I hardly know what he is seeking to prove. However, let me clarify one point for him right away. When I referred to Shostakovich being still alive I was comparing that with the loss of a far greater man, Bartok! When a dreary composer told Rossini that he was writing a Requiem for Meyerbeer, the Italian wit replied: 'What a pity you are not dead, and he writing it for you!' Rather cruel, but artistically reasonable. My comment on Shostakovich was a regret that the better man did not survive the lesser . . . not any more vicious than Rossini's remark, and equally reasonable from a musical standpoint.

Mr. Valentine seems to think that Calvocoressi and Ernest Newman were writing their comments on Shostakovich's work from a 'cold war' point of view. Odd to see this myopic view of two eminent writers, and in any case if they were writing when this composer was doing some of his *best* work, what would they have said about the dreadful 12th Symphony? I hate to think what vitriol would have been used.

Finally, Mr. Valentine's obsession with Cold War Periods makes him confuse my own views with his. Mine are not, in any way, political. I stand by the artists who are courageous enough to write what they believe in. I don't care if it is under Ted Heath or Stalin or the Greek Colonels! Whether a stay in a labour camp is more artistic than a bullet in the neck may seem important to Mr. Valentine's viewpoint. Mine is simply that of one who admires men of courage, and despises those who throw their gifts away for a mess of political pottage. I have no interest in political parties, Mr. Valentine, so I can hardly be accused of having a cold war mentality. The problem I am discussing is at least as old as the Socrates' Trial.

Yours faithfully

. . . about the evidence for insincerity

From: John Blackwell, 114 Stanley Road, Carshalton, Surrey.

DEAR SIR, I trust you will not close the Shostakovich file with the letters in your January issue.

I imagine that most of us accept that Shostakovich is likely to remain a controversial figure for many years to come, and that battles will continue to be fought over the musical and ideological value of his work. Ultimately, the music itself is a matter of individual taste, and anyone, Mr. Ashmore included, has the right to say 'this music is not for me' or 'this music is rubbish'. What he has *not* the right to say is that such-and-such a work is insincere. This is an accusation on moral grounds which can

(continued on page 291)

a survey of the more respectable systems

RECORD STORAGE

Far right: Criterion cabinet by Phoenix Bookcases—made in solid wood. **Middle:** For those who wish to match period furniture, the Henley by Record Housing. **Below:** A small spring-loaded rack in the New Classic range.



STORING records is just another facet of the love-hate relationship that we have, perforce, with the wretched things. Whatever the problems of the cassette, the notion of a 'record' which doesn't turn into a saucer when placed in the warm is mightily attractive; but in the meantime, whether or not you are a serious collector—which presumably most HFN/RR readers are—it pays to store records properly. The average man with his average player treats his discs abominably, of course. They're left lying around without sleeves, they're handled with no care for those precious grooves—indeed the disregard for what are, after all, pretty expensive objects can, surely, arise only from ignorance, even in this age of affluent waste-making.

Since the ignorant are usually undemanding they do not worry at the scratches, wow and general hullabaloo created by damaged discs on cheap players. However, to the collector

who prizes his discs all of these faults are distressing.

Surface damage is normally a function of cleanliness and care in handling (or rather dirtiness and mishandling). Modern lightweight pickups do not appreciably damage the groove—even if accidentally dropped or jarred—and the enemy is dust and grit. Warps and ripples usually arise because of incorrect storage conditions and care alone may not be sufficient to prevent them.

The conditions for satisfactory record storage are well-known: moderate temperature and slight, evenly applied pressure. The LP has always been more susceptible to mechanical distortion than 78s, since vinyl is a plastic material and will flow, especially when warm. However, those with a sneaking suspicion that even LPs are a good deal *more* warp and ripple prone than of old are right. The weight of modern pressings is considerably less than it

used to be, causing them to be less rigid and therefore less tolerant of bad handling. In addition, in an effort to step up production rates pressings are not always allowed to cool for long enough, or slowly enough, before they are removed from the press, and the result is stress within the material which produces an inherent tendency to warp—normally one week after purchase! Incorrect cooling is also responsible for the small—scarcely visible—ripples which sometimes occur on discs. These produce rumble, often considerable, and cannot be eliminated or prevented by correct storage.

There are a large number of record storage devices on the market. Unfortunately the designers and/or manufacturers of the majority appear to be nearly as ignorant concerning the proper storage of records as the public at large. Thus, glorified toast-racks, while they were
(continued on page 291)

BIBSALES DIVISION, MULTICORE SOLDERS LTD., HEMEL HEMPSTEAD, HERTS.

Plastic record wallets available in 7 and 12 in. sizes. These are not intended for storage, but are padded and will hold ten records for transportation and tidying purposes. Cassette cases also available. Prices: 7 in. wallets 26½p (2·65p per disc), 12 in. wallets 99½p (9·95p per disc).

Bib also market plastic record liners and Polythene cover protectors for 12 in. records and a cataloguing system—the *Indexa*. Prices: 12½p for five (2½p per disc) (sleeves); £1·70 for the *Indexa* record system (1·7p per disc).

COLTON & COMPANY LTD., THE CRESCENT LONDON, S.W.19.

Record cases available in sizes 7–12 in. in various colours for carrying records. Packing required when not full, hinged front releases pressure when opened. Complete with index card, lockable. Prices: for 50 12 in. discs £2·62 (5½p per disc); for 25 12 in. discs, £2·04.

Colton & Co. also market plastic record liners and PVC cover protectors for 12 in. records. Prices: Covers 16½p for 12 (1·35p per disc); sleeves 27½p for 12 (2·3p per disc).

NEW CLASSIC ANTI-WARP STORAGE SYSTEMS, J. W. WHOLESALE CO. LTD., 26 ROSMAN STREET, LONDON, E.C.1.

A range of record storage cabinets and racks employing spring-loaded panels to provide even pressure over the surface of records. Moveable panels are employed in all the systems to reduce the extension of the conical springs. The system is versatile and satisfactory in our experience, though care is needed to ensure

the springs are not distorted in use. The units are well finished and guaranteed for two years.

Prices: 'Conversion unit' £4·88—100 records (5p per record). Compact 100 £5·27—100 records (5·27p per record). Compact 200 £10·67½—200 records (5·3½p per record). Major £26·47—100 records (26½p per record). De Luxe £33·55—100 records (33½p per record including accommodation for tuner—amplifier and record player).

PHOENIX BOOKCASES, 36a ST. MARTIN'S LANE, LONDON, W.C.2.

A wide range of furniture including two systems which can be supplied specially made for storing gramophone records. All cabinets are finished in solid wood, and glass or veneered doors are fitted. Various combinations are available and plinths, etc. can be supplied to complete assemblies. Record storage is between partitions and no 'bulk' is supplied for incomplete sections.

Unix. Available for solid or glass doors, or less doors. Storage capacity approximately 125 records per cabinet. Available in light, medium and dark oak only. Prices, according to form required, from £12·15 to £14·15. Bases £1·90 (9·7p per record).

Criterion freestanding partitioned cabinet, available in medium, light and dark oak, medium and light mahogany or teak. Price: £33·75 (10·4p per record).

POWER JUDD & CO. LTD., 94 EAST HILL, LONDON, S.W.18.

A range of storage units employing the well-known *Paddock* system of conical springs and runners. Larger models apply pressure over

the whole of the record, the smaller systems pressing the central areas only. All work better when reasonably full.

The *12C2* shelf model is one of the cheapest self-contained record storage systems available. It is well finished and apart from boxed sets will accommodate all types of 12 in. records.

The *Paddock* assembly is also available in unfinished form for incorporating into cupboards, and can also be purchased ready fitted into *Kewlox* cupboards. Price: *12C2 Paddock Tidy* £2·95—100 records (2·95p per record). Capsule model (unfinished for inserting into cupboards and shelves) £4·59—200 records (2·3p per record). *Kewlox Paddock*—200 records £12·77½ (legs £1) (6·35p per record).

RECORD HOUSING, BROOK ROAD, LONDON, N22 6TT.

Partitioned cabinets for record storage available with and without accommodation for hi-fi equipment. No storage 'bulk' is provided for filling partly occupied partitions, but half partitions are available in medium walnut or afrormosia veneers. Price: *Audio Trolley* £19·95—250 records (7·6p per record). *Hi-Flex* £18·75—200 records (legs £1·45 extra) (9·4p per record). Also available with white doors.

Shelfframes £7·75 per pair. *Scan* £10·5—100 records (legs £1·2 extra, plinth 95p) (10·5p per record). *Scan* may also be used with *Shelfframes*. *Storflex* £16·95—200 records (8·5p per record, also available as *Capri* £21). *Fold-away* £22·5—225 records (10p per record). *Henley* £19·95—125–150 records in walnut or mahogany. (15p per record approximately). *Compact* £10·95—100 records (10·2p per record).

All prices per record are calculated without extras included.



Left: Three units in the *Unix* range by *Phoenix Bookcases*—available with or without doors. **Right:** One version of the *Record Housing Hi-Flex* cabinet with sliding doors—mounted here on *Shelfframes*; two of these models with conventional veneer finish are shown on our front cover. **Above:** *Bib* record catalogue system.



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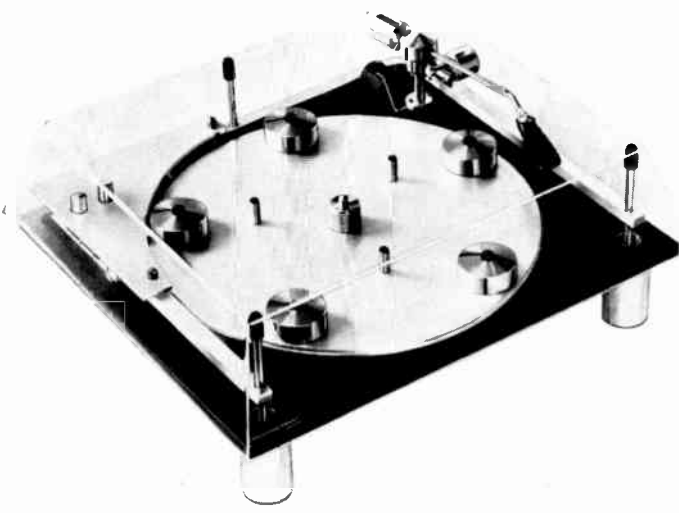
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The price including Purchase Tax is **£57.60 (£57.12.0.)**

TRANSCRIPTORS LIMITED

2 Theobald Street, Boreham Wood, Herts. Telephone 01-953 0771



Above: Kewlox Paddock record cabinet with in-built sprung panels—made by Power Judd.

Right: The Compact 200 by New Classic, one of several open cabinets with spring loading.

Below: Power Judd's famous Paddock Tidy—handy sprung system for modest quantities of discs.



Left: Record Housing's Audio Trolley, suitable for those who need a moderately mobile record collection. **Right:** By the same company, the Capri—a neat and unobtrusive unit.



fine for 78s, just will not do. Nor will 'magazine' racks—although those that support the whole area of the disc are perhaps acceptable for short-term use; but some of the more 'Council of Industrial Design' creations certainly will not. Those who carry records about can choose between several makes of record

case. These are also suitable for long-term storage provided that they are full and are kept in a moderately cool place.

The record storage systems described in this survey are those devices specifically designed for storing discs and which offer more or less correct conditions when properly used. Some

apply pressure by springs, and others require packing unless full (this is not normally supplied). In most cases the equipment has not been examined, and comments and descriptions are based entirely on manufacturer's leaflets, etc.

READERS' LETTERS *continued*

be neither substantiated nor disproved. Or has Shostakovich privately confessed to Mr. Ashmore that he did not really *mean* the eleventh and twelfth symphonies (or the fifth)?

I have had cause recently to study a number of articles written by Shostakovich over a considerable period of time, and I have discovered in them no hint of insincerity or inconsistency. Of course it may well be that some people in the West would like to believe that Shostakovich is not really a Communist at heart, and that he merely pays lip-service to the régime. But there is no evidence for this whatsoever. Throughout his career he has shown great concern that his musical idiom should be comprehensible to a wide audience, and his acceptance of official criticism, however badly it may have been administered, serves to underline this.

Mr. Ashmore cites Beethoven and Berlioz in an attempt to add weight to his argument. This is patently absurd; anyone familiar with the problems involved in musical composition

must surely know that Shostakovich achieved the near-impossible when he submitted his creative process to a harrowing and drastic re-thinking before emerging triumphant with the fifth symphony. Does Mr. Ashmore ask us to believe that this was the *easy* way out?

Since then, Shostakovich has given to the world a further nine symphonies, the musical merits of which have been debated *ad nauseam*. They have also given pleasure and a profound musical experience to countless music lovers all over the world. Can we not accept this as justification for their existence, and leave it at that?

Yours faithfully

... about a head-start for clinics

From: A. G. Howson, 1 Hack Drive, Colden Common, Winchester.

DEAR SIR, May I support Mr. Mills' letter in your December issue calling upon other manufacturers to follow the lead set by Revox in establishing equipment clinics.

At the beginning of November I returned a

tuner-amplifier under guarantee to its makers in London for a minor repair. Two weeks later it was returned to me by rail with a broken case and its electronics damaged. It had then to be returned to the makers, and after another fortnight it made a reappearance with the replacement case broken and some new defects.

Certainly, any manufacturer who establishes local clinics will have a head-start over his rivals when next I buy any audio equipment.

Yours faithfully

... about Goldring service

From: Ken Eaton, 39 Hodge Lane, Hartford, Cheshire.

DEAR SIR, I would like to record my gratitude and appreciation of the outstanding service accorded me by Goldring Limited.

The courtesy, sympathy and magnanimity with which they treated me when, through my own clumsiness, I ruined a brand new 800E stylus was like a breath of fresh air in these 'I'm, all right Jack' times we live in.

Thanks again Goldring! *Yours faithfully,*

audix

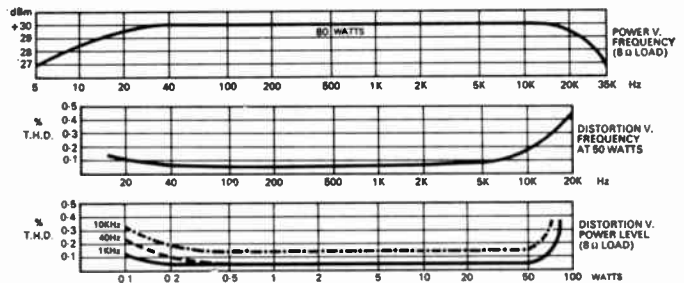
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MUSICAL CHAIRS

BURNETT JAMES

TOP OF WHAT POPS?

THROUGH a piece of editorial assassination (oh yes—I am quite willing to clobber my masters, bite the hand that feeds me if I want to) a remark of mine in a review about jazz and pop being in total opposition, probably irreconcilable, was given the chop. I said then (or would have said, blunt pencil permitting) that I would not go into that then but would take it up somewhere else later on. That I will now do.

Mr. Tony Palmer, in one of his more repellent moments, once declared that the Beatles are the greatest songwriters since Schubert. Of course, our Tony is a great one for dropping names; hardly a piece by him gets by without some reference to Mozart or Tchaikovsky or Beethoven, even Schutz or Scheidt or Schein. It is a little foible we have learnt to live with. But the Schubert-Beatles syndrome stuck, and I think many have actually taken it at its face value.

Now I am not going to say that the Beatles—John and Paul anyway—are not very good writers of popular song. But Schubert? Why Schubert? What about Schumann, Brahms, Wolf, Richard Strauss, if you want to go the whole hog—or *totus porcus* as old Admiral 'Jackie' Fisher used rather engagingly to put it? This is a case of slotting things into the wrong categories, of making comparisons inevitably odious.

All right: what has this to do with jazz? Not much. But there is another little matter to be considered: Duke Ellington. Duke, is the one who drops the bomb neatly on to the hyphen in the Schubert-Beatles nonsense; and jazz itself performs the same useful service in the wider sense.

Why I say that jazz and pop are at bottom

irreconcilable is that not only do they work from opposing principles, but that the true achievements of jazz—both in itself and in its role as the root source of all the popular music of this century (bar perhaps a few years at the beginning)—are of an order unknown and as like as not incomprehensible to pop, loosely and generally so-called. Take the matter of 'swing': pop does not swing and in fact deliberately turns its back on swing—which is a neat way, quite familiar, of making a virtue of what you can't do. But swing—call it rhythmic animation, carrying the rhythm over, what you like—is an essential ingredient of virtually all music. To call any musical performance 'heavy' is a term of just censure; but pop makes heaviness a creed and point of honour. It has even invaded jazz, this thumping, lumping, leaden echo. We thought we had got rid of that years ago, but here it comes back, bold as brass and twice as noisy. You can put a lot of things together in this life; but swing and heaviness are not two of them: the opposition is final, fatal, irreversible.

Of course it takes a big talent to do what the great jazzmen have done—men like Armstrong, Hawkins, Bechet, Young, Parker, Gillespie, Davis, not to mention Duke and his men. And the big talent is just what pop doesn't have, and maybe because of its nature cannot have. How in the end can one have anything but contempt for a music that has minted millions of pounds and more millions of dollars, and has not thrown up a single major talent? OK: so there is no reason why a popular music appealing to young people in the mass should be bursting at the seams with genius. It would not be worth arguing about if it were not for

the preposterous claims made on its behalf by the legion of pushers the world over. The same Mr. Palmer, who despite everything is an intelligent man or would be if he could overhaul his catechism, also said that the guitar playing of Eric Clapton made Julian Bream sound like a beginner. That is as pretty a way as I know to insult one's friends. It is like I were to call Duke Ellington the greatest composer since Beethoven, or to say that he made Stravinsky sound like a first-year student. Duke would belt me with something heavy—maybe Harry Carney's baritone sax. You don't insult Duke and get away with it.

I think that you can have a taste for the classics and jazz, or for the classics and pop; but you can't dig both jazz and pop. Some will say they do, but I don't believe them. In fact, the driving of jazz away from popular music is but another example of the modern tendency to divide and destroy. Pop, in setting itself, consciously or subconsciously, against jazz and all that jazz at its best and most potent is, isolates itself from all living currents of music and music making. All very well for 'classical' critics clambering on to the pop bandwagon to go on about complicated technicalities which exist only in their own infertile imaginations. One actually selected a Beatles LP as the most important musical event of a year, which may have given somebody a laugh, though not me.

It isn't a case of keeping a sense of proportion (that can be very dull and boorish), but of not talking obvious nonsense. It is as simple as that.

The incompatibility of pop and jazz has far-reaching effects on the contemporary scene, musical and other, and creates a deal of muddled thinking both ways. Like I have said somewhere before, jazz may join cricket as something we enjoyed in our youth but shall only remember in our old age. The loss will be great, to some of us intolerable. And if it happens, and I mean of course jazz in its fullest, most comprehensive sense, not some old 'trad' rubbish, it will mean the triumph not just of pop, but of all lumpen, 'heavy', dulling pretentiousness that threatens life and art on all sides. Let us speak plain. It is a fight to the finish. Here endeth the first lesson.

THE OTHER SIDE

GRAMOPHONE SOCIETY NOTES BY K. LLOYD

THERE IS NOTHING one likes to hear more than a success story, so I was delighted when I learned recently that the Cheltenham Gramophone Society, founded in 1938 by their present treasurer Mr. S. W. Jenkins, had at the end of their first year a total membership of only nine; today it is nearly two hundred.

Early meetings were held in the Founder's home or the showroom of what was at that time the town's leading music shop. Today they are fortunate in having at their disposal the use of the excellently appointed 260-seater theatre used by amateur societies for theatrical

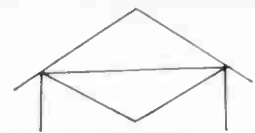
productions. This is due to the generous support and help of the Cheltenham Corporation. Tip-up seats, fully equipped stage, refreshment room and excellent lighting are all conducive to the first-rate presentation of recorded music.

Like all good societies, a large proportion of the committee's endeavours are channelled into obtaining first-class speakers. Reference to their attractive programme shows that recitals are held fortnightly on Mondays and when it is seen that names like Roy Plomley, John Heddle Nash and Anthony Hopkins, plus a good sprinkling of Record Companies—Joan Coulson of EMI, Katharine Wilkinson of Philips, Michael Bremner of Argo, and Isabella Wallich of Delysé—give indication of the high quality of programmes presented. I understand that the recitals of recent recordings by the companies always attract large audiences for, as my correspondent says, they have first-class records and I quote his actual words 'they always have something useful to say'.

Imogen Holst, famous daughter of the Cheltenham-born Gustav Holst, is the patron and takes a keen interest in the Society's progress.

Unfortunately space does not allow me to list all the many good ideas that are part of their success but it is obvious that careful stage management of each recital where even flower arrangements are a regular feature is some indication of the obvious pleasure that is had by all members. Cheltenham has every reason to be proud of its Gramophone Society, which it cannot be denied has contributed in no small way to the musical culture of the town.

I hope that in this New Year societies who have already contacted me will continue to let me have news of their progress, and that those who have not already done so will send me details of themselves, for I know only too well that already many groups have derived great benefit from taking up the ideas that are used so successfully by others. This mutual interchange of ideas must be of great benefit to all concerned.



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looking back

by Peter Gammond

A column of second thoughts, new discoveries and old favorites

I LOOK back with a warm glow of pleasure this month to a reception that was held in the board room of the National Portrait Gallery in bleak December. It was not only the liberal lashings of champagne or the delightful opportunity to rub shoulders and converse with such interesting people as John Neville, Eric Porter, Christopher Plummer, Moira Lister, Peter Sellers (and many others of lesser fame but equal interest) that induced the glow; but the fact that it was to launch an appeal for a project which to me seems eminently worthwhile and meaningful. Briefly, an organisation called St. George's Elizabethan Theatre Limited, artistic director George Murcell, are planning to reconstruct the circular church of St. Georges in Islington, with the full co-operation of the Islington council and various other bodies, into an Elizabethan theatre based on Shakespeare's original Globe Theatre, so that the works of the bard and other Elizabethan dramatists, poets and musicians may be performed there professionally throughout the year in addition to its use as a study centre.

As you might expect, money is required—to the tune of three-quarters of a million pounds. Our readers and advertisers can help this project firstly in a most delightful way by purchasing an LP put out by Argo called *The Elizabethan Appeal* (ZPL1154). It only costs £1.49½ and contains a most entertaining anthology of music, drama and poetry of the Elizabethan period by such eminent actors as Paul Scofield, Alec McCowan, Eric Porter, John Neville, Anna Massey, Moira Lister, Dorothy Tutin, Christopher Plummer and others, with the music played on instruments of the period. It was reviewed in our October issue. The proceeds go toward this valuable enterprise and there is a form within which will show you how to make further contributions to this exciting project.

ANOTHER PROJECT which this magazine has always been pleased to support is the *Music Without Distraction* series of presentations of recorded music played with enormous effect in such places as the church of St. Martin-in-the-Fields, Westminster Abbey and Westminster Cathedral. The next event (detailed briefly in our *Audio & Record News* section last month) is at the Royal Parish Church of St. Martin-in-the-Fields for three nights—Tuesday 9th February, Wednesday 10th and Thursday 11th, beginning at 7.30 p.m. The programmes (all Decca stereophonic recordings on Lowther equipment) are: Tuesday—Verdi: *Four Sacred Pieces* & Tchaikovsky: *Symphony No. 4*; Wednesday—Bach: *Brandenburg 5*, Schubert:

Unfinished Symphony & Brahms: *Piano Concerto No. 2*; Thursday—Mozart: *Eine kleine Nachtmusik*, Rachmaninov: *Piano Concerto No. 2* & Beethoven: *Symphony No. 7*. The presentations are most impressive in the blacked-out church and always enjoyable. Tickets at 50p and 25p and souvenir programmes at 10p may be obtained by personal callers, Monday–Friday 9.30 to 5, or by sending remittance and stamped-addressed envelope, from Mr. Kurt Kettner, 6 Cecil Court, Charing Cross Road, London WC2. Phone: 01-836 4544. The proceeds this time are in aid of Shelter (National Campaign for the Homeless) and the Church Music Trust.

MY PRACTICAL 'looking back' this month firstly concerns a clutch of piano recordings. This is partly because our discerning piano reviewer Barbara Holmquest is, as I write in this foggy week before Christmas, off to her native haunts for a period—which also explains why several pianistic records are reviewed by others this month; and partly, through no fault of our aforementioned esteemed reviewer, that a couple of interesting records did not get reviewed. When you come to think of it, it is a minor miracle that we manage to organise our record-reviewing activities as well as we do; that, after all the inevitable paper-chasing in the record companies, vast packages arrive on our doorstep; that, after our hurried sortings-out, further packages arrive at far-flung destinations for the attention of our eager and earnest reviewers; that their words of wisdom arrive on my desk mostly on time and in good order; and finally that the whole lot gets to an impatient printer in Bristol by a copy-date, the missing of which almost carries the death penalty. Anyone who has gazed in awe-struck admiration at the athletic efforts of those who load parcels on to railway trains with the abandon of Greek discus throwers will know what I mean. It is amazing that so few records are late or actually go astray.

By a remarkable coincidence, two recent casualties were two piano discs of almost identical music that, through quirks of fate, have so far remained unreviewed. Namely, the two Schumann records by those giants of the keyboard, Rubinstein (RCA) and Horowitz (CBS). These are belatedly included in our review pages this month but I should like to add here, partly to make up for our failure to review them earlier, that they are an unusually rewarding pair of discs viewed in partnership and I would urge all Schumann and piano devotees to try to hear them both if possible.

Another piano disc that I want to reconsider is the Liszt recital by the young and remarkable

Katchen-protégé, Pascal Rogé. Barbara Holmquest in her review in the December issue gave this a top 50 rating for performance, with which I wholeheartedly agree. The accuracy, vitality, virtuosity and poetry of his performances add up to a truly memorable experience. Not at all far-fetched to compare him to the young Rachmaninov. But after we have wondered at the precociousness of an 18-year-old pianist we can remain to admire interpretations of Liszt that would have been remarkable from a Rubinstein or a Horowitz. Our review was slightly marred by being awarded a C for recording, a rating which the record company thought rather severe. Having been allowed to hear the disc (and B. H. made the reservation that it might be the test-pressing at fault) I can bear out her contention that the piano occasionally seems slightly out-of-tune, but tonally the quality is generally very good. As we have no way of rating instrumental quality I would give the recording the benefit of the doubt (particularly as the middle and lower register sound splendidly impressive). Judging from the finished pressing, I think a B would be fair enough and less inclined to persuade people to miss this otherwise remarkable record.

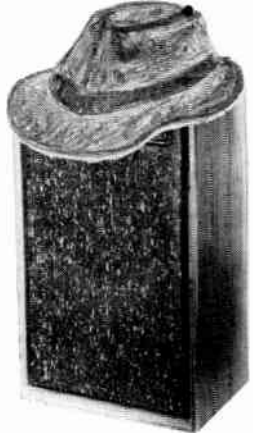
IT IS AS REMARKABLE TO agree as to disagree in rating artistic productions; and why should we not expect different reviewers to have different views of the same thing? Which brings me to the slight and, I hope, final alterations we make to our rating system this month in order to bring it to a form which works best for all concerned by getting maximum agreement on a broad basis.

Keeping the A, B, C, D ratings for recording (plus the H for historical), we are—following a useful suggestion from a recording company—now slightly amending the import of these ratings so that instead of A trying to stand for something exceptional it now stands for the general output of very good records which had hitherto been given a B. A B now indicates a good record, still recommendable but with very slight reservations; a C a passable recording but not really recommendable; D definitely not recommendable. For the occasional outstanding recording we add a star, to be added to an A rating only, naturally. To bring performance ratings into line with this they are going to be simplified to 1, 2, 3, 4, with the same implications: 1 for very good, 2 for good, 3 for moderate, 4 for poor; and the star could be added to a 1 for something exceptional.

As in the past, we have found it necessary to have an H rating. For recording quality this will generally signify that a recording is pre-LP in origin; but it will only be used on the performance side when the recording is so poor that performance cannot be properly judged.

For the sake of established conventions we are putting the recording rating first, so that an A : 1 record will, as it suggests, be something highly recommendable. An A* : 1* would be reserved for something really exceptional, like—and I take the first thing that comes to mind—*La fille mal gardée* (Hérold)—Decca SXL2313—still happily with us, I trust, and still well worthy of two stars. In practice we immediately find that the system becomes far more of a guiding categorisation, rather than a too-specific rating—which is what its critics have objected to previously.

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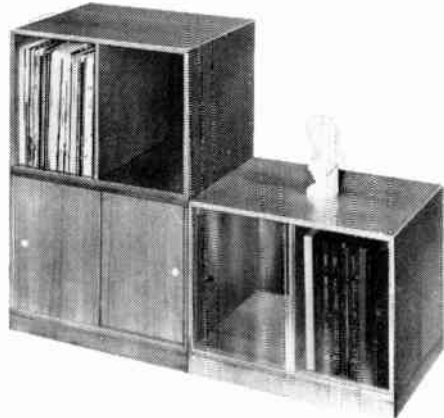
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Oistrakh (centre) with Rostropovich and Richter

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- BACH-VIVALDI:** Double concerti (w. I. Oistrakh etc)—**DGG 135082 (45: A/B)**
- BEETHOVEN:** Violin concerto (w. French Nat. Rad. / Clutens)—**Columbia SAX2315 (45: B)**
- BEETHOVEN:** Triple concerto (w. Rostropovich / Richter / Karajan)—**HMV ASD2582 (45: A)**
- BEETHOVEN:** 'Archduke' Trio (w. Oborin / Knushevitzky)—**Music for Pleasure SMFP2117 (40: B)**
- DEBUSSY:** Violin sonata / **PROKOFIEV:** 5 Melodies / **RAVEL:** Violin sonata / **YSAYE:** Solo sonata (w. F. Bauer)—**Philips SAL3589 (45: B)**
- SHOSTAKOVICH:** Violin concerto 2 (Symphony 6)—**HMV ASD2447 (48: B)**
- SIBELIUS:** Violin concerto (w. Moscow RO / Rozhdensyevsky) (Concert)—**HMV ASD2407 (48: B)**. (Earlier version w. Philadelphia / Ormandy)—**CBS 61041 (40: B)**

THE GREAT INTERPRETERS DAVID OISTRAKH

DAVID OISTRAKH was born in Odessa in 1908. His family was musical; his father played violin and mandolin and his mother sang in the chorus at the opera. Like most great musicians, he was an infant prodigy, appearing in a school concert at the age of six (the youthful Nathan Milstein also appeared in the same concert). His early teacher, to whom he owed much of his later success, was Peter Stolyarsky who guided him both at school and at the Odessa Conservatoire. After graduation he met Glazounov and Prokofiev, both of whom influenced his artistic development. He went to Moscow in 1928, already a young man marked for future fame, and his 1929 debut in the Russian capital was memorable. His rise was steady rather than meteoric, and during the 1930s he made an increasing impression in musical competitions, culminating in 1937 when he won first prize in the Ysaye Violin Competition in Brussels, the most coveted award of all. Thereafter his international fame was assured, both as soloist and in chamber music where he has always been active. His career was interrupted by the Second World War, but from 1946 onwards he has appeared in practically every country in the world, accepted on all sides as one of the outstanding musicians of our age.

David Oistrakh is a player in the grand manner. There is nothing small, narrow or finicky about an Oistrakh performance. He reaches out to and achieves realisation of the fullest implications of a composition, whatever

its creative premises; is not content with a mere rendering of notes. Yet he is never self-indulgent. If there is a certain objective detachment about his playing, it is always informed by subjective commitment and penetration. He stands far enough away from the music he plays to see it with clarity as it is in itself and of its stylistic nature, yet close enough to feel it as personal expression. It is in the particular, the essentially individual combination and interaction of the two that his artistic stature is defined.

Oistrakh excels in most ranges of music, from Bach and Vivaldi through Mozart, Beethoven, Brahms, and the nineteenth century repertoire, to the moderns, especially the modern Russians, Shostakovich, Prokofiev and the like. Many Russian works have been written for and dedicated to him, his art the inspiration for some fruitful extension of the contemporary violin repertoire. He is deeply conscious of his national inheritance and so has true understanding of others. As a man, profoundly concerned with international understanding and personal integrity, as well as in his purely artistic stature, David Oistrakh is a major force in our musical world of today, along with his compatriots like Rostropovich and Richter (and his son, Igor, also a fine violinist with whom he has often played and recorded).

David Oistrakh has recorded prolifically since the end of the war.

Burnett James

THE BASIC REPERTOIRE RODRIGO'S "CONCIERTO DE ARANJUEZ"

WITH the run on classical guitar records of the past decade or so, the *Concierto de Aranjuez* has received many good recordings by the world's leading guitarists. Oddly, Segovia not only hasn't recorded it; he has never even played it. But most of the others have. It is an essentially Spanish composition, though not so much so that only a Spaniard can interpret it: like all works of wide appeal it goes farther than its purely national characteristics.

Unfortunately, the recording by its dedicatee Sainz de la Maza is technically too inexperienced to come into the reckoning (RCA Victrola VICS1322 [20: C]). Narciso Yepes, another Spaniard, has been closely associated with the *Aranjuez* since its earliest days. He has recorded it in fact three times—first on a long deleted London International disc issued by Decca in

the mid-1950s, with the Madrid Chamber Orchestra under the late Ataúlfo Argenta; next for Decca with the same conductor but the Spanish National Orchestra (both coupled with Falla's *Nights in the Gardens of Spain* by Soriano) (SXL2091) [40: B]; lastly, and best, with the Spanish Radio Orchestra under Odón Alonso for DGG (139440) [45: A], this one coupled with an equally good performance of Rodrigo's *Fantasia para un gentilhomme* based on themes by the 17th century Spanish court composer, Gaspar Sanz. Another Spanish version comes on Philips from Angel Romero of the famous guitar playing family, with the San Antonio Symphony Orchestra under Victor Alessandri, this time coupled with Rodrigo's rather nondescript *Concierto Andaluz* for four guitars played by all the Romeros. There is a strong and attractive Spanish flavour to this one (SAL3677) [40: B]. Spanish again is Alario Diaz with Professors of the Spanish National Orchestra conducted by Rafael Frühbeck de Burgos on HMV, a typical Diaz performance, full of life in the outer movements but rather hurried in the Adagio. It is effective if you do not look only for the obvious (ASD2363—coupling Giulizini in A) (40: B).

It is in the Adagio that Julian Bream with the Melos Ensemble under Colin Davis especially scores. There is a depth and tension about Bream's playing here that is unmatched in any other version; and Colin Davis secures beauti-

fully crisp and incisive playing from the Melos all through. The coupling is a Vivaldi lute concerto (P.209) and the Courtly Dances from Britten's *Gloriana* (RCA SB6635) [48: B]. John Williams presents perhaps the most accomplished guitar playing of all, not surprisingly. The orchestra is the Philadelphia under Ormandy, a bit softer and more indulgent than the Melos, and the coupling is the Castelnuovo-Tedesco (CBS 72439) [45: B].

Siegfried Behrend's *Aranjuez* has been recorded at a lower price with Rodrigo's *Concert Serenade for Harp and Orchestra* by Zabaleta. Behrend's steely tone is not entirely suited to this music, though he plays with skill and technical polish (DGG 'Privilege' 135117) [35: B]. Turibio Santos on Musidisc is rather messy and shows signs of strain, and the sound is not much [30: C]. Some say that the best *Aranjuez* of all is by Bitetti; but that has not been issued in England.

A summary suggests—Bream, especially for the slow movement; Williams for outstanding guitar playing all round; Yepes on DGG for a delightfully individual reading plus an irresistible coupling, and the best sound.

Burnett James

- Bream / Melos—RCA SB6635 B: 1**
- Williams / Ormandy—CBS 72439 B: 1**
- Yepes / Alonso—DGG 139440 A: 1**

Note: Some old ratings have not yet been converted. For details of the new system see page 302.—Ed.



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THE THINGS I HEAR

ARTHUR JACOBS

The Music World, Live and Recorded

THE deserved congratulations to the Royal Shakespeare Company for its ten stimulating years at the Aldwych Theatre, and to Peter Hall for his management of both the Aldwych and Stratford, call for a little addition. Congratulations also on the transformation of theatre music, largely through the resourcefulness of the company's musical director, Guy Woolfenden.

Peter Hall at Stratford abolished the traditional band-pit, forcing new locations for music. Woolfenden responded with everything from electronics to his own design of imitation-Roman trumpets. Some of his own music for the company's productions has been available on record, but he would be the first to share the credit with other composers whom he has commissioned. I would point also to his cunning and sometimes ironical use of older music, 'in quotation marks', as it were—such as the occurrence of *The last rose of Summer* and *Rule Britannia* in the recent, most enjoyable production of Dion Boucicault's early-Victorian farce, *London Assurance*.

ADDICTS OF GILBERT and Sullivan (who, by the way, know Boucicault's name from *Patience*) now have the pleasure of a 12-week season by the D'Oyly Carte Company at Sadler's Wells Theatre. I wish them as much pleasure as I derived from the opening-night production of *The Gondoliers* by Anthony Besch—a production which seems to me as brilliant and creative a re-thinking of Gilbert and Sullivan as any of the supposedly more radical treatments

(even Tyrone Guthrie's) which have emerged since the ending of the copyright ten years ago.

Those seasoned players, John Reed (Duke of Plaza-Toro) and Kenneth Sandford (Grand Inquisitor) have renewed their comic impetus under M. Besch's guidance. To have the Inquisitor a sexy ecclesiastic whose hands are always straying towards the girls is a conception fully supportable by Gilbert's own lines, and the Duke's deftly danced encores for 'I am a courtier' are infinitely more effective now that this is the *only* encore of the evening. The two brides are disappointing, though—strangely, since there seems to be so much young talent of this kind elsewhere in the operatic field.

PETER HALL has now turned from the Aldwych to Covent Garden, where Tippett's *The Knot Garden* supposedly foreshadows the régime shortly to be jointly directed by Hall and Colin Davis. A huge publicity show was mounted in advance of the Tippett première, newspaper editors being apparently glad to yield whole square feet of space for preliminary puffs, where a new Pinter play would have earned a column and a new string quartet half an inch.

I must not suggest that some of my distinguished colleagues were brainwashed as a result, but I found that the tone of hushed reverence both before and after the event was strongly in contrast not only with my own adverse view of the work, but with that of a number of expert musicians and experienced laymen who attended the first or second per-

the envy and despair of most other singers. His voice was also extremely flexible, so that he could mould a phrase with exquisite gradations of tone.

I have chosen his 1903 Warsaw disc of Tosti's little song 'Ancora' as an example of the great singer's technique. He sings the tuneful but quite ordinary little ballad with a perfect legato and many subtle nuances which must be heard to be appreciated, and then he finishes with a superb example of the correct use of the 'messa di voce' on the word 'morir'. He starts softly, swells it out a little, then follows with a diminuendo which in its turn gives way to a hint of a crescendo, and then the voice gradually melts away to a final pianissimo which is hauntingly lovely. So wonderful is the singer's control that it is quite impossible to say at what point he finishes the note, as it hovers for a few seconds on the very threshold of audibility. This record was originally issued as G&T 52669, and is now a great rarity. A fine original copy would cost anything up to £18.

formance (or both, as I did). Impressive as some of the music may be on 'abstract' considerations, it is virtually torpedoed by Tippett's own clumsy, verbose, obscure libretto, the basic idea of which—a group of people 'finding' themselves under the apparently supernatural guidance of another—comes as an echo of Eliot's *The Cocktail Party*.

That fine actor-singer Thomas Hemsley as the guiding psycho-analyst (rather pretentiously identified with Shakespeare's Prospero) is among those who do their best for this work. A beautiful, and vocally accomplished, young soprano, Jill Gomez, makes a most auspicious Covent Garden debut. Peter Hall's production is a bit novel for the Royal Opera House, but anyone accustomed to the Stratford/Aldwych norms would call it a funny, old-fashioned, stand-around, 'operatic' (in the bad sense) kind of staging.

GOOD TO SEE the distinguished Swiss composer Frank Martin, now 80, at the English Chamber Orchestra concert in the Queen Elizabeth Hall conducted by Paul Sacher. Martin's new *Three Dances* were played, as well as his well-known and still impressive *Petite Symphonie Concertante*, with its extraordinary solo combination of piano, harp and harpsichord. Martin, vigorously mounting the platform at the end, was applauded by an audience which included an even more astonishing veteran—Sir Robert Mayer, fully active at 91.

Sir Robert Mayer's orchestral concerts for children are now almost half a century old. Dare one criticise such a labour of love? Yes. I went to one of the recent concerts and was dismayed at the unrepresentative 20th-century repertory (Rawsthorne's *Street Corner*, Ibert's Saxophone Concerto) and the remote, Victorian great-uncle appearance and speech of Trevor Harvey, who conducted and introduced the programme. Heavens, these kids are used to wild pop and to the free-and-easy, uncondescending adult-to-child relationships of 'Blue Peter'. They should be hearing electronics, random music, the lot. Who will do for children's concerts what Glock has done for the Proms?

Pol Plançon, the great French bass, was an equally accomplished artist, with a voice of cello-like beauty and a command of all the attributes of the bel canto school which are a constant source of amazement and delight to connoisseurs of great singing. I have chosen his 1907 Victor recording of the 'Air du Tambour Majeur' from *Le Caid* by Thomas as a good example of his artistry. He had made three previous versions of this air which was obviously a favourite of his, and certainly the voice is a little fresher in the heavily cut G&T version of 1902. However, in the 1907 recording he still retains all his old mastery, including an unrivalled legato, an agility astonishing for a bass, and a superb trill. To these should be added his fine diction and impeccable sense of rhythm, and the final result is a record which is a masterpiece of its kind. Luckily it is not rare by collectors' standards, and a fine copy of the Victor disc 85119, or its G&T equivalent 032065, can be obtained from specialist dealers for around £6. It is certainly worth every penny of this and more!

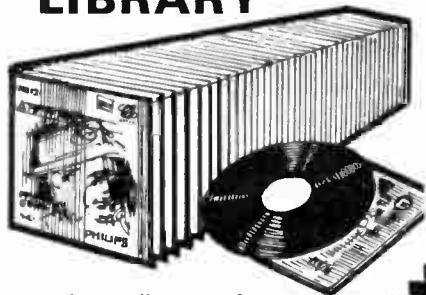
HISTORICALLY SPEAKING

John Freestone

TWO ACKNOWLEDGED MASTERS of the art of bel canto for this month. The first is Mattia Battistini, who was born in 1857 and made his debut in 1878. He was soon acknowledged as one of the leading baritones of his day, and as the years passed he came to be recognised as one of the most perfect exponents of the already dying art of bel canto. His voice was under perfect control, and he possessed an agility when necessary which would have been



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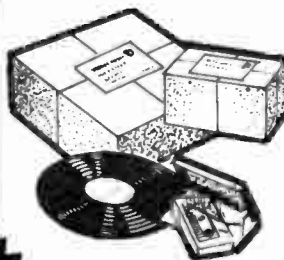
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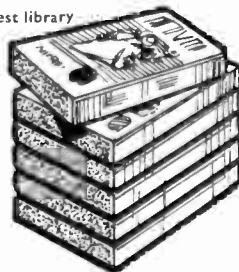
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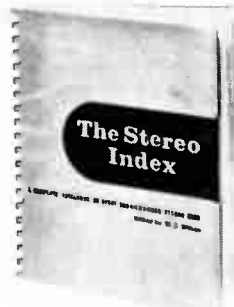
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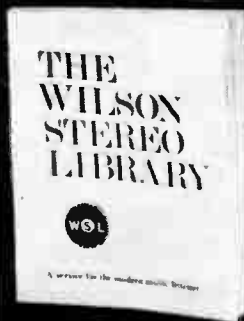
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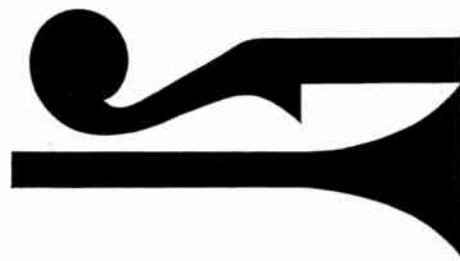
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STEREO, MONO and PROCESSED MONO. Any record reviewed in this magazine may be assumed to be stereophonic unless its number is preceded by M (monophonic) or P (processed mono). Every effort is made to ensure accuracy, but manufacturers' labelling is sometimes misleading on this point.

CLASSICAL RECORD REVIEW



Basil Ashmore, Peter Aston, Peter Branscombe, Christopher Breunig, Bryan Corrie, Kenneth Domett, Colin Evans, John Freestone, Peter Gammond, Christopher Grier, A. K. Holland, Barbara Holmquest, Peter Le Huray, Arthur Jacobs, Burnett James, Gareth Jefferson, Robert Sherlaw Johnson, Wilfrid Mellers, Charles Osborne, Malcolm Rayment, Madeau Stewart, Isla Tait, Cedric Wallis, Stephen Walsh

RR :: RECORD RATINGS :: RR

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*.

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J. S. BACH: Concerto for 2 harpsichords in C, BWV1061 □ Harpsichord concerto in f, BWV1056 □ Concerto for 2 harpsichords in c, BWV1060 □ Harpsichord concerto in G, BWV1058
George Malcolm, Simon Preston (hpds) | Menuhin Festival Orchestra | Yehudi Menuhin
HMV ASD2647 (£2.25)

George Malcolm, Simon Preston and Yehudi Menuhin are regularly associated in combined music making; and they show again here how well they understand each other and how to make a truly artistic partnership. There is tremendous response and a communicated enjoyment about all this; spring in the rhythms, a vivid liveliness in the quick music and sensitive insight in the slow movements. Malcolm and Preston combine most effectively in the two-clavier works, and the recording does it all full justice. There is no funny business, such as one harpsichord off the port bow and the other off the starboard quarter; any artificial separation, that is, for the sake of a clever effect. The perspective is as you normally hear it; and if you cannot always hear the two keyboards apart, then that is quite in order for you do not hear them all over the place in a room or hall. The balance between one or two claviers and orchestra is excellently adjusted, so you miss nothing you should not miss, but get nothing flung in your eye (or ear). Everyone in my household, including the not particularly musical, loved this disc; and so did I. This may not be the greatest Bach; but it is the way to play Bach, all through. And the way to record Bach. [A: 1] Burnett James

J. S. BACH: Goldberg variations, BWV988
Wilhelm Kempff (pno)
Deutsche Grammophon 139455 (£2.38)

The Goldberg Variations offer almost limitless

Ratings and Prices. The revised record rating employed in the following pages and tabulated above is discussed by Peter Gammond on page 295 and in the Editorial on page 245. Record prices in this issue are given in decimal currency; but not all manufacturers had finalised their figures at the time of printing, so we have given exact equivalents of old prices which in some cases may be changed.—Ed.

possibilities to the perceptive interpreter. Kempff takes an essentially reflective view of them, and one that is in marked contrast to the extravagant interpretation provided by Glenn Gould. Both are valid. The variations particularly to compare are the first, twentieth, twenty-third and twenty-fifth. Kempff's range, both in terms of speed and dynamics is much smaller. The interest and sympathy of the listener are taken for granted and no attempt is made to attract attention by extremes of pianism. Possibly some listeners may find Kempff's approach rather dry for their taste, notably in the first variation, where ornaments are perhaps played a little too precisely. The recording matches the performance admirably. The acoustic is suitably domestic and the piano has a mellowness, particularly in the upper regions, that is most attractive. This issue, in short, is highly recommended. [A: 1] Peter le Huray

BAROQUE LUTE MUSIC

J. S. BACH: Lute suite in g, BWV995 / BUXTEHUDE: Lute suite in c / PACHELBEL: Lute suite in f
Walter Gerwig (lute)
Oryx 3C 302 (99p)

Walter Gerwig is Germany's foremost lutanist: we have heard him on some Archiv issues. This new Oryx is valuable, especially for Buxtehude and Pachelbel for none of their lute music is otherwise available. The Bach has been done by Julian Bream, but oddly, on the guitar instead of the lute. Gerwig is a fine musician, though his playing lacks a little in character: it is assured and accomplished, but the dance movements lack something in rhythmic spring and definition. It is all rather poker-faced. Nor am I too happy about the recording: it is clean, clear, well proportioned; but it sounds over-amplified so that the delicate charm of the instrument tends to be overwhelmed by a kind of tonal inflation. Care with the volume control setting can help to bring it into natural focus; all the same, I find it difficult to avoid the suggestion of a small-toned instrument made to sound like a big-toned one by amplification—the bass strings sound about eight feet long, which results in a want of true tonal perspective. If you have heard Bream playing this kind of music on the lute, you will know what I mean. I don't want to diminish the pleasure to be had from this recital; but with a little more sensitivity in the recording and a little more 'bounce' in the playing it would have given still more. [B: 2] Burnett James

BALAKIREV: Islamey—oriental fantasy / MUSORGSKY: Pictures at an Exhibition / STRAVINSKY: 'Petroushka'—suite
Alfred Brendel (pno)
Vox 'Turnabout' PTV34258S (99p). Reissue: formerly Vox MPL9140 (Nov '56)

Brendel's early Vox recordings have proved a musical treasure-trove since his playing gained proper recognition in this country, and the present disc, made in 1955, is no exception. Even the sound quality is remark-

ably good for its age. Brendel has, of course, the clearest and most controlled of techniques, and this is a great aid to definition. But there is also a surprising range of colour, in music which we tend to think of as particularly colourful because of familiar orchestral versions. Only real power is (understandably) absent.

Of the performances little need be said beyond the fact that they are superb. Brendel hasn't the temperament of a trapeze-artist, but he has no difficulty with the most hair-raising passages in *Islamey* or *Petroushka*; every note is clear and intelligently placed. The Mussorgsky gets as close to a definitive performance as one is entitled to expect with such a diverse score. No work lends itself so completely to idiosyncratic interpretation. But Brendel is always attentive to the composer's expressed requirements. One might quibble at the impressiveness with which he handles the *Promenade*, and a few details of tempo here and there in the pictures themselves. But in the main this is a brilliant, penetrating and authoritative performance, and—its age notwithstanding—it is the one I shall return to most often. [B: 1] Stephen Walsh

BARTOK: Piano concerto 2* □ Four pieces for orchestra, Op. 12
*Alexis Weissenberg (pno) | Philadelphia Orchestra | Eugene Ormandy
RCA LSB4010 (99p)

The more important of these two sides is the one containing the Four Pieces for Orchestra, not because this is a better work than the Concerto, but because of its rarity. Written shortly before the opera *Bluebeard's Castle*, which to some small extent they anticipate; they mark a retrogressive step in Bartók's career, being less mature and characteristic than certain previous works; a narrow exception to this generalisation is the second piece, a scherzo, but to dismiss the opus out of hand, as some have done, is going too far. Certainly Ormandy makes a very powerful case for it with his dramatic, and at times luxurious, interpretation. I, for one, was greatly surprised how much the music had to offer, and in the light of this performance its almost total neglect seems inexplicable.

The Concerto receives a remarkably fine performance—one, I feel, that could only be improved upon by stricter observance of dynamic markings. Unfortunately the reverberant recording, which enhances the Orchestral Pieces, clouds the Concerto's linear writing. Its outer movements, in which the woodwind have to fight the brass and the piano, is difficult enough to balance with a dry acoustic. Some of the strands certainly get submerged here, and sometimes they are principal strands, while in the most complex loud passages the overall sound becomes very diffuse. This is a pity, because no better or more faithful performance has been recorded. The rating allows for the appalling difficulties involved. [Orchestral Pieces—A: 1*; Concerto—B: 1]. Malcolm Rayment

BAX: Symphonic variations for piano and orchestra

Joyce Hatto (pno) / Guildford Philharmonic Orchestra
Vernon Handley
Revolution RCF.001 (£2-30)

This is a huge work, too huge some might say, in its uncut form here presented; but if you give yourself over to it, listen properly, you will not find it overlong. It was written between 1916 and 1918, and given by Henry Wood at a Prom in November, 1920, Harriet Cohen the pianist. After that it was played by Harriet Cohen in a radically reduced form; but the full version did not reappear until it was given virtually complete in the BBC Overseas Service in 1963. The first public performance since 1920 was given by the present forces at Guildford in May, 1970, and the recording was made immediately afterwards. Thus this is a first in more senses than one, and a notable service to Bax and to English music in general.

The work is in six main sections, each with a descriptive heading (very Baxian)—Youth—Nocturne—Strife—Temple—Scherzo (Play)—then an Intermezzo 'Enchantment'—and a Coda, Triumph. A big technical and emotional range is covered, all within the familiar Bax territory: it was his first essay in concerto form, though the title *Symphonic Variations* indicates the conception, which is not in the virtuoso style, though virtuosity is involved, of course, but piano integrated with the orchestra. The theme is given quietly at the outset and returns to clinch the 'Triumph' at the end.

Joyce Hatto and Vernon Handley obviously know and love the work. It makes heavy demands on the players, but Miss Hatto handles them all with skill and insight, reproducing Bax's poetry and force with equal aplomb. The orchestral playing is good too: one or two passing indecisions and imprecisions do not disturb one's concentration. And the recording is truly excellent. An impressive and valuable issue, indispensable to anyone interested in this period of English music. [A: 1] Burnett James

BEETHOVEN: Symphony 5 in c, Op. 67 / SCHUBERT: Symphony 8 in b, D759 'Unfinished'

London Philharmonic Orchestra / Leopold Stokowski
Decca 'Phase 4' PFS4197 (£2-19)

Minded to sue Decca for aural assault and battery, I turned over from Beethoven seeking balm from Schubert but, alas, in came the lower strings at a surging mezzo-forte—which I fear is symptomatic of this whole larger-than-life production. Stokowski hammers out the Beethoven as though fate, instead of merely knocking at the door, batters it in with a series of shoulder-charges. Everything is relentlessly over-emphasised, and in the scherzo the conductor has tampered with the orchestration to put even more punch into it. The total effect is exhausting and non-cumulative.

Stokowski fails to find the lyrical flow that lesser conductors habitually attain in the *Unfinished*. His varied assortment of tempi combine with a ponderous approach to turn this beautiful symphony as nearly into a disjointed bore as can be imagined. The high level recording may be a piece of technical wizardry but it just isn't natural. Woodwind and brass are often highlighted quite unnecessarily, and although it's undeniably exciting it's also a distortion of the music. Personally, I revere Beethoven and Schubert too much to see them treated thus, and my rating is coloured accordingly. The one unarguable bright spot is the warmth and virtuosity of the LSO, every man Jack of them. [B: 3] Bryan Corrie

BEETHOVEN PIANO VARIATIONS Vol. 2

Variations on 'God Save the King' □ Ten variations on 'La stessa, la stessissima' □ Eight variations on 'Une fièvre brûlante' □ Six easy variations in G □ Twelve variations on 'Menuet a la Viganò' □ Six variations on 'Nel cor più mi non sento'
John Ogdon (pno)
HMV HQS1230 (£1-49½)

These early sets of variations demand a stronger affection than Ogdon seems to feel for them judging by his immensely careful, cold performances. I received much the same impression listening to the first volume though there the music was intrinsically less interesting or entertaining than the six sets on the present issue. The variations on *God Save the King*, like those on *Rule, Britannia!* in volume one, have the advantage of being based on the most familiar melodies, and it is fascinating to see what Beethoven does with our National Anthem. But, like *Wellington's Victory*, the results are more interesting than rewarding. Nothing here affords anything like the pleasure that comes from the *Eroica* variations or the 32 variations in C minor of a few years later though there are premonitions of greatness in the sets based on Gretry's *Une fièvre brûlante* and the uncommonly amusing variations on Haibel's *Menuet a la Viganò*. Compare Brendel, say, with Ogdon where possible and I think you will agree that the Austrian pianist is temperamentally more suited to conveying the spirit of these pieces than his British counterpart. EMI's recording is first-class. [A: 2] Kenneth Dommett

ETTORE BASTIANINI

BERLIN: 'Annie Get Your Gun'—Anything you can do / DONIZETTI: 'La Favorita'—Vien, Lenora, a' piedi tuoi □ A tanto amor / GIORDANO: 'Andrea Chenier'—Quest' azzurro sofa . . . Son sessant'anni □ Nemico della patria / PONCHIELLI: 'La Gioconda'—Maledici? Sta ben . . . Oh monument Ho! He! Ho! He! Fissa il timone . . . Pescator, pescator / PUCCINI: 'La Bohème'—In un coupé . . . O Mimi, tu piu non torni / ROSSINI: 'Il Barbiere di Siviglia'—Largo al factotum / VERDI: 'La Forza del Destino'—Son Pereda, son ricco d'onore □ Solenne in quest'ora □ Morir, tremenda cosa . . . Urna fatale del mio destino □ Invano, Alvaro, ti celasti al mondo
Ettore Bastianini (bar.) / various Orchestras and Conductors
Decca SDD252 (£1-69). Reissues

Bastianini was still in his forties when he succumbed to throat cancer a few years ago. He was oddly neglected by Covent Garden, but I used to hear him frequently in Vienna where he was a great favourite, and I always thought him the most interesting Italian baritone after Gobbi. Bastianini's voice was individual, not always beautiful in sound, and towards the end of his life somewhat rough (though he used somehow to make a virtue of this), but he always sang with great intelligence and musicianship. He was also exceptionally good-looking, though good looks are, I suppose, wasted in baritones, who are usually cast by composers as the villain.

The arias and duets on this disc display something of Bastianini's wide operatic range, from the *bel canto* operas through Verdi (he was a magnificent Carlo in *La forza*, well represented here) to *verismo*. The final item is a hilarious account, in fractured English, of 'Anything you can do, I can do better' from *Annie Get Your Gun*, with the adorable Simionato. [B: 1] Charles Osborne

BERLIOZ: 'The Damnation of Faust'—Hungarian march / MASSENET: Scènes alsaciennes—Under the lime trees / ROSSINI: 'William Tell'—ballet music / JOHANN STRAUSS II: Tales from the Vienna Woods—waltz / SUPPÉ: 'Light Cavalry'—overture / TCHAIKOVSKY: Andante cantabile
Hallé Orchestra / Sir John Barbirolli
Pye 'Golden Guinea' SOS1 (99½p). Reissues

The proceeds from this disc go to the SOS Children's Villages, an organisation that cares for orphaned and abandoned children all over the world, founded in Austria in 1949. So I am happy that, without any sentimental considerations, the selection can be recommended. Sir John was in his happiest light vein in the recordings chosen and it makes a nice memorial to him as well. The *William Tell* music is really delightfully done, with the cello counter-melodies receiving the customary Barbirolli attention. Some of the recordings are now oldish and a little thin by modern standards but with a little treble cut they manage to sound pleasant enough and all have the virtue of clarity. The address of the British office of SOS is 261 Lavender Hill, London S.W.11. [B: 1/2] Peter Gammond

BORODIN: 'Prince Igor'—Polovtsian dances / MUSSORGSKY: 'Khovantchina'—Prelude Act 1 / RIMSKY-KORSAKOV: Capriccio espagnole Op. 34 / TCHAIKOVSKY: Capriccio italien, Op. 45
Cleveland Orchestra / George Szell
CBS 61213 (£1-49½)

The Russians at home, it must be confessed, are better than the Russians abroad. Brilliant picture postcards, such as the two Capriccios here, sound a little forced and artificial by comparison with the native Borodin dances (exotic as they may be to our ears) or the charmingly poetic 'Dawn on the Moscow River' of Borodin. But the two styles show off the versatile Clevelanders to perfection: there terrific virtuosity of ensemble and their sensitiveness to fine shades of instrumental colouring. They are actually a little heavy-handed in the Tchaikovsky piece and their Rimsky-Korsakov, dazzling as it is, blinds us at times with science and has more heat than light at the end. The Borodin is the plain orchestral version (without chorus) and no one can pretend that this is half as good as the original operatic score. However, for what it is, nothing could be more effectively treated. It seems at times as if they were deliberately putting a barbaric sound into their tone, not so much a roughness of outline as a garishness of timbre. But curiously enough it sounds right. And there is always the little Mussorgsky prelude to display their more delicate nuances. [A/B: 1] A. K. Holland

SVETLANOV CONDUCTS

BORODIN: 'In the Steppes of Central Asia' □ 'Prince Igor'—Overture / GLINKA: 'Russlan and Ludmilla'—Overture □ Chernomor's march □ Oriental dances □ 'Summer night in Madrid' / RIMSKY-KORSAKOV: 'The Tsar's Bride'—Overture
Bolshoi Theatre Orchestra / USSR Symphony Orchestra / Yevgeny Svetlanov
HMV ASD2664 (£2-25)

Svetlanov proves here that he can easily leave Leonard Bernstein miles behind. His handling of the *Russlan Overture* makes Berlioz' *Corsair Overture* sound like a Bruckner Adagio in comparison. The breathtaking pace obliterates all the music's natural grace and charm. The March and Dances from the same opera emerge more commendably, since they have a quasi-Prokofievian quality of deliberate grotesquerie about them. But Glinka's 'Summer night' loses most of its rather slight appeal amid the hectic attack, while the usually magical *Steppes of Central Asia* now sounds as coldly, brilliantly intellectual as anything by Hindemith . . . which is quite an achievement! There is nothing cheap or theatrical about Svetlanov's approach to this music. He simply seems to be uninterested in its inherent poetic quality. The recording is warm and truly 'alive' in everything . . . except for the upper registers of the

violins and trumpets, which are made to sound unbearably metallic. Cut the treble here, for musical comfort. But for this lapse the recording would have merited an **A**. [B: 2] Basil Ashmore

BRAHMS: Symphony 3 in F □ **Tragic overture**
London Symphony Orchestra / Sir Adrian Boult
HMV ASD2660 (£2.25)

We have badly needed Sir Adrian's Brahms for some time—and now we have some. It does not disappoint: total Brahms. One feels at once how naturally and truly Sir Adrian feels and understands Brahms: there is an ease and immediate identification, a spontaneous flow in Sir Adrian's conducting that raises his Brahms above all but a very few of his colleagues. Although Sir Adrian fell under the spell of Nikisch early in his career, it was Hans Richter who seemed to him the great master of the German classics, especially of Brahms. That old conclusion shows still in his work. There is no false emphasis, no working up of surface thrills in Sir Adrian's Brahms; simply (though it is not really at all simple) a complete and deeply satisfying exposition of Brahms' music. And if this sounds a bit anonymous in the writing of it down, the result is not in any sense anonymous. In the symphony the big outer movements (repeat made in the first) are perfectly matched with the two small inner ones. One listens and one knows that this is the true, unexaggerated, un-fussed, Johannes Brahms. The same is true of the *Tragic Overture*: a strong, potent, deeply satisfying musical interpretation.

The sound is to match: one of EMI's best; the blend and tone wholly Brahmsian; the acoustic admirably managed, the range wide, clean, unforced but full of aptness. This is what Brahms is about, all through—orchestral, anyway. [A: 1] Burnett James

BRAHMS: Symphony 4 in e, Op. 98
Chicago Symphony Orchestra / Carlo Maria Giulini
HMV ASD2650 (£2.25)

The Italians tend to bring out the lyric warmth of Brahms, and Giulini is no exception. The orchestra, of course, is American, and one of the best, willing and able to respond to all demands made on it. Thus we have here the melodic strains brought out and shaped with much *amore*, and that is important, for any good Brahms performance must keep the melodic through-line clearly in view, and this Giulini does. On the other hand, there is a strong architectural element in all Brahms' large scale works, and especially in the E minor symphony, which must be no less honoured. You may not feel that Klemperer's Brahms is always 'human' enough, but there is a matching of the lyric and the structural, fusion of the detail into a unified whole that is immensely impressive. Giulini has trouble with the musical punctuation: in the first movement and in the scherzo are checks and hesitations which impede the natural flow. I don't think Giulini feels Brahms's musical flow as naturally as some; as, for example, Sir Adrian Boult does in the recording of the Third Symphony. In the great finale too, the music does not quite hang together; the flute variation has a strong elegiac quality, fair enough in itself but not quite fitting into the overall picture. Yet there is much to admire and enjoy; some beautiful orchestral playing and an obviously deep affection in the conducting. The sound is very good in general, with an acoustic that suits the performance, not clinical and analytical but warm and homogenous in a way that would not serve Mozart or Beethoven so well but is good for Brahms. Strings and woodwind are well blended, and the brass is clean without being too assertive. The drums speak well, too, a

good sense of the sticks striking skin; but the triangle in the scherzo sounds a bit too concertante, emphasised by Giulini's handling of the rhythm. [A: 2] Burnett James

BRAHMS: Two rhapsodies, Op. 79 □ **Three intermezzi, Op. 117** □ **Variations and fugue on a theme by Handel, Op. 24**
Balint Vazsonyi (pno)
Pyé 'Virtuoso' TPLS13035 (£2.25)

I liked Vazsonyi's previous Brahms recital (TPLS13016), and I like this one. He is a pianist with an obvious feel for Brahms, combining strength and tenderness and seeing far into the creative mind of the composer, both in his 'big' moods and in his intimate solitudes. There are a few things I am not quite happy about—the rhythm of the second Rhapsody seems to have too much external emphasis, is rather forced I think; and the 'Musette' variation (22) of the Handel set is not light and airy enough on top. The first Rhapsody, though, is very convincing, and overall the Handel variations are well held together, varied in scope and execution, and crowned by a splendid accorde of the fugue. The Op. 117 Intermezzi, 'cradle songs of my sadness' as Brahms called them, are played with much insight and, especially in No. 1, with that true simplicity they require. Technically, Vazsonyi is equipped to do justice to the full range of Brahms, and his touch is for the most part both strong and sensitive. He is well served, too, by a pretty faithful recording, though I find it improved by a touch of bass lift—but you have to be careful not to make the middle woolly. The sound is a trace hard, perhaps, in loud passages; but this may be due to the player, reproducing a quality of sound he makes with the piano. [A: 1] may slightly flatter; but the next down would go the other way, and the basic quality inclines me to generosity. Burnett James

BRAHMS: Horn trio in E_b, Op. 40* / **MOZART: Horn quintet in E₂, K407**
*Ifor James (hn) / *Susan Tunnell (pno) / John Tunnell (vln) / Brian Hawkins (vla) / Kenneth Essex (vla) / Charles Tunnell (vlc)*
Pyé GSGC14132 (£1.50)

Ifor James is a horn player who is maturing fast, a busy man in the concert world, giving recitals and appearing as soloist in concertos. The characteristic warmth and breadth of phrasing which distinguish his playing are heard to best advantage in the Brahms Trio which receives a virile performance from James and from John and Susan Tunnell. The Mozart Quintet is not as well done. The opening allegro is lacking in real sparkle and produces a few sour notes from the horn. The charming andante is played with affection, however, and justifies a recommendation though once again in the finale I am conscious of a lack of buoyancy in the playing. The wit and humour to which the sleeve refers are I fear, absent, and their loss materially affects the general good impression. There is no alternative version coupling these particular works, nor do I know an acceptable recording of the Brahms at this price. For the Mozart there is a good version on a recently released Oryx issue which has the Clarinet Trio for company. [Brahms—B: 1 / Mozart—B: 2] Kenneth Dommett

BRAHMS: Violin concerto in D, Op. 77* / **MENDELSSOHN: Violin concerto in e, Op. 64**** / **TCHAIKOVSKY: Violin concerto in D, Op. 35***
*Jascha Heifetz (vln) / *Chicago Symphony Orchestra / Fritz Reiner / **Boston Symphony Orchestra / Charles Munch*
RCA Victorla DPS2002A/B (£2.99). Reissues: formerly MRB16117 (Jul '58); SB2066 (Mar '60); SB2002 (Oct '58)

It was time we had some of Heifetz's recordings back in circulation—the current list is decidedly scanty. The Brahms has not appeared in stereo before: it is a marvellously fashioned, ripely considered performance, played with the kind of mastery perhaps only Heifetz still can purvey. The sheer assurance, the impeccable intonation, the finely drawn line and absolute command, persuade the attention back to the music. Heifetz has never been an indulgent player, lingering to savour phrases and episodes: he keeps the music on the move, especially in the slow movement which may not seem quite as lyrically reflective as with some. But the finale dances and dazzles with supreme elan. Lack of indulgence is most obvious in the Mendelssohn, where Heifetz's brilliance tends to ruffle the music's sensibility a trifle. This is perhaps almost too much the virtuoso reading, the polish and glitter too near the surface. Yet it too is remarkable in its way, certainly from the violinistic point of view. The Tchaikovsky is a virtuoso concerto; and Heifetz gives it the full treatment. Here is mastery of the sort that makes simple folk cross themselves, fearing alliances with unspeakable powers. If the Tchaikovsky concerto was ever thought unplayable, no one ever told Heifetz about it. Typical Heifetz performances then, which means all but superhuman art and craft, in its way unique and incomparable, and except in the Mendelssohn for some, utterly compelling.

The orchestral support from Reiner and Munch is very good, though sometimes Heifetz's own superiority does reduce all else to mildly panting accompaniment. The recording varies: mostly it is acceptable; but there is sometimes an edge on the sound, the orchestral tone rougher than it should be, a certain amount of grit in the grain. Ratings difficult—different reproducers, particularly different cartridges, will give more variations than usual; but [B/C: 1—B/C: 2—C: 1] should cover most contingencies. Burnett James

BRITTEN: 'Albert Herring'—highlights
Sylvia Fisher (sop) / Johanna Peters (sop) / John Noble (bar) / Owen Brannigan (bass) / Edgar Evans (ten) / April Cantelo (sop) / Joseph Ward (bar) / Catherine Wilson (sop) / Sheila Rex (sop) / Peter Pears (ten) / Sheila Amit (sop) / Anne Pashley (m-sop) / Stephen Terry (tble) / English Chamber Orchestra / Benjamin Britten
Decca SET453 (£2.49)

For those unwilling to invest in the complete recording on three discs, these excerpts from *Albert Herring* can be highly recommended. Since its first performance at Glyndebourne in 1947, Britten's only comic opera (unlike Tippett, Britten is not given to comparing himself with Mozart, so has not described the work as his *Figaro!*) has continued throughout the years to give pleasure. Peter Pears is no longer young enough to sing Albert on the stage, but his recorded performance is beautifully sung and characterised. From a first-rate cast, it is unfair to single out individual names, but Sylvia Fisher's Lady Billows is irresistible. Hear her speech on Side One, Band Five. Decca have selected their highlights from this delicious village comedy very cleverly. [B: 1] Charles Osborne

BRUCKNER: Symphony 8 in c (1890 version)
Pro Musica Symphony / Jascha Horenstein
Vox 'Turnabout' TV34357/B (£1.98). Reissue: formerly Vox PL9682 (Jul '56)

This magnificent performance, first issued in July 1956, kept its place in the Vox list until a few years ago. Here it is again, most welcome in a decently reprocessed 'stereo', at a real bargain price. My only regret stems from the fact that Horenstein was just in time to

use the then new Nowak version of the score, with the cuts reluctantly agreed to by Bruckner in 1890, rather than the fuller and grander version edited by Haas. Yet so persuasively does Horenstein recreate this towering masterpiece, so infectiously are his love and understanding transmitted to a not outstandingly good orchestra, that this recording is to be preferred to most of the others now or until recently available. Of course one does rather wonder why Horenstein has not been invited to record this and other Bruckner symphonies with the orchestra of his choice in the best possible circumstances—but until that time comes, here is a glowing reminder of the ideal Bruckner conductor very near his best. [B/C: 1] *Peter Branscombe*

BRUCKNER: Symphony 8 in c / WAGNER: Prelude and Liebestod from 'Tristan und Isolde'
The Cleveland Orchestra | George Szell
CBS 72891/2 (£4-50)

The competition is severe—and so it ought to be!—in the case of Bruckner's Eighth, and I don't think Szell quite catches the stature of the work or measures up to the finest available recordings. Of recent issues, Haitink's with the Concertgebouw (September 1970) has been received with a warmth entirely in accord with high expectations aroused by his earlier Bruckner records. Jochum and Karajan generate epic breadth, Furtwängler a vivid, magnetic excitement; Solti's lushly played, intoxicated reading is probably the most beautiful of all, though the least Brucknerian. In this company Szell and his Cleveland Orchestra fail to make a profound impression. It is for the most part a careful reading—there is nothing in the least perfunctory about it—indeed, in the first three movements Szell's tempi are almost all marginally slower than Horenstein's. The latter (in the reissue of his famous old performance reviewed above) nevertheless attains an intensity and grandeur which make Szell seem a plodder by comparison. Of grandeur, anguish and serenity there is all too little. The *Tristan* music on the fourth side has the proper fervour and glow—it is a pity that something of this quality was not infused into the Bruckner. The recording is rather close, the surfaces quiet, though some details are lost and others unnaturally prominent. [B: 2] *Peter Branscombe*

BRUCKNER: Symphony 9 in d
Pro Musica Orchestra | Jascha Horenstein
Vox 'Turnabout' P TV34356S (99p). Reissue: formerly Vox PL8040 (Mar '55)

An unexpected but valuable advantage of this version is that the scherzo and slow movement are accommodated on side 2; only the Schuricht version on WRC of the dozen or so other versions known to me avoids a vexing side-change somewhere in the second movement. A small point, perhaps, but one typical of the care Turnabout have taken with this issue. The sound is splendid—amazing for its age (first issued on Vox in March 1955). Comparing passages on my much-played old copies of Horenstein's 8th and 9th with the new pressings I felt rather as I do when seeing a favourite painting for the first time after it has been cleaned; the blaze of colour for the moment makes one blink, reluctant to accept such brightness. Then gratitude takes over. The orchestra is not fully worthy of Horenstein's taut, spacious reading, but it plays pretty well. A splendid 99p worth! [B: 1] *Peter Branscombe*

BRUCKNER: Symphony 9 in d
Columbia Symphony Orchestra | Bruno Walter
CBS 'Classics' 61194 (£1-50). Reissue: formerly Philips SABL179 (Jun '61); CBS SBRG72095 (May '63)

This recording first appeared in June 1961 and until recently it has been available as a full price issue. Since the quality of the recording belies its years and Bruno Walter's reading of the symphony would be many people's first choice, it is obviously going to prove an even more attractive issue at its reduced price. It is indeed a fine performance of Bruckner's last symphony—for me one of the few pieces of post-war evidence that Walter's legendary pre-war reputation was not based on undoubted but ephemeral genius. The autumnal glow of the music is superbly realised by the orchestra, the work unfolds with majesty, step by step, like some alpine vista as a wanderer reaches a fresh vantage-point. What Walter seems to me to neglect is the stark, frightening nature of parts of the work—the eeriness of the trio, the bleak, uncompromising discords and harmonies. Despite the occasional untidy details (two flutes caught masquerading as Bruckner's one, spread chords and entries) this is deeply beautiful, comforting performance—but it is not the whole picture. [B: 2] *Peter Branscombe*

CHERUBINI: 'Medea'—highlights
Pilar Lorengar (sop) | Bruno Prevedi (ten) | Justino Diaz (bass) | Gwyneth Jones (sop) | Fiorenza Cossotto (m-s) | Chorus and Orchestra of the Accademia Nazionale di Santa Cecilia, Rome | Lamberto Gardelli
Decca SET476 (£2-49). From complete set—SET 376/7/8 (Jan '69)

The complete Italian version of Cherubini's *Médée*, with recitatives by Franz Lachner, from which come these highlights, was issued in January, 1969, when I reviewed it less than enthusiastically. This single disc confirms my view that the recording is well below Decca's usual standard, that Lamberto Gardelli's reading of the score lacks classic poise and that Gwyneth Jones, in the title role, allows vehemence of expression to push her fine voice beyond its natural limits, resulting too often in harsh and unsteady tone and dubious intonation, though there are by contrast some moments of splendour too. Bruno Prevedi and Justino Diaz do better as Jason and Creon respectively, and Fiorenza Cossotto is an excellent Neris; Pilar Lorengar finds the exacting first act aria of Glauce a little beyond her technical powers. The chorus sings well and the orchestra performs adequately when not over-harried by Mr. Gardelli. The disc covers the salient moments of the tragedy—four scenes from the first act, two from the second and two from the third. Band 3 on Side 2 would be a good one to sample for quality of sound and standard of performance. [C: 3] *Cedric Wallis*

CHOPIN: Fantasia on Polish airs for piano and orchestra, Op. 13* □ Scherzo in b, Op. 20 □ Polonaise-fantasia, Op. 61 □ Ballade in A, Op. 47 □ Scherzo in b, Op. 31
Sergio Fiorentino (pno) | *Guildford Philharmonic Orchestra | Vernon Handley
Revolution RCB10 (99p)

The Chopin Fantasia on Polish Airs is an aggravating work, starting so exquisitely and ending like a tired Czerny exercise. Never mind—the Guildford Philharmonic under Vernon Handley sets a magical introduction for the piano entry of a very beautiful Polish moonlight song, and continues to weave a gossamer web around the soloist's well-poised phrases. Towards the end of the

Mazurka, however, there seems to be a tape splice that foreshortens a vital third beat in one of the crucial cadential measures. Only on the review copy, let's hope. The remaining items on this record are a little disappointing because of Fiorentino's tendency towards a waywardness in rhythm and tempo. Occasionally, this liberty can be effective (bridge into the trio of the B-minor Scherzo), but in general it is disturbing. The Polonaise-Fantasia suffers this malady too. Still, so much of the playing is winning and interesting, and perhaps some listeners like their Chopin wavery. [B: 1] *Barbara Holmquest*

CHOPIN: Complete Mazurkas
Nina Milikina (pno)
Pye 'Virtuoso' TPLS13038 (£4-47½)

It is good to have a complete set of these mazurkas to compete with the version Rubinstein recorded for RCA. The mazurkas are possibly Chopin's most endearing compositions; they are more intimate and less showy than his grander compositions. The early mazurkas, written while he was a young man, are rhythmically lively and interesting; the melodies unsophisticated but very charming. They became more harmonically subtle and interesting as Chopin grew older and at the same time less dance-like and more 'pure' compositions. Nina Milikina's performance is never idiosyncratic and does not tire the listener with an excessively individualistic interpretation. Indeed, her playing seems a little mechanical at times but it says much for her performance that one can listen to the whole set, and that's six sides, without becoming tired of the essentially limited form of the mazurka. The sound quality is generally very good. There are some harsh notes here and there but I think they can be blamed on the piano and the rather close microphone. The acoustic is dry and rather lifeless to my ear and may not be liked by those who prefer their pianos in a rather more reverberant setting. On the other hand there is nothing specific to complain of except for various assorted clicks and plops. These extraneous noises are unobtrusive except on side one which is very 'surfacey'. The Pye people assure me, however, that this is a sample fault and not typical. At £4-47½ this set is less than two-thirds the price of the Rubinstein set and represents good value. [B: 2]

Gareth Jefferson

COPLAND: 'Billy the Kid' □ Four dances from 'Rodeo'
London Symphony Orchestra | Aaron Copland
CBS S72888 (£2-25)

This latest addition to the Copland conducts Copland series is a pretty predictable one bringing together as it does his two popular Westerns. Predictably too the performances are vigorous and polished. Not for nothing has Copland expressed his pleasure at working with the LSO; they play the tricky cross rhythms with panache and give those generously orchestrated folk tunes a sweet lyricism that is quite compelling. Of the two, *Billy the Kid* is the more satisfying score. The opening passage suggesting the desert landscape is one of the composer's most effective. Not perhaps as totally integrated in mood as *Appalachian Spring*, *Billy the Kid* nevertheless balances what one might call the pastoral and the hoe-down aspects of Copland's 'prairie' style convincingly and more effectively than *Rodeo*. This brash score, a western counterpart to Bernstein's *Fancy Free*, reverts to the harsh primary colours of *El Salon Mexico* and makes its point without much recourse to sophisticated ideas, though the orchestration is often quite subtle. This is

basically an entertaining record, expertly made and beautifully played. There is not much need to discuss alternative versions; composer's own views of their music are always worth investigation, especially if the composer is as adept at making his intentions known as Copland clearly is. [A: 1*]
Kenneth Dommett

DEBUSSY: 'Pelléas et Mélisande'—highlights Erna Spoorenberg (sop) / Camille Maurane (ten) / George London (bar) / Rosine Brédy (sop) / Guus Hoekman (bass) / John Shirley-Quirk (bass) / L'Orchestre de la Suisse Romande / Ernest Ansermet
Decca SET475 (£2.49). Reissue from complete set on Decca SET227/8/9 (Jan '65)

Last October, while complimenting the new CBS complete recording of *Pelléas et Mélisande*, conducted by Pierre Boulez, I made clear my preference for its Decca competitor of 1965, under the late Ernest Ansermet—with a more diffused sound and, within that sound, a greater prominence of the orchestra. It has a fine stereo spaciousness, too. Now here are five excellently chosen extracts from that recording: they include the great scene of Golaud's jealousy, when he holds the child Yniold up to the window to spy, and the climactic scene of love and killing. We are given a total of more than 58 minutes' music, making excellent value.

George London as Golaud renews his impressiveness at this re-hearing, and an adult soprano (Rosine Brédy) paradoxically makes a better *small* child than an older boy (CBS) can. As a record I recommend it practically without reserve, though a full translation would have been useful: if ever there was an opera which demanded word-for-word following in order to make sense of the vocal line, this is it. [A: 1]
Arthur Jacobs

O SACRUM CONVIVIVM

DURUFLÉ: Quatre motets / FAURE: Messe basse / LANGLAIS: Messe solennelle / MESSIAEN: O sacrum convivium! / POULENC: Litanies à la Vierge Noire
Choir of St. John's College, Cambridge / Stephen Cleobury (org) / Andrew Blunt (solo treble) / George Guest
Argo ZRG662 (£2.39)

Argo's high repute in recording church music is well maintained with this latest record of the St. John's (Cambridge) choir: there is an appreciably long resonance, but it is never allowed to overcome the clarity of the musical lines. All five works here are French, all modern or fairly modern, and all new to the current catalogue. Though Messiaen's piece gives its name to the disc (presumably because he is the 'fashionable' one of these composers), it lasts under five minutes, and the longest is Langlais' Mass, whose routine festivity I find tedious: that long-held final major chord on the organ is too much, man.

At the other extreme is the set of four tiny unaccompanied motets by Duruflé (sensibly preceded, on this recording, by the plainsong fragments on which they are based): without either a forced modernity or sham revivalism, this seems to be an example of a really distinguished composer's talent working to a miniature scale. Fauré's *Messe Basse* is an early and all-too-dispensable piece of organist's doodling, but Messiaen's short Latin work and Poulenc's rather longer French one fully repay hearing.

George Guest shapes the music carefully and well. But an English cathedral-style choir is, need I say, not a French one. In Langlais' Mass, the adult male altos sound somewhat unhappy in deputising for incisive boy altos; and when, in Fauré's work (originally for female voices) the Cambridge boys are allowed to take the lower voices as well as

the upper, they are not well balanced, the upper sounds being so much more emphasised in an English treble's training. [A: 2]

Arthur Jacobs

DVOŘÁK: String quartet 6 in F, Op. 96 'American' □ String quartet 2 in d, Op. 34 The Janáček Quartet
Decca 'Ace of Diamonds' SDD250 (£1.69)
Reissue: formerly Decca SXL6103 (Jun '64)

Last month provided a Hungarian account of the evergreen *American* quartet which had all the cheerful irreverence of Pinchas Zukerman taking a youthful 'new look' at the classics. This Czech version of the same piece has the calm, traditional approach, illuminated by sweetness and light, with which Bruno Walter so serenely illuminated the classical symphonies. I find it hard to say which interpretation is the more desirable. The accompanying work will probably affect one's final choice. Where the Hungarians gave an appealing, if slightly un-idiomatic account of the Ravel Quartet, the Czechs give a very idiomatic account of Dvořák's first really important string quartet. This is a lovely work indeed. While it may not seem to possess the immediate appeal of the *American*, it is a masterpiece of truly classical construction. To take but one example, note how the third and fourth bars of the Allegro's first subject are made to serve as the start of the second subject. After which, this second subject is made to appear again in the coda of the slow movement . . . a movement, incidentally, of timeless beauty which is scarcely surpassed by any other adagio, since the death of Beethoven! The whole work abounds in similar felicities and makes it clear why Brahms stated that he would be 'very honoured by the dedication of this quartet'. I have nothing but praise for a recording of sheer beauty, both from the technical and the musical point of view. It will bear infinite repetition. [A: 1]
Basil Ashmore

FINZI: A young man's exhortation—10 songs for tenor & piano (Hardy) □ **Earth and air and rain**—10 songs for baritone & piano (Hardy)
Neil Jenkins (ten) / John Carol Case (bar) / Howard Ferguson (pno)
Lyrita SRCS 51 (£2.35)

Readers who acquired the Lyrita recording of three Finzi cycles issued in October 1968 need have no qualms about buying this one, in some respects better than its predecessor. Most of the songs on the earlier record were written late in the composer's life, and indeed two of the three cycles were assembled after his death from songs thitherto unpublished. *A young man's exhortation* (1933) and *Earth and air and rain* (1936), are much earlier, and if the construction is more discursive the melodic invention is generally fresher than in the later songs. Finzi's music will never command a very wide audience, but it will always have a secure place in the affections of those who have come to know his highly personal contribution to English song. Certainly no one save Britten has ever come nearer to recreating in music the elusive atmosphere of Thomas Hardy's poems. The new recording has a perfect balance between voice and piano. It is close and resonant in character, but that is no fault in such intimate music, and the piano tone is both rich and natural. There is some pre-echo in the piano on my pressing. In all his career John Carol Case can never have sung better; his voice sounds fuller than usual, and his colouring of the words shows a high degree of literary perception. Neil Jenkins, reminding one of the young Wilfred Brown, is taxed by awkwardly placed high notes (as was Tear in the

previous record), but his singing goes near to the heart of the music. Howard Ferguson's strong playing contributes much to the atmosphere of a successful and enjoyable disc. [A: 1]
Bryan Corrie

FLOTOW: 'Martha'—highlights Anneliese Rothenberger (sop) / Brigitte Fassbaender (m-sop) / Nicolai Gedda (ten) / Hermann Prey (bar) / Dieter Weller (bar) / Bavarian State Opera Chorus (CM: Wolfgang Baumgart) / Bavarian State Opera Orchestra / Robert Heger
HMV CSD3683 (£2). Reissue from complete set on SAN246/7/8 (Apr '69)

Martha is an absolute charmer which the smaller of our two national opera houses (I mean Covent Garden) might try sometime. I'll even cast it for them, since they don't always do that very well for themselves: Elizabeth Harwood, Richard Lewis, Yvonne Minton and Forbes Robinson. Now to business: I reviewed most favourably the complete set from which these excerpts are taken, and it's one I've often taken from my shelves to play for pleasure, as distinct from dutiful reviewing purposes. The cast is splendid, especially Gedda and Fräulein Fassbaender who is as delightful on the stage as she is on disc. Very ably conducted by the veteran Heger, this is a disc well worth acquiring: most of the opera's best tunes (at least three 'hits') are here. [B: 1*]
Charles Osborne

FROBERGER: Capriccio 2* □ Fantasia 3* □ Toccata per l'Elevazione* □ Ricercar II* □ Canzona 2* □ Toccata 9 □ Suite XVIII** □ Toccata 18** □ Suite 12****
Gustav Leonhardt *(org), ** (hpd)
Telefunken 'Das alte Werk' SAWT9569 (£2.29)

On the evidence of this issue *Das alte Werk* has fallen from its exemplary standard of sleeve material. Apart from the woeful English note (e.g. "he encountered a cosmopolitan-oriented mentality"! the works themselves are not as clearly identified as they should be—there is no means of telling whether some of the pieces here played duplicate versions on the Tachezi and Dart recitals. The music and the performances are happily of an order to dispel the doubts raised. One side is devoted to pieces played on the Müller organ in the Waalse-Kerk, Amsterdam, and the other to pieces played on a Skowronek single manual harpsichord of 1961 modelled on an Italian instrument. The performances are scrupulously clean and stylish; Herr Leonhardt is alert to the very different demands of the slighter toccatas and the extended, radiant suite which is a lament for the passing of the emperor Ferdinand IV, at whose court Froberger had spent several years of a restless life (a hardly credible anecdote relates that he overblew the organ, thereby incurring the wrath of his superior, Gibbons, during Charles II's wedding service in Westminster Abbey, and then seated himself at the instrument and improvised brilliantly!). The music is finely recorded, but the sides are not very generously filled. [A: 1]
Peter Branscombe

HANDEL: Sonata for flute, violin and continuo in b, Op. 2:1b □ Sonata for two violins and continuo in d, Op. 2:3 □ Sonata for oboe, violin and continuo in d □ Sonata for recorder in f, violin and continuo in F, Op. 2:5
Frans Brüggen (flte & recorder) / Jürg Schaefflein (baroque oboe) / Alice Harnoncourt, Walter Pfeiffer (baroque vlns) / Nikolaus Harnoncourt (baroque vlc) / Herbert Tachezi (hpd)
Telefunken 'Das alte Werk' SAWT9559 (£2.39)

The four works on this disc were probably composed around 1733 when Handel was living in London. They form a rather odd group of pieces, and the music seems to improve as the record continues. The first

piece on the disc is the Sonata for flute, violin and continuo which turns out to be a rather uninteresting work, not helped very much by a plodding and unimaginative harpsichord part.

The harpsichord player comes into his own during the recorder sonata as he has much more to say. This is a delightful work, but despite Brüggens's fine playing, and the general excellence of the ensemble, the performance is slightly marred by the balance which seems to favour the harpsichord rather than the other instruments.

Probably the most interesting work on the record is the sonata for two violins. It is a fascinating, if uncharacteristic piece in the Italian style which opens with a beautiful aria-like movement and culminates in a slightly bizarre finale: full of rushing semiquaver passages and a peculiar jagged dotted rhythm. But the two violinists offer an excellent performance of this un-Handelian piece.

The oboe sonata proves Jürg Schaefflein to be a competent performer. The old baroque oboe has a rounder and strangely out-of-focus quality compared to our modern instrument.

The sound is generally good, but the instruments are closely recorded and while the harpsichord and wind instruments come over well, the violins strike me as just a little edgy at times. This however is a minor flaw which may not trouble many listeners. An interesting record. [B: 1] *Colin Evans*

HANDEL: 6 Trio sonatas for 2 oboes, bassoon and harpsichord: 1 in B \flat □ 2 in d □ 3 in E \flat □ 4 in F □ 5 in G □ 6 in D
Michel Piguet (ob) | Heinrich Haas (ob) | Walter Stifftner (bsn) | Eduard Müller (hpd)
Archiv 2533 045 (£2.38)

There is very good evidence for accepting that this set of six trio sonatas was composed by Handel at the ripe old age of ten! Astonishingly assured from a technical viewpoint, they are also of sufficient interest to allow the sceptical to express doubts as to the accuracy of statements about the date of composition that the composer himself later supported. There is not enough variety to encourage one to play straight through the two sides—but that is no valid objection! What one must do is comment appreciatively on the playing as well as on the craftsmanship of the sonatas. The first oboe and the bassoon are 18th century instruments, the second oboe and harpsichord modern reconstructions. I noted very favourably a recital by M. Piguet on his superb Rottenburgh oboe in ARR in January 1967. With equally talented partners he gives great pleasure again here. There is fine tonal variety, though less in dynamics and tempo, and the recording is admirably engineered: sensible disposition of the players, entirely silent surfaces and lively presence. [A: 1]

Peter Branscombe

HAYDN: Quartet in C, Op. 33:3 'Bird' □ Quartet in D, Op. 64:5 'Lark' / SCHUBERT: Quartet in E \flat , D87
Smetana Quartet: Jiri Novák (vln) | Lubomir Kostecký (vln) | Milan Skampa (vla) | Antonin Kohout (vic)
HMV ASD2644 (£2.75)

I always welcome the chance to hear this excellent ensemble whether it be in the recital-room, over the air or on one of their too rare gramophone recordings. This new issue is an absolute delight: we have three superb quartets, none of them as well represented in the catalogue as they deserve to be, played with love, spirit and wonderful musicianship. Listen to their rapt unfolding of the riches of the opening movement of the 'Lark' and you seem to be hearing this glorious and familiar music for the first time. Another highlight is the careful attention (it sounds more like spontaneous inspiration) given to

the relative weight of the themes in the Schubert finale. Of course, there are other details about which I am personally less happy—the restricted dynamic range in the Scherzando of the 'Bird', the loss of four bars in the first movement of this work through ignoring the second repeat, and a similar omission in the Schubert Scherzo. But, short of hearing an angelic consort, I am unlikely to experience finer chamber music playing than this, and it is quite beautifully recorded. [A: 1]

Peter Branscombe

HAYDN AND MOZART DISCOVERIES

HAYDN: 'Il Disertore'—Un cor si tenero □ 'La Vera Constanza—List und Liebe'—Spann' deine lange Ohren □ 'Acide e Galatea'—Tergi i vazzosi rai □ 'La Scuola di Gelosi'—Dice benissimo / MOZART: Männer suchen stets zu naschen (Warnung) □ Ich möchte wohl der Kaiser sein, K539 □ 'La Finta Giardiniera', K196—Nach der Welschen Art □ Mentre ti lascio, K513 □ Così dunque tradisci . . . Aspri rimorsi atroci K432 □ Un bacio di mano. K541 □ 'Le Nozze di Figaro', K492—Hai già vinta la causa . . . Vedro mentr'io sospiro
Dietrich Fischer-Dieskau (bar) | Vienna Haydn Orchestra | Reinhard Peters
Decca SXL6490 (£2.39)

Discoveries? Well, yes, I suppose you could say that about the four Haydn pieces, though scarcely about the majority of the Mozart items on this record. Never mind, it is all very enjoyable though Fischer-Dieskau does still carry over a slightly hectoring quality of voice into the lyrical arias. It suits Almaviva's irascible *Hai già vinta la causa* quite well, and is not out of place in the war song (new to record) *Ich möchte wohl der Kaiser sein* or the comic item from Haydn's *La vera constanza* or Nardo's clever aria from *La finta giardiniera* with its parodies of the German, French, Italian and English modes of addressing the lady of one's choice.

Un cor di tenero is one of Haydn's few occasional arias. No notes have come with the pressing, but I see that it has been attributed to something called 'Il Disertore', presumably the Bianchi opera of that name produced at Esterhaza in 1787. *Dice benissimo* was composed for inclusion in Salieri's *La scuola de' gelosi* performed there on 27 July 1780. The other two Haydn arias are from his own operas. All are attractive and tempt one to believe, contrary to evidence, that closer acquaintance with the scores would be rewarding.

The remaining Mozart items are all concert arias, none of them over-recorded and very welcome in these crisply tailored performances with Reinhard Peters and the Vienna Haydn Orchestra (any relation to the Vienna Mozart Ensemble?) providing elegantly stylish accompaniments. There is some interest attached to *Männer suchen stets zu naschen* (K433). This, like the tenor aria K435, exists in incomplete form. It was presumably intended for an unrealised Singspiel project of about 1783 (K416a) and has been arranged for this recording by one Furst. Einstein has advanced the opinion that the opera concerned would have been a German version of Goldoni's masterpiece, *The Servant of Two Masters*. The fact that the autograph appears on paper associated with *Der Schauspiel-direktor* has led some scholars to associate the piece with the year 1786. It too is new to record, so perhaps 'discoveries' is not so inappropriate after all. [A: 1]

Kenneth Dommett

A GRAND OPERETTA GALA

Excerpts from—
HEUBERGER: 'Der Opernball' / KALMAN: 'Countess Maritza' / LEHAR: 'Die Lustige Witwe' □ 'Der Graf Von Luxemburg' □ 'Der Zarewitsch' □ 'Paganini' / MILLOCKER: 'Die Dubarry' □ 'Der Bettelstudent' / STOLZ:

'Venus in Seide' / J. STRAUSS II: 'Der Zigeunerbaron' □ 'Casanova' □ 'Indigo' / SUPPE: 'Boccaccio' / ZELLER: 'Der Vogelhandler'

Grace Bumbry (sop) | Anneliese Rothenberger (sop) | Rita Streich (sop) | Nicolai Gedda (ten) | Hermann Prey (bar) / etc
Columbia TWO320 (£1.99½)

A positive galaxy of top singers, and orchestras and conductors well-versed in the delicate art of operetta, promises a real feast for the connoisseur and melody-lover alike. They will not be disappointed. There are some superb performances and nothing less than good. It includes a number of top favourites in the operetta stakes with a spicing of less exploited pieces, but the aim is obviously to present the best in every way. Rothenberger and Gedda singing 'Lippen schweigen', Grace Bumbry and Gedda with 'Wers un getraut', Fassbender and Gedda with 'Chambre séparée' (there is a lot of Gedda on this record which is itself a guarantee of satisfaction) are all perfectly done; but you can also have some relatively unknown pieces from Strauss's *Indigo* and *Casanova* and a fine Robert Stolz item from *Venus in Silk*. The recordings are all fairly new, the earliest being published in 1965, the majority from 1968 and 69, the latest Bumbry's *Gypsy Baron* of 1970—can we hope for a badly needed new recording from this direction—and the sound throughout is very good in rich, realistic 'Studio 2' stereo without any unnecessary exaggerations. I like the unconscious suggestion of 'grand operetta', a new musical category but what we certainly get when 'grand opera' singers give of their best to the lighter vein. [A: 1]

Peter Gammond

HUMMEL: Concertino in G for piano and orchestra, Op. 73* □ Rondeau for piano, Op. 120 'La Galante'* □ Concerto in F for bassoon and orchestra**

**Martin Galling (pno) | *Berlin Symphony Orchestra | *C. A. Bunte | **George Zukerman (bsn) | **Württemberg Chamber Orchestra | **Jörg Faerber*
Vox 'Turnabout' TV34348S (99p)

A resourceful composer whose classical training was impregnated with a touch of Biedermeier sentimentality, some think to its disadvantage, Hummel was an important, and influential, link between Mozart's generation and that of Mendelssohn and Schumann. This link is, on the present record, most clear in the Concertino for piano composed about the time of Waterloo. The outlines of the work are epitomised in the title of the piano piece which follows it—'La Galante'. Feminine and graceful, as if Beethoven had never existed. It would be easy to dismiss such music as frivolous and empty yet that would overlook its very personal assets, high among them being an ability to exploit the resources of the keyboard, much as his master, Mozart, had done, so as to enhance its lyric characteristics.

The performances are fastidious and restrained, yet they convey the degree of warmth that is needed for conviction. Bunte, who conducted the recently released recording of the Weber Potpourri and Danzi Cello Concerto on Turnabout, is rather too formal and fails to draw the requisite degree of relaxation from the Berlin Symphony Orchestra. The balance between them and the soloist is not as carefully judged as it might have been, either.

I have been unable to discover the provenance of the Bassoon Concerto which George Zukerman plays with crooning smoothness of tone to a much more lively accompaniment by the Württemberg Chamber Orchestra under Faerber than Bunte provides. As recorded it is an amiable vehicle for the soloist, not unlike Weber's concerto for the

same instrument. Less immediately engaging than the Trumpet Concerto it does have a pleasant Adagio but otherwise must, I think, be regarded as being of limited interest and circulation. Worth investigation though, particularly for the piano pieces. [B/C: 2]

Kenneth Dommett

IRELAND: Symphonic prelude 'Tritons' □ Two symphonic studies □ Suite 'The Overlanders' □ Scherzo & cortège on themes from 'Julius Caesar'

London Philharmonic Orchestra | Sir Adrian Boult
Lyrita SRCS45 (£2.35)

Of the music on this fourth collection of John Ireland's orchestral music (and how well Lyrita have served Ireland), one is a very early work, his first of symphonic scope, and the rest is from his contribution to stage and cinema. The Symphonic Prelude, *Tritons*, was given at the Royal College in 1901, under Ireland's teacher, Charles Villiers Stanford. Ireland actually withdrew it, and it does not appear in his catalogue of published works; but he did return to its material later, in 1944, using it as the basis of a piece for military band, *A Maritime Overture*. *Tritons* is a pleasant piece, obviously not yet mature Ireland, but written with care in the Stanford-influenced idiom of the time. It is worth having, both because it is agreeable in itself and because it throws light on the composer's development. Most of the rest of the disc is occupied by music Ireland wrote for the film *The Overlanders* in 1946. He was not keen on writing for the cinema, but was persuaded here and once into it gave of his best. Ireland himself was not convinced that a suite could be made from his *Overlanders* music; but it was eventually done by Charles Mackerras, and very well made. Two pieces from the film score were not included by Mackerras, and these were subsequently (1969) made into the Two Symphonic Studies by Geoffrey Bush who also wrote the sleeve note for the record and tells how it came about and what was intended. Bush also made the *Scherzo and Cortège*, this time out of the music Ireland wrote for a BBC production of *Julius Caesar* in 1942. Thus not all the music is pure and original John Ireland; but it adds up to an attractive concert altogether pertinent to Lyrita's exploration of his work. The performances under Sir Adrian are exemplary, and the recording is good, though without quite the full tonal freedom and natural resonance of the best contemporary orchestral reproductions. [B: 1]

Burnett James

MICHAEL KELLY & MOZART

KELLY: Cara son tuo così □ Soffri che intraccia □ The woodpecker □ Placa gli sdegni tuoi □ Ruin seize thee / KELLY-MOZART: Grazie agl'inganni tuoi / MOZART: 'Le Nozze di Figaro', K492—Finale Act 1 □ Crudel perché Finora □ 'Lo Sposo Deluso', K430—Naqui all'aura trionfale □ 12 variations on 'Ah, vous dirai-je, Maman, K265 / PICCINI: 'La Buona Figliuola'—E tal contento / STORACE: 'The Pirates'—The jealous Don / STORACE-MARTINI: 'The Siege of Belgrade'—How the deuce
Dan Klein (ten) | Sasha Abrams (sop) | Peter Alexander (pno)

Decca 'Ace of Diamonds' SDD273 (£1.69)

I suppose the only way to describe this record is to call it an entertainment. It is in fact a recording of a programme that Sasha Abrams and Dan Klein have given in various places and consists of a spoken commentary derived by Mr. Klein from Michael Kelly's 'Reminiscences' and interspersed with songs and duets by Mozart, Kelly and Stephen Storace, Mozart's pupil and their mutual friend, the brother of Nancy, Mozart's first Susanna and the recipient of *Ch'io mi scordi di te*.

Both Miss Abrams and Mr. Klein have

fresh-sounding voices and Peter Alexander accompanies on the piano with simple directness. The result is, as no doubt is intended, a light-hearted diversion. It is not much more and I cannot help wondering whether the spoken passages, which are pretty extensive, may not pall in time especially as they are delivered in a heavily inflected manner reminding us of those animated story-tellers of old Children's Hour days.

The music, beginning with one chorus of *Non piu andrai* on the piano, is of scarcely more than curiosity value. There is, it is true, the attractive *Naqui all'aura trionfale* from Mozart's unfinished *Lo Sposo Deluso* intended for Nancy Storace, not otherwise available. Kelly's own pieces, including a pleasant little song to a poem by Tom Moore, *The Woodpecker*, and a breast-beating setting of Gray's *Ode, Ruin seize thee, ruthless King*, are interesting, though Storace's two contributions, one an adaptation of a piece by Martini, fall short of expectation. The last item, *Grazie agl'inganni tuoi*, presents a bit of a problem. Kelly claims authorship of the tune, listed in Köchel under K532 as a terzetto fragment by Mozart to words by Metastasio, and goes on to say that Mozart wrote variations on it which he played frequently. As presented here the tune is clearly Kelly's rather than Mozart's, lacking as it does any real substance.

The recording is absolutely first-class, but how does one rate this sort of thing? I could have done without the chat myself and had more music, perhaps. That is a personal preference though, and scarcely valid as criticism. Even on its own terms I could envisage it better done; there is something faintly condescending about the reading while the performances represent something of a compromise. I suggest sampling it if possible before purchase. [A: 2]

Kenneth Dommett

A KARAJAN FESTIVAL

LISZT: Les Preludes □ Hungarian Rhapsody 2 / SIBELIUS: Finlandia □ TCHAIKOVSKY: 1812 Overture
Berlin Philharmonic | Herbert von Karajan
Deutsche Grammophon 643212 (99p)

This is a real spree for Karajan, but for this least relaxed of conductors an entirely serious one. After all, if you are going to perform hackneyed works, it is not a bad plan to treat them as if they were first performances. At least two of these well-known pieces were composed for festive occasions (in the broad sense) while the others (Liszt) are nothing if not dramatic events. I am not sure that Karajan does not over-paint the picture and become a little melodramatic here and there but his Liszt is tremendously exciting and 'original', like a first performance. The Tchaikovsky is done with all the trimmings: the impressive choral opening, the cannon, the bells, everything. Best of all, as sheer performance, is *Finlandia* which, although not the noisiest, is the most sonorous. Sibelius discovered the orchestral 'pedal' and his orchestration goes further in the matter of sonority than almost anyone with the possible exception of Wagner. So if you thought you were tired of these old war-horses, give Karajan and the Berlin Phil a trial. [A: 1]

A. K. Holland

LISZT: Années de Pèlerinage: Première année—Suisse
Sergio Fiorentino (pno)
Revolution RCB2 (99p)

Close to Fiorentino's heart and temperament are the nine pieces from Liszt's *Années de Pèlerinage en Suisse*. The pianist is here most sensitive, keeping an even balance between poetry and drama, appropriate to

the rarified atmosphere of Swiss landscape. He favours slower tempi than most which adds true dignity to the *Vallée d'Obermann*, and credibility to some of the less-inspired moments in Liszt's writing. This record is an excellent value. [A: 1]

LISZT: Variation on a waltz by Diabelli □ 8 Variations □ Scherzo in g □ Fantasia on themes from Beethoven's 'Ruins of Athens' □ Valse a capriccio sur deux motifs de Lucia et Parisina □ Divertissement on themes from Puccini's 'Niobe' (Early works and operatic transcriptions)
Gail Buckingham (pno)

Revolution RCF005 (£2.30)

Although many of the compositions on this recording are of limited interest, the performer, Gail Buckingham, is quite the contrary. An inspired player at best and a nervous one at worst, Miss Buckingham romps through some difficult pages with a flush of victory at all times. The Fantasia on Beethoven's 'Ruins of Athens' themes is the most substantial work (if not the most difficult), and it would be nicer to hear the famous March played a little faster—some other time. The pianist is a real coquette in the Donizetti opera themes, and her playful exposition of imaginary operatic duet is captivating. The sound of the piano is not altogether pleasing, though, and I for one would balk at the price. [B: 2]

Barbara Holmquest

MAHLER: Symphony 1 in D 'Titan' (1893 version)
New Philharmonia Orchestra | Wyn Morris
Pye 'Virtuoso' TPLS13037 (£2.25)

Following the commercial success of his two previous Mahler recordings for Delysé (*Knaben Wunderhorn* and *Klagende Lied*), Morris hopes to begin a complete cycle of the symphonies, it is reported. As before, his producer here is Isabella Wallich.

Whatever artistic promptings, it makes good commercial sense, too, to begin by performing the original, more lightly scored version of the first symphony—with the *Blumine* movement subsequently omitted by Mahler. The only alternative in this country, the Ormandy/RCA, offers the finalised 1899 edition with the *Blumine* (taken much faster incidentally) interpolated: a hybrid. In his note for the present album, Jack Diether outlines the principal changes—the most striking of which is perhaps the doubling of the string bass solo beginning the Huntsman's Totenmarsch with cello—which weakens the eerie quality considerably. All in all the published revised score is stronger and more boldly imaginative, but it is good to have at least this opportunity of having the 1893 for study.

Morris's interpretation is sensitive, although the reins could have been tightened on the NPO, and the grotesque forces are underplayed in favour of lyricism. This is exaggerated by the excessively reticent cut of the disc: a concert hall balance has been achieved, but little impact is possible from the present transfer since in lifting the volume one merely becomes aware of surface rumble. [B: 2]

Christopher Breunig

MAHLER: Symphony 2 in c 'Resurrection'
Birgit Finnila (con) | Evelyn Mandac (sop) | Singing City Chorus | Elaine Brown (dir) | The Philadelphia Orchestra | Eugene Ormandy
RCA LSB4003/4 (£2.99)

In the 1930s Ormandy made the very first recording of the *Resurrection* Symphony with the Minneapolis Symphony Orchestra—for RCA. And now this new version, produced by Peter Dellheim. The position has changed drastically, of course, with the magnificent (full-priced) sets by Klemperer, Solti, and Haitink; and medium-price competition from Abravanel (Vanguard).

The opening movement is disappointing:

too little dramatic and structural tension, with the Philadelphians sliding through the score in a surprisingly easy way: lyricism almost turned to complacency in the direction. And the third movement, by contrast, is too hard-driven by Ormandy. He is at his best in the long finale, where the richly characteristic sounds of the orchestra are undeniably attractive. The two solo singers and choir are adequate, the choir impressive even.

The recording is studio-like and tends to suffer from a masked overall quality; the solo voice (Urlicht) overloads and the final pages suffer from totally unconvincing balancing and remixing; a very 'dated' sound. The Vanguard is cleaner, more analytical, and I think more truly stylish in general, although the orchestra seems much smaller than the Philadelphia in numbers.

Whereas I think Solti's Decca recording was an important technical landmark, and important in Solti's recording career too, it is not a performance I really savour. I turn to it always for short comparisons (technical quality of playing and recording), but my favourite version of all is the Concertgebouw/Haitink on Philips SAL3715/6: a profoundly satisfying set still not properly recognised. [B/C: 2] *Christopher Breunig*

MAHLER: Symphony 5 in c □ 'Des Knaben Wunderhorn'—excerpts*
*Yvonne Minton (con) | Chicago Symphony Orchestra | Georg Solti
Decca SET471/2 (£4-98)

Most readers will want to know basically how does this set compare with the HMV with Barbirolli/NPO, made at Watford, and coupled with Janet Baker's essential performance of the Rückert settings (ASD2518/9).

The contrasts are much as one speculated: in over-simplified terms, the choice between warmth, humane temperament, and driving, forceful playing, exactly disciplined. As with the *Tragic*, I am glad this was made in Chicago. The recording is similarly superb, the Chicagoans clearly were not in the least daunted by Solti's driving pace for the Rondo, here more of a virtuoso toccata for orchestra. And the weight and colour are fine for the opening funeral march—turn to the NPO and inevitably it sounds comparatively ragged. The late Sir John's vocal encouragements are there too (the HMV recording I remind is excellent of its kind: striking horn calls beginning the finale!).

Originally I dared suggest Barbirolli's loving account of the adagio should be detached (from what is, after all, Mahler's toughest symphony). I am unrepentant. In fact this did reappear in the memorial album SLS796/2. Solti's account is very different: fast, and yet still effective. It is in the other middle movements that I find the energetic, determined conducting too unvaried, too perfected at the expense of human feelings. And so, overall, I would go for Barbirolli first—although this new Chicago version is very much the complementary set.

The sequence of *Wunderhorn* songs I do not care for as such: *Das irdische Leben*; *Verlor'ne Müh*; *Wo di schönen Trompeten blasen*; *Rheinlegendchen*: and only the third of these makes a major contribution to the Mahler discography. The voice is rather close elsewhere, but the long song of the night visitation is beautiful. Solti's *Rhine legend* is too fine, too lacking in earthy humour, and 'Labour lost' works best in duet form. I spent a great deal of time over these songs, since they are all so well presented by Miss Minton. She works closest with Solti in *schönen Trompeten* and the result is exceptional. [A: 1] *Christopher Breunig*

MENDELSSOHN: Symphony 11 □ Violin concerto in d
Roberto Michelucci (vln) | I Musici
Philips 6500 099 (£2-40)

Another completely delightful I Musici disc. And a surprise in Mendelssohn's String Symphony, for the scherzo he suddenly introduces 'Turkish' percussion elements—tympans, triangle, cymbals—for which the gramophone listener will be totally unprepared (well! If this note does not spoil it). It was written when the composer was twelve—the Violin concerto in d (for string orchestra too) was completed the year before, and first played in our time by Menuhin in 1952.

Michelucci is a wonderfully clean player, and this short dramatic piece is excellently done, but the main pleasure comes from the symphony: more of a contrasted suite of movements: an allegro with slow introduction/scherzo 'Schweizerlied'/adagio/minuet and an intense finale with strict contrapuntal writing. I Musici bring a warmth and expressive daring to it (not dissimilar to the Italian Quartet's style in Beethoven so far as phrasing and colour go), and the recording quality is superbly alive. Identical to their recent Vivaldi *Seasons* in fact: quite a close studio setting but excited ambience sufficient to give sparkle, and a wide clean dynamic range. [A: 1] *Christopher Breunig*

MORLEY: The first Book of Ayres
Nigel Rogers (ten) | Nikolaus Harnoncourt (vla) | Eugen Dombois (lute)
Telefunken 'Das Alte Werk' SAWT9568B (£2-29½)

The influence of Morley on Elizabethan and Jacobean madrigal composers largely explains why his ensemble vocal music has remained more popular than his solo songs; with the exception of such deservedly famous pieces as *It was a lover*, Morley's Ayres have been overshadowed by the work of his more illustrious contemporaries, Dowland, Campian and Rosseter. But in fact Morley's solo songs show much more individuality than most of his ensemble vocal music. Morley's genius is at its best in light songs such as the sensuously flirtatious *Mistress mine*, and significantly the performers bring off these pieces much better than the more serious, melancholic numbers. *I saw my lady weeping*, for example (the song stands up well to comparison with the setting by Dowland), lacks real intensity, and merely affects passion in a somewhat mannered style which is more appropriate (though hardly more convincing) in the lighter songs. The fault here is not entirely the singer's: the recording balance leaves lute and bass viol very much in the background, and the lack of cantabile line and coldness of tone from the viol fail to give the singer the kind of support he needs. Despite some admirably executed ornaments and the delicate charm of the performances, the whole programme left me with a sense of cold admiration for an aspect of Morley's work which deserves to be better known. [C: 3] *Peter Aston*

MOSCHELES: La Tenerezza Op. 52 □ Gigue Op. 58 □ Sonata Mélancolique Op. 49 □ La Petite Babillarde Op. 66 □ 3 Characteristic Studies Op. 95 □ Etude Op. 51 No. 2 'La Legerezza'
Philip Challis (pno)
Revolution RCF004 (£2-80)

This Champagne-type music requires a drier recording technique than sustained, lyrical piano writing in general does, and Revolution seem to have accomplished a nice compromise between a lively acoustic, so necessary for the treble part of the piano, and a clean focus for clarity in the passagework. There are, remember, 12–16 notes per second fre-

quently, that have to succeed one another on different pitches and still be heard! There is charm, wit and substance in these pieces and Challis makes the most of the splendid pianistic opportunities. His playing is well-poised, poetic and even exciting when decorum decrees; Challis wisely avoids being 'cute' by allowing the decorative nature of these compositions to settle loosely around the melodic framework—and some of the melodies are very beautiful in themselves. This is a highly recommendable recording for its integration of performance, music chosen and recording technique, all matched suitably to each other. [A: 1]

Barbara Holmquest

MOZART: Symphony 21 in A, K134 □ Symphony 27 in G, K199
Munich Chamber Orchestra | Hans Stadlmair
Oryx 3C 317 (99p)

Only one thing prevents me from giving this record star billing, the funereal speed of the presto finale of K199. I came to it after the stimulation of the delectable little Symphony in A and three admirably judged movements of K199 and its inaptness seems inexplicable. The Munich Chamber Orchestra prove conclusively that they can handle this kind of music and give it sparkle, and Stadlmair keeps it all neatly in shape. He insists on all repeats—both halves of the movements—and this gives these modest symphonies stature without making bores of them. Böhm's somewhat magisterial DGG recording apart, there is not a really good recording of K199 on the catalogue. This is a much earlier symphony than its Köchel number implies and does not aspire to the achievements of K183, K200–202, yet it has its modest charm, not least its attractive slow movement. But it does need a dashing finish: here, unhappily, it just limps past the post into second place. [A: 1]

Kenneth Dommett

MOZART: Serenade 1 in D, K100 □ Ein musikalischer Spass (Musical joke), K522
Vienna Mozart Ensemble | Willi Boskovsky
Decca SXL6499 (£2-39)

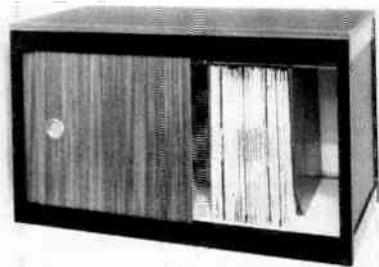
This is the fourth volume of the Decca-Boskovsky collaboration which is recording all Mozart's orchestral serenades. The Serenade K100, now K62a, is in fact the first of its kind that Mozart composed. Dating from the summer of 1769 it is a companion to the two Cassations K63 and 99 (63a). Unlike succeeding orchestral serenades this one contains no self-contained concerto though there are extensive solo passages for oboe and horn in the second movement (the introductory March for this work does not seem to have survived). The soloists here are Walter Lehmeier and Roland Berger, both members of the Vienna Philharmonic, and both masters of their instrument. As with previous issues in this series Boskovsky adopts brisk tempi, occasionally a bit too brisk perhaps. But on balance there is the now normal feeling of 'rightness' about the results. Boskovsky and his players capture a spirit in this kind of music which eludes most other groups, an effervescence that infuses what is often not particularly original music with real zest.

The *Musical Joke*, like all musical jokes, wears a bit thin on repetition. The parade of meaningless sequences, the obvious wrong notes, parody the ineffectual composer and the inept performer but can only intermittently amuse the contemporary listener surrounded by the applauded and financially rewarded produce of both. This performance is as good as any you are likely to encounter, and as musical jokes go this is a good one. [A: 1] *Kenneth Dommett*



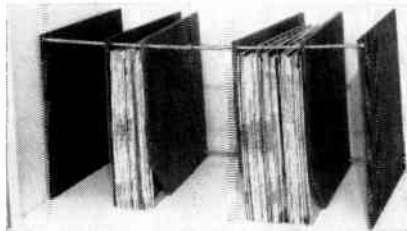
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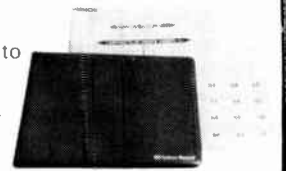
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BIB DIVISION

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MASONIC MUSIC

MOZART: *Maurerische Trauermusik*, K477 □ *Zur Eröffnung der Freimaurerloge*, K483 □ *Zum Schluss der Freimaurerloge*, K484 □ *Die ihr des unermesslichen Weltalls Schöpfer ehrt*, K619 □ *Dir seele des Weltalls*, K429 □ *Laut verkünde unare Freude*, K623 □ *O heiliges Band*, K148 □ *Gesellenreise*, K468 □ *Die Maurerfreude*, K471 □ *Maurersang*, K623a
Werner Hollweg (ten) | Ian Partridge (ten) | Stafford Dean (bass) | Irwin Cage (pno) | Simon Lindley (org) | Ambrosian Singers | New Philharmonia Orchestra | Edo de Waart
Philips 6500 020 (£2-40)

I have always agreed that Mozart's masonic music is relatively small beer, though I have always enjoyed a great deal of it. The three cantatas, *Dir, Seele des Weltalls, Die Maurerfreude* and *Laut verkünde* contain many moments of interest and several of sheer ebullient joy of the kind Mozart clearly derived from his association with Freemasonry, and the cantata *Die Ihr des unermesslichen Weltalls*, dating like *Laut verkünde* from the last year of Mozart's life (the latter is in fact his last complete composition unless the final chorus *Lasst uns mit geschlungnen Händen* is really by Mozart after all), is a near-masterpiece. The Masonic Funeral Music is, of course, great music—but only lasts a few minutes, especially at this speed.

All the performances, except that of the Funeral Music, are entirely convincing. Hollweg still has an edginess to his tone which I remarked on when reviewing his recent record of Mozart arias for tenor and which Ian Partridge, the other tenor, does not have. Stafford Dean's short appearance adds distinction to *Laut verkünde*, and the Ambrosian Singers distinguish themselves throughout. De Waart's direction falters only in the Funeral Music which he takes too fast and, in common with everyone else, has too large a body of strings; though the New Philharmonia play with extraordinary taste and the engineers have worked hard to ensure that the vital deep-toned woodwinds can make their mark. The minor works are all well done with Irwin Cage contributing well-judged piano accompaniments. Kertesz on Decca offers very strong competition in a similar programme, and I prefer him. But only just. A pity Philips could not have some information on the sleeve. [A: 1]

Kenneth Dommett

MOZART: *Sinfonia concertante in E♭ K.364 □ Clarinet concerto K.622*
Rafael Duruian (vln) | Abraham Skernick (vla) | Robert Marcellus (clt) | The Cleveland Orchestra | George Szell
CBS S61195 (£1-49½)

Szell's Mozart rarely gives me unalloyed pleasure, but this is an exception. Unalloyed may be going a bit far and its use is relative in this context; nevertheless this is one of the most consistently enjoyable Mozart records from this source that I have come across in a long time. The usual strong sense of discipline is everywhere apparent and does make one wish for an occasional relaxation of Szell's parade ground manner—there is not enough heart in the Clarinet Concerto to be sure—though the *Sinfonia concertante* is very well played. The two soloists, members of the Cleveland Orchestra, are nicely matched and well placed in relation to the reduced body of strings. Marcellus, the clarinetist, is a good player though he has a drier tone than most of his European competitors and does not get the autumnal melancholy of this concerto as completely as one could wish. The recorded quality has a welcome feeling of depth without the harsh brilliance that this company's American products so often assault our tender English ears with. Bad grammar possibly, but good sound. [A: 1]

Kenneth Dommett

MOZART: *Piano concerto 9 in E♭, K271 □ Piano concerto 2 in B♭, K39*
Géza Anda (pno) | Camerata Academica des Salzburger Mozarteums | Géza Anda
Deutsche Grammophon 139453 (£2-40)

Anda's series of Mozart's piano concertos has been disappointingly uneven. His performances have often been marred by idiosyncrasies of treatment while some of the recordings themselves have been less than perfect. Recent issues have suggested an improvement in both respects, and this one, with one slight though important regression, is equally recommendable. The one reservation I have concerns the balance between soloist and orchestra. For most of the record's length the piano is well to the fore, slightly too much so in fact, but in the finale of K271 there is an arpeggiated passage following bar 290 where the piano develops the accompanying string figure. Here the piano is almost totally enveloped by the orchestra, unintentionally surely? The objections I expected to raise against the performance—Anda's tendency to slow up for the introduction of new ideas (the interpolated minuet in the finale, for example) and the lack of cohesion in the orchestral playing during periods when Anda is busy at the keyboard—did not materialise. He captures the passionate spirit of this concerto well and does not overload it with intensity.

The other concerto is, as readers probably know, not original Mozart. Like K37, K40 and K41, it is an arrangement of sonata movements by other composers. The first and last movements are from Rapauch's Op. 1 No. 1, the second from Schubert's Op. 17 No. 2. It is jolly, unpretentious music which adds little to our knowledge of Mozart at eleven years of age beyond confirming the acuteness of his ear and his unique facility in manipulating an orchestra. [B: 1] Kenneth Dommett

MOZART: *Violin concerto 1 in B♭, K207 □ Adagio for violin and orchestra in E, K261 □ Rondo for violin and orchestra in B♭, K269 □ Rondo for violin and orchestra in C, K373*
Wolfgang Schneiderhan (vln) | Berlin Philharmonic
Deutsche Grammophon 139446 (£2-40)

This and another Schneiderhan Mozart record released this month are drawn from the set of five authentic concertos and three separate movements which DGG issued in January 1969 and which I reviewed enthusiastically when they appeared. The recorded quality is exceptionally good with the soloist well balanced in relation to what sounds like a numerically reduced Berlin Philharmonic. Schneiderhan directs the performances himself and succeeds in infusing them with fresh-sounding vitality without overlooking the elegance which makes all these works such splendid examples of the *galant* style.

The present record contains all three of the substitute movements in addition to the first of the concertos, a still slightly archaically constructed work related to the old concerto grosso. According to Einstein the Rondo (K269) was intended as a substitute finale for this concerto though there is no real evidence to support this opinion. Similarly the beautiful Adagio in E, also written at the end of 1776, was believed to have been for use as an alternative slow movement in the A major concerto (K219) though again there is no conclusive evidence to confirm this. The third piece, the Rondo in C, is the last concertante violin movement from Mozart's pen that we possess since the Andante (K470) of April 1785 has been lost. It is an attractive movement though not an especially memorable one. Schneiderhan plays all three with the requisite stylishness and since

this appears to be the only single record to put them all together this may well appeal to the collector of Mozart miscellanea who also needs to be genuinely entertained. In any case you are not likely to be disappointed. [A: 1] Kenneth Dommett

MOZART: *String quartet 14 in G, K387 □ String quartet 15 in d, K421 □ String quartet 16 in E♭, K428 □ String quartet 17 in B♭, K458 □ String quartet 18 in A, K464 □ String quartet 19 in C, K465 'Dissonance'*
Bartók Quartet: Péter Komlós (vln) | Sándor Devich (vln) | Géza Németh (vla) | Károly Botvay (vlc)
Qualiton LPX1400/1/2 (5-18)

There have been several good recordings of the six quartets dedicated to Haydn, and among those currently available my own first choice would be that by the Quartetto Italiano on Philips. This new Hungarian set runs it extremely close, and in price is superior, being considerably cheaper in addition to being offered as a boxed set. In this price range only the HMV set by the Heutling Quartet offers competition, but in interpretation I must award the prize to the Bartók Quartet whose response to all six quartets displays a sensitivity missing from the Heutling performances. There are, of course, the recordings on separate issues by the Amadeus on DGG. These I consider to be open to the criticism that they are on occasion unnecessarily affected, and they have the added disadvantage of being expensive.

There is, it is true, a certain absence of gaiety from the performances, due, I suspect, to the generally slow speeds adopted in movements, particularly finales, which we are more used to hearing played faster. In spite of this each quartet is carefully considered with the players assessing the work as a whole so that there is a welcome cohesion throughout the series. Considerable attention has also been paid to dynamic levels and, like the Quartetto Italiano, the Bartók enunciate Mozart's lines with great and welcome clarity and without exaggeration. In this, naturally, they are helped by the recording which has an immediacy that takes a little getting accustomed to, but which to my mind has the advantage of allowing us to hear the parts without losing sight of the whole. It does lack a touch of the warmth which I like in chamber music recordings and which gives them a domestic acoustic I consider desirable. However, unless it is really bad, recording quality is something one's ears adjust to very quickly and by the time I was half way through the first side any reservations I had had disappeared in my interest in the performances themselves. [B: 1] Kenneth Dommett

MOZART: *Complete sonatas for piano and violin, Vol. 1*
Julian Olevsky (vln) | Estela Kersenbaum (pno)
Gemini GME1006 (£1-87½)

This is the first of a projected nine-record set of all the known sonatas by Mozart for violin and keyboard—presumably the two sets of variations are not to be included. It is a project one would like to hail with unqualified enthusiasm, particularly if the performances that follow are as good as the first four, but honesty compels me to ask if we really want all Mozart's violin sonatas. So many of them are quite early works, several dating from actual childhood (K7 on this record was written when he was eight), and in them the violin literally plays second fiddle to the keyboard either duplicating the piano part or echoing it at a bar's length. That said though, I confess to having enjoyed everything in this

first volume except the febrile speed of the first movement of K296, the earliest of the sonatas to find its way into most modern editions.

It is the first time I have come across Julian Olevsky or his wife, Estela Kersenbaum, and I am very impressed by their playing. Olevsky, using a fabled Guarnerius violin, produces tone of generous warmth and a fluid execution which is matched by his wife's delicate yet sinewy keyboard work and which almost allows them to get away with the impossible Allegro with which they open the Sonata in C. That, however, is my only quibble. The remaining performances strike me as admirably scaled—the little two-movement sonata in G is especially good—and I look forward, even to the juvenilia, with anticipation. The recording is a trifle thin but well focussed and perfectly acceptable. [B: 1]

Kenneth Dommett

MOZART: 'Die Zauberflöte'

Sarastro—Martti Talvela (bass) / Tamino—Stuart Burrows (ten) / Speaker—Dietrich Fischer-Dieskau (bar) / 1st Priest—Kurt Equiluz (ten) / 2nd Priest—Herbert Lackner (bar) / 3rd Priest—Wolfgang Zimmer (speaker) / Queen of the Night—Cristina Deutekom (sop) / Pamina—Pilar Lorengar (sop) / 1st Lady—Hanneke van Bork (sop) / 2nd Lady—Yvonne Minton (sop) / 3rd Lady—Hetty Plumacher (con) / Papageno—Hermann Prey (bar) / Papagena—Renata Holm (sop) / Monostatos—Gerhard Stolze (bar) etc. / Vienna State Opera Chorus (CM: Norbert Balatsch) / Vienna Philharmonic Orchestra / Georg Solti
Decca SET480/1/2 (£7-42)

Decca's new *Magic Flute* is by any standards an excellent production, recorded in the light-hearted manner that befits a *Singspiel* rather than a grand opera, which I count as a virtue. Georg Solti directs his forces with a great sense of style, giving the singers time to breathe without destroying the shape of the Mozartian phrase, and paying due attention to the niceties of the *appoggiatura*. The Vienna Philharmonic play like angels and the chorus of the Vienna State Opera give an impressive account of themselves, particularly in the bass wing. All the leading singers do well and I would single out Stuart Burrows's Tamino, Martti Talvela's Sarastro and Hermann Prey's Papageno for special praise; Cristina Deutekom's Queen of the Night is sung in a vengeful *martellato* style that I found imposingly dramatic, and I thought the three Vienna Boys who sang the Mozartian counterparts particularly effective, in slightly unearthly contrast to the Queen's Three Ladies. I received no libretto to guide me through the dialogue, which I presume was spoken by the singers themselves; to my English ear it sounded idiomatic enough. I found it pleasantly unusual to have no important reservations about a complete opera recording; when the opera is by Mozart it is a minor miracle. [A: 1] Cedric Wallace

PAGANINI: Le Streghe (Witches' Dance), Op. 8 (arr: Kreisler) □ **Fantasia on the G string** (after Rossini's 'Mosè in Egitto') □ **Moto Perpetuo, Op. 11** □ **Variations on 'Nel cor più non mi sento'** (from Paisiello's 'La Molinara') □ **Variations on 'God Save the King', Op. 9** □ **La Campanella** (from Violin concerto 2 in b, Op. 7—arr: Kochanski) □ **Sonata 12 in e, Op. 3:6** □ **I Palpiti, Op. 13** (arr: Kreisler)
Ruggerio Ricci (vln) / Louis Persinger (pno)
Decca 'Eclipse' ©ECS585 (99p). Reissue: formerly NLT2808 (Sep '54)

Ricci is inclined to make this kind of pyrotechnical violin music his own particular thing. He is a dab hand at it too: he has all the technical abilities, and is not only undaunted by difficulties but seems positively to seek them out. This is above all virtuoso display music: Ricci displays it and himself to much

advantage. Paganini's friendship with Rossini resulted in three sets of variations based on Rossini themes, two included here (the other is *I Palpiti*, on an air from *Tancredi*). The playing is, as I say, spectacular: the recording is as good as it needs to be, generally. Processed stereo does not make much difference, I think; and Louis Persinger is hardly balanced to the fore—he should not weep into his pillow on that account. [C: 1]

Burnett James

PARRY: Overture to an unwritten tragedy □ **An English suite** □ **Lady Radnor's suite** □ **Symphonic variations**
London Symphony Orchestra / Sir Adrian Boult
Lyrita SRCS48 (£2-25)

Hubert Parry is remembered today as one of the two leading instigators—the other was Stanford—of the English musical renaissance and for *Blest Pair of Sirens*, *Jerusalem*, and one or two anthems. Not much more, though a few other works are named from time to time. One could think, though, that his orchestral and instrumental music, of which he wrote a great deal, little of it heard now, is more likely to command attention today than the cantatas and oratorios which appealed to the taste of his own day. He wrote five symphonies, three suites, and various other orchestral works, plus a quantity of chamber music. This Lyrita record gives a fair cross-section of his music for orchestra, apart from the symphonies. The *Overture to an Unwritten Tragedy* was Parry's first published orchestral composition. A critic of the time, Herbert Thompson of the *Yorkshire Post*, said that it would do very well for Shakespeare's *Othello*—and Parry himself agreed. The two suites for strings are deftly written, showing sometimes a lightness of touch not always associated with the composer, together with an engaging vein of lyric melody. The *Lady Radnor suite* was written in 1894, for Lady Radnor, who gave it with her orchestra that June, its six dance movements well contrasted. The *English suite*, in G, has seven movements, and was not completed when Parry died in 1918. The final order and two of the movements were decided by Emily Daymond and published in 1921. The *Symphonic Variations of 1897* is the most complex and extensively composed item here. It is perhaps one of the works upon which Parry's final reputation as a serious composer may rest. Certainly it is impressively structured and executed, showing a true musical mind at work.

As always, Sir Adrian serves his composer supremely well: there is no one who could do it better, though one should not say there is no one could not do it as well, for that would be to thrust Parry back into English provincialism. The recording is good but just misses the final ease and naturalness. [B: 1]

Burnett James

PROKOFIEV: Symphony 3 in c, Op. 44 □ **'In Autumn', Op. 8** □ **Andante, Op. 50a**
Moscow Radio Symphony Orchestra / Gennady Rozhdestvensky
HMV ASD2636 (£2-25)

The earlier MK recording of Prokofiev's 3rd Symphony made by the USSR State Symphony Orchestra under Rozhdestvensky has disappeared, and the best Western versions of it have been by Leinsdorf and the Boston Symphony and by Abbado and the LSO. Now Rozhdestvensky returns to the fray with a recording dating originally from 1967 with the Moscow Radio Symphony Orchestra, completing the second side with *In Autumn* and the *Andante* for Strings. A strange, disquieting work (1928), it derives from the opera *The Fiery Angel*, the production of which

seemed at the time indefinitely delayed, but it is not, however, necessary to know the opera to enjoy the symphony, so pungent is its atmosphere, and in the Scherzo so wild. The performance is powerful and arresting, the Rupprecht music from Act II sounding especially impressive in the finale. The reproduction is adequate, though liable to be a bit coarse under pressure and a certain amount of detail gets crowded out. *In Autumn* is an attractive, early, rather Rachmaninovian piece scored for small orchestra, and the better known *Andante* is an effectively 'blown-up' arrangement of the slow movement from Prokofiev's 1st String Quartet. [C: 2]

Christopher Grier

RACHMANINOV: Symphony 3 in a, Op. 44* / MUSSORGSKY: 'Khovantschina'—Prelude Act 1 'Dawn on the Moscow River'**
*Moscow Radio Symphony Orchestra / **Bolshoi Theatre Orchestra / Yevgeny Svetlanov
HMV 'Melodiya' ASD2646 (£2-25)

To the five versions of Rachmaninov's 3rd Symphony, Melodiya adds a sixth, with the Prelude to Act I of Mussorgsky's *Khovantschina* (Dawn on the Moscow River), reorchestrated by Shostakovich, as a filler. The latter is quite short, but it is an uncommonly beautiful set of variations forming a little, atmospheric tone-poem; its performance and reproduction is the most enjoyable feature of the issue. The Symphony is more problematic. The Moscow Radio Symphony is a good orchestra and Svetlanov a most capable conductor with a real feeling for Rachmaninov, but the reproduction does not do the playing justice. I like the effect of spaciousness, as if in a concert hall, with the listener about half way back in the stalls, and the big cello tune in the first movement sings out gloriously. Unfortunately, in the louder and more thickly scored passages a lot of detail disappears, resulting in a blur of generalised booming sound. A test case in this work is the fugue in the finale which always shows up the efficiency or deficiencies of the recording and sure enough it emerges in a rather muddy condition and, more surprisingly, slightly unsteady. In other respects, however, the performance is perfectly adequate but it still does not compare for instance with the Previn/London Symphony Orchestra version. [C: 2]

Christopher Grier

RACHMANINOV: Preludes, Op. 23:1-10 / KREISLER/RACHMANINOV: Liebesfreud
(24 Preludes, Vol. 1)
Sergio Fiorentino (pno)
Revolution RCB11 (99p)

RACHMANINOV: Preludes, Op. 32: 1-13 (24 Preludes, Vol. 2)
Sergio Fiorentino (pno)
Revolution RCB12 (99p)

These discs, among the first releases by Revolution Records, at a low price, favour a mellow, reverberant piano sound that is for the most part pleasing. The bass to treble range is uniform in quality, and dynamically there is considerable variety of colour.

The act of listening to Rachmaninov's 24 Preludes is similar to contemplating a shelf full of a single author's books, handsomely but identically bound. First question: is the binding more impressive than the content? Yes, the Preludes are impressive, singly and as a set. Does anyone remember the composer playing separate ones as encores, projecting the gamut of human emotion within the span of a few minutes? Whatever the prospective buyer of these records prefers—beginning to end or dip in here and there—he can be assured of competent and accurate readings by a spirited and romantic performer. The best playing Fiorentino achieves

is in the B-flat minor, F-minor and D-flat major of the Op. 32 set, and, quite surprisingly, in the often tiresome, but here very moving, Prelude in C-sharp minor. [B: 1]

Barbara Holmquest

RAVEL: Daphnis et Chloé—ballet
New England Conservatory Chorus & Alumni Chorus
(CM: Robert Shaw) | Boston Symphony Orchestra | Charles Munch
RCA 'Victrola' VICS1297 (99p). Reissue: formerly RCA SB2137 (Feb '62)

This is a recording I have treasured for years despite subsequent competition, particularly from HMV's 1968 version of *Daphnis and Chloé* made by the New Philharmonia and the Ambrosian Singers under Frühbeck de Burgos. The Boston Symphony play like angels, Gallic angels rather, for their tone could take on a French flavour under that great conductor, Charles Munch, and the New England Conservatory Chorus and Alumni Chorus under the excellent Robert Shaw make a much nicer noise than Paris choirs do. It is the sort of recording that suggests the best sort of concert hall conditions, neither too close, nor too remote, beautifully balanced and clearly articulated even during those great swirling washes of Ravelian sound or at the height of the dances. As a reissue in the Victrola series at just under a pound, it is splendid value. [A: 1]

Christopher Grier

RESPIGHI: Pines of Rome □ **Fountains of Rome**
Chicago Symphony Orchestra | Fritz Reiner
RCA 'Victrola' VICS1565 (99p). Reissue: formerly SB2103 (Apr '61)

Reiner and the Chicagoans give a coloured and at times spectacular account of the *Pines* and *Fountains*—and there is really not much more you can do. Top class orchestra, first rate conductor—and let it rip. There are poetic moments too, of course, also well handled. The sound is important; and it is good if a bit glaring and artificial, in the loud passages especially. It tends to bounce off the mind, leaving a rather technicoloured impression, fair enough if you have not strong feelings about the musical content and do not enquire within too closely. Good value then: expert performances, and a spicy kind of sound. Ormandy and the Philadelphia on CBS give more sumptuous readings a bit more richly recorded, and add the *Roman Festivals* as well, for good measure at 50p more. Value about even, therefore. [B/C: 2]

Burnett James

ROSSINI: 'Il Viaggio a Reims'—overture □ **La Scala di Seta'**—overture □ **'L'Italiana in Algeri'**—overture □ **'Il Turco in Italia'**—overture □ **'La Gazza Ladra'**—overture
Cleveland Orchestra | George Szell
CBS 'Classics' 61215 (£1.50)

I started with the expectations that the Cleveland Orchestra and Szell might not be providing the warmth and charm that really suits the sunny nature of Rossini's music, and this proved to be the case. In its place there is a lot of American vigour and dash which certainly rocks you back on your heels and makes you listen even if the result sounds rather like Rossini, arr. Sousa. The recording is downright fierce and needs quite a bit of taming, but is also impressive for its impact and ear-shattering abilities in the tutti. There is also quite a bit of pre-echo, as might be expected with such high levels. The woodwind is wonderfully well caught and there is a lot of virtuoso playing to admire. In short it is all very exhilarating but pretty hard-driven. One great merit of the disc is that it gives us two overtures not otherwise

available; *Il Viaggio a Reims*—a rather odd work of 1825 described as a *cantata scenica*, in effect an opera in one act that lasted for three hours, and written for the coronation of Charles X at Rheims. This overture may not have been played originally but was later discovered amongst Rossini MS. The light-hearted *Turco in Italia* (1814) is the other gap-filler at the moment. [B: 2]

Peter Gammond

ROSSINI: Petite messe solennelle
Hanneke Van Bork (sop) | Margaret Lensky (sop) | Serge Maurer (ten) | James Loomis (b-bar) | Choir of the Societa Cameristica di Lugano | Luciano Sgrizzi, George Bernard (pnos) | Bruno Canino (harmonium) | Edwin Loehrer
World Record Club ST1016/7 (£2.96). An Erato recording, Paris 1969

A product of Rossini's gouty, operaless old age, the *Petite Messe Solennelle* (1863) holds an honourable place in the long line of sacred musical works stretching from Monteverdi to Britten in which levity will out. It is the obverse of *Le Comte Ory*, Rossini's penultimate opera, a very funny one in which the music seems continually to want to probe the deeper emotions of the characters; yet in *Comte Ory* there are passages containing harmonic surprises that foreshadow in style the music of the *Péchés* period. In the *Petite Messe* gaiety and tenderness, drama and lyricism lead a peaceful coexistence. Despite the heterodoxy of Rossini's religious beliefs such as they were, this is no more an irreligious work than Haydn's late Masses whose greatness has only recently been appreciated in this country after a century and a half's banishment due to Victorian sanctimony. What is gloriously absent from the *Petite Messe* is the dull piety that overlaid so much 19th century religious music. Friends persuaded Rossini to orchestrate the accompaniment, but here it is in its original and more effective form. Nearly everyone has a chance to shine in the course of the work's 14 movements. The soloists have an aria piece beside some delicious ensemble work, the choir has to tackle exuberant contrapuntal passages and even the pianists are allotted a number to themselves, a 'Preludio Religioso' with spare texture and austere melodic lines. Only the harmonium does nothing in particular. As I am fortunate enough to know by experience, the *Petite Messe* is a happy piece to perform, and Edwin Loehrer and his well drilled Luganesi, past masters at late Rossini, sing with evident enjoyment and a fine rhythmic buoyancy. The 2 pianists are well in the spirit of things and the 4 soloists make a nicely balanced team—listen for instance to the marvellous give and take between the voices in the beautiful 'Gratias Agimus'. While the 2 females sing their arias sweetly, the men are not so hot on their own. The bass has a fine, noble tone but swallows his words, and the tenor, though competent enough, is no Caruso in the 'Domine Deus' which used to be one of Enrico's favourite party pieces. The moderately resonant recording does not allow all to be heard with ideal clarity; if the balance seems to favour voice at the expense of keyboard, it is at least a fault on the right side in this particular work. Warmly recommended to all lovers of genial music. [B: 1]

Bryan Corrie

SAINT-SAENS: Symphony 3 in c, Op. 78
Anita Priest (org) | Shibley Boyes, Gerald Robbins (pnos) | Los Angeles Philharmonic Orchestra | Zubin Mehta
Decca SXL6482 (£2.39)

Commissioned by the Royal Philharmonic Society, and given its premiere in London in 1886, Saint-Saens's 3rd Symphony is in two

main movements and makes use of a motto theme. Liszt is therefore invoked—the work was dedicated to him—but what keeps the symphony alive is its zest, its polish and the effectiveness of its orchestration. Heavily scored for triple wind, plus organ and two pianos, it exists on the fringes of the normal concert hall repertory and is none too easy to record successfully. There are however four different versions of it quoted in the current catalogue, mostly dating from the early 1960s and most of them made under very respectable auspices. This latest issue scores high marks for its tone quality, its balance and its interpretative conviction. The Los Angeles strings sound sumptuous, with a European warmth as well as transatlantic efficiency, the bass is firm and clear (not least the well-defined timpani) and a lot of trouble has been taken over the organ and piano contributions. Above all Zubin Mehta conducts it as though it were a magnum opus, which in a sense it is if craftsmanship is the major criterion. Strongly recommended. [A: 1]

Christopher Grier

SCHUBERT: Symphony 9 in C, D944
Berlin Philharmonic | Herbert von Karajan
Deutsche Grammophon 139043 (£2.38)

With recordings of music which you so badly want to succeed—and Schubert's 9th has always been one of my preoccupations—you can even start off a train of prejudices by seeing the colour of the label. In this case, DGG's confident yellow has rendered so many great services to the music of Schubert (in recent months alone the magnificent Lieder and Piano sonata albums) that I had great hopes. And this is very nearly a great performance with Karajan starting off with great delicacy and that most beautiful orchestral sound, which the Berlin Philharmonic so effortlessly achieves, doing all the right things. The opening movement is restrained and delicate; the Andante con moto exquisitely done, a really beautiful sound. It was only thereafter that I experienced a very slight sense of disappointment. The combination was not quite capable of producing that desirable Viennese lilt and swing in the Scherzo (which is where Boehm with the same orchestra on the same label excels); and this seemed to put them into the finale in a slightly grumpy mood. As I know of few performances which succeed in this rambling work, this one still rates as a safe recommendation without having the outstanding virtues of Krips, Boehm, the exciting eccentricities of Furtwängler or Menuhin's sweet reasonableness. The recording is very good and presents a panoramic, concert-hall like picture of a great orchestra in realistic detail, with very little background noise. [A: 2]

Peter Gammond

SCHUBERT: Quintet in C, Op. 163, D956 □ **Quartettssatz in c, D703**
Weller Quartet: Walter Weller, Alfred Starr (vins) | Helmut Weiss (vla) | Robert Scheiwein, Dietfried Gurtler (vics)
Decca SXL6481 (£2.39)

One of Schubert's profoundest as well as one of his most endearing works, it requires a careful balance of thoughtfulness and lyricism. The thoughtfulness is evident throughout this performance. The Weller Quartet let no phrase through without due, if not always correct, attention to its shaping and balance and the recording helps in this respect by allowing us to hear what each instrument is doing all the time. But I wish they could have achieved a little more lyricism for it takes them a long time to relax; not

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until the last movement is any true Viennese lilt allowed to take charge for more than a few bars. The work must be assessed on the impact of the wonderful first movement with its alternations of drama and song and I missed the easy ebb and flow that is my ideal—still the old Casals recording that used to be available on the Philips label, in spite of its rough sound. The Weller Quartet bring out the nobility of the music but make it a little stern. The Quartettsatz is well played and suits their approach for it is a tense piece of writing to begin with. Anyone who likes Schubert taken seriously and deplores the light-hearted lyricism that we get from the players from the Vienna Octet, for instance, will enjoy this performance for its intensity. The recording is not absolutely ideal and benefits from the introduction of a treble filter as the higher string notes are a little wiry, but the balance is good. [B: 2]

Peter Gammond

SCHUBERT: Piano sonata 5 in A♭, D557 □
Piano sonata 16 in D, D850
 Paul Badura Skoda (pno)
 RCA 'Victrola' VICS1574 (99p)

Had I to introduce someone to the Schubert piano sonatas for the first time, this is the last record I would use by way of illustration. If this sounds unkind, let me explain why. First, neither sonata shows Schubert at his most attractive. The little A♭, a throwback to Haydn, has as its sole claim to fame the fact that its finale is in E♭; maybe Schubert first thought of it in that key and didn't bother to transpose it. The 35–40 minute D major, despite purple passages, is simply too long for any but an extraordinary performance to hold our attention throughout. Secondly the recording follows the bad old boxy RCA tradition. The more I hear it, the less I like it. Lastly Badura-Skoda, elegant enough in the A♭, fails to palliate the longueurs of the D major as well as Kempff. His playing is scrupulously accurate but lacking in a sense of span. Kempff, more cavalier over detail, using a lighter touch, invests the music with (as PG noted in our December issue) a lyrical flow that continually carries it forward, and his speed for the second movement (marked *Con moto*) is much more sensible than Badura-Skoda's dragging tempo. Rating is on the borders of the second and third categories in each case. [B: 2]

Bryan Corrie

SCHUBERT: Sonata for piano, violin & cello in B♭, D28 / **SCHUMANN: Piano trio 1 in d, Op. 63**
 Trio di Trieste: Dario de Rosa (pno) | Renato Zanettovich (vln) | Amadeo Baldovino (vlc)
 Deutsche Grammophon 139434 (£2.38)

The Schubert sonata has recently come to our attention as a filler on Schubert discs by the Beaux Arts Trio (Philips) and the Menuhin Trio (HMV) and has received delightful performances in each case. As its numbering suggests it is an uncomplicated, lyrical piece that it would be difficult to dislike except by a mind psychologically disturbed by over-academic indulgences. The Trio di Trieste play it superbly in one of those rare performances where delicate touch and inspired abandon have combined to achieve utmost naturalness. When we turn to Schumann's 1st Piano trio, which is not exactly a popular work if we judge by its complete absence from the current catalogue, they are faced with the problem of giving vitality and meaning to a piece of music that certainly lacks the friendly charms of the Schubert

(and for goodness sake don't read the turgid sleeve-note before buying or listening or you will be put off for ever). Until we get to the comparatively carefree finale the work is deeply introspective and constantly making an effort to escape from its own moodiness. The bright flashes that do appear are of short duration. It is, in short, a demanding work; satisfying if you are in sympathy with its tenseness and its melancholy; mainly unsettling and disturbing. The Trio di Trieste give a deeply involved, moving and persuasive performance and do all they can to unravel its moods.

The recording is very good with a nice bite to the strings, a realistic stereo balance and silent surfaces. It is very near to that ideal chamber music recording that combines the immediacy of the pop approach with the sensitive restraint that seems to be demanded by music-making of this kind. [A: 1]

Peter Gammond

SCHUMANN: Piano concerto in a, Op. 54* □
Carnaval, Op. 9—ballet (orch. Glazunov etc.)**
 *Dinu Lipatti (pno) | L'Orchestre de la Suisse Romande
 | Ernest Ansermet
 Decca *©SDD271 (£1.49). **Reissue: formerly SWL8027 (Jun '62)

The concerto was recorded live from Geneva's Victoria Hall in 1950, Lipatti's last appearance there; in fact he was already mortally sick, and as his wife recounts on the record-sleeve went there with determination against all medical advice.

It makes a valuable addition to the pathetically small collection of existing Lipatti recordings (the sound, if you can discount the tape noise, of the 'fish-frying' variety, is not much more limited than the RCA/Rubinstein/Giulini!), even if we already have the marvellous Philharmonia recording with Karajan. Quite recently Walter Legge was talking of that collaboration (1948)—telling how Karajan at rehearsal spent so much time over the solo part that Lipatti rebuffed him by suggesting they should change roles—and forced to choose, I would admit that for all the vital qualities of the live version, the older one has more magic, more beautiful orchestral support. (XLP30072.)

The idea of linking the orchestrated *Carnaval* was obvious, but one that should have been resisted. Ansermet conducts a balletic performance, satisfactorily engineered, but anyone sensitive to the original will find it grotesque. [*H/*B: 1]

Christopher Breunig

SCHUMANN: Kreisleriana, Op. 16 □ **The prophet bird, Op. 82: 7** □ **Arabeske, Op. 18**
 Artur Schnabel (pno)
 RCA SB6840 (46/-) (£2.30)

SCHUMANN: Kreisleriana, Op. 16 □ **Piano sonata 3 in f, Op. 14—3rd Movt.** Variations on a theme by Clara Wieck
 Vladimir Horowitz (pno)
 CBS 72841 (45/-) (£2.25)

Schumann's *Kreisleriana*, an immortalisation of a fictional conductor and philosopher created by Hoffmann in eight extended and connected movements, is not such a common inhabitant of the gramophone catalogues that the almost simultaneous appearance of recordings by two of our greatest living pianists could fail to be an exciting coincidence. The work certainly has no current recording to outdo these new rival versions, though Varsi's version on Philips is as good. The names of Rubinstein and Horowitz imply a strong contrast which is remarkable from

the first bars. Rubinstein plays down the flourishing opening, treating it calmly and carefully. Horowitz pounces into the attack with arrogant brilliance as if he was playing the final cadenza of a romantic piano concerto. Rubinstein's performance of the whole work is sensitive, absorbed and meditative, compelling you to listen with bated breath. His imposed means of expression are slight yet, because the whole reading is so straightforward and calm, comparatively effective. It welds the eight movements into a rapt whole and is wholly satisfying. Horowitz is sensitive in a very different way. While his playing is even more delicate than Rubinstein's in the sense of being nimble and clearcut, it is also very much more forceful, full of fiery passion, not so withdrawn. Both would suit me very nicely in different moods.

The main work takes up 1½ sides in each case. Rubinstein has his fillers at the end of side 2, a very simple and effective performance of the *Prophet bird* from *Forest scenes* and, a curiously perverse reading of the *Arabeske*. Almost an old-fashioned performance with enforced rubato that does not allow the music to flow enough for my liking; quite unlike the usual Rubinstein, almost as if he was not too fond of the work. Horowitz has his filler first with *Kreisleriana* starting halfway through side 1, in this case the variations which make up the third movement of his third piano sonata and played in a much more introspective and sombre mood than the main work.

If both performances, taken as a whole, make the 1 grade, I have a slight preference for Rubinstein but it would be very much a matter of taste and it is fascinating to hear both. In matters of recording, the position is reversed. The Horowitz makes the A grade easily with a beautifully clear recording of the *Kreisleriana* (the other work seems to be not quite as good); while the Rubinstein is less realistic with a clear but boxy recording bedevilled by pre-echo, which was surely not necessary with only about 20 minutes of music per side. [RCA—B: 1/CBS—A: 1]

Peter Gammond

SIBELIUS: Violin concerto in d □ **Karelia suite**
 Isaac Stern | The Philadelphia Orchestra | Eugene Ormandy
 CBS 72885 (£2.25)

It would be hard to imagine a Sibelius Violin Concerto more different in character from the last one I reviewed, by the Korean player Kyung Wha Chung. Stern is one of the most positive and forthright of violin virtuosos, and this is an essentially masculine performance, very strong in tone and not without a certain wilfulness in interpretation. Some of the solo passage-work, for instance, suffers from careless rhythm, with Stern inclined to arrive at the top of an arpeggio in advance of the orchestra. There are also minor faults of intonation. The slow movement, the best feature of Kyung Wha Chung's performance, is rather lacking in poetry here, though not without intensity.

Stern is at his best in the finale. He's one of the few violinists who can manage the weight of tone needed for the big main themes, and he has of course a fabulous technique. There is much beauty in the first movement, the start pure and intense, and a general sense of commitment.

Stern, as usual, is well forward in the balance, and the Philadelphia is apt to sound muddy—though this is in any case not Sibelius's most felicitously scored work. In *Karelia* the sound is clearer. But the performance disappoints. Ormandy seems

rather half-hearted about this music. The rhythms don't catch fire, phrasing is sometimes perverse, and at one point a rending trumpet wrong-note is allowed to stand. [B: 1] *Stephen Walsh*

TAVENER: The whale

Anna Reynolds (m-sop) | Raimund Herincx (bar) | Alvar Lidell (speaker) | John Tavener (org) | London Sinfonietta Chorus | London Sinfonietta | David Atherton

Apple SPCOR15 (£2.99)

It was a little over a year ago in Warsaw that I made the acquaintance of *The Whale* and its composer. That performance in a Contemporary Music Festival made a strong impression. While many young composers from various countries were represented by rather tired works, all of them similar in idiom and with little to say, here was an Englishman with a marked individuality and a smile on the face of his music. *The Whale* was enthusiastically received because its impact is immediate and at times startling. Yet for all its originality it is a carefully planned and well thought out piece, combining a wide range of idioms into a convincing but unclassifiable whole. The attention is held throughout, even when deliberately banal passages occur, for they create a feeling of expectation. Perhaps the most outrageous part is the opening—a dry as dust reading from an encyclopedia describing the various types of whales, that eventually and very gradually becomes swamped by semi-musical sounds. This reading is given in the language of the country in which the performance is taking place—in this case English—but the work, a Bible allegory, is sung in Latin.

If listening to this record did not have quite the impact as the Warsaw performance, this is probably because *The Whale* has a visual as well as aural appeal. Certainly it was not due to any shortcomings in the present performance which is superb in every way. My one regret is that John Tavener did not give his mezzo-soprano more to do. Both Anna Reynolds and Raimund Herincx, who has a much larger part, sing magnificently getting the maximum expression out of their Webern-like leaps. It's all very refreshing and entertaining and with good recording can be strongly recommended to high-brow or low-brow although perhaps not to the dyed in the wool or those who think good music must necessarily be deadly serious. [A: 1]

Malcolm Rayment

TCHAIKOVSKY: Symphony 6 in b, Op. 74 'Pathétique'

Concertgebouw Orchestra of Amsterdam | Bernard Haitink

Philips 6500 081 (£2.40)

Haitink's *Pathétique*, like his Fourth, is distinguished by its lack of extravagance, and the results may strike some as tending towards anonymity. The emphasis, as before, is on the composer's instructions, though this is not to say that Haitink is averse to a few of his own ideas, some of which are unfortunate (I'm thinking, in particular, of his slower tempo and heavy pulse for the middle section of the second movement, which makes for an awkward transition back to the main theme). On the whole, however, it is an understated and fairly orthodox reading.

This approach pays most dividends in the first movement, where Haitink's superb control and understanding of large articulated structures make for a reading of exceptional intensity. The atmosphere is soft,

rather muted—partly the effect of a somewhat colourless recording, though also I think because hysteria simply isn't in Haitink's make-up. Least successful is the third movement, where one really does want more sheerly brazen excitement. Haitink achieves weight but not brilliance here, and it may be for this reason that by contrast the finale, too, makes less than its optimum effect.

I don't want to suggest that the performance is anything but satisfying, and it has the supreme virtue—for a gramophone record—that it avoids idiosyncrasy. The playing is good. Brighter sound and better definition in the middle regions would certainly have improved the total effect, though I daresay Haitink would accept the result as a fair representation—in spirit at least—of his intentions. [B: 2]

Stephen Walsh

TCHAIKOVSKY: Piano concerto 2 in G, Op. 44 (original version)

Igor Zhukov (pno) | Moscow Radio Symphony Orchestra | Gennady Rozhdestvensky

HMV 'Melodiya' ASD2645 (45/-)

Though seldom heard live, this concerto has done well on record: deservedly so, for it contains some fine music, rather under the influence of Schumann. Its main fault is its extreme length. Tchaikovsky's attention was drawn to this after the first performance. But to his dying day he refused to sanction more than token cuts, despite pressure from Siloti, whose much-curtailed edition was published after the composer's death. The present recording, to its credit, plays the concerto uncut. Having heard it through, I must say I can see Siloti's point, for there is a degree of padding and spinning out of transitional phrases (especially in the solo part) quite unusual for Tchaikovsky. On the other hand the larger form is tidy and satisfying. One can only regret that Tchaikovsky failed to see the need for tightening up some of the more conventionally rambling solo passages; the task is one which, as always, only the composer himself could properly undertake.

The Melodiya performance is more than adequate, though I miss the easy-going lyricism which is the concerto's main debt to Schumann. Zhukov is a muscular and rather impulsive player; he tends to hurry away with phrases that seem to him (often rightly) unimportant, and this sometimes impairs the music's shape. But he can certainly play with brilliance and fire, and his great strength is an asset.

The recording is variable: resonant, with some compression on the piano tone, but generally reasonable definition. The problem of the slow movement, with its violin and cello solos, isn't solved. The cello sounds closer than the violin, and since the playing here is rather ordinary one ends up feeling, with Taneyev, that Tchaikovsky miscalculated in introducing such important extra solo parts into a concerto already erring towards over-diversification. [B: 2] *Stephen Walsh*

VAUGHAN WILLIAMS: On Wenlock Edge—6 poems from 'A Shropshire Lad' □ The water mill* □ The new ghost □ Ten Blake songs for voice and oboe**

Ian Partridge (ten) | *Jennifer Partridge (pno) | **Janet Craxton (ob) | Music Group of London

HMV HQS1236 (£1.50)

This is a recording doubly welcome, not only for its own high merit, but because not a note of the music on it is otherwise currently available. Although Vaughan Williams' solo songs are uneven in quality the best of them, and that surely includes *On Wenlock Edge* and the 2 Fredegond Shove songs, are among

the finest written this century. *On Wenlock Edge* has evoked almost as much censure as praise. Critics have found the piano quintet accompaniment awkward to bring off, yet an especial care for sonority and balance will make it effective. V-W has been accused of inflating and over-dramatising Housman's poems; if this be true what matter, for he is in such high company as Wolf who found much more in the *rispetti* of the *Italian Songbook* than either Heyse or the original poets, and we applaud him for doing so. The charge that parts of the music are ersatz Ravel cannot be sustained for one moment; true, V-W had recently undergone a short course of instruction with Ravel, but both his vocal line and his string writing are very English and quite unlike that of the French master. No, this is a song cycle of great power and imagination, containing good tunes enough for several symphonies. If odd things have been said about *On Wenlock Edge*, hardly anything has been either said or heard of the Ten Blake Songs, written in 1958 and dedicated to Wilfred Brown and Janet Craxton (the BBC have a recording by them which has never been issued). Blake's poems brought forth a real spring of melody from the aged composer. The set as a whole suffers from a sameness of tempo, but let us hope this new recording will rescue it from the oblivion into which it has undeservedly fallen, for there are some lovely things in it. Ian Partridge has for some time now merited an LP of his own, and in his first he doesn't disappoint. With a keen intelligence, an easily produced voice and clear yet natural diction, he has all the requisites for a fine singer of English songs. There is more drama in *On Wenlock Edge* than he shows us, more atmosphere in 'The new ghost'; perhaps the voice is on the light side for parts of the former, but a more incisive and varied verbal emphasis would have helped. Otherwise, from singer and players alike, all is superb. The recording is absolutely right in every respect—warm, spacious and well balanced; if only pianists and quartets were always recorded as well as this! Some, not I, will cavil at the obvious help Partridge receives from the engineers in 'Is my team ploughing?' [A*: 1] *Bryan Corrie*

VAUGHAN WILLIAMS: Sinfonia Antartica

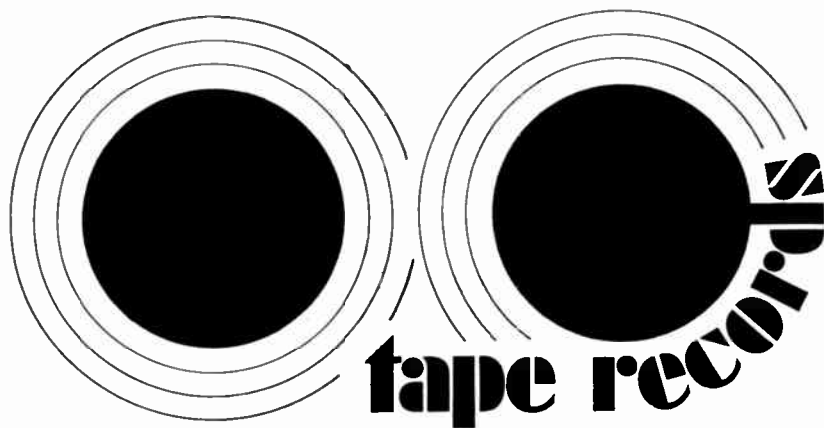
Margaret Ritchie (sop) | Sir John Gielgud (speaker) | London Philharmonic Choir and Orchestra | Sir Adrian Boult

Decca 'Eclipse' P ECS577 (99p). Reissue: formerly

Decca LXT2912 (Nov '53); ACL291 (Nov '66)

Sir Adrian's original *Antartica* still does noble service, despite the superb new version he recently made for HMV. The main difference is that here we have the superscriptions spoken by Sir John Gielgud (most beautifully of course) whereas in the HMV they were omitted altogether—Previn on RCA includes them, by Sir Ralph Richardson. This is a matter of taste, basically, to speak or not to speak, though there is something to be said for the view that the superscriptions are intended to be read rather than said. Sir Adrian's two performances do not differ much; so it is the sound that counts—and the price. Inevitably the HMV recording, outstanding anyway, tells significantly at many points in a big, complex score like this. The processed stereo makes a reasonable general impression; but much of the detail and several of the sonic perspectives suffer by comparison with the HMV and the RCA. I think the HMV the 'definitive' *Antartica*, with the Previn/RCA an excellent alternative. This is for those who want a fine performance at an advantageous price, principally. [C: 1]

Burnett James



CASSETTE RELEASES REVIEWED

LIGHT

ARMSTRONG GIBBS: *Dusk* / **BALFOUR GARDINER:** *Shepherd Fennel's dance* / **GRAINGER:** *Country gardens* □ *Shepherd's hey* □ *London derry air* □ *Handel in the Strand* □ *Mock Morris* □ *Molly on the shore* / **QUILTER:** *Children's overture, Op. 17* / **TOYE:** *The haunted ballroom*
Light Music Society Orchestra | *Sir Vivian Dunn, Producer* *Brian Culverhouse*
Columbia TC-TWO295 (£2-37½). Disc: TWO295 (RR: Apr '70)

This collection of British light music, played by forces who might justifiably claim a special interest and insight into the genre, seems even better on a second hearing, although I still wish that *Country gardens* had not been so noisily arranged. While all is not absolutely perfect, the majority of the pieces are very well done indeed, especially *Handel in the Strand* and *Quilter's fine Children's overture*. The smooth and warm-toned quality of the disc has been retained on the tape issue which sounds first-rate with the Dolby facility in use, then there is no hiss at all. I hope that Brian Culverhouse will soon be busy putting a whole archive of British light music onto record. [A: 1] *Peter Gammond*

FABULOUS BROADWAY

Orchestral medleys from 'Hair', 'Company', 'Man of La Mancha', 'Fiddler on the Roof'
Boston Pops Orchestra | *Arthur Fiedler*
Polydor 3177 028 (£2-40)

I am not often disappointed by a Fiedler recording but I thought the Boston Pops' renderings of the *Hair* and *Company* music a little lacking in the necessary zest; then I would hardly have thought that Fiedler, from my past knowledge of his tastes, was very much in sympathy with this kind of music. With the more traditional scores of *Man of La Mancha* and *Fiddler on the Roof* he does better; but on the whole I think it is all music which comes better from a theatre orchestra and needs its lyrics. Oddly the *Fiddler on the Roof* medley does not include 'If I were a rich man'—for some contractual reason perhaps, but fancy missing out the best tune. [A: 2] *Peter Gammond*

12 CLASSICAL MASTERPIECES

BRAHMS: *Hungarian dance 1* / **CHOPIN:** *Etude in E, Op. 10: 3* / **MEYERBEER:** 'Le Prophete'—*Coronation march* / **RIMSKY-KORSAKOV:** *Capriccio espagnol, Op. 34* / **ROSSINI:** 'Il Barbiere di Siviglia'—*overture* / **SMETANA:** *Ma Vlast—Moldau* / **J. STRAUSS I:** *Radetzky*

march, Op. 228 / **J. STRAUSS II:** *Wein, Wein und Gesang, Op. 333* □ *Champagner-polka, Op. 211* / **JOSEF STRAUSS:** *Dorfschwalben aus Oesterreich, Op. 164* / **SUPPE:** 'Banditenstreich'—*overture* / **TCHAIKOVSKY:** *Nutcracker, Op. 71—Waltz of the flowers*
Various orchestras & conductors, etc.
Philips 7506 007 (£3-75)—double cassette. Reissues from various LPs

This is one of the 2 LP cassettes. When you open the fatter box, out comes the normal size cassette with seemingly very little tape in it—this one plays for one hour and twenty minutes and it could have been longer, but it is still a miracle in compactness and what a marvellous compendium for civilised background music. Philips have oft dipped into their miscellaneous repertoire for such compilations on their various cheap labels but have not come up with a better one than this. The main conducting chores are divided between Dorati and Mackerras and the performances are mainly very good. The first track *Moldau* (fifteen minutes alone) is least satisfactory with a rather pedantic opening and a rather noisy tape. But the rest are all pleasant to listen to and the whole deserves an average rating of [B: 1/2]. *Peter Gammond*

PLAY BACH AUX CHAMPS-ELYSEES, Vols. 1 & 2

Jacques Loussier Trio
London SLC1035 & SLC1036 (£2-49 each)

Recorded at a Paris concert, the microphone placing on these sessions is interesting as we appear to be hearing the musicians from backstage with the audience in the distant auditorium beyond and some muffled announcements from beyond a curtain. This is a successful idea because it eliminates audience noise during the music and makes us feel that we are very much with the musicians—like a Beatles film. The sound of the instruments is very natural and nicely spread out. As for the playing, that depends on how you like your Bach. When Loussier and his men are playing Bach almost as written, albeit swung, I find it very enjoyable. When they go off on those long, formless improvisations common to much modern jazz I can find them dull and adding little of value—but [A: 1] for admirers. *Peter Gammond*

JAZZ

SIDNEY BECHET: A TRIBUTE TO SIDNEY BECHET

Sweet Lorraine; Up a Lazy River; Four or five times; Diga Diga doo; That's A-plenty; Sweet Sue, just

you, Cherry; China Boy
Ember ZCEB 2009 (£1-50)

A most excellent issue—especially at the budget-line price of thirty bob. Sidney Bechet plays at somewhere near his incredible best—slightly more restrained than usual, but in the context, just right. Cornettist Muggsy Spanier can hardly have played better at any time in his career—even on those immortal Ragtimers sides. Assisted with commendable sympathy by bassist Wellman Braud and guitarist Carmen Mastren, Bechet and Spanier inspire each other to superlative heights. Naturally, it's Bechet who is the catalyst in most of what transpires, yet Spanier is never pushed into the background by the great soprano-saxist/clarinetist. The sheer relaxation and drive of the Bechet-Spanier sides (some of the tracks are by a Rex Stewart-led combo) is a positive joy to hear. [B: 1] *Stan Britt*

ERROLL GARNER: UP IN ERROLL'S ROOM

Watermelon man; Cheek to cheek; A lot of livin' to do; The girl from Ipanema; The coffee song; I got rhythm; It's the talk of the town; All the things you are; Groovin' high; Up in Erroll's room
Pye International ZCP 28 123 (£2-37½)

Without ever aspiring to being as vital a record as the marvellous 'Concert by the sea', 'Up in Erroll's room' is a worthwhile and timely reminder that the little fella is still a force to be reckoned with in the field of jazz piano-playing. There's a driving *Girl From Ipanema*, complete with an intro which is a kind of Garner 'salute to Thelonious Monk'; it is a joyful summation of the intensely rhythmic style that is Erroll's alone. *Watermelon Man*, with some delightful rubato playing and unrelenting swing throughout ranks with the best of Garner. And *Talk of the town* is typical Garner ballad playing. [C: 1] *Stan Britt*

POPULAR

BOB DYLAN: 'THE TIMES THEY ARE A-CHANGIN''

Only a pawn in their game; Boots of Spanish leather; When the ship comes in; The lonesome death of Hattie Carroll; Restless are well; The times they are a-changin'; Ballad of Hollis Brown; With God on our side; One too many mornings; North Country blues

CBS 40-62251 (£2-49)

BOB DYLAN: 'HIGHWAY 61 REVISITED'

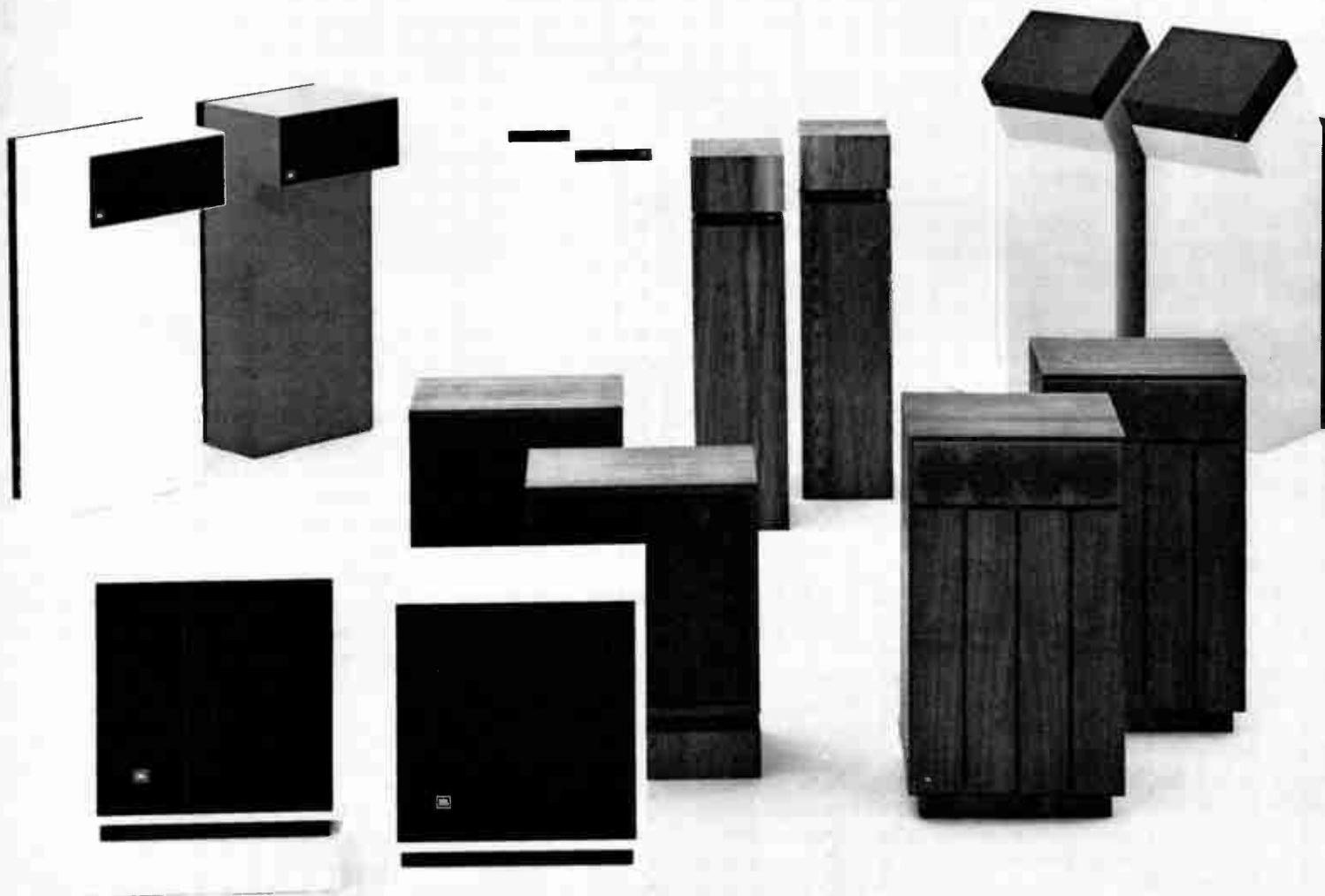
Queen Jane approximately; Highway 61 revisited; Just like Tom Thumb's blues; Desolation row; Tombstone blues; It takes a lot to laugh, it takes a train to cry; From a Buick 6; Ballad of a thin man

CBS 40-62572 (£2-49)

There isn't very much extra to say about the former Bob Zimmerman, born in Duluth, Minnesota 30 years ago, is there? Except to make reiterations about his importance as a musical and social commentator of the highest order. Except to repeat that at his very best Dylan's contributions to the popular music scene during the past decade (as of now also) have been significant and many. These two cassettes show the development (some would say he's *regressed*) over a few years. 'The Times' is certainly the better of the two [B: 1]. It presents Dylan at his best, or not far from it. Whereas the first album has Dylan accompanied only by his own guitar and/or harmonica, 'Highway' has a pop-influenced country group (now better-known—and rightly so—as The Band) in support... something which didn't please a great many Dylan admirers when the LP was first released. Actually, it detracts not at all from Dylan's singing or his songs. But a [B: 2] rating is necessary, if only to show that 'Times' is marginally better. *Stan Britt*

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POP OF THE TOPS

THE WORLD OF 'YOUR HUNDRED BEST TUNES'—THE TOP TEN

Finlandia (*Sibelius*); Nuns' chorus (*J. Strauss*); Intermezzo from 'Cavalleria Rusticana' (*Mascagni*); Don't be cross from 'Der Obersteiger' (*Zeller*); Pastoral symphony—After the storm (*Beethoven*); Moonlight sonata—adagio (*Beethoven*); Chorus of Hebrew slaves from 'Nabucco' (*Verdi*); Violin concerto 1—adagio (*Bruch*); Jesu, joy of man's desiring (*Bach*); Nimrod (*Elgar*)

Decca SPA112 (99p). Reissues

I have always thought that there ought to be an established 'Top Ten' listing for classical recordings. The idea makes some sensitive souls recoil, I know, but as it would mainly affect those works which they tend to recoil from anyway, it would not really matter, and it would be fun. Anyway Decca have started the ball rolling with a record that could probably be No. 1 in any charts. By a happy coincidence all their top ten happen to have top Decca recordings to hand but their choice is pretty well unbounded. The artists involved are genuine classical, a preponderance of the LSO under various conductors from Hermann to Monteux, singers like Sutherland and Gueden, Backhaus at the keyboard. All splendid recordings of variable degree. I wouldn't argue with their choice much, although I am surprised to see Bruch there, and equally surprised (though delighted) to see no Tchaikovsky; and is *Finlandia* all that popular? Well, what would be your choice of an all-time Top Ten? We should like our readers to send us their own lists—it's a game most people like to play—and we will print the findings in a future issue. As for Decca's effort—a surprisingly tasteful selection with a lot of delightful as well as popular music on it. [A: 1]

FUNNY BUT SAD

THE UNBELIEVABLE GLORY OF THE HUMAN VOICE

Arias by Mozart, Liaoff, Delibes, J. Strauss, etc. / 'Faust' in English*

Florence Foster Jenkins | *Jenny Williams and Thomas Burns

RCA 'International' (INT1150) (99p)

By now the Florence Foster Jenkins addicts will have worn their aged EP of this great singer's art to wafer-thinness and will welcome this new LP compilation with its improved sound, additions to the repertoire and the opportunity to discover that Jenkins disciples (pupils possibly) are still carrying on the almost forgotten art of *malato canto*. The art of Jenkins has long provided an engrossing topic for uninformed discussion. Did she really think she could sing or was it all a great leg-pull? Nice to have the money to hire the Carnegie Hall at any rate. She was a great woman, by any standards, even if her ambitions were greater than her abilities. I have always found her recordings strangely sad and touching as well as being excruciatingly funny. And if you had sadly assumed

that no-one was ever going to take on the Jenkins mantle you may now rest assured that they have. I am not sure that Thomas Burns is not even funnier and he builds up an extra sense of tension by making us wonder whether he is not actually going to pass out in his forlorn attempts to reach the right note. With Jenny Williams an excellent straight woman, their rendering of 'My heart is overcome with terror' is an absolute minor piece of guileless art. Rating—[EW: FQ†]

† In the words of Ronald Frankau—Extraordinary, wonderful, fascinating, queer!

THE LINGERING ON

MUSIC HALL TO VARIETY, Vol. 2—FIRST HOUSE

Recordings by Harry Tate, Lily Morris, Flotsam & Jetsam, Layton & Johnstone, Will Hay, Leslie Sarony, Charles Penrose, Norah Blaney & Gwen Farrar, Tommy Handley, Sophie Tucker, Billy Bennett, Douglas Byng, Tom Clare

World Record Club (SH149) (£1-12½)

MUSIC HALL TO VARIETY, Vol. 3—SECOND HOUSE

Recordings by Horace Kenney, Gracie Fields, Tessie O'Shea, Ronald Frankau, The Crazy Gang, Nellie Wallace, Stanley Holloway, Elsie & Doris Waters, Max Miller, Florence Desmond, The Western Brothers, Robb Wilton

World Record Club (SH150) (£1-12½)

The connoisseur will tell by the names that the true 'music-hall' part of this compilation was exhausted in the wonderful Vol. 1 of this series which we reviewed in December. The cream is undoubtedly on that record. In these next two volumes 'variety' has unquestionably, however subtly, become the flavour; and a lot of it belongs to radio rather than the stage. But the overall title does not try to hide this fact and these two volumes are hardly less valuable or entertaining for being nearer to our own times. For the youngsters they will appear just as remote while the middle-aged will dwell lovingly on the strange sounds that enlightened their childhood. There are 'light' classics here galore: Harry Tate's immortal *Motoring* sketch; Will Hay and St. Michaels; Penrose's *Laughing policeman*; Stanley Holloway's *Runcorn ferry*; the Western Brothers' *Play the game, you cads*; to name but a few of the imperishable masterpieces. There is surprisingly little dross—only the Crazy Gang manage to be embarrassingly unfunny, heard but not seen. These three LPs are worth their weight in gold and have preserved material that should never be allowed to disappear. You will never forgive yourself if you don't take the opportunity to get them. [H: 1*]

IVORY, BRASS & VOICES

IVORY AND BRASS

Corsair overture (*Berlioz*); Londonderry air; Scherzo (*Litolff*); Zeldia (*Code*); Piano concerto (*Newsome*)
Keith Swallow (pno) | Black Dyke Mills Band | Geoffrey Brand | Roy Newsome

Pye 'Golden Guinea' GSGL10463 (£1-23½)

Litolff's Scherzo has something of a 'now for my next trick' air about it; further researches into the unlikely for brass band material. Keith Swallow is the only part of it that sounds like the real thing; the brass is mainly confined to hasty and explosive bursts of unseemly sound. In fact, if this disc proves anything it is that piano and brass are not particularly suitable companions even in Roy Newsome's Concerto which at least gets marks for trying. An odd record; interesting but not really successful. [B: 3]

THE EPWORTH CHOIR

Riding on a donkey; Hail Jesu bambino; O come to my heart; etc.

Epworth Choir | Choir of Woking Grammar School | Walter Deakin

Chapter CMS1003 (£1-69)

Woking being one of those places I only pass through, with no apparent attractions to make one linger, it is interesting to find it full of vocal talent. Producer Les Reed is more discerning and stayed in Woking long enough to discover and record some excellent singing which nicely mixes classical and popular styling to produce a very pleasant record. The church acoustic (Trinity Church, Woking) has been realistically caught and the voices are commendably clear. An enjoyable programme. [A: 1]

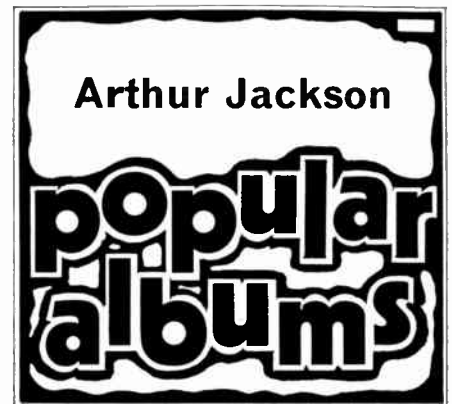
SCOTCH, IRISH AND WELSH

In STEVE MERRICK SINGS—Beltona (MBE 101, SBE101 (99p) several things disappoint; a rather nasty acoustic makes overbearing hearing and the singer's words become pretty well indistinguishable; while his own lack of a clear style, emphasised by anonymous orchestral accompaniment, make it a fairly meaningless record [C: 3]. But there is some good healthy stuff on SCOTTISH GEMS—Emerald (GEM1049, GES1049 (99p) with a good bouncy, toe-tapping Scottish sound from the Hawthorn Scottish Dance Band and good robust vocals of impeccable clarity from Jim McFarlane. [A: 1]

The Brian Boru Ceili Band follow up their previous successful LP with MORE CEILI TIME IN IRELAND—Emerald (GEM1046, GES1046 (99p) with some more exhilarating Irish material which should do well in dance circles [A: 1]. In THE VOICE OF ERIN—Philips 6588 009 (£1-49), Frank Patterson presents a pleasant programme of favourite Irish songs like *Killarney* and *Rose of Tralee*. He has a light-toned voice that needs a more varied approach but he has the advantage of good accompaniments and arrangements. [A: 2]

Finally 1,000 hearty Welsh voices roar it out in the Albert Hall in WALES IN SONG, a programme recorded last October; the results an exhilarating mush of sound that will please the devotees—Columbia SCX6440 (£1-87) [B: 2]. Some good coughs!

NB: Saydisc SDL210 ('I'll Dance Till De Sun Breaks Through'), reviewed in the January issue was wrongly priced at 47/6. It should be 39/11 or £1-99½.



FEATURE REVIEW: FOREVER NAT

NAT KING COLE: 'FOREVER YOURS'

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The 50 Guitars of Tommy Garrett El Hombre
C 0942E

5th Dimension The Age of Aquarius C 0951E

Frank Sinatra The Concert Sinatra CRP 358

Trini Lopez in London CRP 360

Francis A. Sinatra & Edward K. Ellington
CRP 363

Dean Martin Gentle On My Mind CRP 369

Frank Sinatra Cycles CRP 370

Wes Montgomery A Day in the Life CYP 185

Herb Alpert & the Tijuana Brass
Sounds Like CYP 194

Val Doonican Val CYP 196

Sergio Mendes & Brasil '66 Fool on the Hill
CYP 1101

Dionne Warwick Freewheelin' CYP 1103

Petula Clark Portrait of Petula CYP 1110

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Orchestra Amsterdam/Bernard Haitink
Beethoven Piano Concerto No. 4 in G CPC 0037

LSD/Colin Davis Elgar Enigma Variations,
Cockaigne Overture; Concertgebouw Orchestra
Amsterdam/Bernard Haitink Pomp &
Circumstance March No. 1 CPC 0024

Concertgebouw Orchestra Amsterdam/
Bernard Haitink Mendelssohn A Midsummer
Night's Dream CPC 0009

Ingrid Haebler (piano) LSD/Colin Davis/
Witold Rowicki Mozart Piano Concertos
K.415 K.488 CPC 0063

Arthur Grumiaux (violin) LSD/Colin Davis
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van Bienum Tchaikovsky Nutcracker Suite,
Op. 71a CPC 0038

Henryk Szeryng (violin), LSD/Antal Dorati
Tchaikovsky Violin Concerto CPC 0021

Concertgebouw Orchestra, Amsterdam/
Bernard Haitink Tchaikovsky Capriccio Italien;
Ovtrak Slavonic Dances from "Prince Igor";
Lamoureux Orchestra/Igor Markevitch
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Arthur Grumiaux (violin)/LSD/Colin Davis
Mozart Violin Concerto in B Flat; Violin Concerto
in D, Violin Concerto in G (2LP) 7505 003

Claudio Arrau (piano)/Concertgebouw
Orchestra, Amsterdam/Bernard Haitink
Beethoven Piano Concerto No. 5 "Emperor";
Piano Concerto No. 3 (2LP) 7505 006

Rod Stewart An Old Raincoat Won't Ever Let
You Down 7145 004

The Exquisite Nana Mouskouri 7103 004

Dusty Springfield For You Love Dusty 7108 001

Blue Mink Melting Pot 7108 002

Pentangle Basket of Light CTP 170003

BBC Symphony Orchestra/Colin Davis
The Last Night of the Proms CPC 0088

Syd Lawrence with the Glenn Miller Sound
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Coteseum Valentine Suite CVO 16000

Benny Goodman Swing Classics CPP 1089

John Hanson Great Songs from Great Films
7108 005

Paul Mauriat & His Orchestra L.O.V.E. CPP 1087

Frank Sinatra A Man Alone CRP 373

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Nana Mouskouri Nana Recital '70 7103 005

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Joan Baez One Day At a Time 7150 001

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World Record Club SM131-6 (6-record boxed set £6.98)

They've done it again! WRC have come up with another set matching in style and quality the Sinatra collection that became one of my 1970 choices of the year. Here again, there will inevitably be highly personal arguments regarding the choice of material . . . but here again, who would envy any compiler the task of selecting 60 titles representative of the output and talent of artists like Frank and Nat? Not all the Cole milestones are here, and there are one or two that I wouldn't have included in a hundred years. Repertoire-wise, I must add. Nat himself was always the superb performer, and even pot-boilers like *Ramblin' rose*, *Lazy hazy crazy days of summer*, *Answer me*, *Back in my arms* and *If I give my heart to you* never made him compromise his art. He sang them and they emerged better songs from the experience. Many I haven't heard since the days of 78's, like *The ruby and the pearl*, *Song of Delilah* and *Here's to my lady*, when every Cole record was one to be treasured, and one of my own personal favourites, done not long before his death, is *That Sunday that summer* . . . not a great song, but a warm nostalgic ballad that somehow seemed to distil the essence of the man. The King Cole Trio is here, both in the original recordings circa 1944 (*When I take my sugar to tea*, *Exactly like you* and *After I say I'm sorry*) and the 1961 re-creations for the 'Nat King Cole Story' set (*Route 66*, *Sweet Lorraine*, and *Straighten up and fly right*). Superb engineering on the old tracks ensures little technical difference, but it is interesting to compare Nat's lighter, more intimate singing style of the forties, when he sang purely within the trio format, to the more confident delivery of 17 years later after he had been used to big band backings. These trio tracks reveal Cole the jazz pianist whom many people forgot in later years, though he did remind us occasionally, as in the jazz session which produced *When I grow too old to dream* and *Just you just me*, and in his short but effective Hammond organ interludes in the swinging *Moon love* and *When my sugar walks down the street*. Others are too familiar to need comment here; everyone who ever admired the magnificent Cole talent will know them. The set cuts across a number of comparatively recent LPs, which may lessen its appeal to those who like myself, have a special record shelf devoted to Nat Cole; but as a set for non-specialists (at whom it is aimed via WRC's national press advertising) it's unbeatable value in a beautifully pictured box. But I do wish WRC wouldn't negate the 'luxury' effect with such shoddy, uninformative notes, which tell us nothing about accompanists, arrangers or recording dates. Could it be that the general public don't care? [B: 1*]

RONNIE ALDRICH: 'TOGETHERNESS'

24 titles including:— Airport; Arizona; Sugar sugar; Daydream; Venus; Because; Let it be; Something; You lied; Paper mache; Snowbird; Cecilia; Close to you; Sun dance; Make it with you
Decca DDS2 (Double album £2.50)

This includes the contents of 'Here Come the Hits' (PFS4195) reviewed in November. For an extra 12/- it makes a good bargain but may limit the sales of the earlier LP. All one can say is that it's more of the same, with the piano-orchestral formula as always more

effective on ballads than on things like *Arizona* and *Sugar*. I gave the original **A: 1** and the 12 additional tracks do nothing to lower the rating.

VAL DOONICAN

Magic Of . . . Thunderclouds; Daydream; Jennifer's rabbit; Rainin'; Hold me; Yesterday; Lazy; Bella Rosa; Take me; Visions; Small world; + 13 others
Philips 6642003 (Double album £2.75)

Now: Don't cry my Angelina; Sunny; Now; Sunday best; Straight life; Love of a gentle woman; Too many times; Feelin' groovy; Gentle on my mind; Times; If I knew then; Just like a woman
Philips 6308039 (£2.15)

World Of . . . Vol. 3: Sing a rainbow; Slattery's mounted fut; False hearted girl; I told a brook; Gentle Mary; Joe's been a-gittin' there; Country boy; Kaw-Liga; Special years; Trouble in mind; Jenny dreams; Quit kickin' my dog around
Decca SPA or **PAT9** (99p)

We know that Doonican is a friendly, unassuming and pleasant singer. But do we, I wonder, realise just how versatile he is? Without radical changes of style he sings a wide variety of songs from Irish novelties and evergreens to current pops with no sense of anachronism. That easy style is so deceptive, its full range only revealed by diversified collections like these. [B: 1]

HARRY STONEHAM: 'THE MIDNITE BLUE'

Meditation; Quiet nights; Dindi; I'll never fall in love again; Girlie; What the world needs now; Je t'aime non plus; People; Without her; Air on a G string; Whisper not
Polydor 2418024 (£1.49)

ROY BUDD: 'BUDD 'N' BOSSA'

Meditation; Quiet nights; Girl from Ipanema; Des-finado; I appreciate so much; Man and a woman; One note samba; It only goes to show; Little boat; So nice; Girl from Southend-on-Sea
Pye NSPL18354 (£2.15)

Your ration of background mood music for the month, both from session groups with like Isaacs providing guitar rhythms behind Stoneham's Lowery organ and Budd's piano . . . the latter curiously restrained and giving prominence to the flute of Vic Ash. Nothing to titillate the ear or raise the pulse but nice to have around. **A: 1** for both.

ARTHUR TRACY: 'ALWAYS IN SONG'

Marta; Frasnita serenade; Rain in my eyes; Little lady make-believe; I won't tell a soul; Old man river; Goodnight angel; I shall always remember you smiling; Roses of Picardy; Masquerade is over; San Antonio Rose; Sweetest song in the world; Giannina mia; Goodnight my love
Eclipse or **ECM2050** (99p)

One of the singing phenomena of the early 30s, 'The Street Singer' was an acquired taste, whose limited appeal finally vanished after he had been in this country for some years before the war. I recently reviewed a comeback LP he made last year in his seventies, but this one takes in 14 of his original 78s, all fully indicative of the schmaltzy approach that made him such a great, if temporary, favourite with the general public. Strictly for nostalgia seekers. [C: 3]

THE SANDPIPERS

Come Saturday Morning: Santo Domingo; Long and winding road; Free to carry on; Song of joy; Where there's a heartache; Whole world in his hands; Sound of love; Drifter; Autumn afternoon; **Come Saturday morning;** Wonder of you; Beyond the valley of the dolls
A & M AMLS990 (£1.99)

Guantanamo: Guantanamo; La mer; Carmen; Things we said today; Cast your vote to the wind; What makes you dream; Angelica; Stasera gli angeli non volano; Inchworm; Glass; It's over
Mayfair AMLB1004 (99p)

Well-written arrangements, beautifully rehearsed singing and impeccable taste, with an essentially romantic approach that is a tonic to jaded ears. They do break out occasionally . . . *Whole world* winds up like the Fifth Dimension, exciting but nicely controlled. The budget release has some of their best earlier work, almost a direct reissue of the original 'Guantanamo' (Pye NSPL28086) with 3 tracks substituted from AMLS901. [B: 1]

HARRY SECOMBE: 'A MAN & HIS DREAM'

Impossible dream; If; I believe in love; I dream of Jeannie; I have dreamed; What kind of fool am I; Some enchanted evening; What a wonderful world; When I grow too old to dream; I believe; Lovers such as I; Knock on any door
Philips 6308021 (£2.15)

Big voice ballads dealt with by the biggest voice around, with lush arrangements to match. Harry deals in decibels rather than dynamics, but for the purity and sheer resonance of that fine voice we'll forgive him. [A: 1]

THE CARPENTERS: 'CLOSE TO YOU'

We've only just begun; Love is surrender; Maybe it's you; Reason to believe; Help; Close to you; Baby it's you; I'll never fall in love again; Crescent moon; Mr Guder; I kept on loving you; Another song
A & M AMLS998 (£1.99)

Their recent chart success really gives no idea of the capabilities of this young brother and sister act. Richard C., who sings, plays piano, arranges, conducts, and wrote four of these impressive songs, has got to be the sort of talent this business needs. Sister Karen plays drums and sings, and since the sleeve says they do all vocals on the record, I assume they multi-tracked the group and choral sections, which again indicates musicianship of a high order. This is pop at its very highest level, and I doubt if I'll hear anything in the pop field as completely literate, perfectly scored and performed than, say, *Crescent moon*, a miniature masterpiece. Talent . . . yes, that's here, but also warmth and a genuine love of music. Last month Fred Deller gave the cassette release **A: 1***, and I really can't argue.

DALIAH LAVI

Love's song; Black paper roses; If you go away; Taxi; Time to leave; Love is; Lonely crowd; Won't you join me; If I could; Hello love; Love of a child; Where can I go
Pye NSPL28141 (£1.99)

Armed with an album full of unhackneyed non-pop songs, the Israeli actress's initial assault on the record shops may or may not succeed. I hope it does. Though not a great singer she had a pleasantly mature voice and confident delivery, and what I would call musical understanding rather than musicianship. Certainly I could name a couple of dozen top girl singers who couldn't make such an attractive album. [B: 1]

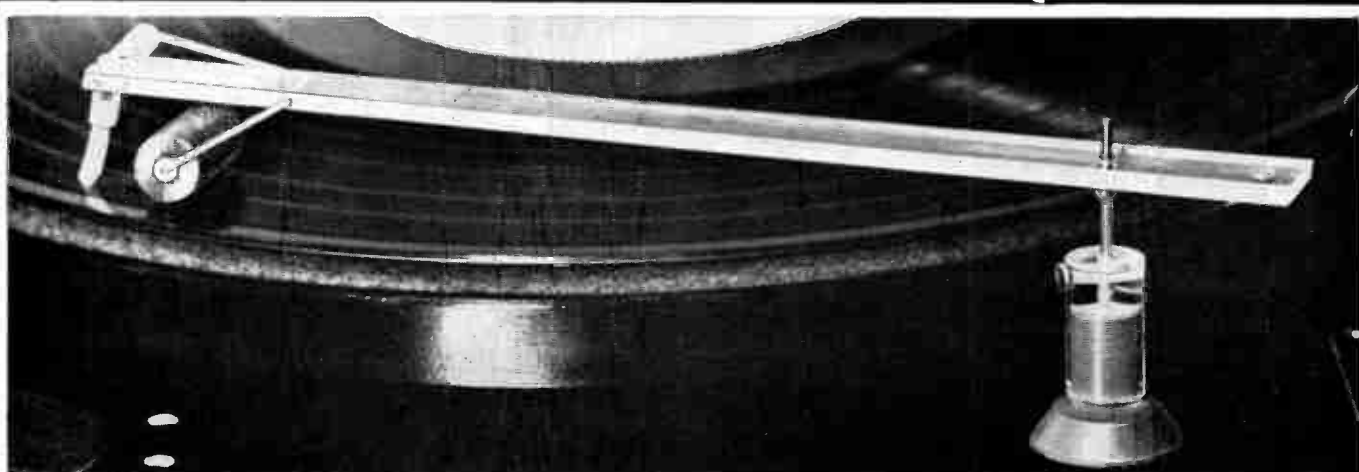
JOHNNY KEATING & HIS ORCHESTRA: 'CANADIAN SUNSET'

Norwegian wood; Moonlight serenade; It was a very good year; Shadow of your smile; Girl talk; Felicidade; Canadian sunset; Ebb tide; Who will take my place; Michelle; Imprevu; Shangri la
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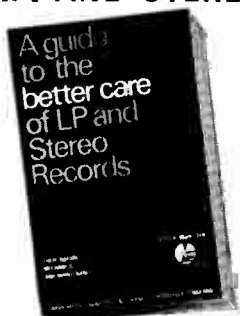
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contemporary rhythms. It all comes off quite well judged as a middle-of-the-road album for either listening or foot-tapping. [B: 1]

STEPHANE GRAPPELLE: 'AND FRIENDS'

I can't believe that you're in love with me; Sweet Georgia Brown; Darling je vous aime beaucoup; Taking a chance on love; Willow weep for me; My one and only love; How high the moon; Girl from Ipanema; Like someone in love; More; I got rhythm; Lonely street
Philips 6308017 (£2-15)

No compromise here . . . this comes down firmly on the side of the popular music/jazz traditionalists (in the mainstream sense). Grappelle plays in a timeless style, an undated compound of melody and swing, and his British supporting group backs him up so well one is never conscious of invidious comparisons with the old Hot Club Quintet. Just sit back and enjoy it. [A: 1]



Arthur Jackson

THE ARISTOCATS

Soundtrack recording & songs: Phil Harris, Eva Gabor, Pat Buttram, Scat Man Crothers, narr. Sterling Holloway
Disneyland M ST3995 (£1-62)

Disney's latest cartoon can be said to be playing it safe, what with a storyline not unlike '101 Dalmations', narration by Sterling 'Winnie The Pooh' Holloway, and lusty singing by Phil Harris in best 'Jungle Book' style of songs mostly by Disney staffers the Sherman brothers. Certainty of sales is assured by the usual profusely illustrated album, and it and the film are likely to be around for many a year, such is still the magic of the Disney name. [B: 1]

HANS CHRISTIAN ANDERSEN

Hans Christian Andersen; Anywhere I wander; Ugly duckling; Inchworm; Thumbelina; No two people*; King's new clothes; Wonderful Copenhagen / with Tubby the tuba; Tubby the tuba at the circus; Uncle Pockets; Hole in the bottom of the sea. Danny Kaye (*w. Jane Wyman)
Coral M CP56 (99p)

Frank Loesser's first important film score (1952) also marked our first acceptance of Danny Kaye as a serious performer, a singer of charm and warmth, who gave Loesser's beautifully written songs (surely of more than mere juvenile appeal) their definitive performances. This set of reissues (wonderful value in playing time when coupled with *Tubby* etc) make one think how nice it would be if the film were also reissued. [B: 1]

THE LIVING DESERT / THE VANISHING PRAIRIE

Soundtrack Music: Paul Smith
Disneyland M DQ1198 (75p)

The music by Disney conductor-arranger Paul Smith contributed no less than the

marvellous photography to the success of the 'True Life Adventure' series, and it is good to be reminded of these miniature gems of film-making. Nothing here for children, but musically-minded parents can enjoy the music which does stand up out of context better than most incidental scores. [B: 1]

LOOT

Soundtrack music: Keith Mansfield
CBS 70073 (£2-45)

TWO MULES FOR SISTER SARAH

Soundtrack music: Ennio Morricone
MCA MKPS2013 (£1-99)

Morricone's score may interest acoustic guitar players and film fans, but offers even less in the way of set pieces than his usual scores. 'Loot' is one of those British epics built around a pop music sound, with one Steve Ellis dominating 8 of the 13 tracks with the sort of amateurish singing that might get a 1 rating in our Pop columns but turns me up rather than on.

PINOCCHIO

Soundtrack songs: Cliff Edwards, Walter Catlett, Dickie Jones

Disneyland M DQ1202 (75p)

Despite the passage of 30 years the sound quality is quite outstanding, not only in the lack of surface noise (it was after all dubbed from film) but in the frequency range and clarity of the original recording, with its fine orchestral separation and balance. Musically . . . well, what needs to be said about such an old and oft-reissued favourite at this stage? [B: 1]

JULIE ANDREWS: 'A LITTLE BIT IN LOVE'

Little bit in love; I feel pretty; How can I wait; Burlington Bertie; If love were all; This is new; Waiting at the church; Looking for a boy; By the light of the silvery moon; I didn't know what time it was
Hallmark CHM687 (80p)

Great Broadway songs and old English music hall favourites, delivered in the over-precious but tuneful Andrews style. Previously heard on CBS albums 'Broadway's Fair Julie' (BPG 62018) and 'Heartrending Ballads' (BPG62405). [B: 1]

PERCY FAITH & HIS ORCHESTRA:

'YOUNGER THAN SPRINGTIME'

Some enchanted evening; Laura; Begin the beguine; Deep purple; Summertime; If ever I would leave you; Younger than springtime; Where or when; I loved you once in silence; Tenderly
Hallmark CHM686 (80p)

Faith's highly individual strings deal longingly and lovingly with some of the best film songs of the past 30-odd years. Faith fans will have the LP's from which they come but others will find it a superb bargain offering. [A: 1*]

ALLAN JONES: 'GREAT SHOW TUNES'

Night & day; Begin the beguine; What is this thing called love; Easy to love; In the still of the night; Why shouldn't I; I've got you under my skin; Why do I love you; Who are you; Thine alone
RCA Camden M CDM1076 (80p)

A much better sound than the phoney 're-processing' on Camden's last Jones LP is very much kinder to the voice. The Cole Porter songs probably date from the 40s or 50s, at which time Jones developed a more baritone quality, and with lush choral and orchestral backings the end result is a sophisticated showbiz sound we hear too little of these days. [B: 1]

JOHNNY MATHIS

Lovely way to spend an evening; I'm in the mood for love; Don't blame me; Warm & willing; Love me as though there were no tomorrow; Where are you; Can't get out of this mood; Sunny side of the street; Let's misbehave
Hallmark M CHM684 (80p)

Someone had the bright idea of going through Mathis' albums made over the years and extracting all the film songs by Jimmy McHugh making a handsome tribute to the veteran composer who died recently. B: 2 . . . B: 1 for Mathis fans.

MUSIC MAKES THE MOVIES

Talk to the animals; Moon river—Herb Alpert; Come Saturday morning—Lisa Minnelli; What the world needs now—Sergio Mendes; Windmills of your mind—Baja Marimba Band; Born free; That night—Sandpipers; Scarborough Fair—Claudine Longet; Sundance Kid—Burt Bacharach; Maybe tomorrow—Quincey Jones

Mayfair AMLB1012 (99p)

An arbitrary but well-balanced and quite pleasant collection of tracks from A & M releases; one or two highlights and no low spots . . . a happy addition to the budget range. [B: 1]

PETER NERO: 'BORN FREE'

Who's afraid; Sweetest sounds; Born free; Stella by starlight; It's a darned good thing; I got plenty o' nuttin'; Gone with the wind; 'Sunday In New York' themes

RCA Camden CDS1063 (80p)

This anthology of film and show themes is one of the most tasteful and musicianly albums by a pianist whose obsession with technique and effect often obscures his sense of musical proportion. Here he remembers little things like swing and economy of notes, and is a far better performer for it. I liked particularly the themes Nero wrote for the 1964 film 'Sunday in New York'. [B: 1]

WALTER SCHARF & HIS ORCHESTRA: 'BUT BEAUTIFUL'

Call me irresponsible; Imagination; Sunday, Monday and always; Moonlight becomes you; Darn that dream; Love and marriage; Second time around; All the way; But beautiful; Swinging on a star; It could happen to you
Gemini GMX5027 (99p)

In partnership with, successively, Johnny Burke and Sammy Cahn, composer Jimmy Van Heusen has given Crosby and Sinatra many of their greatest film songs of which those featured here are only a very few. Scharf has been a top Hollywood MD for almost 30 years, and I'd have expected a little more from this LP than a piano and strings mood session. But of its kind it's good, despite a little too much reverberation on the strings, and can be recommended at the price. [B: 1]

SHOWTIME

Dear world—Angela Lansbury; Put on a happy face—Dick Van Dyke; Gonna wash that man outa my hair—Mary Martin; Tonight—Larry Kert & Carol Lawrence; Wouldn't it be lovely—Julie Andrews; Everything's coming up roses—Ethel Merman; Diamonds are a girl's best friend—Carol Channing; Cabaret—Joel Gray; Miss Marmelstein—Barbara Streisand; The party's over—Judy Holiday
Hallmark M CHM692 (80p)

Excerpts from the CBS Broadway Cast album of 'Gypsy', 'M.F.L.', 'West Side Story', 'I Can Get It For You Wholesale', 'Dear World' etc. Recording quality is variable as you'd expect, considering the range in time, but the performances are memorable and mostly familiar enough to ensure good sales. [B: 1]

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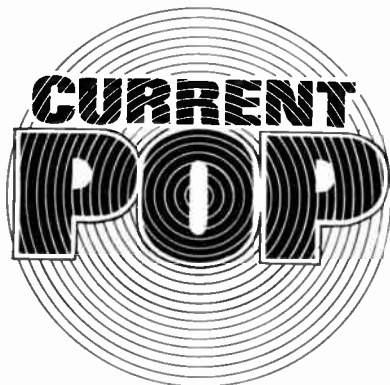
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Fred Dellar

MOE KOFFMAN: 'CURRIED SOUL'

Curried soul; You are my sunshine; Li'l bitty pretty one; Sunshine superman; Country song; Anteaters dance; High heel sneakers; Cantelope Island
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Telefunken (import) SLE14 231 (£2.50)**

PHASE FOUR FEST

OKTOBERFEST!

Twelve titles by Will Glahé and his Orchestra
Decca Phase Four PFS4194 £2.19

A RECORD OF THE YEAR

SCHRAMMELN: The original music of Johann and Joseph Schrammel

Lumpen Polka (Fast polka); Spielkätzchen (French polka); Eugenie (Introduction—Andante and four waltzes); Bei guter Laune (French polka); Erinnerung an Wien (Idyll in polka mazurka style); Kunts and Natur (march); Die Lerchenfelder (waltz); Auf der Promenade (polka mazurka); Tracherei (French polka); Musikalisches Farbenspiel (Andante-waltz-polka-waltz-galop); Im Kaffeehaus (French polka); Oesterreicher Landsturm (march)

The Classic Viennese Schrammel Quartet dir. Lois Böck
German Decca Musik für Alle ND440 (£1.50)**

Electrola's anthology of German popular music and song is aimed at the 'tourist' market; that is, for those people wishing to re-live a happy holiday once they have come home. Of the eight records three are superb. 'Black Forest Memories' which opens in praise of the local 'Kirsch', the delicious ham and no less tasty girls is one of the most

palatable records of its kind I have ever met. Try also the song about the Black Forest clock and the inevitable Mill in the Black Forest. All tracks here are worth a listen and the 'sound' is excellent. This may also be said of the records of marches and country dances. The rating on these three discs is [A: 1]. The others go in for hearty, sing-along stuff reminding us of wine-cellars and those enormous beer halls where everything including the waitresses and bass tubas appears larger than life. The stereo here is frequently gimmicky and not at all well-spread. The Telefunken records of roughly the same material are far less pretentious and much more musical. It is good to find Will Glahé still active! I read the other day that he's nearly seventy and lives in semi-retirement at Honnef-am-Rhein where he pursues his hobbies of photography and dog breeding. Neither the Telefunken nor Decca's Phase Four Oktoberfest! sound as though old Will has given up yet. Even so, there is an appropriate mellowness about this one, again much more suited for home listening than some of the month's rowdier efforts. [B: 1]

Schrammeln is both a delightful record and an important document of nineteenth century musical history. Having studied violin under Hellmesberger, conductor of the Vienna Philharmonic, Johann and Josef Schrammel formed a quartet, two violins plus guitarist Strohmaier and clarinetist Danzer. They played the popular 'Heurigen' (wine-tavern) tunes which they transformed into a compelling 3/4 rhythm thereby influencing the composers of 'the Viennese waltz'. When Danzer died an accordionist took his place and the quartet of two violins, accordion and guitar became the Schrammel formula. On this record, to my knowledge the first LP devoted entirely to the music of the Brothers, the original combination is used and with such grace and elegance that we feel the crinolines swish by us and as we turn back the years to a time when the old Emperor reigned in Schönbrunn. Though the brothers Schrammel died in poverty at the age of 42 their influence was immeasurable. This is one of my [A: 1*] records of the year and with it may I wish you 'Fröhliche Weihnachten' and hope that our television screens will permit us once again to enjoy the New Year concert from Vienna, but first let's make sure we hear the Brothers Schrammel!

* Available from EMI Specialist Import Dealers.

** Available from Selecta Specialist Import Dealers.

SOUL FLUTES: 'TRUST IN ME'

Try a little tenderness; Trust in me; In the wee small hours; Scarborough Fair; Bachianas Brasileiras; Cigarettes and coffee; Early Autumn; Day-O; Buckaroo

A & M Mayfair AML1015 (99p)

There's great contrast between these flute predominated albums. Koffman is brash, all-electric, and as trendy as a Knightsbridge discotheque. The Soul Flutes, Joel Kaye, George Marge, Romeo Penque and Stan Web offer a sophisticated velvet backdrop that should appeal to off-duty jazz devotees. Made at Van Gelder's studios, this recording does not quite have the clarity and definition that was once the hall mark of Van Gelder's work. Or is it that our standards have been raised since Rudy first brought quality recording to jazz? [B: 2] and [B: 1]

HERON

Yellow roses; Car crash; Harlequin 2; Smiling ladies; Little boy; Sally Goodin; Upon reflection; Lord and Master; Little angel; Goodbye; For you; Carnival and penitence

Dawn DNLS3010 (£2.40)

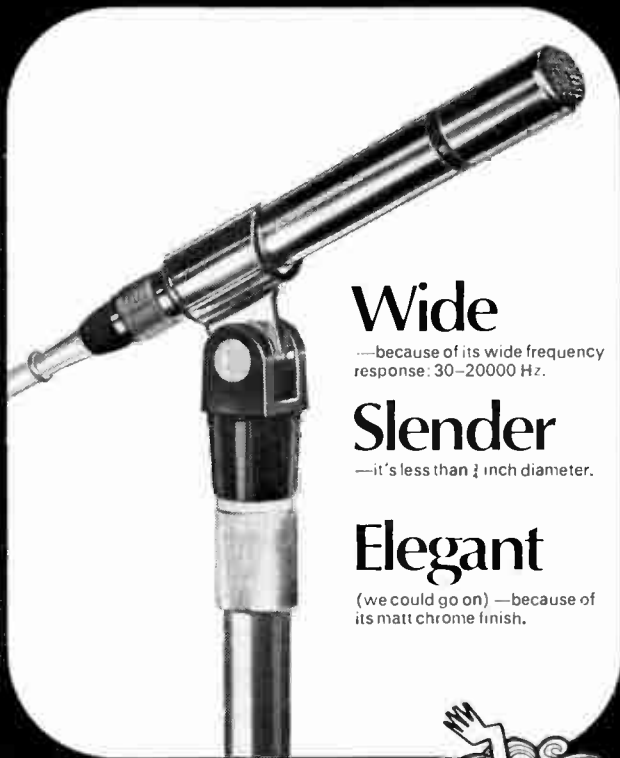
It's amazing what they do nowadays to bring a fresh-air appeal to their folk oriented groups. Now Pye have trotted all the way up to Manor Farm, Appleford, Berkshire, in order to record Heron in a truly rural setting. No doubt the mobile recording unit operated from a horse and cart and that dissenting critics will be ducked in the local village pond. Not me though. I enjoyed it all, from Stephen Jones' effective accordion fill-ins to the four-some's delicate vocals. Now back to me much spreadin'. [B: 1]

AREA CODE 615: 'A TRIP IN THE COUNTRY'

Katy Hill; Sligo; Sautilito; Welephant walk; Devil weed and me; Scotland; Always the same; Stone fox chase; Russian red; Judy; Gray suit men
Polydor Super 2425 023 (£2.15)

I thought that Area Code would never surpass their highly original initial album but *A trip in the country* does just that. The sound produced by these Nashville sessioneers is one of the most exciting in pop music today. Listen to *Katy Hill* where Aron Copland meets rock with advantages to both, *Sligo* with its

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(we could go on) —because of its matt chrome finish.

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Stax-like bass line or *Welephant walk* where bluegrass gets a kind of good-natured come-uppance. Not that the big beat predominates everywhere. *Suasilito*, for instance, features some beautiful melancholy Charlie McCoy harmonica and the mild jazz moments on *Devil Weed* are thoroughly stimulating also. And that's only one side of this brilliant record! [A*: 1*]

NEIL DIAMOND: 'GOLD'

Lordy; Both sides now; Solitary man; Holly holy; Cherry cherry; Kentucky woman; Sweet Caroline; Thank the Lord for the nighttime; And the singer sings his song; Brother Love's travelling salvation show
UNI ANLS116 (£1-99‡)

RICHARD STEVENSON: 'GATES OF ME'

The day that you came back; Harvest of stones; Rain on grey pavements; A face in the crowd; The gates of me; I'll show you my love; January Jacqueline; Florence's hours; A very unusual day; Reverie; You
Pye NSPL18358 (£2-15)

MAC DAVIS: 'SONG PAINTER'

In the ghetto; Memories; Daddy's little man; Home; You're good for me; Half and half; Whoever finds this I love you; Uncle Boogaloo Red and Byrdie Nelle; Hello L.A. bye bye Birmingham; Once you get used to it; Closest I ever came
CBS 64197 (£2-19)

Composer-singers all. Each of the trio is worthy of attention. Davis possessing most of the character and Diamond providing the power. These two have also achieved a fair degree of success with their songwriting while the lighter-voiced Stevenson has yet to attain fame in this field. Not that he operates in the same sphere as his American counterparts. His is the intimate world of the love song, petal-like, but perhaps lacking that confidential, word-in-your-ear, approach of an Al Stewart. He doesn't fully communicate. Diamond does, and with some vehemence, especially when he preaches *Brother Love's* philosophy on *Lordy*. Elmer Gantry meets Trini Lopez this one. Meanwhile, Mac Davis has enthusiastic quotes from Frank Sinatra, Glen Campbell and Sammy Davis appended to his liner notes and the only comment I will add, is that anyone who can provide Presley with the best song of his career (*In the Ghetto*) must have more than his fair share of talent. [B: 1], [B: 2] and [B: 1]

JAMES BROWN: 'SEX MACHINE'

Get up, I feel like being a sex machine; Bewildered; There was a time; I can't stand myself; If I ruled the world; Give it up or turn it loose; Licking stick; Brother Rap; Spinning wheel; Low down popcorn; I got the feeling; Mother Popcorn; Please, please, please; It's a man's man's world; I don't want nobody to give me nothing
Polydor Super 2625 004 (Double album £2-15)

Either a thoroughly boring or an eminently exciting set depending upon how you rate Brown's penchant for screaming phrases over riffs played ad nauseum. His audience — this one hails from Augusta, Georgia — usually manages to make our cup final crowds sound like an old folks' outing and his band has always been a big rough bear of an outfit with some excellent soloists given limited breathing space. It's all atmosphere and, as it states on the sleeve, everything has been faithfully captured on Ampax (sic) recording equipment. [B: 2]

EGG: 'THE POLITE FORCE'

A visit to Newport Hospital; Contrason; Boilk; Long piece No. 3
Deram SML1074 (£1-99‡)

Egg move vaguely in the same area as *Lifetime* though I personally feel that Mont Campbell (bass), Dave Stewart (organ), and Clive Brooks (drums) emerge, on the strength

of this recording, as a more fruitful source of inspirational music than the more renowned Tony Williams combo. Frankly, *Boilk* is a sheer waste of time. Strange noises and things that go bump in the night. On the other hand, *Long piece* has moments when it touches the heart as much as the mind and *Contrason*, performed by a stellar line-up that includes Bob Downes, Tony Roberts and Henry Lowther was another tentative step worth trying. Not easy listening by any means but if one accepts Egg on their own terms then *The Polite Force* can be a thoroughly rewarding album. [A: 1]

ISAAC HAYES: 'BLUE HAYES'

Precious, precious; When I fall in love; I just want to make love to you—Rock me baby; Going to Chicago blues—Misty; You don't know what I like
Atlantic 2465 016 (£1-49)

This is 1967 Hayes that has been issued to catch some of the sales that are accumulating as a result of the singer's successful super-soul sets. If you seek more of Hayes in his panoramic settings then *Blue Hayes* could be a disappointment. If, however, you appreciate intimate latenight soul with some thoughtful piano playing then this is for you. [B: 1]

THE BEACH BOYS: 'SUNFLOWER'

Cottonfields; Slip on through; This whole world; Add some music to your day; Deirdre; Got to know the woman; It's about time; Tears in the morning; All I wanna do; Forever; Our sweet love; At my window; Cool cool water
Stateside SSLA 8251 (£2-15)

Once again the undoubted capabilities of the Beach Boys are wasted. True, the occasional item, like the sure-fire-hit *Deirdre*, has one listening more attentively. This is no *Pet Sounds* however and despite the sleeve note blurb regarding 'true stereophonic sound' (I understand a couple of tracks on this album were originally recorded for quadraphonic reproduction) I hesitate to recommend this LP on the grounds of listenable recording quality. One more point—did we really have to have *Cottonfields* again? [C: 2]

MICK SOFTLEY: 'SUNRISE'

Can you hear me now?; Waterfall; Eagle; Julie Argoyne; Caravan; If you're not part of the solution; Ship; You go your way; Birdie birdie; Time machine; On the road again; Love colours
CBS 64098 (£2-19)

Softley belies his name. His is a gritty voice, confident and full of character. Abetted by musicians that include Jerry Donahue (guitar) and Pat Donaldson (bass) Mick Softley emerges with a healthy album blessed with individuality. The fact that Sue and Sunny are around on a couple of tracks is an added feature. [A: 1]

DRIFTWOOD

I'm leaving today; Ernest and Amelia; Seagull flies/variations; She's still alone; You don't need love; Somewhere deep inside; Deborah Broughton; The wind cries above you; Take me with you now; Since she came along; Paper; Anna my love
Decca SKL5069 (£2-19)

When I first heard Driftwood and saw that the name Harrison was quoted as being responsible for most of the material on the set, I immediately jumped to the conclusion that Apple had lost one of their greatest assets. This did not prove to be the case however for it's Nick and Neil Harrison who provide the songs and two thirds of the group, Neil Alford completes the trio and also provides three, less Beatle-inspired, melodies. Worth hearing. [B: 1]

WILD ANGELS: 'RED HOT 'N ROCKIN'

Little Queenie; Stuck on you; Something else; Forty days; Odessa; Let the four winds blow; High school confidential; All shook up; You ain't got me;

I need your love tonight; Rave on; Bullmoose
B & C BCM102 (99‡)

Oh dear! Lovable ol' Max Needham, the B & C press officer, obviously loves this one and expects me to praise it too. Now I know that the Wild Angels are our best revivalist rock 'n' roll combo but I don't really remember the Rock era with all that amount of relish. The Everlys, Fats Domino, Jerry Lee and the frenetic approach of Little Richard—these are the happy things. Much of the rest was dire jump on the rockwagon stuff that often was all noise and little excitement. For those that still indulge however, this is a good album, beautifully packaged and excellent value at the low price. How's that Maxie? [B: 2]

ROOM: 'PRE-FLIGHT'

Deram SML1073 (£2-19)

An efficient ensemble who provide unsmiling music. Despite some brassy trimmings it's a bore really. [A: 3]

THE TRIO

Dawn SNLS3006 (£3-25)

Three superlative musicians, John Surman (reeds), Barre Phillips (bass) and Stu Martin (drums) combine on a double album of contemporary jazz sounds that, in turn, both beguiles and bewilders. [A: 2]

BARBARA DICKSON: 'DO RIGHT WOMAN'

Decca SKL5058 (£2-19)

A warm-voiced vocalist who imparts a fair portion of personality on both traditional airs and songs like *Easy to be hard* and James Taylor's *Something's wrong*. [A: 2]

GLEN CAMPBELL: 'THE GLEN CAMPBELL ALBUM'

Capitol ST22493 (£2-15)

Despite attractive arrangements from Al De Lory and Marty Paich, Campbell hardly raises the temperature on this selection. The exceptions are an imaginative treatment of Webb's *Just another piece of paper* and some unusually un placid Campbell on *Oh happy day*. [B: 3]

THE YETTIES: 'KEEP A-RUNNIN'

Argo ZFB16 (£1-69)

Dorset bred folk music from an enthusiastic quartet who have made many friends via their 'Folk on Friday' broadcasts. Jolly, accordion sounds prevail throughout and it's as English as best bitter. [A: 2]

FRIGID PINK: 'DEFROSTED'

Deram SML1077 (£2-19)

Defrosted indeed. After their initial inertia, Pink move forward on this, their second album. Mainly it's the blues with heavy adornment but Gary Thompson's guitar feature, *Sloony*, swings lightly despite drummer Stevers apparent unfamiliarity with the non-rock tempo. [B: 2]

STEAMHAMMER: 'MOUNTAINS'

B & C CAS1024 (£1-99‡)

A four-piece which cannot hope to make any real impression in a market that is already swamped with good groups without any real individuality. Only point of interest is the inclusion of Lionel Hampton's *Riding on the L. & N.*, a number I haven't heard since the late forties. With the Byrds using Coltrane riffs and Steamhammer diggin' Hampton it can only be a short while before Zeppelin offer an album of Fletcher Henderson arrangements or Grand Funk do the Bennie Moten songbook! [B: 3]

JAZZ

and all that

Peter Clayton

Two more of the Blues Paperbacks (another four are now with us), edited by Paul Oliver and published at 65p each by *Studio Vista*, have been covered in a previous issue. I've now had a chance to read the remaining two, and to listen to the CBS LP which accompanies each volume.

Recording the Blues, by R. M. W. Dixon and J. Godrich, is a study complete in itself, but it could also be a long, fascinating chapter in the huge book that I hope some historian is compiling about record label politics. Perhaps it's my sentimental attachment to the memory of some old Brunswick 78s which makes it so intriguing to read that Brunswick was originally started by a firm which made billiards and bowling alley equipment. It's not only that kind of information which packs this volume, of course, because its main theme is the astonishing fact that the American record industry, having discovered literally by accident in 1920 that there was a market for records made specifically for the American black sub-population, found itself at one period issuing 500 new blues and gospel titles in a year. Indeed, after the early twenties boom in records sales, the so-called 'race' records were the only category in which sales improved, while all the rest gradually diminished. It is ironic to think of a predominantly white industry being partly bailed out by a poverty-stricken oppressed section of the populace. The book itself doesn't

grind any kind of racial axe; its authors are content to leave facts to make their own comment, and facts are what they give you. Facts about the various record companies' race series, the rise and fall in the number of issues per year, the changes of fashion from the classic blues singers—all women—to the male country blues singers, and then the gradual shift after the depression (this is incidentally the best account I've read so far of the effects of the Slump on the record business) to the new urban blues music which was spreading in the thirties, and which is the ancestor of a huge part of our own pop music. Sandwiched somewhere in between came the sermons and the gospel singing which reached best-seller proportions in 1926.

A constantly fascinating account, well written and profusely illustrated.

Derrick Stewart-Baxter's **Ma Rainey and the Classic Blues Singers** deals with the incredible ladies who founded the fortunes of the race catalogues, full-blown show-biz personalities many of them, who were vaudeville entertainers first and 'artists' second. Mr. Stewart-Baxter not unreasonably complains of the classification of 'classic' blues singing, but having been lumbered with it by long usage, he makes a good job of describing the work of the performers who did it. He even does some sub-classifying himself, putting it most concisely on the sleeve of the associated LP: 'those who lean heavily on the music hall, vaudeville and cabaret for their inspiration . . . and the more blues-based rural singers such as Ma Rainey, Bessie Smith. . . .' Having defined his terms of reference he writes informatively about his subjects. On the subject of Ma Rainey herself, he quotes Champion Jack Dupree: 'She was really an ugly woman, but when she opened her mouth—that was it! You forgot everything'. He also passes on Victoria Spivey's marvellous recollections of the extravagant, unlikely Ida Cox: 'She offered me good money, and she had a pocket book

as big as I was'. In fact, the section on Ida Cox, who lived until 1967, and who recorded (poorly, as the author says) as late as 1961, is possibly the best in the book, since there is so much more to relate about her than just her singing; there are *stories* about her, and such things always score over musical description.

Of the emotional accounts which surround Bessie Smith's tragic death in a car crash in 1937, Mr. Stewart-Baxter takes a very common sense view. On the evidence, including a 1969 interview with the doctor who attended her at the scene of the accident, he comes to the conclusion that the stories of racial discrimination against her at the hospital are probably untrue, and that she was so terribly injured that she was almost certainly beyond help within minutes of the accident.

The four LPs associated with the series are comparable in their scope and historical importance with the Southern Folk Heritage set that Alan Lomax did about ten years ago. In some ways they're more relevant, because they use contemporary recordings to make their point. Just how vast are the resources on which CBS can draw becomes apparent on those rare occasions when something is missing, as on the **Blacks, Whites and Blues** album they are unable to include any Jimmie Rodgers, a key figure in the volume of the same name. But we're back to label politics and the petty rivalries which make the industry the fascinating, infuriating, lovable thing it is. At £1.49½ the records are good value even though you have to listen to them with historical ears. As adjuncts to the written word, they are almost indispensable. Since the earliest item (Mamie Smith, on the Ma Rainey album) dates from 1920, and anything post-1940 is a rarity, normal ratings don't apply, not even to the **Savannah Syncopators** set, because most of the examples there are old recordings made in Africa. That doesn't mean they're poor, I might add, only that it is not right to judge them against sophisticated studio standards.

POETRY

and

DRAMA

Mary Postgate

ROBERT DONAT reads *Favourite Poetry at Home*

On Westminster Bridge; Bright Star; La Belle Dame sans Merci; Ode to Melancholy; Ode to Autumn; The Way Through the Woods; Nightingales; Gus, the Theatre Cat; Greater Love; Futility; Stone Fish Lake; Ring and the Book (extract); Dirge for Fidele | Early Carol; The Oxen; Journey of the Magi; Christus Natus Est; Before Dawn; Christmas; Noel; When Icicles Hang; Wassail Chorus; Christmas Cockcrow (from Hamlet); Two Epitaphs; Carol; Prayer of St. Francis of Assisi

Argo **PLP1064** (£1.69). Reissue: formerly RG192

Robert Donat died twelve years ago and is remembered and still mourned by a host of admirers. This disc was originally published in 1959, the year after his death, and was compiled from tape-recordings he had made for his own and his family's pleasure, in his own home, during the last five years of his life, when increasingly severe attacks of asthma prevented him from acting in the theatre or for films. It was presented by Argo,

and the producer, Mr. Harley Usill, as a tribute to the actor; in a sense, all they had to offer, since a projected series of studio recordings could never be made. In the sleeve note, Mr. John Donat tells of the utter absorption with which his father would 'disappear into' a poem, and that quality of complete concentration, allied to the technical mastery he never lost, makes this an exciting and heart-warming disc, not at all the melancholy occasion it might have been; the standard of recording varies a good deal, which is not surprising, but this disc is a pretty good instance of difficulties overcome. Warmly recommended. [B: 1]

T. S. ELIOT: *The Waste Land; The Love song of J. Alfred Prufrock; The Hollow Men; Ash Wednesday*. Read by Robert Speaight
Argo **PLP1108** (£1.69). Reissue: formerly RG10

This is a disc to listen to again and again. Robert Speaight exactly captured the poets' astringent brilliance, and he never obtruded his own personality—as, in a curious way, to compare one negative with another, Eliot himself never obtruded his. Naught for our comfort here, but an argosy of austere treasure from the long-dead '20s and '30s.

I have one small criticism, and it does not only apply to this disc nor to this company: when a first-rate disc like this one is re-issued, is it simply not feasible to bring out a revised sleeve note? I take it that economics are at the root of the problem, but it does seem to be spoiling the ship for a ha'porth of tar. Harley Usill's note to the present recording is excellent, but, after all, about half the

people who might be expected to buy or borrow this issue weren't even born when he composed it eighteen years ago, and his use of the present tense in such places as, '... the anguish and beauty which lie beyond the facades of Bloomsbury or Boston society' and 'Eliot is Anglo-Catholic', does not breed confidence. [A: 1]

SIR ARTHUR CONAN DOYLE'S SHERLOCK HOLMES: *The Speckled Band | The Blue Carbuncle and Charles Augustus Milverton | Black Peter*
Sherlock Holmes..... Robert Hardy
Dr. Watson..... Nigel Stock
Discourses DCO1210 and DCO1211 (£1.27 each disc)

I have thoroughly enjoyed these discs, which are apparently the first pair in a series. The tales are wildly improbable, the players mannered to a degree. Who cares? This is all as it should be: Holmes and Watson, the frightened ladies, the policemen, the black-mailer, the amateur thief, the intellectual drunkard fallen on hard times, the hotel attendant and all, are just right. This clever adaptation provides a most satisfactory Victorian-flavoured treat, and I put listening to it into the same class of enjoyment as eating hot buttered crumpets by the light of the fire. Of course, you *can* turn on the electric light and have starch-reduced crispbread and cottage cheese for tea, if you prefer, and get someone to read you a little something from Marcuse or Chomsky; but, thank you, I won't join you this time. It's Holmes for me, Holmes too clever by half and killingly upper class; and Watson, dear,

pea-brained, gentlemanly figure—how charming they are.

Turn down the lamp, someone, and let's listen to it all again. [A: 1]

LEWIS CARROLL: Alice in Wonderland.

Adapted and produced by Douglas Cleverdon. Alice—Jane Asher / Dormouse and Baby—Vivienne Chatterton / King of Hearts—Tony Church / Mouse, March Hare and Frog Footman—Frank Duncan / White Rabbit and Fish Footman—Leslie French / Cheshire Cat and Bill the Lizard—Deryck Guyler / Lory and the Mad Hatter—Carleton Hobbs / Queen of Hearts—Margaret Rawlings / Gryphon and Caterpillar—Norman Shelley / Mock Turtle—Jan Wallace / Duchess and Helen—Marjorie Westbury / Narrator—Margaretta Scott

Argo ZTA 501 and 502 (£2.58 for two-record set)

A welcome reissue of this delightful *Alice*, made twelve years ago when Jane Asher was twelve and ideally suited to play an intelligent and sociable little Victorian miss. The cast throughout is excellent and Douglas Cleverdon's adaptation first-rate, with plenty of the story made into comments from Alice and the remaining 'straight' narrative told by Margaretta Scott in her nice smiling voice. No music, no frills, just an absolutely admirable piece of work. [A: 1]

FOR CHILDREN

THE STORY OF ROBIN HOOD—A Disneyland Record and Book

THE STORY OF UGLY DUCKLING—A Disneyland Record and Book

Disneyland LLP342 and LLP340 (52½p each)

These 7-inch LPs with the story books that come with them are a good idea: the child listens to the record while he reads the story, in exactly the same words, from the book, and there is a signal on the recording for when to turn the page; on the other side of the disc there are songs. The *Robin Hood* is a very elegant little production—a crisp retelling of some of the old legends, read by an Englishman, Tony Brandon, with two quite enjoyable songs on the other side. The book

(which contains a rather precarious record sleeve) has nicely drawn and interesting illustrations, not in 'cartoon' style, printed in pleasant colours. This could be very acceptable, and useful, to a nine- or ten-year-old who is not finding reading very easy.

The Ugly Duckling is aimed at a slightly younger reader. It has been, not so much based on the Anderson original, as suggested by it: quite a pretty little tale in its own right, read by Lois Lane, and the text is accompanied by the big, bright, Disney-ish drawings you would expect. One disappointment: the first song is Loesser's *The Ugly Duckling*, perfectly good in itself, but hardly connected with the story we get here. Is the 'duckling' white or is he brown? Etc., etc. It's this sort of inconsistency that children most dislike. Nevertheless, these useful LPs are sure of a warm welcome, not only by children but by parents. On the whole, they have been very carefully produced.

REVOLUTION RECORDS:—

THE SLEEPING BEAUTY. Adapted from the fairy story by Perrault: Denise Bryer and the London Theatre Company—REVK 1 (75p)

DAVID AND GOLIATH and other stories: James McKechnie and the London Theatre Company—REVK 2 (75p)

OSCAR WILDE: FAIRY STORIES VOLS I & II (two discs):—Robert Rietty and the London Theatre Company—REVK 4 & 5 (75p each)

THE STORY OF BEETHOVEN: William Devlin and the London Theatre Company—REVK 7 (75p)

WILLIAM TELL: Paul Daneman and the London Theatre Company—REVK 11 (75p)

DON QUIXOTE: Alec McGowan and the London Theatre Company—REVK 12 (75p)

A warm welcome to this new series of children's records. I have only heard those listed above, and there are eight further titles, but of this sample I can certainly say that they are well-produced, with an attention to detail that is not always found in records for children, and that they cannot fail to enlarge the horizons and add to the listening pleasure of any child lucky enough to get them. It is

an imaginative list of subjects, and several of them have been realized with the aid of splendid and stirring music. *The Sleeping Beauty* is dramatized in a high-spirited version, with Tchaikovsky's music, a real pleasure to listen to. *David and Goliath* is less successful, perhaps, despite careful writing and James McKechnie's beautiful voice. It presents a brisk synopsis of Hebrew history from David down to Antiochus and the destruction of Jerusalem, accompanied by music by Cesar Franck which doesn't seem particularly apposite.

There is wonderful variety in the *Fairy Stories* of Wilde, great sophistication and wit, some desperate pessimism, some rather lush religiosity, a great deal of sheer charm, and an abundance of references to the colour and texture of things, above all the colour, so that some of the tales remain in the memory like brilliant pieces of embroidery enriched with jewels. My favourite is *The Remarkable Rocket*, a cynical and amusing story told with immense stylishness (as, indeed, they all are) by Robert Rietty.

I found *The Story of Beethoven* and William Devlin's portrait informative and moving (I should have to leave it to Burnett James or Christopher Breunig to say whether it is 'right') and, with all that music, ravishing to listen to. *William Tell* is full of violence and Rossini. The writing is a bit wooden, but the actors do their stuff with enthusiasm and it is a striking and vigorous recording. It also tells a complicated story clearly.

Don Quixote has an austerity about it, something to do with the insistent guitar and the thunder of hoofs on hard earth, that is the perfect ambience for Alec McCowen's unworldly Don and the spellbound Sancho Panza. It can't have been easy to dramatise this for a disc, but the attempt comes off, with the help of some ripe Northern accents on the part of Sancho's audience, and there is real beauty and pathos in the ending. I am glad someone undertook this ambitious project.



CHURCH BELLS. Recordings from Debenham (Suffolk), Kichfield (Staffs.), Cadoxton (Glamorgan), St. Albans (Herts), Evercreech (Somerset), Birmingham, Hillingdon (Middlesex), Hughenden (Bucks), West Wickham (Kent), Stratton (Cornwall), and St. Paul's Cathedral (London). From record retailers or BBC Records, London, S.E.99. REC 77M (£1.45)

Collectors of the unusual on record will certainly find a study of the BBC Records catalogue rewarding, as it lists many items under such headings as Spoken Word, Humour, Nature, Serious and Popular Music, for Children, and for Enthusiasts—in diverse fields—unlikely to be found elsewhere.

This LP includes twelve recordings, selected from the BBC Sound Archives by Harold N. Pitstow and Alan R. Patterson, of examples of change-ringing at various churches and cathedrals in England and Wales. Many of

the exercise names familiar to campanologists will be found on this disc, such as, Grandsire Caters, Stedman Doubles, Triples, Cinques, and the Norwich Surprise Minor, and one band has 3 mins. 22 secs. of the bells at St. Peter's, Evercreech, popular with early morning Radio 2 listeners on Sundays.

The music of change-ringing has its peculiar fascination for the devotee, who will assuredly find this mono record has its attractions. Technically, the standard can be called 'actuality', I suppose. Amateur dramatic groups will find it invaluable for sound effects. Donald Aldous

JUBILATE DEO

The Royal School of Church Music Festival Service, 1970

Singers from 130 Churches etc | Trumpeters of the Royal Military School of Music, Kneller Hall (cond. Lt.-Col. C. H. Jaeger) | John Jordan (org) | Martin Hall | Edred Wright. Precentor: The Rev. Canon Joseph Poole, Precentor of Coventry Cathedral. Readers: The Right Rev. E. J. K. Roberts, Lord Bishop of Ely | The Rev. Canon Joseph Poole

RRS4/5 (£4.00). Available from the Royal School of Church Music, Addington Place, Croydon, Surrey; or from Roundabout Records, 8 Parson Street, London NW4.

The Festival Service was held on June 25, 1970, in the Royal Albert Hall, in the presence of Her Majesty the Queen, The Archbishop of Canterbury, the General Secretary of the British Council of Churches, the Secretary of the Free Church Federal Council, and official representatives of the Roman Catho-

lic Church, the Baptist Church, the Presbyterian Church of England, and the Salvation Army. The service, devised by the Rev. Canon Joseph Poole in collaboration with Dr Gerald Knight, Director of the Royal School of Church Music has as its theme the Praise of the Living God and the Affirmation of Christian Hope. There are five sections—'The Approach to God's Presence', 'The Father Almighty, Maker of Heaven and earth', 'The Lord Jesus Christ', 'The Acclamation'. There are fanfares, anthems, readings from prose and poetry, hymns in which the 3000 strong congregation join (as well as in some of the readings), and the choir numbered 850 singers drawn from 130 churches, schools, and colleges. Musical highlights are Parry's *I was glad* with the extra section sung only when the Queen is present; Orlando Gibbon's *O clap your hands together: Handel's Let the bright seraphim and Let their celestial concerts*; plus Kenneth Leighton's *Let all the world in every corner sing*, Cedric Thorpe Davie's *Come, Holy Ghost, the Maker, come*, and Hubert Middleton's *Let my prayer be set forth*.

The recording was made by Angus McKenzie. It is always a difficult assignment to record massed forces in the Albert Hall, even now with the 'saucers'. It is on the whole highly successful here; a truly skilled piece of work. The sound is full of life and atmosphere, catching the sense of the occasion most commendably. A notable and unusual issue. No performance rating of course; but A for recording. Burnett James

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H High pass and low pass filters	A.F.U.	C. D or E	£5.19.6 (£5.97½)
J Radio	Stereo F.M. Tuner	C. D or E	£25.0.0

Sinclair Project 60

Z.30 & Z.50 power amplifiers



The Z.30 and Z.50 are of advanced design using silicon epitaxial planar transistors to achieve unsurpassed standards of performance. Total harmonic distortion is an incredibly low 0.02% at full output and all lower outputs. Whether you use Z.30 or Z.50 amplifiers in your Project 60 system will depend on personal preference, but they are the same size and may be used with other units in the Project 60 range equally well.

SPECIFICATIONS (Z50 units are interchangeable with Z.30s in all applications).
Power Outputs

Z.30 15 watts R.M.S. into 8 ohms using 35 volts
20 watts R.M.S. into 3 ohms using 30 volts.

Z.50 40 watts R.M.S. into 3 ohms using 40 volts;
30 watts R.M.S. into 8 ohms, using 50 volts.

Frequency response: 30 to 300,000 Hz ± 1 dB.

Distortion: 0.02% into 8 ohms.

Signal to noise ratio: better than 70dB un-weighted.

Input sensitivity: 250mV into 100 Kohms.

For speakers from 3 to 15 ohms impedance.

Size 3½ x 2½ x ½ in.

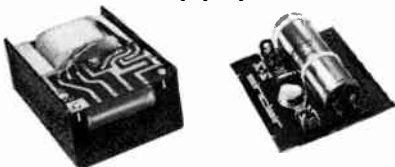
Z.30

Built, tested and guaranteed with circuits and instructions manual **89/6** (£4.47½)

Z.50

Built, tested and guaranteed with circuits and instructions manual. **109/6** (£5.47½)

Power Supply Units



Designed specially for use with the Project 60 system of your choice.

Illustration shows PZ.5 to left and PZ.8 (for use with Z.50s) to the right. Use PZ.5 for normal Z.30 assemblies and PZ.6 where a stabilised supply is essential.

PZ-5 30 volts un-stabilised **£4.19.6** (£4.97½)

PZ-6 35 volts stabilised **£7.19.6** (£7.97½)

PZ-8 45 volts stabilised

(less mains transformer) **£5.19.6** (£5.97½)

PZ-8 mains transformer **£5.19.6** (£5.97½)

Guarantee

If within 3 months of purchasing Project 60 modules directly from us, you are dissatisfied with them, we will refund your money at once. Each module is guaranteed to work perfectly and should any defect arise in normal use we will service it at once and without any cost to you whatsoever provided that it is returned to us within 2 years of the purchase date. There will be a small charge for service thereafter. No charge for postage by surface mail. Air-mail charged at cost.

Stereo 60 pre-amp/control unit



Designed for the Project 60 range but suitable for use with any high quality power amplifier. Again silicon epitaxial planar transistors are used throughout, achieving a really high signal-to-noise ratio and excellent tracking between channels. Input selection is by means of push buttons and accurate equalisation is provided for all the usual inputs.

SPECIFICATIONS

Input sensitivities: Radio—up to 3mV. Mag. p.u. 3mV; correct to R.I.A.A. curve ± 1 dB; 20 to 25,000 Hz. Ceramic p.u.—up to 3mV; Aux—up to 3mV.

Output: 250mV

Signal-to-noise ratio: better than 70dB.

Channel matching: within 1dB.

Tone controls: TREBLE +15 to —15dB at 10KHz; BASS +15 to —15dB at 100Hz.

Front panel: brushed aluminium with black knobs and controls.

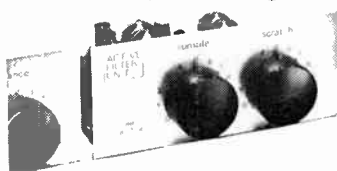
Size: 8½ x 1½ x 4 ins.

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and guaranteed.

£9.19.6 (£9.97½)

Active Filter Unit



For use between Stereo 60 unit and two Z.30s or Z.50s, and is easily mounted. It is unique in that the cut-off frequencies are continuously variable, and as attenuation in the rejected band is rapid (12dB/octave), there is less loss of the wanted signal than has previously been possible. Amplitude and phase distortion are negligible. The A.F.U. is suitable for use with any other amplifier system. Two stages of filtering are incorporated—rumble (high pass) and scratch (low pass). Supply voltage—15 to 35V. Current—3mA. H.F. cut-off (—3dB) variable from 28kHz to 5kHz. L.F. cut-off (—3dB) variable from 25Hz to 100Hz. Distortion at 1kHz (35V. supply) 0.02% at rated output.

Built, tested

and guaranteed

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Stereo FM Tuner



first in the world to use the phase lock loop principle

Before production of this tuner, the phase lock loop principle was used for receiving signals from space craft because of its vastly improved signal to noise ratio over other systems. Now, for the first time, the principle has been applied to an FM tuner with fantastically good results. Other original features include varicap diode tuning, printed circuit coils, an I.C. in the specially designed stereo decoder and squelch circuit for silent tuning between stations. Sensitivity is such that good reception becomes possible in difficult areas. Foreign stations can be tuned in suitable conditions and often a few inches of wire are enough for an aerial. In terms of a high fidelity this tuner has a lower level of distortion than any other tuner we know. Stereo broadcasts are received automatically as the tuning control is rotated, a panel indicator lighting up as the stereo signal is tuned in. This tuner can also be used to advantage with any other high fidelity system.

SPECIFICATIONS:

Number of transistors: 16 plus 20 in I.C.

Tuning range: 87.5 to 108 MHz

Capture ratio: 1.5dB

Sensitivity: 2µV for 30dB quieting; 7µV for full limiting.

Squelch level: 20µV.

A.F.C. range: ± 200 KHz

Signal to noise ratio: >65dB

Audio frequency response: 10Hz—15KHz (± 1 dB)

Total harmonic distortion: 0.15% for 30% modulation

Stereo decoder operating level: 2µV

Pilot tone suppression: 30dB

Cross talk: 40dB

I.F. frequency: 10.7 MHz

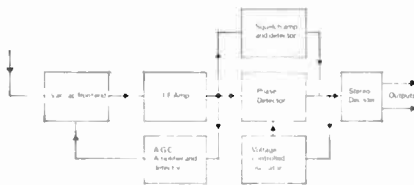
Output voltage: 2 x 150mV R.M.S.

Aerial impedance: 75 Ohms

Indicators: Mains on; Stereo on; tuning indicator

Operating voltage: 25-30 VDC

Size: 3.6 x 1.6 x 8.15 inches; 91.5 x 40 x 207 mm



Price: £25 built and tested. Post free

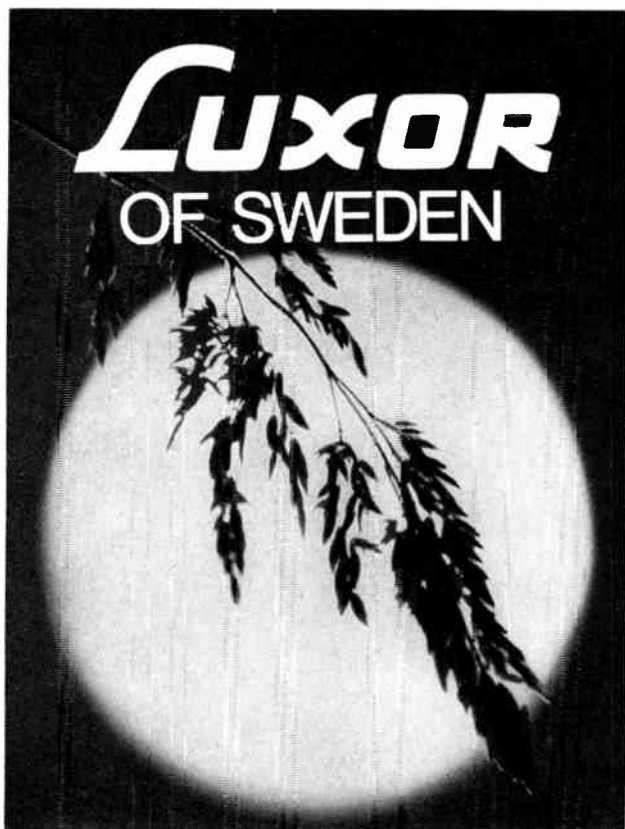
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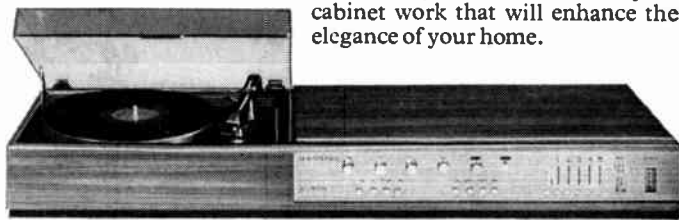


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4903 A combination unit, beautifully styled to incorporate the 4988 tuner/amplifier with record deck on its own elegant table (making the stereo unit a complete piece of furniture in itself). FM tuner with pre-selection and Automatic Frequency control and a two x 20W RMS stereo amplifier, frequency response 20-20,000 c/s. Inputs for tape recorder, microphone and output sockets for loudspeakers. Bass, treble and mid-range filters. Two speed turntable is complete with magnetic cartridge and hinged perspex cover. Finish available Teak or Rosewood. *Dimensions: 36" w x 10 1/2" d x 5 3/4" h.* Matching speakers available.

4902
This elegantly designed single unit combines the 4987 FM tuner/amplifier with a turntable, the turntable having its own hinged perspex cover. The sensitive FM tuner offers preselection for five stations as well as Automatic Frequency Control. The amplifier has a power output of 2 x 9W RMS and gives a frequency response of 35-18,000 c/s. Sockets for tape recorder and loudspeakers, bass treble and balance controls. Available in Teak or Rosewood.
Dimensions: 27" w x 11" d x 5 1/2" h.



You will find Luxor of Sweden sound systems are available through a select number of stockists. For further details contact: LUXITONE 84 Bolsover Street, London W.1. Tel: 01-636 2910



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John Borwick's "Gramophone" Review . . . "the warp had been considerably reduced and was now quite playable"—"On both counts, therefore, as a neat means of storage and a curative for warped records, the New Classic 'Compact' can be recommended."

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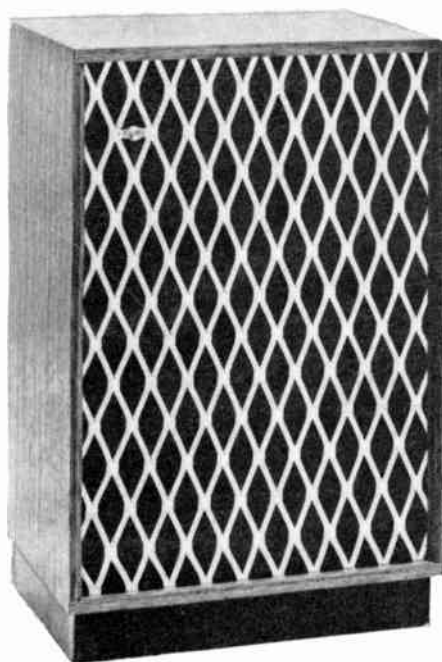
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'New Products' is in no sense a review, or a technical report, of the goods mentioned, and any performance figures and descriptions quoted are taken from manufacturers' literature and published in good faith. None of the products has been examined unless specifically stated, but brief descriptions obviously based upon samples do not preclude a full technical review at a later date.



DYNASONIC MONITOR

INCORPORATING a 'multiplicity' of $6\frac{1}{2}$ in. bass units, the Shackman *Dynasonic* monitor loudspeaker also employs two tweeters in what the makers describe as a modern and progressive design. Because of the multiple bass units, low frequency sounds are said to be reproduced with depth, breadth and a cleanliness of articulation not possible with heavy cone drivers. Measuring $26 \times 16 \times 11\frac{1}{4}$ in., the *Dynasonic* Monitor costs £62.

Manufacturer: Audio Services (Hi-Fi) Ltd., 82 East Barnet Road, New Barnet, Hertfordshire.

INEXPENSIVE AMPLIFIER

TRIPLETONE HAVE expanded their range of equipment with a solid-state version of the *Gemini*, the FET *Gemini* Mk II. Employing an FET IC to offer the correct load to good ceramic cartridges, the amplifier is also available with magnetic inputs if required, and 8 ohm headphones are provided for. Nominal output is 5 W per channel from a complementary low power germanium pair, and the well-known Tripletone control system adjustable on each channel is incorporated—and it's calibrated! Priced at £19-92½ in the chassis version, the case costs £3-57½ extra, and magnetic input preamplifier costs £5 extra, available separately if required.

Manufacturer: The Tripletone Manufacturing Co. Ltd., 138 Kingston Road, London S.W.19.

POCKET MULTIMETER

AN ATTRACTIVE pocket multimeter is available from ITT Components. Measuring but $5\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ in., the unit employs an elastically suspended movement and measures DC voltage from 0.1 to 1,500, DC current from $5 \mu\text{A}$ to 5A, AC voltage over 5 to 1,500, AC current from $150 \mu\text{A}$ to 1.5A, and resistances from 2 ohms to 6 megohm.



Also announced is a high sensitivity test meter from the same manufacturer. This also employs an elastic suspension and has a resistance of 40,000 ohms/V with 23 ranges. It costs £23.

Manufacturer: ITT Components Group Europe, Edinburgh Way, Harlow, Essex.



HIGH POWER LOUSPEAKERS

KNOWN AS the *Crescendo* range, Fane have introduced a series of high power moving-coil loudspeaker designs. Employing 2 in. magnets with a flux density of 20,000 Gauss, the drive



units are available in versions suitable for public address work as well as bass guitar. Prices are £28-75 for the 12 in. models and £35-90 for the 15 in. model.

Manufacturer: Fane Acoustics Ltd., Hick Lane, Batley, Yorkshire.

R-C OSCILLATORS

ADDITIONS TO the well-known range of *Levell* equipment have been announced. They comprise the TG200 series of R-C oscillators which cover the range 1 Hz–1 MHz with low distortion and precision attenuation on the front-panel. Prices of the TG200 series range from £42 to £55 depending on the format chosen.

Manufacturers: *Levell Electronics Ltd.*, Park Road, High Barnet, Hertfordshire.



BAKER LOUSPEAKERS

SUITABLE for high quality extension speakers and simple high fidelity applications, the *Baker Regent* is a 12 in. unit with a useful frequency



Baker DW1
speaker unit

range of 45 Hz–13 kHz. Employing a paper cone and surround, aluminium chassis and 12,000 Gauss magnet, the *Regent* is priced at £7.

Also available from the company is the latest version of the well-known *DWI* loudspeaker.

(continued overleaf)

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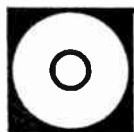
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The 12 in. version now incorporates a double ellipse metal cone to prevent break-up by the loudspeaker at high frequencies, and both 12 and 15 in. units incorporate the latest ceramic magnets. The DWI models cost £22 for the 12 in. and £28 for the 15 in. versions.

Manufacturer: Baker Reproducers Ltd., Ben-sham Manor Road Passage, Thornton Heath, Surrey.

SLIDE IN HEAD

BSR McDONALD players are all fitted with headshells designed to accept plastic slide-in cartridge carriers. These are now available separately for users who wish to employ a number of cartridges and cost 49p each.

Also available is a supplementary balance weight for the record decks for those who require to counterbalance cartridges which weigh more than 10 gms. The weights are free to owners of the decks, who should contact the manufacturers.

Manufacturer: BSR McDonald, Monarch Works, Cradley Heath, Warley, Worcestershire.

PRINTED BOARDS

SRBP PRINTED boards are now available for circuits described in the Mullard publication *Transistor Audio and Radio Circuits*, reviewed in HFN in January 1970. Component identification is printed on the boards, which are pretinned for easy soldering, and prices include postage and packing. The circuits catered for are the 10 and 25 W amplifiers (65p and 70p) and the preamplifier (73p) as well as the general-purpose 10 W power and preamplifier circuits.

Manufacturer: Aying Industries Group, Kings Road, Horsham, Sussex.

CROWN POWER AMPLIFIER

EMPLOYING INTEGRATED circuitry, the Crown D150 power amplifier is claimed to produce 90 W into 8 ohm loads with both channels driven, with intermodulation distortion less than 0.1%. Available in various formats, the unit costs £200.

Manufacturer: Crown Radio Co. Ltd., 137 Goswell Road, London, E.C.1.

CASSETTE CLEANER

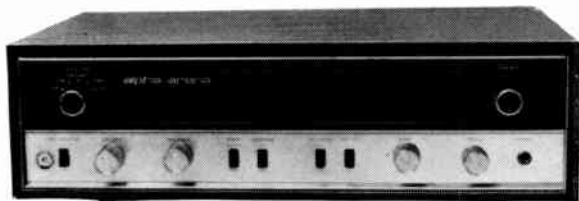
USERS OF cassette machines who have broken their finger nails and scraped their finger tips endeavouring to clean the heads—which are easily 'gummed up' in use—will welcome the Bib cassette tape-head cleaning tape. This is a compact cassette with cleaning tape threaded in it and is simply played through the machine. Price is 53p and the unit is reusable.

Manufacturer: Bib Division, Multicore Solders Ltd., Hemel Hempstead, Hertfordshire.

MANUFACTURER'S SPECIFICATION.

Modestly priced AM/FM tuner-amplifier. **AMPLIFIER:** Power output: 30 W total music power into 8 ohms; 11 W RMS each channel (8 ohms). **Frequency range:** 20 Hz-35 kHz. **Power bandwidth:** 20 Hz-30 kHz (-3 dB) at 0.5% distortion. **Harmonic distortion:** 0.5% at 10 W. **Sensitivity:** magnetic 3 mV; crystal: 250 mV; auxiliary: 200 mV; tape: 200 mV. **Channel separation:** over 40 dB magnetic and over 50 dB auxiliary. **Tone controls:** bass: ± 10 dB at 50 Hz; treble: ± 12 dB at 10 kHz; loudness: +12 dB at 50 Hz and +4 dB at 10 kHz. **Hi-filter:** -18 dB at 10 kHz. **Signal-to-noise ratio:** 60 dB magnetic; 70 dB auxiliary. **FM SECTION:** Frequency coverage: 88 to 108 MHz. **Sensitivity:** 2 μ V (30 dB S/N). **Image ratio:** over 50 dB. **Selectivity:** ± 120 kHz (-3 dB) **S/N ratio:** over 50 dB **MPX separation:** over 30 dB at 1 kHz. **Aerial:** 300 ohms balanced input. **AM SECTION:** Frequency coverage: 535 to 1605 kHz. **Sensitivity:** 200 μ V (20 dB S/N). **Image ratio:** over 30 dB. **Selectivity:** ± 10 kHz (-20 dB). **S/N ratio:** over 40 dB. **Aerial:** ferrite rod. **Price:** £79 walnut; £82 teak. **Distributor:** Highgate Acoustics, 184-188 Great Portland Street, London W.1.

ALTHOUGH in the lower price range for an AM/FM tuner-amplifier, this recently introduced Alpha-Arena model yields a comfortable 10 W per channel into 8 ohms from radio and from external pickup, tape and auxiliary sources. The FM section also incorporates a stereo decoder of the auto-switching kind, while signal for the AM section is derived from a rear-mounted ferrite rod aerial which swivels out for maximum response. FM aerial input is based on 300 ohms balanced



ALPHA-ARENA
R500

feeder, convertible to 75 ohms unbalanced (coaxial) by connecting the braid to an 'earthy' point and the inner conductor to one of the 300-ohm sockets. This is not particularly easy as the sockets are DIN, but in practice there is only marginal loss in sensitivity by connecting coaxial cable straight across the 300-ohm socket. Alternatively, of course, an external balun device could be used. This is the simplest way of ensuring the least mismatch.

Fascia is pleasant to look at, in brushed aluminium (or similar finish) and black with matching knobs. The tuning scale is usefully large and easy to read—a tinted 'filter' in front reveals the scale only when lit from the rear. A maximum-reading tuning indicator—active on both FM and AM—and a stereo indicator light are included in the scale area.

DIN signal sockets at the rear are selected by a front panel switch giving auxiliary, pickup (there are two sockets relating to this, one passing through the equalised preamplifier for magnetic and the other attenuated and non-equalised for crystal), FM stereo, FM mono and AM. Tape replay circuitry is activated by a separate tape monitor switch. In the mono FM position the decoder is muted, which allows weak stereo to be received less noisily in mono.

In addition to the volume, balance, treble and bass controls—and, of course, the tuning

equipment reviews

ALPHA-ARENA R500
TUNER-AMPLIFIER
B & W MODEL 70 LOUDSPEAKER

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—four slide-switches provide mono/stereo mode, loudness on/off, hi filter on/off (a low-pass filter) and FM AFC on/off. The front panel is completed by a stereo headphone jack socket which automatically mutes the speakers when the jack plug is inserted. Each headphone circuit is fed from the main output via a resistor of 390 ohms, thus accepting a number of available headphone sets but not (as usual!) doing the job properly.

The rear accommodates all the sockets, and extra to those already mentioned are a DIN for external AM aerial (hardly worthwhile with the ferrite rod aerial), a pair of DINs for the speakers and an American type power outlet (unswitched) across the mains supply. The four output transistors (*n-p-n*) use the rear metal panel as a heat-sink and are covered by a perforated grille. A reasonable 'earth' terminal is provided desirably close to the signal sockets for connecting an 'earth' to the gram

valve equipment, of course, owing to heater current sensitivity, but transistors are without this problem and appear to run happily, especially when the internal supply is regulated. One possible danger when there is no regulator in the design is an abnormally high swing of driver transistor collector voltage when the amplifier is operated without a load at high drive. I referred to this in my review of the Pioneer SX990 last month.

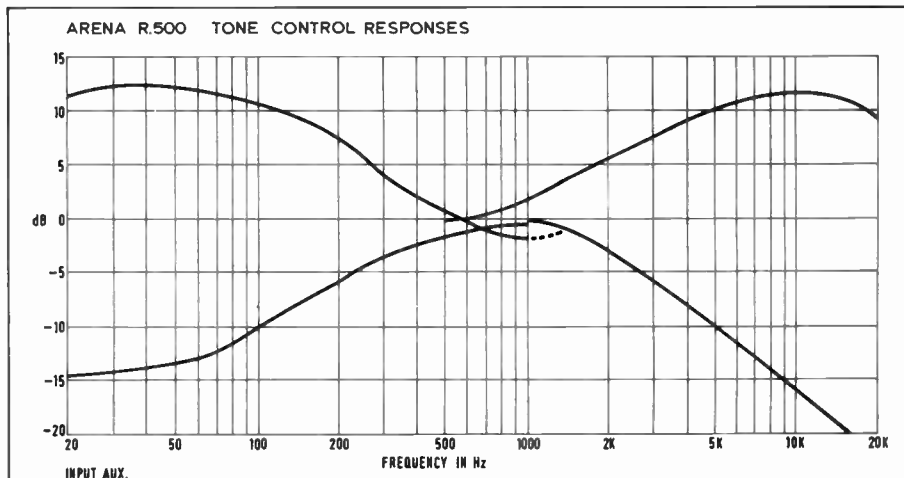
Circuitry is fairly conventional. Each power amplifier is quasi-complementary, with a *p-n-p/n-p-n* pair driving into an *n-p-n* pair. Tone controls are passive and the magnetic pickup preamplifier uses a pair of *n-p-n* devices with the normal equalising feedback loop. The overload margin is about 38 dB relative to 3 mV input. Each main audio channel employs ten transistors, but there is also a circuit to guard the driver and output devices against overload. This uses three transistors and samples the current in the power amplifiers. It forms an electronic switch between the supply source and the power amplifiers, which automatically opens in the event of the PA current rising abnormally.

The FM front-end employs a field-effect transistor RF amplifier and bipolars for mixer and local oscillator. Two tuned circuits precede the mixer which, with the local oscillator, are tuned over Band II by a three-gang capacitor. AFC is applied to the local oscillator by a varactor picking up its control bias from the FM detector, via an on/off switch. AGC is applied to the gate of the FET from a potential derived from the first FM IF stage.

The AM front-end comprises a simple self-oscillating mixer loaded at the base with the ferrite rod aerial. FM IF channel has four bipolar transformer-coupled stages, two of which are used on AM, with the final one feeding a simple diode detector that also yields AM AGC bias for one of the IF transistors. This circuit also controls the tuning meter.

unit, etc. The mains fuse is also accessible at the back, as is the mains voltage selector, providing adjustment over 100, 117, 220 and 240 volts AC.

Mains adjustment of this variety appears to be fading from contemporary equipment (British as well as imported), there usually being a nominal 220 V input for the European mains (including the 240 V British) and 110 V for the American. This was not possible with



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Stereo decoding employs four bipolar transistors and a number of diodes, two used in the pilot-tone doubling circuit and four in the synchronous switching detectors. Input is applied almost direct from the FM detector without elaborate low-pass filtering.

The test sample behaved perfectly under typical domestic conditions for a period of several weeks. FM sensitivity was such that Radio Bristol could be received consistently and without fading or interference on a simple, single dipole indoor aerial at a distance of about 75 miles. Radio Oxford (about 150 miles distant) also came in under good reception conditions using the same aerial, but was prone to fading. All the BBC 'locals' were well received. In fact, bearing in mind the relative simplicity of the FM section, I was very surprised to find the sensitivity so high, as shown by the curves. Full limiting occurred at about 20 μ V and maximum S/N ratio a little below this on mono. Stereo switched on at about 5 μ V, but then it was noisy. It needed at least twice this signal level to give 'entertainment' value.

The FM selectivity was estimated by use of wobulator and oscilloscope, using marker pips from another generator. As would be expected, the skirts of the response spread out much more than in designs featuring crystal or ceramic filters instead of IF transformers exclusively; but I had no trouble (in my West Country area) with interference from weak and powerful stations separated by two channels (e.g. 400 kHz). The FM front-end appeared to be reasonably free from intermodulation troubles; but for optimum results the design would need to include an FET mixer and an extra tuned circuit in front (barely possible for the price!). However, in areas where powerful local signal fields encourage intermodulation and hence a particular brand of FM 'birdies', the S/N performance is sufficiently advanced to permit the use of input attenuation without adding noise.

Lack of efficient low-pass filtering at the decoder input might, in certain areas, encourage 'birdies' on stereo, but at my location this trouble was not experienced.

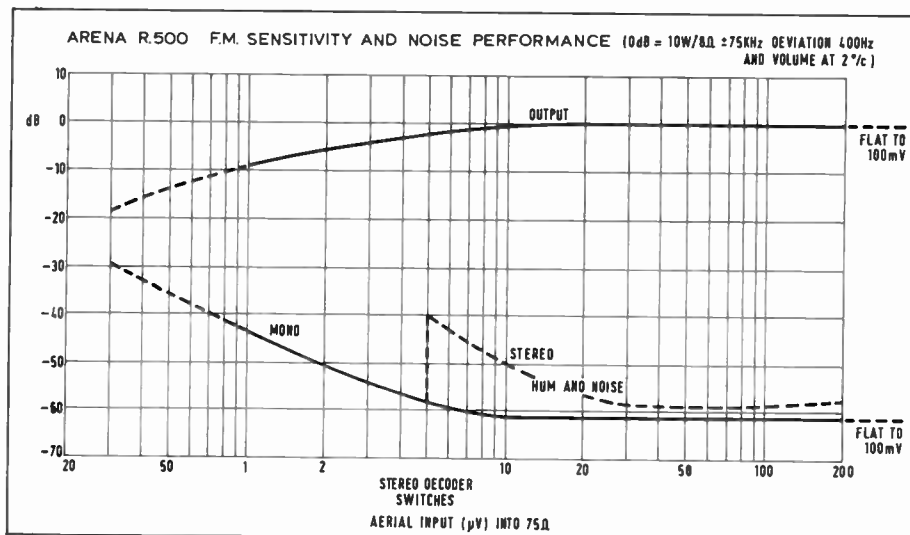
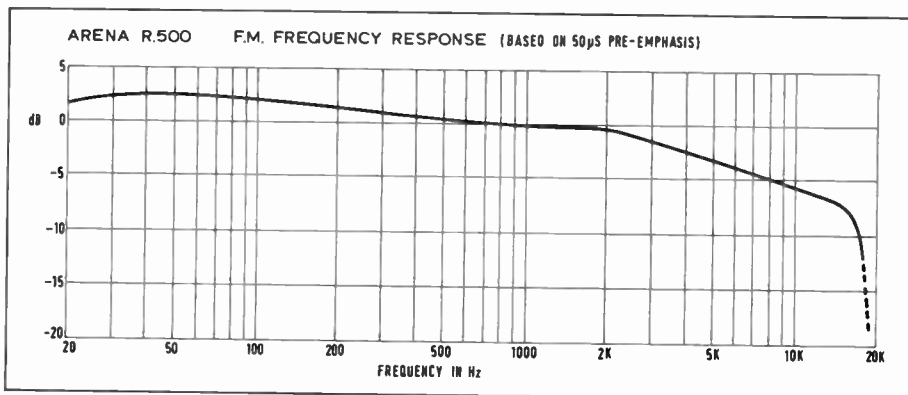
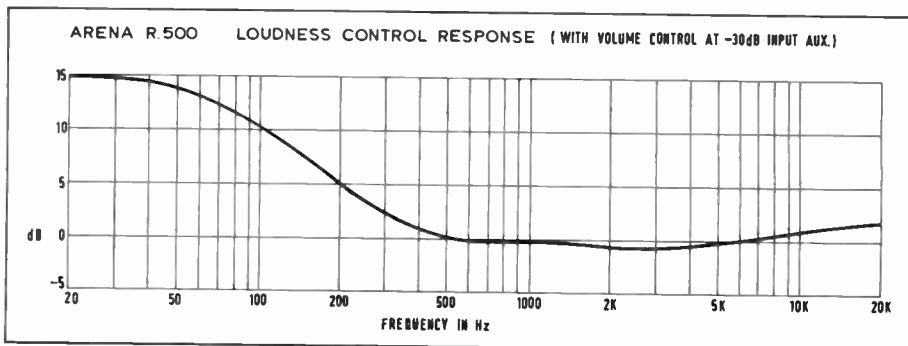
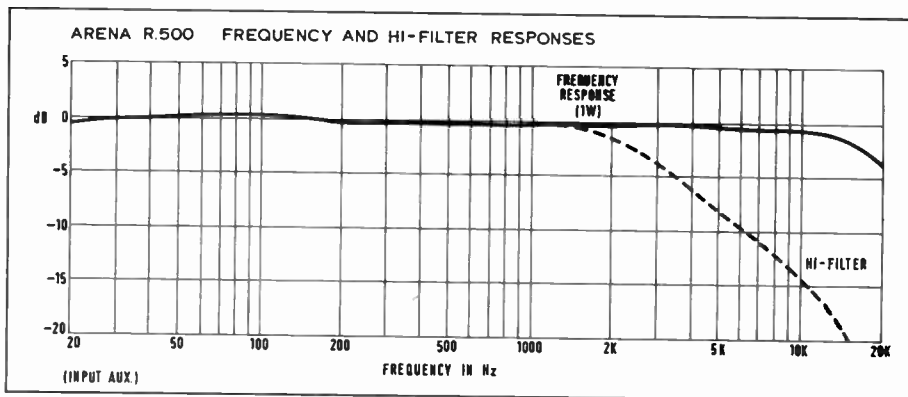
The AM department is mediocre. With an external aerial the front-end tends to overload and introduce whistles. However, fair reception is possible on the ferrite rod aerial during daylight hours. This section is unimportant so far as I am concerned.

Power output was virtually up to the specification. As already mentioned elsewhere, steady-state power is closely geared not only to the value of the output load but also to the rail voltage, and in the Class-B modes a close approximation is:

$$\text{RMS power} = (V-v)^2/8R_L$$

where V is the rail voltage, v the voltage dropped by the transistors, etc, and R_L the load resistance in ohms. Almost all amplifiers will exhibit above-specification power when the mains voltage is above the input or tapping voltage; but on the R-500 I carefully adjusted the mains voltage to correspond to the 240 V tapping.

I would have liked to have measured a higher damping factor (not given in the specification), but a value of eleven at 20 Hz is not too bad, which is where we want the damping, anyway. It means that at that frequency the output source impedance is about 0.7 ohms.



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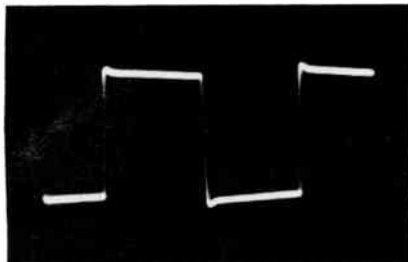
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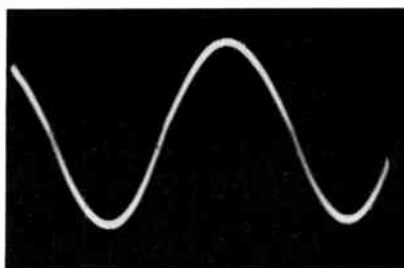
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SQUARE-WAVE, 1 kHz 8 Ω

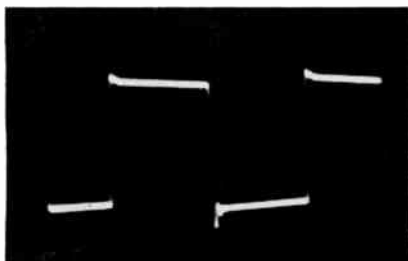


CROSSOVER KINK, 0.1 W 20 kHz

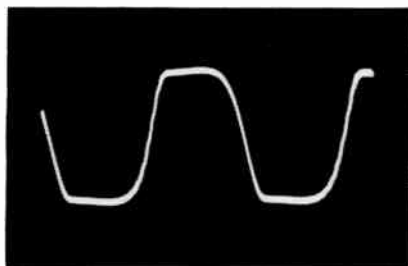
Not all the input sensitivities came up to the specification, but none was far out. Hum and noise below maximum power was good. I could not quite make 0.1% THD (!); but

the measured 0.125% is not at all bad, bearing in mind price and features on offer. However, at high frequencies very mild cross-over distortion was observed on the waveform (see accompanying oscillogram), and the THD residual was not all that inspiring. Square-waves were handled admirably into resistive loads, and even with heavy capacitive reactance in parallel (8 ohms in parallel with 2 μF) the rings were well controlled.

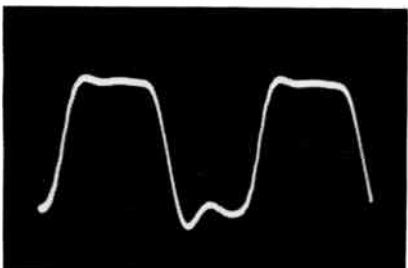
Overall frequency response and RIAA correction were very satisfactory, but I found the FM frequency response rolling off too quickly at the treble end. This can be countered fairly accurately by the treble control, but I think the designers would do well to look into this. Also, hi-filter roll-off could with advantage be faster; but it does help to rid AM of whistles.



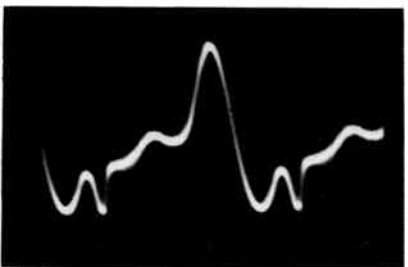
SQUARE-WAVE, 1 kHz 8 Ω/2 μF



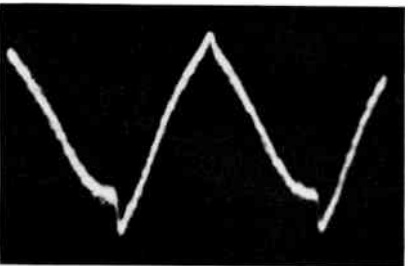
SQUARE-WAVE, 10 kHz 8 Ω



SQUARE-WAVE, 10 kHz 8 Ω/2 μF



WAVEFORM OF DISTORTION, 10 W 10 kHz



WAVEFORM OF DISTORTION, 0.1 W 10 kHz

PERFORMANCE					COMMENT	
Mains input: at 240 V (mains tapping 240 V)						
Power capacity to clipping (auxiliary input)						
Load (ohms)	20 Hz	1 kHz	20 kHz	30 kHz	1kHz power almost equal to specification. This table is arranged to show how power is handled over spectrum 20 Hz to 30 kHz. Maximum power delivered into 4 ohms; but note power reduction with both channels driven.	
8	5.3 W	10.5 W	10 W	8.2 W		
16	5 W	7 W	7 W	6.3 W		
4	4 W	12.2 W	10.5 W	9 W		
These are all steady-state (RMS) powers with one channel only driven. With both channels driven together, power per channel 1½ dB (about 15%) down.					Not too good at mid-spectrum, but holds up reasonably at 20 Hz.	
Damping factor (BS) 1 kHz-15; 20 Hz-11. Both relative to 8 ohms and 2½ W power.						
Input Sensitivities					Satisfactory and approximately to specification.	
Auxiliary		220 mV
Tape .. .. .	.. .. .	.. .. .	.. .. .	.. .. .	170 mV
Pickup (mag.) .. .. .	.. .. .	.. .. .	.. .. .	.. .. .	3 mV
Pickup (xtal) .. .. .	.. .. .	.. .. .	.. .. .	.. .. .	270 mV
All relate to 1 kHz, volume control maximum, stereo mode for 10 W output into 8 ohms.					Very good values at Aux. and Tape, but could be a little better on pickup. Approximately as specified.	
Hum and noise referred to 10 W into 8 ohms						
Auxiliary		-71 dB
Tape		-78 dB
Pickup (mag.) .. .. .	.. .. .	.. .. .	.. .. .	.. .. .	-60 dB
Pickup (xtal) .. .. .	.. .. .	.. .. .	.. .. .	.. .. .	-60 dB
All taken with volume control at maximum and tested input shorted, stereo model.					Mostly better than specified, but not good based on true hi-fi standards. Note worsening at HF end of spectrum: this is often due to output transistor switching delay and hole storage effects.	
Total harmonic distortion						
RMS power	40 Hz	1 kHz	10 kHz			
10 W	—	0.16%	0.795%			
1 W	0.125%	0.125%	0.45%			
0.1 W	0.315%	0.315%	0.795%			
Including preamplifier THD (input auxiliary) and taken into 8 ohms, stereo mode, one channel only driven. Readings at 40 Hz include residual hum.					Satisfactory.	
Output for tape recording 200 mV (stereo) at sensitivity input voltage.						
Magnetic pickup overload 82 mV (about 28.5 dB margin). Taken at 1 kHz, stereo mode.					Satisfactory for cartridges up to about 1.5 mV per cm/s.	
FM Section						
Limiting complete at 25 μV/75 ohms						
45 dB S/N ratio: approximately 1.5 μV/75 ohms.						
Stereo decoder switches at approximately 5 μV/75 ohms.						
IF selectivity: 240 kHz, -6 dB points.						
Image rejection: 56 dB, Stereo separation at 1 kHz: 30 dB.						
(For further information and AM performance see text.)					Reasonable. Good for nature of equipment. Good, though early switching shows stereo noise. Satisfactory. No greater bandwidth required for stereo anyway. Satisfactory. Satisfactory.	

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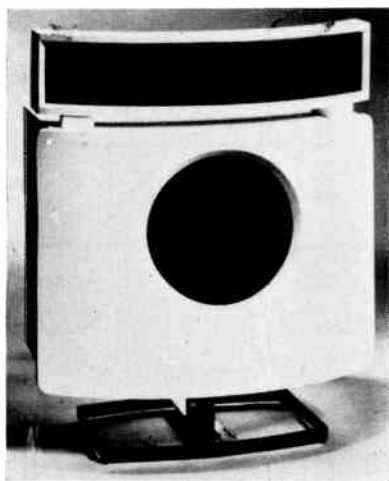
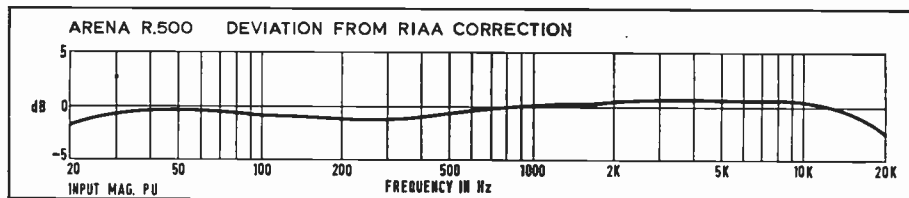
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Tone control characteristics are fair, but the jumble in the middle is caused by the response at 1 kHz being shifted from zero slightly as the controls are rotated either side of centre.

That's about it. For its price a very useful piece of equipment. One would need to seek far and wide to find a tuner and amplifier partnership with similar specifications for the same price.

Gordon King



B & W MODEL 70 LOUDSPEAKER

MANUFACTURER'S SPECIFICATION

High quality combined electrostatic and moving-coil speaker system. **Frequency response:** 40 Hz-20 kHz ± 5 dB. **Axial response:** 90° horizontal ± 2 dB of axial response. **Power handling capacity:** 25 W. **Impedance:** Nominally 8 ohms. **Drive units:** One 12 in. moving-coil bass unit and one electrostatic mid and treble unit. **Crossover frequency:** 400 Hz. **Finish:** 'Standard'—teak and walnut; 'Continental'—white and teak. **Dimensions:** 'Standard'—32 x 32 x 15 in.; 'Continental'—32½ x 27 x 15½ in. **Price:** £139.50. **Manufacturer:** B & W Electronics Ltd., Littlehampton Road, Worthing.



THE writer has already been impressed by the designs of this company, a relative newcomer to the scene, so it was with 'great expectations' one could say that this review was approached. Though at first sight there is nothing basically new, it is in fact B & W's most ambitious project to date.

Electrostatic tweeters have been used with moving-coil woofers many times before, even long curved ones as wide as this one (EMI 1949!). No, the Model 70 is ambitious because it has to be better than any of their previous designs—better than the DM1 and DM3 as it is more costly, and better than the P2 as it is more recent. The electrostatic unit they have had to develop themselves, and while the construction looks very simple, it is a very deceptive device. Anyone can knock up something on the kitchen table in a couple of hours that works beautifully—for that night anyway. When it comes to making two, three, four, etc., all the same and staying the same for several years, it is a very difficult business. That is why there are so few electrostatic designs in the whole world, and only one really commercial full-range, even after 15 years since its appearance. Peter Walker (Quad) has often stated that the ESL is the *only* design whose performance can be *exactly* calculated. Remembering this, I wasn't surprised to learn the other day that Geoffrey Horn has Quad ESL No. 1 and No. 25,000 running perfectly as a stereo pair! Well, this is one reason why the electrostatic principle is so worth while, and when limited to the upper part of the frequency range, problems are not quite so bad.

The tweeter is 27 in. long, 6 in. high, curved into an 80° arc and with actual radiating area 24 x 3 in. This makes it large enough to be used down to 400 Hz, so the frequency range that provides stereo information comes from the same place with practically the same distribution pattern. The 80° arc provides the necessary angle of distribution to cover all normal requirements, domestic or otherwise.

The tweeter is mounted 'in the clear' above the cabinet for three reasons. Firstly, it puts the source of sound at ear level (when seated) and the 3 in. height of the electrostatic element gives enough vertical spread to cover the range of all likely ear heights. Secondly, being right outside the main cabinet it does not collect any coloration due to its immediate surroundings. Being a dipole radiator, at least up to several thousand Hertz, it produces very little sound that might be reflected by the top surface of the bass cabinet. The third reason is to allow free radiation from the rear surface. This comes to a focus somewhere around a metre behind the cabinet and then of course opens out again to spread like the front radiation, to be reflected by the boundary walls. This rear radiation improves the general diffusion of sound and makes for a less tiring effect (even with cheap speakers). This is probably because the more even distribution of sound approaches more nearly the conditions in the concert hall, where one can move one's head a foot in any direction without any noticeable change in sound. One does not usually move as much as that—the neighbouring members of the audience don't like it—but one does move a little when listening and the brain does not like having to get used to a new ratio of intensities between the two ears everytime the head moves or rotates slightly. For those who wish for, or need, less rear radiation (perhaps because of imprecise stereo in a reverberant listening room), absorbing pads can be fitted.

The tweeter element plugs into the top of the main cabinet and is secured by two wood screws. The high tension polarising supply and the matching transformer, etc., are of course inside the main cabinet, and do not betray their presence with any detectable hum, showing careful design and construction of the humbler parts.

The bass end of the system is somewhat more orthodox, but is built to unusually high standards. The Model 70 exists in two forms, one with a simple rectangular cabinet, while the 70 C (C for Continental!) has a curved

front to match the electrostatic unit, which is common to the two designs. The first uses a wooden 'under-carriage' but the 70 C has a metal stand to match its shape and style. Both cabinets are extremely rigid, being made of 1 in. dense veneered chipboard, and internally braced as well. The 70 C, submitted for test, is probably even more rigid, by virtue of its shape. A special long-throw 12 in. unit has been developed having very low distortion and break-up. The cone is of laminated construction and is damped by cemented-on rubber blocks something like the elliptical woofer unit of their DMI speaker. Acoustic damping is done by filling the whole internal volume with long fibre wool, which is well known for its extraordinary damping ability.

First impressions were completely favourable, but as is usual with a system having pretensions to very high standards, a rather more searching investigation was made to see, quite frankly, if it has fallen down on any aspect of its performance.

White-noise tests, and even better pink-noise tests with a new noise generator of very accurate performance, showed less coloration than anything else available for comparison—and that included some three or four speakers of unusually good performance. By way of explanation, white-noise is the random sound produced by many electrical devices like valves, transistors, diodes, both thermionic and solid-state. It has equal energy per unit bandwidth and sounds more like a hiss at low levels, as the ear is more sensitive at high frequencies. Pink noise is produced by filtering (electrical) white-noise, so that there is equal energy per octave. It corresponds rather more closely to real-life noise, say a large auditorium full of people talking quietly before the performance. It has come on the scene partly due to the availability of an accurate source (and not too expensive) and partly as the I.E.C. (International Electro-technical Commission) are likely to standardise pink-noise as one recognised signal source for loudspeaker measurements. Pink-noise sounds

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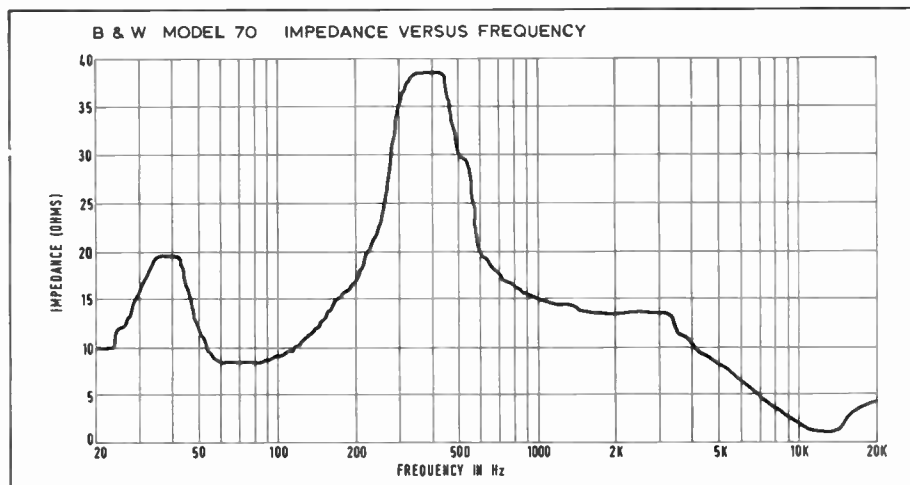
Phone: 25194

more of a 'shush' than a hiss and will also show up low frequency trouble quite clearly.

The pink-noise tests were made *after* some preliminary listening tests to get the general impression and find the speakers' siting requirements in the listening room. Some quite noticeable coloration at mid frequencies was noted at first and it seemed to vary markedly with speaker position. It was soon realised that the tweeter focus point about one metre behind the speaker coincided with wall surfaces. Pulling the speaker farther away reduced this, but really a longer room was needed for this solution. The rear absorber pads were then fitted and the speakers moved back again *nearer* the wall. This proved to be the complete solution for this particular room. Used later in a large University lecture theatre, the rear pads could be removed or left in, with a slight preference for no pads in use. The reviewer has had experience of this problem before when the 4×Jansen electrostatic tweeter assembly made by PWB Audio was used close into the room corners.

The bass performance was the best ever experienced to date—really 'silent' 30 Hz tone at quite high levels. No buzzes, chuffs, or harmonics were audible anywhere in the room. The high frequency end sailed away smoothly well beyond audibility with no fizz or 'sandpaper' noises, and distribution was excellent as expected, giving very comfortable listening. The stereo effect was not startlingly pin-point clear, just natural. It also passed the 'back to the speakers' test—i.e., it did sound like a choir or an orchestra *behind* one.

Another good point gradually became clear as listening proceeded. This was the fact that it was rarely possible, when listening to stereo signals, to locate the speakers as sources of sound even when looking directly at one or the other. This can only be due to the smoothness and equality of the two speakers and also the integration of woofer and tweeters as a single



entity. Crossing over at 400 Hz certainly pays dividends, especially when the upper register only needs a single unit which, moreover, has a polar distribution that hardly alters with frequency.

Only one point temporarily raised doubts in the reviewer's mind, that was the rather wide impedance excursions with frequency. Over most of the range it measures around 10 ohms. The rise at 40 Hz is the speaker-in-cabinet resonance, noticeable because a really large magnet system is fitted, not because it lacks damping. It doesn't, and if that peak can't be seen it usually indicates a wooden magnet (!) or too much damping. Anyway, that rise in impedance and the other at 400 Hz due to the crossover circuitry will not worry any amplifier that is fit to listen to. The fall above 5 kHz, due to the capacitive nature of the tweeter asserting itself and falling to 1½ ohms at about 14 kHz, did lead to slight misgivings. In fact it was suggested that there might be a difference in sound when run from a modern transistor

amplifier with an output impedance of a small fraction of an ohm, when compared with, say, the valved Quad with its modest overall feedback and output impedance well over the ohm. This was checked by comparing the 70 C speakers on Quad II set to 8 ohm output, the Quad 303, Rogers Ravensbourne and Goodmans Maxamp. No difference was observable with changeovers that took only one second to effect (two pairs of plugs to unplug and reinsert). No untoward effects could be found, and anyway sound energies generally fall rapidly above 4 kHz, so amplifier overload is unlikely to occur unless abnormal effects are attempted.

The more one heard the more one came to the conclusion that Messrs. B & W really have achieved what they set out to do. It has been a struggle to get it right, but well worth all the effort, and the reviewer will be really sorry to have to remove the 70 Cs to make room for the next group of contestants. **Ralph West**

positive feedback

PICK-UP TRACKING TESTS AND RINGING ON TEST RECORDS

Letters on technical matters, preferably concise, are welcomed. If not for publication, they should be clearly marked.

Determining the mistracking of gramophone pickups; the validity of extrapolating results. Ringing on test records.

I WAS VERY pleased to see the trackability and transient-response tests in Gordon King's review of the Micro-Seiki moving-coil pickups (November, p. 1731). It is a step in the right direction, but may I sound two notes of caution?

The trackability figures were obtained by taking the measurements at low velocities and corresponding low tracking weights. May I suggest that this has two drawbacks. In the first place it is difficult enough to obtain the stylus/modulation 'overload' point, because of slight warping and off-centre records, at tracking weights down to 1 gm. It is even more

difficult to determine the mistracking 'overload' at higher frequencies, because the pickup acts as a low-pass filter and sharp breaks in the waveform are not visible. May I ask what confidence is placed in measurements at 5 kHz and 200 mgm, and 10 kHz and 350 mgm?

Secondly, the extrapolation assumes that the transducers are linear devices with amplitude. Snell and Rangabe (*Hi-Fi News*, February 1970) have shown that a non-linear relationship exists for stylus drag versus amplitude at 300 Hz (STR 111) for a number of pickups. They suggest that this is because of the mechanical resistance of the stylus suspension; if this is hysteresis loss, it is not difficult to understand why this may be a function of displacement.

My other caution concerns the photographs of tone-burst tests. Am I correct in assuming

these were taken from HFS69? If so, they mean very little. I have used this record to examine a number of pickup cartridges but they all show a 'resonance' (ringing) at 16.7 kHz at 33½ r.p.m. It is at 22.5 kHz if the record is played at 45 r.p.m.! Need I say more? In defence of the pickup tested, I should add that the time-constant at the end of each pulse is also on the record. This can be seen under the microscope.

D. G. TURVILLE,
25 Parsonage Gardens, Enfield

The cautions sounded by Mr. Turville are valid and, indeed, would normally be heeded by experienced testers. Force at mistracking threshold can easily be defined at low and medium frequencies at velocities from about -5 to 0 dB (ref. 3.54 cm/S). HF mistracking is more difficult to detect for the reasons given by Mr. Turville, but good equipment and judicious filtering mitigate many of the problems involved. My oscillograms show mistracking at a low-frequency (a), at a medium-frequency (b) and a high-frequency (c). The last carries a bit of 'flutter', but the improvement when the tracking force is increased is shown at (d); (a) is at -5 dB and others at 0 dB.

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Non-linear changes in the resistive and/or reactive components of tip impedance can occur with changes in velocity and/or tracking force, but I have found these to be of insufficient magnitude to invalidate the tracking performance figures within the functional accuracy of the measuring scheme as a whole. It would appear that other workers in the field have also found this ^{1, 2, 3}.

I do not regard the Rangabe and Snell results cited by Mr. Turville, based on stylus drag at fixed 300 Hz, and increasing velocity in lateral mode, at an unspecified and apparently fixed tracking-force, as a very powerful factor in this discussion. Much more information would be required, based on different frequencies, velocities and tracking weights, to reveal how the elements of the tip impedance vary.

While appreciating the possibility of non-linearity, especially at the low-frequency end of the spectrum, in my judgement the method I adopt for tracking appraisal is the most accurate currently available. Tracking tests at high velocity and high frequencies are limited by finite tip radii (curvature overload effects).

Although the producers of the HFS69 record do not claim perfection (even the best cutting heads sometimes ring!), I have found this disc ideal for speedy comparative tests, for which it is essentially designed. My photographs show at (e) and (f) tone-bursts from two different cartridges played on HFS69. The ringing here is very small, while that at (g), from a cartridge that really does ring, is much greater in amplitude. These tests, and many others like them, lead me to suppose that residual groove ringing is minimal and insufficient to obscure ringing in the pickup itself.

G. J. K.

1. 'Measuring Gramophone Pickup Performance', J. Walton, *Wireless World*, December 1967.
2. 'Pickups Today', Stanley Kelly, *Hi-Fi Year Book*, 1966/7.
3. *Pickups: The Key to Hi-Fi*, J. Walton, p. 57.



EXAMINED BY 'CROSSOVER'

For details of how to write to 'Crossover' please refer to page 245.

HORNS vs. INFINITE Baffles

Dear Sir, I propose to build my loudspeaker systems into the alcoves of my lounge (which measures 11 ft. 6 in. by 10 ft. 8 in. plus a bay window 8 ft. 6 in. and two 3 ft. alcoves on the shorter wall). Will it be worth the trouble of constructing a horn unit into each alcove or is it preferable just to brick up the front of the alcoves with breeze blocks or something similar, and use them as an infinite baffle? Do I need to line the enclosures?

I am at present using 3 cu. ft infinite baffle enclosures, which I made myself. Each one contains a Fane 12 in. bass unit, Model 122/12, crossing over at 1 kHz. into a

Goodmans Axiette 8, and then into a Goodmans Trebax 5K/20XL.

Since purchasing a Cambridge P.40 amplifier and a Shure M44-7 pickup, and trying various loudspeakers, I now appreciate how lacking many speakers are in the mid-range and treble, although the bass end sounds all right if rather coloured (not enough wadding?), and I think the bass unit is far more efficient for a given input compared with the other units. Can you comment?

Yours faithfully, J. A. B., Sheffield, Yorkshire.

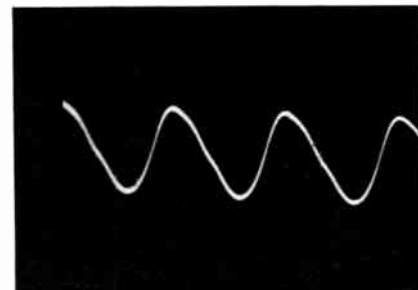
Concerning your points on enclosures, horns, etc., I would say that it is generally more favourable to build a horn, provided a volume greater than 10 cu. ft. or so is available. This will then provide a power gain at low frequencies in comparison with the I.B., which merely radiates in accordance with the volume of air displaced (at low frequencies).

In your case, it would seem your alcoves could be fitted with horns as outlined by Colin Walker in the September 1969 issue of *Hi-Fi News*, but with some alteration in proportions and making use of your Fane 12 in. bass units.

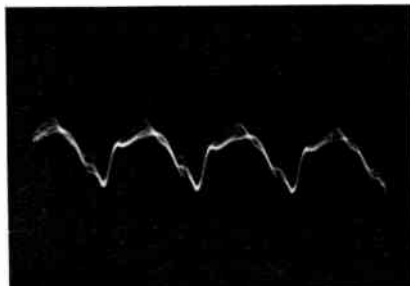
Your proposals for mid and treble units sound appropriate, the only difficulty being in matching efficiency with the horn. This is easy if bass amplifiers and electronic crossovers are used (see the article in the March 1968 *HFN*;



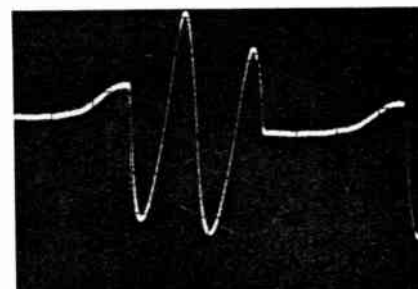
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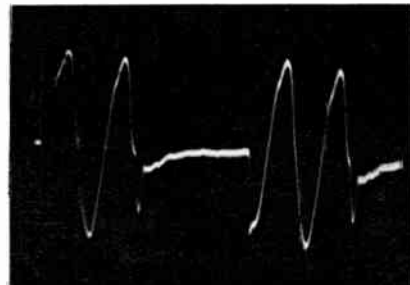
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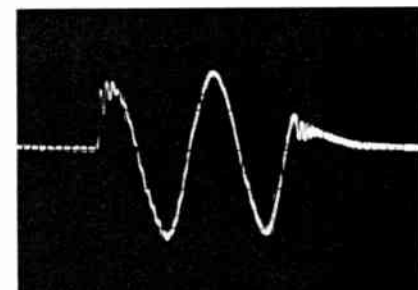
c



d



e



f

g

"Crossovers"), but normally the signal to the bass horns will require attenuation. However, there is nothing impossible about all this and some excellent systems have been constructed this way.

LP DISCS AT 45 R.P.M.?

Dear Sir, Tape speeds of 15 and 7½ i.p.s. produce much better results than the lower ones. Does this also hold good for gramophone records? Is it true that a 45 r.p.m. record would be better in sound quality than an equivalent disc recorded at 33½ r.p.m. If so, why aren't classical LPs and other items that demand the highest possible fidelity released at the 45 speed? It is certainly no problem to make a 12 in. 45 r.p.m. record! I quote from

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an advertisement that has appeared regularly in the American magazine *Stereo Review* for a demonstration record, produced by that paper: 'A 12 in. stereo recording available in your choice of 33 $\frac{1}{3}$ to 45 r.p.m. The 33 $\frac{1}{3}$ r.p.m. is of the highest attainable quality at that speed, and the higher speed of the 45 enables an even higher quality disc. . . .'

Yours faithfully, Z. A. K., Karachi [Pakistan].

It is theoretically correct that a 12 in. 45 r.p.m. disc would give better quality than a similar one at 33 $\frac{1}{3}$ r.p.m., but the difference is marginal, as we know from checking the two versions of the dem record you mention. To make a really worthwhile improvement it would be necessary to go to 78 r.p.m., which would involve the old tiresome breaks in the music and frequent turning over, or else a further reduction in groove dimensions to about half of that at present used. Experiments on these lines have been carried out, and I wouldn't put the proposition completely out of court as a future possibility but, if it comes, it will be a long time ahead, and other media or techniques may have supervened. One can hardly comment that quality has been sacrificed for playing duration: the quality available from the best 33 $\frac{1}{3}$ r.p.m. discs today is very high, better than most reproducing equipment will realise, and the present playing-time of an LP side is highly convenient, as well as economic. We must not forget that the prime aim of gramophone records is to give musical pleasure. The quality currently available at 33 $\frac{1}{3}$ r.p.m. certainly does that, and ensures that it is not interrupted by several awkward breaks and also, even in these days of inflated prices, it remains a medium within reach of most people.

FILTERS AND HF HEARING

Dear Sir, As a young person I have, unfortunately, a poor HF hearing response and can detect nothing above about 7 kHz. Consequently, I find it impossible to make any satisfactory use of the Slope control on my Leak Varislope pre-amplifier. As I am now considering a completely new sound system, I wonder if your experience could help me in the selection of the amplifier in view of this limitation?

Given my aural health would you think that I would be well advised to get a model without any filtering or to buy one with at least some rudimentary filtering present? Incidentally, I do know one hi-fi enthusiast who is almost completely deaf and gets his pleasure from other people's equipment!

Yours faithfully, R. F. L., Wokingham, Berks.

The crucial point here is—can you tell whether the filter is in or out? If you can—and I think its highly likely—then it isn't wasted. The object of the filter is simply to remove distortion and it should not be used unless and until it is necessary. I think your amplifier should have one, because from your remarks I'm fairly sure that you are not so deaf that HF distortion is undetectable and, in the same way, although you cannot hear pure tones above 7 kHz I feel certain that you can notice the difference between sound that did and did not contain frequencies higher than this, because of sum and difference tones. On the whole, I think the tendency to omit even a half decent filter nowadays is a retrograde step, especially if a loudness device is then fitted instead!

THIS MONTH'S LEADING HI-FI OFFERS!

UNIT 59	Usual Rec. Ret. Price
Teleton 206 Amp.	£29 0 0
Garrard SP25 Mk 3	£15 15 0
Base/Cover	£8 19 6
Goldring 850	£6 10 0
Pennine 314 Speakers (pair)	£23 0 0
Leads/Plugs	£1 15 0
	£84 19 6 (£84.97)

OUR PRICE COMPLETE

£59

plus 35/- (£1.75) carr.

TELETON 206 AMP.

£19

NEW MODEL
(Replaces 203 & A150)

PENNINE 909 INTEGRATED CIRCUIT STEREO AMPLIFIER MODULE COMPLETELY BUILT AND TESTED

The PENNINE Stereo Amplifier is a complete unit capable of delivering 18 watts peak, total, using the latest integrated circuit amplifiers. This power-packed unit incorporates the full range of tone control, balance and volume as well as a bridge rectifier and smoothing circuit.

SPECIFICATION

Overall dimensions: 6" x 5 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "
Minimum operating load: 7.5 Ohms.
Total O/P Power: 18 W Peak at Vcc 21 v 7.5 Ohms.
Distortion: 0.4% at 9 W 400 Hz
Noise level: -75 dB at 1 M Ohm Source Impedance
Response: 20-20 kHz at -3 dB Level
Bass range: -12 to +12 dB at 20 Hz
Treble range: -12 to +12 dB at 10 kHz
I/P Sensitivity: 150 mV
£10/19/6 (£10.97) plus 10/- (50p) carriage.
Ideal for plinth mounting

SCOOP PURCHASE!

STEREO MAGNETIC
CART. (Diamond stylus)

72/6 (£3.63) plus

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15° TRACKING ANGLE

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(Diamond) £2. 2.6 (£2.13)
GOLDRING G850 £4.17.6 (£4.87)
GOLDRING G800 £7.10.0 (£7.50)

Plus P. & P. 2/6 (13p) each
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with GOLDRING G850—£16.10.0 (£16.50)
with SPECIAL SCOOP PURCHASE CARTRIDGE
(featured above)—£15.7.6 (£15.37)
2025TC (Stereo Cartridge)—£9.17.6 (£9.87)
Plus carriage 10/- (50p) each.
Base/Cover for SP25 & 2025TC £4.15.0 (£4.75).
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AMPLIFIER PERFECTION

No we are not claiming to have made a perfect amplifier but we have tried to get as near to it as possible and our recent articles "In pursuit of perfection" may have given you some insight to our philosophy of this goal. We do know that we are in the forefront of practical amplifier design and the following extract of a recently received letter may show you what we mean.

"... May I also add my congratulations to those of others on your production of a very fine amplifier. I can say with certainty that through my speakers (Lowther Audiovectors, PM4 units) and ancillary equipment (S.M.E. 3009/2 and plinth; Shure V15/2, imp.) it produces a tonally better sound, with a seemingly wider dynamic range and improved transient response, than do other top quality amplifiers I have owned or tried out. A further and very noticeable difference compared with these amplifiers is the complete absence of any form of listening fatigue, or the so-called 'transistor sound'. As you know, the Audiovectors are extremely efficient and sensitive speakers, and will indeed demonstrate imperfections and improvements too subtle to be clearly defined by other speakers. With no reservations whatsoever I will say they perform better when driven by your C.51 and A.51 units, than with any comparable amplifier I have tried."—B. Joseph-Horne, Lewes, Sussex.

The above refers to our A.51 amplifier with C.51 control unit (£125 complete). For the equally discerning listener with not quite the same amount of ready we offer the A.21 integrated amplifier—the sound quality is the same but the power output is lower and filter facilities, etc. are fewer—i.e. there are less knobs on. We confidently defy anyone to find us an amplifier so well made and sounding so good under £65—or even much more.



A.21 Integrated Amplifier

ask your dealer or write for free colour brochure today.

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Package Deals

We have given a lot of thought and consideration to which items would be most popular for our recommended package deals. We feel that we have offered you a well balanced selection of units, each item matched with considerable care so that optimum results can be obtained with the minimum of outlay. If, however, there is a particular selection of equipment that you are interested in, do not hesitate in sending us your ideas for a package system and we will be pleased to offer a special quotation.



LEAK Stereo 70 35+35 W Stereo Amplifier (cased) £75.00
Thorens TD-125 electronic turntable complete with TP.25 arm and plinth £120.20
Shure M55/E Magnetic Cartridge £12.95
2 Wharfedale Dovedale III speaker systems £85.00
Total recommended list price £293.15

PACKAGE PRICE £260.00 POST £3



TRIO KA-4000 40+40 W Stereo Amplifier £78.00
MICRO MR-111 two speed belt drive turntable unit with integral pick-up arm £40.00
MR-111 teak base and tinted perspex cover £9.95
MICRO VF-3100/e variable flux cartridge £13.50
2 SONY SS-3000 monitor speaker systems £126.00
Total recommended list price £267.45

PACKAGE PRICE £228 POST £3.00

For details of Lasky's 1971 Audio Tronics Catalogue see advertisement in this issue

TRIO KA-2002 17+17 W Stereo Amplifier £42.00
BSR McDonald MP60 4 speed single play deck £15.75
Lasky's teak plinth and cover for MP60 £4.75
Audio Development AD-76K Magnetic Cartridge £4.50
2 Sonics AS-303 speaker systems £63.00
Total recommended list price £130.00

PACKAGE PRICE £110.00 POST £3.00



PHILIPS RH580 9+9 W Stereo Amplifier £28.00
PHILIPS GA105 semi automatic record player with cartridge, plinth and cover £20.00
2 PHILIPS RH481 speaker systems £22.00
Total recommended list price £70.00

PACKAGE PRICE £62.00 POST £2.00



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February is all change month

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We are continually striving to improve our already outstanding record for service and after sales care. Remember we serve approximately one hundred and fifty thousand customers every year and our aim is to satisfy everyone, but inevitably owing to the numbers involved and the vast range of individual items sold there must of course be the odd exception. Our service department has trebled its size over the past 12 months and is equipped with the most sophisticated modern test equipment. We are working hard for 100% satisfaction—your satisfaction.

Express Cartridge Service

From the widest range stocked in Great Britain we are able to supply practically any known make or model of high fidelity cartridge and replacement stylus assembly. We can usually supply from stock: ADC, Audio Development, Audio Technica, B & O, BSR, Decca, Elac, Empire, Garrard, Goldring, Neat, Micro, Seiki, Obi, Ortofon, Pickering, Philips, Shure, Sonotone, Stanton, etc. Send for your requirements (we gave a comprehensive list of models in our half-page advertisement in the January '71 issue of *Hi-Fi News*) POST FREE in the U.K.

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We operate the new over the counter personal export service for overseas visitors and those who are emigrating. We can also arrange direct export to anywhere in the world quickly and efficiently—just tell us what you want and where you want it, we will do the rest.

Bargain of the Month

The TRIO TT-10 three head stereo tape deck reduced to £75.00 original list price £109.50

Due to tremendous reduction from the importers the outstanding TRIO TT-10 stereo tape deck has been reduced to what is certainly "the bargain of the month" if not the year, in tape recording value. The TT-10 is manufactured to the same high standards that all TRIO units are famous for. Finished in matt black with brushed satin trim, this unit will accept reels up to 7in. and will operate either horizontally or vertically. Due to its ingenious pre-amp design it minimises distortion during both recording and playback. Additional features include: exclusive auto-step mechanism, independent left-right record/monitor switches and slide-type control.

SPECIFICATIONS—Recording system: 4 Track stereo/mono. **Power requirements:** 100, 220-240 V, 50/60 Hz. **Tape speeds:** 7½ ips, 3½ ips, 1½ ips. **Reel sizes:** 7 in. or smaller. **Frequency response:** 40-19,000 Hz +1 dB-3 dB at 7½ ips; 50-10,000 Hz +1 dB, -4 dB at 3½ ips; 50-5,000 Hz +1 dB, -4 dB at 1½ ips. **Signal to noise ratio:** Playback, 50 dB. **Harmonic distortion:** Less than 0.6%. **Wow and flutter:** Less than 0.15% (RMS) at 7½ ips, less than 0.25% (RMS) at 3½ ips. Less than 0.35 at 1½ ips. **Level indication:** Two VU Meters. **Inputs Sensitivity:** Microphone 0.6 mV, Impedance 50 K, Line 100 mV, Impedance 100 K Rec/PB connector (DIN) 9.8 mV. **Line Outputs:** Output level 0 dBs (0.775 V) Optimum load impedance 100 K ohms Rec/PB connector (DIN) impedance 2.5 K headphone impedance 8 ohms. **Equaliser:** NAB (record and playback). **Bias frequency:** approx. 85 kHz. **Dimensions:** 16 (w) × 7⅞ (h) × 12½ (d) ins. **Accessories:** empty reel 7 in. connection cord × 2 reel cap × 2.



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SCANDINAVIAN PUBLIC LIBRARY JOURNAL



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WHAT THE REVIEWERS SAY ABOUT THE RAVENSBOURNE AMPLIFIER AND FET FM TUNER...



GRAMOPHONE

AMPLIFIER: "The construction of the whole amplifier and the assembly of the printed circuit boards, on which every component is clearly marked, is of a very high order and cannot be criticized on any score." "This amplifier certainly meets its specification. Under working conditions one can place it amongst the top British-designed amplifiers." "Considering the modest price of £64 including case, the Ravensbourne stereo amplifier must be regarded as a leader in its price class. Its excellent performance, power output and attractive styling—and, for the ladies, its simplicity in operation—deserve every credit. This is an outstanding and uncompromising design." **FM TUNER:** "As with all Rogers designs, the chassis is beautifully finished and logically designed." "The stereo decoder follows previous successful Rogers designs, with excellent channel separation and automatic switching for mono and stereo transmissions." "... measurements made on the tuner fully meet the maker's specification." "The tuning indicator is very accurate, a feature not observed on all tuners, and switching on the AFC control solidly locks the receiver to the transmitter." "On local station conditions, the stereo output meets the expected high standard and can be compared with the best of USA and Continental designs which cost two to three times the price." "The Rogers Ravensbourne FET tuner is a fitting companion to the fine Ravensbourne amplifier. It will operate just as effectively with other makes of high quality amplifier, it fully meets international safety conditions and should find a ready market here and abroad."

hi-fi news

AMPLIFIER: "... this is undoubtedly a neat and well laid out interior, good solid construction with easy access for servicing on the expensive fibre-glass printed circuit boards; in short a general air of technical excellence..." "... a sight to gladden any audio engineer's heart. One instinctively feels that here is a product of utter reliability..." "... extended listening tests over a number of days induced no sense of fatigue, confirming what one would expect from the low distortion measured at both maximum power and normal listening levels." "... the low-pass filter is almost a copybook example of what it ought to be and is extremely effective at cleaning up noisy or edgy recordings without degrading the quality of the sound too much."



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Please send me full Colour Literature and Review Reprints on the Ravensbourne Amplifier and FET FM Tuner.

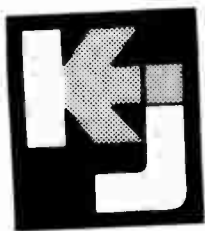
I am also interested in Ravensbrook equipment.

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HFN 271

Export enquiries invited



NEWS EXTRA

FEBRUARY 1971

CASSETTE RECORDERS

	List Price	Cash Price
Grundig C200 DL	£39 18 1	£29 19 0
Philips Stella ST473	32 1 7	18 19 0
Sanyo M 48M	19 15 0	17 0 0

TAPE RECORDERS AND DECKS

	List Price	Cash Price
Akai X 150D 4T Stereo Deck	£130 0 0	£105 0 0
Akai 1710L 4T Stereo	109 0 0	79 10 0
Ferguson 3226 4T Mono	46 6 0	35 0 0
Ferguson 3228 4T Mono	48 16 0	37 0 0
Ferguson 3247 4T Mono	48 9 0	41 0 0
Ferguson 3249 4T Mono	64 6 0	53 10 0
Ferguson 3249 4T Mono	188 10 0	157 10 0
Ferrograph 713 2T Mono	207 7 0	171 0 0
Ferrograph 702/704 2 or 4T Deck	242 10 9	201 0 0
Ferrograph 722/724 2 or 4T Stereo	39 5 0	29 19 0
Grundig TK 120 2T Mono	44 18 0	36 0 0
Grundig TK 124 2T Mono	57 12 8	47 0 0
Grundig TK 149 4T Mono	105 10 0	89 10 0
Grundig TK 245 4T Stereo Deck	104 15 9	85 0 0
National RS 760S 4T Stereo	28 17 5	19 19 0
National RP 8048 Ext Spkrs	187 2 5	145 0 0
National RS 790S 4T Stereo	52 7 11	39 10 0
National RP 8058 Ext Spkrs	139 0 0	117 0 0
Philips 4408 4T Stereo	60 0 0	49 19 0
Pye 9123 4T Mono	103 16 0	89 19 0
Pye 9137 4T Stereo	90 4 1	69 19 0
Sanyo MR 151 4T Stereo (mains/batt)	84 15 0	65 0 0
Sanyo MR 910 4T Stereo	69 15 0	59 19 0
Sanyo MR 801 4T Stereo Deck	68 5 0	52 0 0
Telefunken 202 2T Mono	76 2 6	59 19 0
Telefunken 212 4T Mono	103 8 6	83 0 0
Telefunken 203 Studio 2T Stereo Deck		

MICROPHONES

AKG D9DHL Stick (Hi-Z & Low)	£9 10 0	£6 15 0
AKG D66 Stereo (200 Ohms)	13 0 0	9 19 0
AKG D11D Twin Stereo (Hi-Z & Low)	22 15 0	17 0 0

HEADPHONES

AKG K120 Dynamic Stereo	£9 0 0	£5 19 0
Duvidal SA 6 Dynamic Stereo	3 3 0	1 15 0

AMPS, TUNERS, TUNER/AMPS

Arena T 2400 FM Stereo T/Amp	£89 5 0	£73 0 0
Arena T 2500F AM/FM Stereo T/Amp	99 15 0	85 0 0
Arena T 2500H as above with spkrs	103 19 0	87 10 0
Arena T 1500F AM/FM Stereo T/Amp	72 9 0	59 19 0
Arena T 1500H as above with spkrs	75 12 0	58 19 0
Armstrong 426 AM/FM Stereo T/Amp	89 0 0	69 19 0
Armstrong 525 FM Stereo T/Amp	91 17 9	79 0 0
Armstrong 526 AM/FM Stereo T/Amp	104 14 3	89 19 0
Eagle SMX 52 FM Stereo T/Amp	51 9 0	25 0 0
Eagle TSA 60 Amp	39 18 10	38 0 0
Eagle AFT 60 AM/FM Stereo Tuner	22 11 6	16 0 0
Eagle SA 100 Amp	59 0 0	47 10 0
Ferrograph F 307 Mk II Amp	54 0 0	42 19 0
Goodmans Max Amp 30	82 10 5	69 19 0
Goodmans Stereo Max Tuner	59 4 8	45 0 0
Leak TL3 FM Stereo Tuner	154 0 0	119 0 0
National SA 54 AM/FM Stereo Tuner	72 18 4	49 18 0
Philips GH 944 AM/FM Stereo Tuner	45 10 0	32 0 0
Rotel 100 Amp	79 0 0	65 0 0
Rotel 130 AM/FM Stereo T/Amp	95 0 0	79 10 0
Rotel FAX 330 AM/FM Stereo T/Amp	119 0 0	99 19 0
Rotel FAX 550 AM/FM Stereo T/Amp	129 0 0	109 19 0
Rotel FAX 660 AM/FM Stereo T/Amp	97 5 0	79 19 0
Sanyo DC 60E AM/FM Stereo T/Amp	57 15 3	35 0 0
Wharfedale WF1 Stereo Tuner		

TURNTABLES AND ARMS

Garrard SP 25 Mk III/Teak Plinth & Cover/NM22 Magnetic Cartridge	£28 13 5	£19 19 0
Garrard SP 25 Mk III only	16 8 11	12 9 0
Garrard WB 2 Plinth for Lab 80	4 13 8	2 19 0
Decca Mk I Super Arm	9 0 0	7 0 0
Ortofon SMG 212 Arm	13 11 10	11 10 0

LOUDSPEAKER SYSTEMS

Bush A763 Column	Per Pair	£31 0 2	£22 0 0
Celestion Ditton 25	Per Pair	119 14 0	95 0 0
Goodmans 3005	Per Pair	25 0 0	18 0 0
Goodmans Mambo	Per Pair	44 13 0	35 0 0
Goodmans Marimba	Per Pair	48 0 2	37 0 0
Keletron KN 123/3	Per Pair	37 10 0	29 0 0
Leak Mini-sandwich	Per Pair	59 10 0	45 0 0
Leak Sandwich	Per Pair	91 0 0	65 0 0

WINTER CLEARANCE SALE

	List Price	Cash Price
LOUDSPEAKER SYSTEMS—continued		
Lowther L.I.B. Enclosures only	Per Pair	£30 0 0
Philips GL 565	Per Pair	39 19 0
Philips GL 561	Per Pair	53 19 0
Quad Electrostatic	Per Pair	18 0 0
Sinclair Q16	Per Pair	49 18 0
Wharfedale Super Linton (Walnut) (Slight Cabinet Imperfections)	Per Pair	32 0 0
LOUDSPEAKER CHASSIS		
Goodmans Audiom 81 15" P.A. (1 only)	£27 12 0	£21 0 0
Goodmans Audiom 51 12" P.A. (1 only)	11 6 0	9 0 0
Grampian SP 10 Reflex Horn (P.A.)	13 11 6	11 0 0
Jordan Watts Module (3.5 ohm) (1 only)	11 0 0	7 19 0
Wharfedale 10" Bronze RS/DD	5 12 0	4 10 0
Wharfedale 10" Golden RS/DD	9 16 6	7 10 0
Wharfedale Super 5"	6 17 6	5 10 0
Wharfedale QS 800 X/Over	3 5 0	2 10 0
RADIO		
Ferguson 3148 L/M/S/VHF	£29 3 0	£24 0 0
Ferguson 3156 L/M/S/VHF	30 15 0	25 0 0
Ferguson 3165 L/M/VHF	15 16 0	13 0 0
Ferguson 3166 L/M/S/VHF Mains	43 2 0	32 0 0
Ferguson 3168 L/M/S/VHF	32 0 0	25 0 0
Philips 161 L/M	9 7 10	6 19 0
Philips RL 269 L/M	14 8 6	10 19 0
Philips RL 583 L/M/S/VHF	40 19 0	28 19 0
Philips RL 372 L/M/VHF	24 16 2	18 19 0
Philips RS 274 L/M/VHF Clock	37 19 0	29 19 0
Grundig TR 860 Marine L/M/S	44 16 9	35 0 0

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Winter Sale



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SAVE £36
DUAL HS 50 PACKAGE SYSTEM
 Integrated turntable/amplifier unit comprising Dual 1209 record player with Shure cartridge and 2 x 12 watts Amplifier. Beautifully styled dust cover. 2 CL35 speaker systems.
 List Price £171.49
R.E.W. Price £135.00
 £45.00 DOWN and 12 monthly payments of £7.50 (INTEREST FREE)

SAVE £19
DUAL CV40 AMPLIFIER
 List Price £73.50
R.E.W. Price £54.50

SAVE £33
DUAL CT16 AM/FM TUNER
 List Price £106.00
R.E.W. Price £72.50



SAVE £29



DUAL HS 34 PACKAGE SYSTEM
 A compact high fidelity stereo system, comprising superb equipment by leading manufacturers, Dual. The manual/auto Dual 1212 record player is fitted with a Shure M71 MB-D magnetic cartridge, and features cue control, pitch control and changer mechanism. There's a 2 x 4 stage stereo transistor amplifier with output transformerless 2 x 6 watts rms push-pull end-stages and equaliser preamplifier. Also input selector switch for phono, tuner and tape recorder. Separate treble and bass controls, functioning on both channels. Balance control, stereo/mono switch. Input jack for radio or tuner and tape deck. Complete with dust cover. The two CL9 speaker systems will each handle 10 watts and come with speaker connection leads.
 Total Recommended Price £133.50.

R.E.W. PRICE £103.95

£36.15 DOWN and 12 monthly payments of £5.65 (INTEREST FREE)

SAVE £24
DUAL TG28 TAPE UNIT
 An all-transistorised 4-track stereo tape unit with two speeds—7½, 3½ ips. Sound on sound facility. Vertical or horizontal operation.
 List Price £93.50
R.E.W. Price £69.50
 £24.50 DOWN and 12 monthly payments of £3.75 (INTEREST FREE)

SAVE £9
DUAL 1219 TURNTABLE WITH SHURE M91 MG-D
 An automatic turntable of professional quality complete with superb Shure M91 MG-D magnetic cartridge. Can also be operated manually.
 List Price £71.71
R.E.W. Price £62.70
 £22.74 DOWN and 12 monthly payments of £3.33 (INTEREST FREE)

SAVE £12

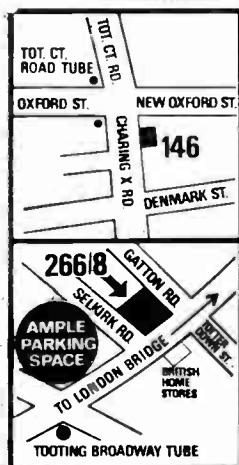
GOODMANS MAGISTER

A fantastic speaker system with a full 50 watt capability. The Magister features a massive 15" bass unit which is combined with a mid-range reproducer and a new dome radiator treble unit to provide a tailored and balanced combination offering superb sound.

List Price £57.00

R.E.W. PRICE £45.00

£15.00 DOWN and 12 monthly payments of £2.50 (INTEREST FREE)



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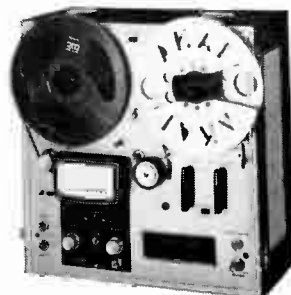
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SENSATIONAL AKAI 1710L OFFER!!

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NOW FROM R.E.W. for ONLY £73.45



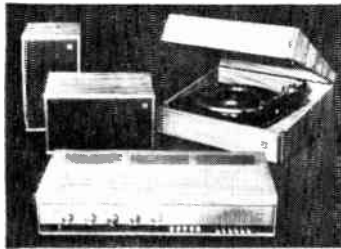
Compact, robust, 4 track complete tape recorder with all-metal deck. Includes built-in amplifiers giving 4 watts output per channel, also 2 built-in speakers. 3 speeds plus 15 ips optional for only 25/- extra. Wide frequency response 40 Hz-18 kHz at 7½ ips. Horizontal or vertical operation. Complete in black leatherette cabinet with lid and carrying handle.

Tremendous price reduction does not allow us to offer this machine on interest free terms, but H.P. is available as follows:
 £25.00 DOWN and 12 monthly payments of £4.50 (total £79.00)

BIG SAVINGS PLUS FREE H.P.

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FOR DETAILS STATING
REQUIREMENTS.**

SAVE £34



Goodmans Music Suite Package System

Goodmans 3000 Stereo Tun./Amp. £77-73
Goodmans 3025 Record Player including G800H Magnetic Cart. £37-74
2 Goodmans 3005 Speakers £25-00

Total Recommended Price £140-47

R.E.W. Price £105-95

£36-95 DOWN and 12 monthly payments of £5-75 (INTEREST FREE)

SAVE £30

Goodmans-Denton Package System

Goodmans 3000 Stereo Tuner Amplifier £77-73
Goodmans 3025 Record Player including G800H Magnetic Cartridge £37-74
2 Wharfedale Denton Speakers £39-90

Total Recommended Price £155-37

R.E.W. Price £125-30

£43-70 DOWN and 12 monthly payments of £6-80 (INTEREST FREE)

SAVE £36

Goodmans-Mezzo III Package System

Goodmans 3000 Stereo Tuner Amplifier £77-73
Goodmans 3025 Record Player including G800H Magnetic Cartridge £37-74
2 Goodmans Mezzo III Speakers £61-80

Total Recommended Price £177-27

R.E.W. Price £140-75

£47-75 DOWN and 12 monthly payments of £7-75 (INTEREST FREE)

SAVE £30

Goodmans Maxamp Package System

Optional: Goodmans Stereo-max AM/FM Tuner. Package Price £69-50 (List £82-50)
Goodmans Maxamp 30 Stereo Amplifier £54-00
Goodmans 3025 Record Player including G800H Magnetic Cartridge £37-74
2 Goodmans Mezzo III Speakers £61-80

Total Recommended Price £153-54

R.E.W. Price £122-90

£41-90 DOWN and 12 monthly payments of £6-75 (INTEREST FREE)

SAVE £26

Goodmans Compact Package System

Optional: Goodmans Stereo-max AM/FM Tuner. Package Price £69-50 (List £82-50)
Goodmans Maxamp 30 Stereo Amplifier £54-00
Goodmans 3025 Record Player including G800H Magnetic Cartridge £37-74
2 Goodmans 3005 Bookshelf Speakers £25-00

Total Recommended Price £116-74

R.E.W. Price £90-70

£30-70 DOWN and 12 monthly payments of £5-00 (INTEREST FREE)

SAVE £25

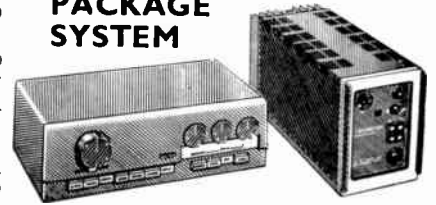
QUAD PACKAGE SYSTEM

Quad 33 Control Unit and 303 Amplifier £98-00
Transcriptors Saturn Turntable £57-60
Shure M7SE Type II Cartridge £21-31
2 Quad Electrostatic Spkrs £132-00

Total Recommended Price £308-91

R.E.W. Price £283-00

£95-20 DOWN and 12 monthly payments of £15-65 (INTEREST FREE)
Leads and plugs £2-50 extra.



SAVE £20

Leak 30+ Package System

Leak Stereo 30 Plus Amplifier (Teak cased) £62-50
B & O Beogram 1000 including B & O Magnetic Cartridge, Base and Cover £45-50
2 Goodmans Mezzo III Speakers £61-80

Total Recommended Price £169-80

R.E.W. Price £149-80

£49-96 DOWN and 12 monthly payments of £8-32 (INTEREST FREE)



SAVE £39

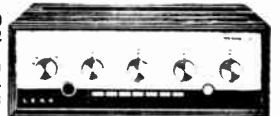
Leak 70 Package System

Leak Stereo 70 Amplifier (Teak cased) £75-00
Dual 1209 Transcription Turntable £42-62
Shure M7SE Type II Cartridge £21-31
2 Goodmans Magister Speakers £114-00

Total Recommended Price £252-93

R.E.W. Price £213-90

£71-34 DOWN and 12 monthly payments of £11-88 (INTEREST FREE)



Optional: Dual hinged plinth and cover. Package Price £16 (List £17).

SAVE £24

Ravensbrook Package System

Rogers Ravensbrook Amplifier (Teak cased) £49-00
Garrard SP25 Mk. III wired in plinth and cover complete with Goldring G800H Magnetic Cartridge £35-00
2 Richard Allan Pavane Speakers £64-00

Total Recommended Price £148-00

R.E.W. Price £123-75

£42-15 DOWN and 12 monthly payments of £6-75 (INTEREST FREE)



SAVE £33

Ferrograph Package System

Ferrograph F307 Stereo Amplifier £59-00
Goldring GL75 Transcription Turntable £39-50
Goldring G800 Magnetic Cartridge £13-00
2 KEF Concord Speakers £87-00

Total Recommended Price £198-50

R.E.W. Price £165-50

£57-50 DOWN and 12 monthly payments of £9-00 (INTEREST FREE)

Optional: Goldring hinged base and cover. Package Price £12. (List £13.)

The prices shown in this advertisement supersede all previous offers. Prices are correct at time of going to press but are subject to alteration. E. & O. E.

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PLUS ELECTRONIC
COMPONENTS**

STEREO AMPLIFIERS (p & p 10/-)	
Armstrong S21	£45 19 6
Dulci 207	£17 0 0
Dulci 207M	£21 0 0
Eagle TSA60	£36 10 0
Ferrograph 307 Mk II	£53 0 0
Goodmans Maxamp	£39 19 6
Henelec 5-5	£13 10 0
Leak 30+ chassis	£43 19 6
Leak 30+ cased	£47 19 6
Leak 70 chassis	£53 19 6
Leak 70 cased	£57 19 6
SA707	£23 0 0
Metrosound ST20	£28 16 0
Metrosound SS30	£68 0 0
Nikko TRM 30 IC	£29 19 6
Nikko TRM 40 IC	£39 10 0
Nikko TRM 50 B	£49 10 0
Nikko TRM 1200	£89 0 0
Pioneer SA500	£45 0 0
Pioneer SA700	£72 10 0
Pioneer SA900	£99 10 0
Pioneer SR202	£33 19 6
Quad 33/303	£98 0 0
Ravensbrook chassis	£35 10 0
Ravensbrook cased	£38 10 0
Ravensbourne chassis	£47 12 0
Ravensbourne cased	£51 5 0
Rotel Equipment available.	
Sinclair 2000	£23 10 0
Sinclair 3000	£39 0 0
Sinclair Neoteric	£46 0 0
Teleton 203E	£19 19 6
Teleton A150	£19 19 6
Teleton GA101	£23 19 6

PLINTHS/COVERS (p & p 4/6)	
For 2025TC, 3000LM, SP25 Model 50, SL6SB etc.	
SPI/PL2	79/6
PI/T1	89/6
Deluxe BNI	£8 15 0
WB1/SPC1	£6 5 0
For AP75, SL72B, 75B, 95B, BN4	£8 15 0
HW15/4	£9 10 0
WB4/SPC4	£8 5 0
For GL69, GL75, HL69 or 75	£9 15 0
Or Goldring versions	£12 10 0
HW1	£11 15 0
HW12	£14 18 6
For 401, G99 and arm etc. (unfrilled)	£9 19 6
For MP60, 610	£5 12 6
HW14	£22 10 0

COMPACTS (p & p 25/-)	
Decca 603	£62 10 0
Wyndor 1550S	£49 10 0
Metrosound 10-10	£65 0 0

SPEAKER SYSTEMS (p & p 10/-)	
BWV DM1	£25 19 6
BWV DM3	£53 10 0
BWV 70	£130 0 0
Celestion Dition 10	£17 0 0
Celestion Dition 1S	£27 0 0
Celestion Dition 2S	£47 10 0
DJ12 10 watt	£9 10 0
Goodmans Maxim	£15 19 6
Goodmans 300S pair	£16 19 6
Goodmans Mambo	£18 10 0
Goodmans Marimba	£19 15 0
Goodmans Mezzo II	£23 0 0
Goodmans Mag K2	£29 19 6
Goodmans Minister Pr	£39 10 0
Goodmans Magister	£46 10 0
HW Narvik	£26 10 0
IMF Studio	£69 0 0
Kef Cresta	£18 10 0
Kef Celeste II	£23 10 0
Kef Chorale	£31 0 0
Kef Concord	£34 0 0
Kef Concerto	£42 0 0
Kef KK2 Kit	£25 10 0
Kef KK3 Kit	£37 10 0
Kef KK4 Kit	£16 10 0
Keltron KN654/3	£7 19 6
Keltron KN824/3	£9 9 0
Keltron KN104/3	£14 10 0
Leak Mini Sandwich Pr	£43 0 0
Leak Sandwich	£33 0 0
Leak 200	£21 0 0
Leak 300	£26 0 0
Leak 600	£41 0 0
Metrosound HFS10 Pr	£22 7 6
Metrosound HFS20	£14 16 0
Quad	£57 0 0
Wharfedale Denton (pair)	£31 10 0
Wharfedale Super Linton (pair)	£38 10 0
Wharfedale Melton	£23 0 0
Wharfedale Dove III	£29 19 6
Wharfedale Rosedale	£48 19 6
Wharfedale Triton Pr	£46 10 0
Wharfedale Unit 3	£9 19 6
Wharfedale Unit 4	£12 16 0
Wharfedale Unit 5	£18 16 0

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In stock SME, Sugden, Neat, Goldring.

SPECIAL NEW ARM! Model 271 takes all cartridges. Price £6/10/- p & p 3/6.

With any cartridge listed right only £5/10/- (plus cartridge cost of course!). Recommended purchase!

TUNERS (p & p 10/-)	
Armstrong S23 MW/LV/FM	£45 10 0
Armstrong S24 FM	£35 17 6
Armstrong M8 Decoder	£7 19 6
Dulci FMT7 FM	£17 19 6
Dulci FMT7S Stereo FM	£25 5 0
Eagle AFT60 MW/Stereo FM	£48 0 0
Goodmans Stereomax	£65 19 6
Leak Stereofetic chassis	£52 19 6
Leak Stereofetic case	£58 19 6
Nikko FAM10 MW/Stereo FM	£39 10 0
Nikko FAM12 MW/Stereo FM	£58 0 0
Nikko FAM14 MW/Stereo FM	£82 10 0
Pioneer TX500 MW/Stereo FM	£63 19 6
Pioneer TX900 MW/Stereo FM	£125 0 0
Quad Stereo FM	£51 0 0
Quad LW/MW/SW	£48 0 0
Ravensbrook chassis	£39 19 6
Ravensbrook case	£42 19 6
Sinclair FM 2000 and 3000	£29 19 6
Teleton GT101 MW/Stereo FM	£39 0 0

TUNER AMPLIFIERS (p & p 10/-)	
Armstrong S25	£77 10 0
Armstrong S26	£87 10 0
Goodmans 3000	£65 19 6
Nikko STA301	£83 10 0
Nikko STAS01	£107 10 0
Pioneer KX330	£66 19 6
Pioneer SX440	£90 19 6
Pioneer LX440	£94 19 6
Pioneer SX770	£130 0 0
Pioneer SX990	£154 19 6
Pioneer SX1500TD	£177 19 6
Tandberg Hi-Fi/FM	£69 10 0
Tandberg Huidra	£130 0 0
Teleton CR10T	£29 19 6
Teleton F2000	£32 10 0
Teleton F2300	£43 0 0
Teleton F4200	£37 10 0
Teleton TSF50	£59 19 6
Wharfedale 100.1	£110 0 0

STEREO TAPE MACHINES (p & p 15/-)	
Akai 4000D	£69 10 0
Akai 1710L	£75 0 0
Teleton FXBS10D	£55 0 0
Teleton 999	£85 10 0
Pioneer T600	£165 0 0
Tandberg 3041X	£89 0 0
Tandberg 4041X	£160 0 0
Tandberg 6041X	£180 0 0
Ferrograph 704	£189 0 0
Revox 1104	£185 0 0
Revox 1124	£199 0 0

Range of Cassettes and 8 track equipment in stock.
Scotch & BASF Tape at 30% discount

STEREO HEADPHONES (p & p 3/6)	
DH025	£2 5 0
DH035	£4 15 0
SE2P	£5 19 6
SE20	£6 10 0
SE30	£11 10 0
SE50	£17 10 0
SP3XC	£8 19 6
K6	£11 15 0
K0727B	£14 17 6
ESP6 or 7	£42 0 0
PRO 4A	£20 0 0
PRO 4AA	£25 0 0
ASE95	£6 5 0
ASE20	£8 10 0
AKG 600 or 75 ohm	£11 15 0

Listen to our Headphones on the new Comparator.

CARTRIDGES (p & p 2/6)	
AT66-S or -7	£5 2 6
AT66 L/C	£5 2 6
AT21-S	£7 6 0
AT21-7	£7 6 0
AT21-X	£12 19 6
AT35	£16 10 0
AT35X	£19 19 6
ATVM3	£12 10 0
ATVM8	£8 19 6
CS90	£4 10 0
CS91E	£6 10 0
G800H	£7 12 6
G800	£7 10 0
G800E	£11 19 6
G800SE	£17 19 6
G850	£5 2 6
Deram	£4 15 0
SCU1	£5 5 0
9TAHC Diamond	£2 7 6
BSRC1	£2 19 6
940DIAM	£3 10 0
GP91/SC-1, 2 or 3	£1 2 6
M3D/M	£6 0 0
M31E	£9 9 0
M32E	£8 8 0
M44-S	£8 10 0
M44-7	£8 4 6
M44-E	£9 19 6
M44-C	£8 4 6
M55E	£10 10 0
M75E II	£16 10 0
M75G II	£11 19 6
15V II	£32 10 0

FREE Complete Stock List Ref. 16/17 on request. GARRARD - THORENS - McDONALD - GOLDRING - PIONEER - DUAL COMPLETE RANGE IN STOCK - SPECIAL PRICES WITH FULL GUARANTEE

GARRARD	GOLDRING	JP601	THORENS	PIONEER
SP25 Mk III	GL69 II		TD150A II	PL12AC
SL6SB	GL69 IIP with cover	£39 19 6	TD150AB II	
AP75	GL75		TD125	
AP76	GL7SP with cover	£39 0 0		
SL72B	G99	£42 0 0		
SL75B		£62 10 0		
SL95B				
401				

GARRARD	McDONALD (BSR)	DUAL
Garrard 2025TC with 9TAHC Diam.	MP60	1219
Garrard 3000 with 9TAHC Diam.	MP610	1209

SPECIAL OFFERS!
SP25. Mounted into Plinth with leads, G800 Cartridge plus cover. Ready wired (HL25PC) £20 19 6 (Mk III £22 10 0)
2025TC. Mounted into Plinth with leads, 9TAHC Cartridge plus cover. Ready wired (HL2025TC) £13 19 6
GL69 Mk II. Mounted into Plinth with leads, G800 Cartridge plus cover. Ready wired (HL69G800) £37 0 0
GL75. Mounted into Plinth with leads, Less Cartridge* plus cover. Ready wired (HL75PC) £39 0 0
MP60. Mounted into Plinth with leads, Less Cartridge* plus cover. Ready wired (MP60PC) £18 10 0
(* Select a cartridge from the above lists extra as required.)

CASSETTE MACHINES	
Teleton Battery Recorder H8100	£17 19 6
Teleton Battery/Mains Recorder TC110	£21 19 6
Teleton Battery/Mains Recorder with MW-FM Radio built-in	£37 10
Philips EL3302 Battery Portable	£22 19 6
Philips N2400 Mains Stereo	£59 19 6
Philips N2602 Car Stereo Replay	£29 19 6

8-TRACK MACHINES	
Metrosound 448 4+4 watts output	£47 10 0
Metrosound SS30 Combined Stereo Amplifier 10+10 watts	£68 0 0
Nivico Stereo Playback Deck	£37 10 0
Pioneer H82 Stereo Playback Deck	£47 10 0
Pioneer HR82 Record & Playback	£75 0 0
Pioneer TP83 Car Stereo complete with Speakers	£39 10 0

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SELECT FROM
100 STEREO SYSTEMS (FREE LIST ON REQUEST)

SAVE up to £55 on recommended prices



C5/8 (Illustrated above)

Teleton 203E, 5P25/G800, Plinth/Cover, Pair DJ12. 10 watt, 3 way Speaker Systems
Total Price £79

Plus FREE pair stereo phones.

SYSTEM PRICE £59 P/P 30/-

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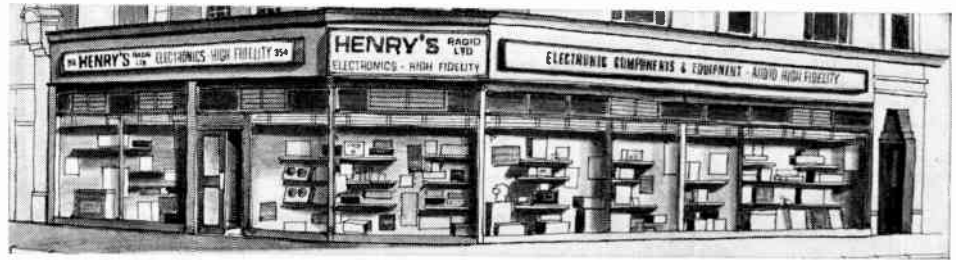
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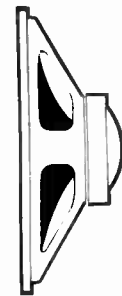


354-356 EDGWARE ROAD, LONDON, W.2

<p>SAVE £32</p> <p>A11/5. Amplifier*, 5P25 Mk II, G800, Plinth/Cover, Pair Dentons. Total Price £130</p> <p>SYSTEM PRICE £98 P/P 30/- (Add 50/- for 5P25/III.)</p>	<p>SAVE £25</p> <p>A12/4. Amplifier*, AP75, ATVM8, BN4 Plinth/Cover, Super Lintons or Ministers or Leak 200's. Total Price £139</p> <p>SYSTEM PRICE £114 P/P 30/- (Add £5 for AP76.)</p>	<p>SAVE £35</p> <p>A13/3. Amplifier*, GL69 II, G800, HL69 Plinth/Cover, Mini Sandwiches or Mezzo III. Total Price £166</p> <p>SYSTEM PRICE £131 P/P 40/-</p>	<p>* CHOICE OF 6 AMPLIFIERS</p> <p>FERROGRAPH F307</p> <p>ARMSTRONG 521</p> <p>LEAK STEREO 30 +</p> <p>NIKKO TRM50B</p> <p>PIONEER SA500</p> <p>ROTEL 610</p> <p>Matching tuners in stock—see list on opposite page.</p>
<p>SAVE £37</p> <p>A19/3. Pioneer 5X440, or Nikko 5TA 301 or Armstrong 526, AP75, G800 or AT21, BN4 Plinth/Cover, Ditton 15s or Meltons or Mezzo III or Celeste II. Total Price £203</p> <p>SYSTEM PRICE £166 P/P 30/- Add £5 for GL69, or AP76; £13 for GL75 with G800E.</p>	<p>SAVE £49</p> <p>A21/2. Pioneer 5X440 or Nikko 5TA301, or Armstrong 526, Pioneer PL12AC, Deck / Arm / Plinth / Cover, G800E or AT21X, KEF Concertos. Total Price £252</p> <p>SYSTEM PRICE £203 P/P 50/- A21/4 with Super Lintons £178 P/P 30/- A21/1 with Concerto's £219 P/P 60/-.</p>	<p>SAVE £45</p> <p>A23/3. Leak 70, AP75, G800 or AT21, BN4 Plinth/Cover, Mini Sandwiches or as A13/3 above. Total Price £181</p> <p>SYSTEM PRICE £136 P/P 40/-</p> <p>Alternative to Stereo 70 Tuner/Amplifiers, Teleton T5F50 or Pioneer KX330, MW/5W/Stereo FM.</p>	<p>ENGLAND'S MOST RESPECTED DEALERS-CAR PARK NEARBY AND EASY LOADING</p> <p>FOUR DEMONSTRATION ROOMS COVERING EVERY PRICE RANGE AND REQUIREMENT - COMPARE AND DISCUSS WITHOUT OBLIGATION</p> <p>SEPARATE HEADPHONE COMPARATOR - TAPE, MICROPHONE, STYLUS AND CARTRIDGE BARS</p> <p>FULL AFTER SALES SERVICE AND GUARANTEE</p> <p>ALL EQUIPMENT SUPPLIED 15 FULLY GUARANTEED FOR 12 MONTHS</p> <p>"SECURICOR" DELIVERY SERVICE IF REQUIRED</p>
<p>SAVE £54</p> <p>A24/2. Pioneer KX330, or Leak Stereo 70, GL69 II, G800, HL69 Plinth/Cover, Dove III's or Magnum K2, or Kef Celeste II, or Leak 300. Total Price £207</p> <p>SYSTEM PRICE £153 P/P 40/- (Add £10 for GL75/HL75 and G800E.)</p>	<p>SAVE £55</p> <p>A25/1. Leak 5T70, or Teleton T5F50, Pioneer PL12AC, G800E or AT12 X, Plinth/Cover, Kef Concerto's. Total Price £242</p> <p>SYSTEM PRICE £187 P/P 50/- (Alternative to PL12AC-5L75B with ATVM3.)</p>	<p>SAVE £23</p> <p>B2/4. Nikko TRM30 IC or Metrosound 5T20, 5P25 or MP60, G850 or AT66. Deluxe Plinth/Cover, Super Lintons or Ministers or Leak 200. Total Price £110</p> <p>SYSTEM PRICE £87 P/P 30/- B2D/4 - GL69/G800 £102 P/P 30/-; also GL75/G800E £112 P/P 30/-. (Add £10 for Mezzo III's.)</p>	
<p>SAVE £21</p> <p>C11/8. Teleton F2000 T/A, Garrard 5P25, Acos 93-1 Stereo, Plinth/Cover, Pair DJ12 3 way systems, or KNB24/3. Total Price £100</p> <p>SYSTEM PRICE £69 P/P 30/- B118/8 with 2025TC / 9TAHC Diam. £65 P/P 30/-.</p>	<p>SAVE £35</p> <p>B31A/3. Nikko TRM 40 IC GL69 II, G800, HL69 Plinth/Cover, Meltons or Mezzo III or Ditton 15 to choice. Total Price £157</p> <p>SYSTEM PRICE £122 P/P 30/- B31D/5 with 5P25/AT66, £95 P/P 30/-. (Add £6 for Super Lintons or Ministers.)</p>	<p>SAVE £27</p> <p>C91/A4. Teleton GA101, 5P25/G800 Plinth/Cover, Super Lintons or Ministers. Total Price £110</p> <p>SYSTEM PRICE £83 P/P 30/- C91/4 - with GL69 £98 P/P 30/- (Save £31). (Either system add £10 for Ditton 15 or Kef Celeste II or deduct £7 for Dentons.)</p>	
<p>SAVE £23</p> <p>C5/5. Sinclair 2000 or Teleton 203E or A150, Garrard 5P25 Mk II, G800 Plinth/Cover, Pair Dentons. Total Price £94</p> <p>SYSTEM PRICE £71 P/P 30/- (Add £7 for Super Lintons or Ministers.) C5A/4 - 5L65B/AT66/ Super Lintons (Save £21), £84 P/P 30/-.</p>	<p>SAVE £23</p> <p>B31/D/5. Nikko TRM 401C or Rogers Ravensbrook. 5P25/G800 Plinth/Cover. Denton Speakers. Total Price £118</p> <p>SYSTEM PRICE £95 P/P 30/- (Add £6 for Super Lintons or Ministers. Add £4 for 5L65B with AT66 or G850.)</p>	<p>SAVE £50</p> <p>D2A. Quad 33+303, GL75, G800E, Plinth/Cover, KEF Concerto's. Total Price £275</p> <p>SYSTEM PRICE £225 P/P 50/- Alternative to Quad, Nikko TRM 1200, Thorens TD150AB, alternative to GL75. (Add £40 for Wharfedale 100.1.)</p>	<p>ELECTRONICS - AUDIO CATALOGUE</p> <p>Latest 6th impression, with 350 fully detailed and illustrated pages. Contains High Fidelity, Electronic Components and Equipment. Complete with 10/- value discount vouchers to use with purchases.</p> <p>Price 7/6, p.p. 2/- ORDER NOW— SEND AWAY TODAY!</p>



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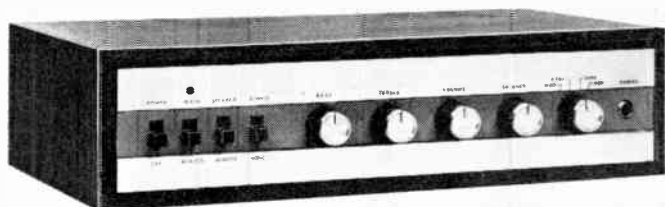
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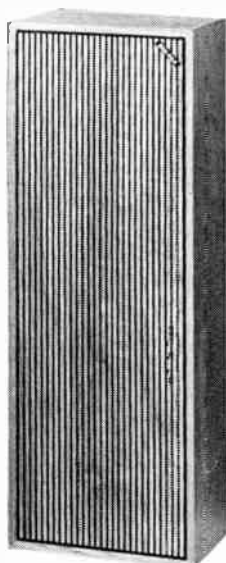
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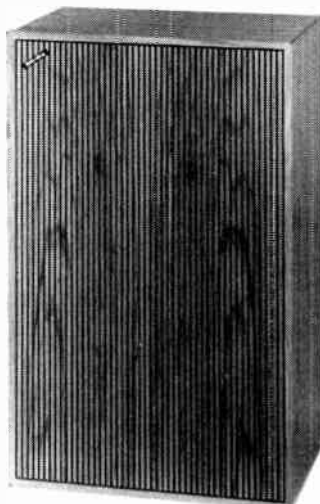
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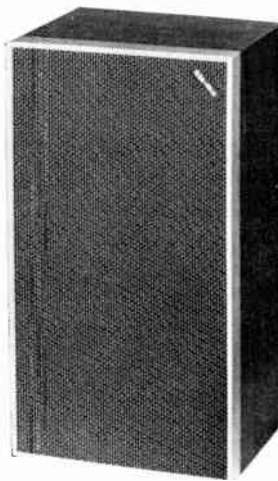
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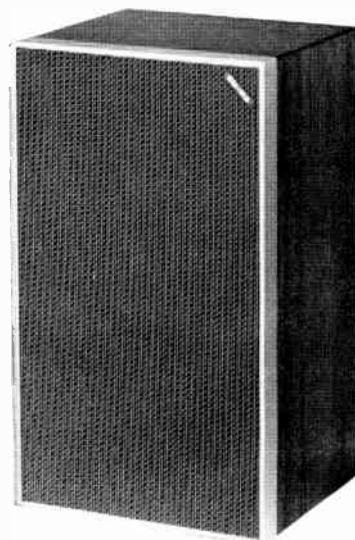
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PHILIPS RH691	£83 0 0	£71 10 0
PIONEER KX320	£78 12 4	£63 10 0
PIONEER SX770	£160 8 6	£129 10 0
TELETON CR10T	£39 10 0	£32 0 0

	Rec. Retail Price	Discount Price
TELETON F2000	£51 19 0	£39 10 0
TELETON MK990	£64 12 0	£49 10 0
TELETON R8000	£69 10 0	£52 10 0
TELETON TFS50	£75 10 0	£54 10 0
WHARFEDALE 100.1	£149 0 0	£123 10 0

SPEAKERS

ARENA HT20	£32 11 0	£27 15 0
ARENA HT26	£78 15 0	£65 10 0
ARENA HT27	£18 18 0	£14 15 0
B & W DMI	£3 20 0	£26 10 0
B & W DM3	£63 0 0	£49 10 0
B & W DM70	£139 0 0	£117 10 0
CELESTION Ditton 15	£32 0 0	£26 0 0
CELESTION Ditton 25	£59 17 0	£45 0 0
DULCI A53	£9 9 0	£8 0 0
GOODMANS Maxim	£20 15 6	£16 15 0
GOODMANS Magnum K	£40 2 0	£29 9 6
GOODMANS Magister	£57 0 0	£40 0 0
GOODMANS Mezzo III	£30 18 0	£23 10 0
GOODMANS Minster per pair	£44 18 0	£38 10 0
GRUNDIG System 412	£86 7 10	£72 10 0
GRUNDIG System 740	£176 9 10	£145 0 0
KEF Cresta	£22 3 7	£18 0 0
KEF Concerto	£53 10 0	£45 0 0
KEF Choral	£34 16 6	£29 10 0
LEAK 200 per pair	£49 18 0	£41 10 0
LEAK 300 per pair	£65 0 0	£52 0 0
LEAK 600 (each)	£49 10 0	£37 0 0
LOWTHER Acousta PM6	£45 10 0	£37 10 0
MORDAUNT SHORT MS 100	£40 19 0	£35 0 0
MORDAUNT SHORT MS 600	£57 15 0	£45 0 0
PHILIPS RH481 per pair	£22 0 0	£17 10 0
SANYO SX-X per pair	£37 16 0	£32 10 0
WHARFEDALE Denton per pair	£39 18 0	£33 0 0
WHARFEDALE Super Linton per pair	£49 18 0	£42 10 0
WHARFEDALE Melton	£32 10 0	£26 0 0
WHARFEDALE Dovedale III	£42 10 0	£34 10 0
WHARFEDALE Airedale	£69 10 0	£56 10 0
WHARFEDALE Rosedale	£57 0 0	£47 10 0
WHARFEDALE Tritons	£59 18 0	£49 0 0
WHARFEDALE Unit 3	£13 0 0	£10 0 0
WHARFEDALE Unit 4	£18 0 0	£14 0 0
WHARFEDALE Unit 5	£26 0 0	£21 0 0

PLAYING DECKS

GARRARD 401	£31 14 2	£27 0 0
GARRARD SL95B	£45 9 1	£37 10 0
GARRARD SL75B	£35 12 2	£28 10 0
GARRARD SL65B	£19 6 5	£15 10 0
GARRARD SP25 Mk. III	£15 15 11	£12 19 6
GARRARD AP75	£23 16 0	£17 15 0
GOLDRING AP76	£26 10 0	£21 10 0
GOLDRING GL69 II	£26 12 6	£22 0 0
GOLDRING GL69/P/II	£35 7 6	£30 0 0
GOLDRING GL75	£36 8 2	£32 10 0
GOLDRING GL75P	£46 18 8	£39 10 0
GOODMANS 3025	£37 14 9	£31 10 0
J.P. T.500	£36 15 4	£29 10 0
PIONEER PL12AC	£50 17 11	£41 10 0
THORENS TD150A Mk. II	£46 3 3	£39 10 0
THORENS TD150 AB II	£49 19 3	£42 0 0
THORENS TD124 II	£46 15 10	£39 0 0
THORENS TD125	£75 17 8	£59 10 0
THORENS TD125 AB	£120 3 11	£95 0 0

STEREO CARTRIDGES

AUDIO TECHNICA AT66	£6 4 8	£5 10 0
AUDIO TECHNICA AT21S	£8 14 4	£7 10 0
AUDIOTECHNICA AT21X	£15 9 11	£13 0 0
ADC 660	£16 6 6	£13 10 0
ADC 10E Mk. II	£46 4 2	£36 10 0
GOLDRING G850	£6 10 0	£5 10 0
GOLDRING G800	£13 0 0	£9 10 0
GOLDRING G800E	£18 17 1	£15 10 0
GOLDRING G800 S/E	£26 0 0	£19 10 0
GOLDRING CS90	£5 4 0	£4 7 6

	Rec. Retail Price	Discount Price
GOLDRING CS91E	£7 16 1	£6 10 0
NEAT V70	£5 4 8	£4 7 6
NEAT V70E	£7 15 3	£6 12 6
PICKERING V15/AME2	£19 5 10	£16 10 0
PICKERING V15 AM2	£13 17 6	£11 10 0
PICKERING V15 AC2	£10 14 8	£8 7 6
PICKERING V15 AC2	£8 8 0	£6 17 6
SHURE M3D M	£7 8 3	£6 0 0
SHURE N3D	£5 11 2	£4 5 0
SHURE M31E	£12 19 5	£10 5 0
SHURE N31E	£9 5 3	£7 5 0
SHURE M32E	£12 0 11	£9 10 0
SHURE N32E	£8 6 9	£6 10 0
SHURE M44 7	£10 3 10	£8 5 0
SHURE N44 7	£6 9 8	£5 2 6
SHURE M44E	£12 0 11	£9 0 0
SHURE N44E	£10 3 10	£8 2 6
SHURE M55E	£12 19 5	£10 10 0
SHURE N55E	£11 12 4	£8 5 0
SHURE M75/6	£16 13 6	£13 0 0
SHURE N75/6	£8 6 9	£6 10 0
SHURE M75 EJ	£19 19 1	£16 5 0
SHURE N75 EJ	£11 2 4	£8 12 6
SHURE 75E II	£21 6 2	£17 0 0
SHURE V15 II	£40 15 0	£29 17 6
SHURE VNISE	£16 13 6	£14 10 0

STEREO TAPE DECKS AND RECORDERS

AKAI 4000D	£89 10 0	£75 10 0
AKAI 1710L	£89 10 0	£69 10 0
AKAI 150D	£199 0 0	£109 10 0
AKAI 1800 SD	£130 2 4	£165 0 0
FERROGRAPH 724/722	£242 10 9	£199 10 0
FERROGRAPH 702/704	£207 7 0	£169 10 0
FERROGRAPH 713	£188 10 0	£157 0 0
GRUNDIG T.K.147	£87 10 0	£72 10 0
GRUNDIG T.K.246	£128 17 8	£109 0 0
GRUNDIG T.K.248	£157 14 0	£120 0 0
REVOX 1104	£204 15 0	£184 10 0
PHILIPS 4404	£80 0 0	£67 10 0
PHILIPS 4407	£103 15 4	£87 0 0
PHILIPS 4408	£136 5 0	£110 0 0
SANYO MR 801	£69 0 0	£57 10 0
SANYO MR 929	£100 16 0	£86 0 0
SANYO MR 939	£110 0 0	£91 10 0
SANYO MR 800	£89 0 0	£75 0 0
TELEFUNKEN 207	£110 0 0	£95 0 0
TELEFUNKEN 204TS	£124 0 0	£105 0 0
SHARP RD 712	£75 0 0	£60 0 0

TRANSCRIPTION ARMS

AUDIO TECHNICA A.T.1005 Mk II	£19 19 0	£16 5 0
SME 3009 with S2 shell	£34 0 0	£27 0 0
SME 3012 with S2 shell	£36 0 0	£29 0 0
GOLDRING L75	£12 10 0	£9 19 6
GOLDRING L69	£9 5 9	£8 5 0
NEAT G30 B	£16 10 0	£13 10 0

STEREO HEADPHONES

AKAI A5E9SE	£6 16 0	£5 10 0
PIONEER S.E.50	£19 3 8	£15 0 0
PIONEER S.E.30	£12 19 6	£10 0 0
PIONEER S.E.20A	£9 19 6	£7 0 0
SANSUI S52	£7 14 6	£6 10 0
SANSUI S520	£16 10 0	£13 0 0
SHARP HP100	£5 17 6	£4 10 0
TELETON SH301D	£4 10 0	£3 10 0

GOLDRING GL75 with Goldring plinth and hinged perspex cover ready fitted with Goldring 800E cartridge ready wired to 5 pin din or phono plug. Rec. Retail price £67. 19. 10. Discount price £54. 0. 0.

GOLDRING GL69 Mk II with Goldring plinth and hinged perspex cover ready fitted with Goldring 800 cartridge ready wired to 5 pin din or phono plug. Rec. Retail price £50. 11. 9. Discount price £41. 10. 0.

All goods are in manufacturer's sealed cartons and are insured against loss or damage in transit. Carriage 10/- for speakers and stereo tape recorders. 7/6 for amplifiers, tuners, playing decks, tape decks. 5/- for cartridges, headphones and transcription arms. We are a retail shop giving a retail shop service. Comparator demonstrations. Over 100 combinations to choose from. Send cash/cheque with order. Personal callers very welcome. 9.30 am-6 pm Monday to Saturday. Thursday ½ day closing.

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AMPLIFIERS (P/P 75p)

*Armstrong 521	£46-00
*Cambridge Audio P.40	£64-50
*Nikko TRM 30 IC	£30-00
*Rogers Ravensbrook	£41-00
*J. E. Sugden A.21/II	On Application
Tripletone 8+8/II	£30-00

TUNER AMPLIFIERS (P/P £1-00)

*Dynaco Scan-Dyna 3000	£120-00
Armstrong 526	£87-00

TUNERS (P/P 50p)

*Nikko FAM.10	£40-00
*Leak Stereo Fetic-Chas.	£55-00
*Revox A.76	On Application

TURNTABLES (P/P 75p)

*Connoisseur B.D.I Kit... .. .	On Application
Goldring Lenco GL.75	£32-50
Goldring Lenco GL.75P/C	£43-50
Garrard AP.76	£21-00
*MacDonald MP.60	£12-00
Thorens, Philips, Dual	On Application

CARTRIDGES (P/P 25p)

ADC.25	£70-00
ADC.26	£50-00
*ADC 10-E	£29-00
*Decca 4RC	£13-50
*Grado FTR	£12-00

*Goldring G.850	£5-00
*Goldring G.800	£7-50
*Shure M.75+6/II	£11-00
*Shure V.15-II-Imp.	£32-00

ARMS (P/P 50p)

*Audio Technica AT.1005/II	£16-50
*Lenco L.75	£11-00
*SME 3009/S.2	£27-50

SPEAKER SYSTEMS (P/P £1-50 per pair)

*KEF Cresta II	£37-00
*Celestion Ditton 120	£40-00
*Celestion Ditton 15	£51-00
*KEF Chorale	£58-00
*KEF Cadenza	£64-00
*PWB NS.4	£70-00 A/SO
*KEF Concerto	£84-00
*Spendor Monitor, IMF (Full Range) and Cambridge Audio R.50W	On Demonstration and Application

TAPE UNITS (P/P £1-00)

*Revox 1104 & Tandberg 3000X	On Demonstration and Application
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HEADPHONES (P/P 25p)

*AKG K.60	£11-50
*Koss PRO 4AA	£22-50
Stax SR3/ENG	£39-00
Koss ESP.6	£36-00

* On Demonstration. A/SO denotes collection only E. & O. E.

For further details, advice or just a chat, contact:—

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Spend under £7.50 and get away from it all – whenever you like – in your own private world of Stereo sound. All you need is a pair of Eagle SE 30 Studio Stereo Headphones . . . leather-padded for maximum comfort . . . adjustable attenuators for individual balance . . . stereo/mono switch for mono listening without phase distortion . . . extended frequency response for true musical enjoyment . . . and more. Hearing's believing – with a pair of SE 30's. Visit your favourite Hi Fi dealer for a demonstration.

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This outstandingly successful cassette tape recorder combines all the advantages of complete portability, easy operation, excellent performance, robust construction and facilities to enable you to use the instrument with the utmost confidence in the results. With built-in loudspeaker, output can be fed to external speaker or amplifier and the instrument can also be used together with another recorder. Supplied complete with 'pencil' dynamic microphone combining on-off switch control and stand, carrying case (with room for mic.), cassette and library rack to hold your cassettes when not in use. **Brand new, in maker's carton with 12 months' guarantee.**

Modern Electrics **£23.10.0**
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(P/p in U.K.—5/-)

STOP PRESS ★ ★ ★ PHILIPS NEW CASSETTE RECORDER N.2202 AVAILABLE FROM STOCK NOW

Modern Electrics are pleased to announce that they already have this very latest model in stock now. Complete with microphone, carrying case, and cassette, we give you the batteries and pay the postage if you order by mail.

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GARRARD SP.25 MK. II

With large turntable, cue and pause control, stylus pressure balance, bias compensation, auto stop and arm return, and other refinements. For 110/250V. a.c. Brand new and guaranteed. Supplied in maker's carton. **LIST PRICE £15/9/7. (Carr. in U.K. 10/6)**

OUR PRICE £10.19.6

We stock a wide range of cartridges suitable for this unit, as well as plinth base and lid. S.a.e. with enquiries please.

WHEN ORDERING

Please send cash with order and mention HF.12. Where applicable, cost of carriage will be advised immediately. Correspondence requiring a reply should be accompanied by S.A.E.

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Since the Company's foundation over a quarter of a century ago, Modern Electrics has specialised in the export of high fidelity equipment to all parts of the world. Our Export Department takes care of the formalities for you, and of course, all items are free of purchase tax where applicable. All goods are expertly packed and carriage is charged at cost. **ORDER IN CONFIDENCE FROM MODERN ELECTRICS.**

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3 UNIQUE OFFERS FROM MODERN ELECTRICS

1 GOLDRING/GOLDRING 69 COMBO saves you £12.10.0

In this attractive combination we have put the Goldring GL.69 four-speed transcription motor with fully variable speed control together with the precision arm and superb Goldring 800 Magnetic Stereo Cartridge fitted with diamond stylus onto a craftsman built teak finished plinth with clear hard plastic top. The assembly is wired complete with phono plugs, ready for immediate use. Total value £53, made up by GL.69, list £26/12/6; 800 cartridge, list £13; plinth and top, list £12; phono plugs and wiring allow £17/6. **At £40/10/- we save you £12/10/-.** (In the interests of your satisfaction, we prefer selling this combo to personal shoppers rather than risk these fine products being damaged in transit.)

£40.10.0

2 GOLDRING/GOLDRING 75 COMBO saves you £16.0.0

Here is an assembly to provide the very finest standards of performance with a very substantial saving in outlay. In this combination we provide the superb Goldring GL 75 motor assembly with its beautifully engineered arm and Goldring Stereo 800 cartridge (with diamond) mounted on a craftsman built teak finished plinth with clear hard plastic top. The assembly is wired ready for immediate use with phono plugs and mains lead. Total value of £65 made up by GL.75 motor and arm, list £39; 800 cartridge, list £13; plinth and top, list £13. **At £49 we save you £16.** (In the interests of your satisfaction, we prefer selling this combo to personal shoppers rather than risk these fine products being damaged in transit.)

£49

3 GARRARD/GOLDRING COMBO saves you £12.2.0

This Modern Electrics 'combo' offers outstandingly good value by bringing together in one top-line assembly the latest Garrard AP.75 3-speed single record playing unit, fitted with the brilliant Goldring 800 magnetic stereo cartridge (with diamond) mounted on to a well styled teak finished plinth with clear plastic hard cover, wired ready for immediate use. **At £34/10/- we save you £12/2/-**—as follows—AP.75, list £23/16/7; 800 cartridge, list £13/-; plinth and cover, list £9/15/5. (In the interests of your satisfaction, we prefer selling this combo to personal shoppers rather than risk these fine products being damaged in transit.)

£34.10.0

CASSETTE OFFERS

PHILIPS LOW NOISE

C.60	..	..	..	Our price 14/6
C.90	..	..	..	Our price 21/-
C.120	..	..	..	Our price 28/6

P/P 6d. per cassette. Six or more, post free in U.K.

MAXELL (Japanese)

C.60	..	..	..	10/6
C.90	..	..	..	15/-
C.120	..	..	..	22/6

10% discount on orders for 12 or more (mixed if required).

P/P in U.K. 6d. per cassette—6 or more post free in U.K.

Cassette tape head cleaner, 11/2 (p/p 6d.)
Metrosound cassette tape head cleaner, 11/2 (P/P U.K. 6d.)

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2,400' 7"	List 65/6. Our price 58/6
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1,200' 5"	List 35/6. Our price 30/-

In round packs.

LONG PLAY

1,800' 7"	List 52/6. Our price 35/-
1,200' 5 1/2"	..	..	..	List 35/6. Our price 28/-
900' 5"	..	..	..	List 30/6. Our price 22/-

In round packs

LOW NOISE, LONG PLAY

1,800' 7"	..	..	..	List 62/- . Our price 54/6
1,200' 5 1/2"	..	..	..	List 43/5. Our price 37/9
900' 5"	..	..	..	List 37/9. Our price 33/-

In Library Cases.

Post free in U.K. 10% Discount on orders for 12 or more mixed or same sizes on one order.

MODERN ELECTRICS (RETAIL) LTD.

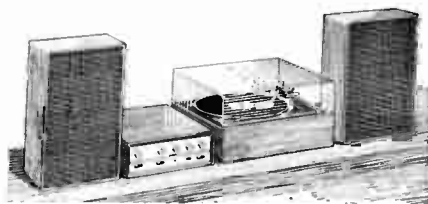
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SENSATIONAL STEREO OFFERS!

NUSOUND "66" SYSTEM



The famous NuSound Stereo System "66" has proved to be the most popular Hi-Fi Stereo System available. The selected equipment has been expertly matched by the NuSound team to produce a system capable of truly outstanding performance and representing today's finest value for money.

The system comprises the world famous **TELETON 203E STEREO AMPLIFIER** incorporating 18 silicon transistors, scratch filter, stereo headphone socket etc. giving total output of 12 watts. Frequency range 30-20,000 Hz. Beautifully styled and housed in attractive matching wooden cabinet. The **GARRARD SP25 MK II** 4-speed single record player in deluxe teak plinth with high quality perspex cover is fitted with the **NM77 STEREO MAGNETIC CARTRIDGE**. This top quality high compliance cartridge with 0.7 mil diamond stylus, frequency response 20-20,000 Hz, is capable of truly superlative performance and on test produced results equal to cartridges costing over £15. The excellent results produced by the combination of the Teleton amplifier and the NM77 cartridge are fed into two **ALLARD SS3 HI-FI SPEAKER ENCLOSURES** housing a perfectly matched 3-way speaker system capable of handling the full output of the Teleton 203E. Each enclosure (10" x 17 1/2" high) is teak finished on all sides and has an attractive padded black cloth front that combines elegant appearance with excellent Hi-Fi reproduction.

Teleton 203E .. £28 7 6
Garrard SP25 .. £16 8 11
Plinth & cover .. £8 19 6
NM77 Cartridge .. £9 19 6
SS3's (2) .. £33 12 0
Leads/Plugs etc. .. £2 5 0

SYSTEM PRICE
66 gns.
Carr. & Ins. 35/-
CASH OR TERMS

SAVE £30.6.5

For value for money coupled with outstanding performance System "66" is the best package system available today. For those requiring autochange facilities see System "T311".

● FREE TRAVEL

If you reside more than 30 miles from Central London we offer a unique **FREE TRAVEL FACILITY** enabling you to visit London and select a NuSound System. Send to Head Office for Free Travel Voucher.

● HIRE PURCHASE TERMS

AVAILABLE FOR PERSONAL CALLERS. (See Free Travel.) MAIL ORDERS, CASH ONLY.

CREATE YOUR OWN SYSTEM

Any amplifier, turntable, cartridge, speakers etc., featured in our advertised systems can be combined to create a system to suit your individual requirements. Our sales staff will be pleased to quote for your own money saving system.

IMPORTANT NOTE! As from 1st January, '71, many manufacturers prices are being considerably increased. All prices quoted were those ruling when this advertisement went to press and are subject to increase when new prices are known.

FERROGRAPH SYSTEMS



SYSTEM "F433"
F307 .. £59 0 0
Goldring GL75P £47 13 4
Goldring G800E £18 17 1
Meltons (2) .. £59 0 0
Leads/Plugs etc. £3 0 0

Total £187 10 5

SYSTEM PRICE
154 gns.
Carr. 50/-, Cash or Terms.
SAVE £25.16.5.

SYSTEM "F546"
F307 .. £59 0 0
Thorens .. £59 0 0
TD150AB II .. £47 8 7
G800 Super E .. £26 0 0
Sandwiches (2) £91 0 0
Leads/Plugs etc. £3 0 0

Total £226 8 7

SYSTEM PRICE
182 gns.
Carr. 50/-, Cash or Terms.
SAVE £35.6.7.

QUAD SYSTEMS



SYSTEM "Q546"
Quad 33/303 .. £98 0 0
Thorens TD150 .. £47 8 7
AB II .. £47 8 7
G800 Super E .. £26 0 0
Sandwiches (2) £91 0 0
Leads/Plugs etc. £3 10 0

Total £265 18 7

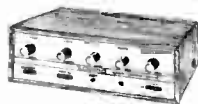
SYSTEM PRICE
216 gns.
Carr. 50/-, Cash or Terms.
SAVE £39.2.7.

SYSTEM "Q434"
Quad 33/303 .. £98 0 0
Goldring GL75P £47 13 4
Goldring G800E £18 17 1
Dovedales (2) .. £79 0 0
Leads/Plugs etc. £3 10 0

Total £247 0 5

SYSTEM PRICE
203 gns.
Carr. 50/-, Cash or Terms.
SAVE £33.17.5.

NUSOUND HI-FI STEREO SYSTEMS



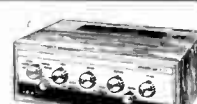
TELETON 203E



ROGERS RAVENSBROOK



ARMSTRONG 521



LEAK STEREO 30+

SYSTEM "T311"
Teleton 203E .. £28 7 6
Garrard SL65B £21 5 0
Base/Cover .. £8 19 6
NM77 cartridge £9 19 6
SS3's (2) .. £33 12 0
Leads/Plugs etc. £2 5 0

Total £104 8 6

SYSTEM PRICE
71 gns.
Carr. 35/-, Cash or Terms.
SAVE £29.17.6.

SYSTEM "RK112"
Ravensbrook .. £49 0 0
Garrard SP25 .. £16 8 11
Base/Cover .. £8 19 6
NM77 cartridge £9 19 6
Derams (2) .. £38 0 0
Leads/Plugs etc. £3 0 0

Total £125 7 11

SYSTEM PRICE
98 gns.
Carr. 50/-, Cash or Terms.
SAVE £22.9.11.

SYSTEM "A222"
Armstrong 521 £56 0 0
Garrard AP76 £28 17 7
Base/Cover .. £9 19 6
Goldring G300 £13 0 0
Derams (2) .. £38 0 0
Leads/Plugs etc. £3 0 0

Total £148 17 1

SYSTEM PRICE
119 gns.
Carr. 50/-, Cash or Terms.
SAVE £23.18.1.

SYSTEM "L223"
Stereo 30 Plus £59 10 0
Garrard AP76 £28 17 7
Base/Cover .. £9 19 6
Goldring G800 £13 0 0
Meltons (2) .. £59 0 0
Leads/Plugs etc. £3 0 0

Total £173 7 1

SYSTEM PRICE
139 gns.
Carr. 50/-, Cash or Terms.
SAVE £27.8.1.

SYSTEM "T112"
Teleton 203E .. £28 7 6
Garrard AP76 .. £28 17 7
Base/Cover .. £8 19 6
NM77 cartridge £9 19 6
Derams (2) .. £38 0 0
Leads/Plugs etc. £3 0 0

Total £104 15 5

SYSTEM PRICE
75 gns.
Carr. 50/-, Cash or Terms.
SAVE £26.0.5.

SYSTEM "RK222"
Ravensbrook .. £49 0 0
Garrard AP76 .. £28 17 7
Base/Cover .. £9 19 6
Goldring G800 £13 0 0
Derams (2) .. £38 0 0
Leads/Plugs etc. £3 0 0

Total £141 17 1

SYSTEM PRICE
115 gns.
Carr. 50/-, Cash or Terms.
SAVE £21.2.1.

SYSTEM "A433"
Armstrong 521 £56 0 0
Goldring GL75P £47 13 4
Goldring G800E £18 17 1
Meltons (2) .. £59 0 0
Leads/Plugs etc. £3 0 0

Total £184 10 5

SYSTEM PRICE
152 gns.
Carr. 50/-, Cash or Terms.
SAVE £24.18.5.

SYSTEM "L433"
Stereo 30 Plus £59 10 0
Thorens TD150 £47 13 4
Goldring G800E £18 17 1
Meltons (2) .. £59 0 0
Leads/Plugs etc. £3 0 0

Total £188 0 5

SYSTEM PRICE
56 gns.
Carr. 50/-, Cash or Terms.
SAVE £24.4.5.

SYSTEM "T222"
Teleton 203E .. £28 7 6
Garrard AP76 .. £28 17 7
Base/Cover .. £9 19 6
Goldring G800 £13 0 0
Derams (2) .. £38 0 0
Leads/Plugs etc. £3 0 0

Total £121 4 7

SYSTEM PRICE
92 gns.
Carr. 50/-, Cash or Terms.
SAVE £24.12.7.

SYSTEM "RK233"
Ravensbrook .. £49 0 0
Garrard AP76 .. £28 17 7
Base/Cover .. £9 19 6
Goldring G800E £18 17 1
Meltons (2) .. £59 0 0
Leads/Plugs etc. £3 0 0

Total £168 14 2

SYSTEM PRICE
137 gns.
Carr. 50/-, Cash or Terms.
SAVE £24.17.2.

SYSTEM "A546"
Armstrong 521 £56 0 0
Thorens TD150 .. £47 8 7
AB II .. £47 8 7
G800 Super E .. £26 0 0
Sandwiches (2) £91 0 0
Leads/Plugs etc. £3 0 0

Total £223 8 7

SYSTEM PRICE
180 gns.
Carr. 50/-, Cash or Terms.
SAVE £34.8.7.

SYSTEM "L546"
Stereo 30 Plus £59 10 0
Thorens TD150 .. £47 8 7
AB II .. £47 8 7
G800 Super E .. £26 0 0
Sandwiches (2) £91 0 0
Leads/Plugs etc. £3 10 0

Total £227 8 7

SYSTEM PRICE
184 gns.
Carr. 50/-, Cash or Terms.
SAVE £34.4.7.

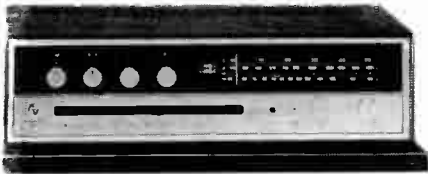


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reproduction of music etc. Features include speaker muting, loudness controls, tape record/replay, stereo headphone socket etc., etc. Supplied as a complete stereo system with record player, base and cover, magnetic cartridge, speakers etc. All three combinations detailed below show substantial savings only made possible by the NuSound purchasing power!

SYSTEM "AT122"

526 .. £104 14 3
SP25 .. £16 8 11
800 .. £13 0 0
Base/Cover .. £8 19 6
Derams (2) .. £38 0 0
Leads/Plugs etc. £3 0 0

Total £184 2 8

System Price **146 gns.**

Carr. 50/- Cash or Terms

SAVE £30.16.8.

SYSTEM "AT233"

526 .. £104 14 3
AP76 .. £28 17 7
800E .. £18 17 1
Base/Cover .. £9 19 6
Meltons (2) .. £59 0 0
Leads/Plugs etc. £3 0 0

Total £224 6 5

System Price **182 gns.**

Carr. 50/- Cash or Terms

SAVE £33.6.5.

SYSTEM "AT544"

526 .. £104 14 3
Thorens TD150
AB II .. £47 8 7
G800 Super E £26 0 0
Dovedales (2) £79 0 0
Leads/Plugs etc. £3 0 0

Total £260 2 10

System Price **216 gns.**

Carr. 50/- Cash or Terms

SAVE £33.6.10.

TOSHIBA SOFIA STEREO SYSTEM MODEL FS2500

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The FS2500 is a fully transistorised stereo system giving reception on AM 530-1605 KHz and FM 88-108 MHz. Stereo multiplex decoder is built in enabling stereo FM broadcasts to be received with perfect clarity. Precision two speed turntable with lightweight pick up arm fitted stereo ceramic cartridge with long life diamond stylus. Beautifully designed amplifier unit with Volume, Balance, Tone, Tuning and Selector Controls, stereo indicator light and stereo headphone socket. Complete with attractive matching speaker systems.

Rec. Retail Price
£89.5.0.

OUR PRICE

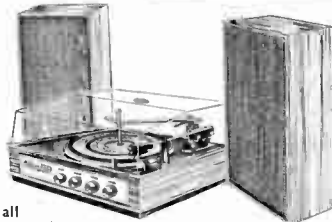
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ALLARD APOLLO STEREO SYSTEM

Offers outstanding stereo performance at low, low cost.

A highly recommended compact stereo system comprising a 7 watts all transistor stereo amplifier with separate bass, treble, volume and balance controls. Attractively mounted in teak plinth together with Garrard 2025 T/C Autochanger incorporating cue and pause control and low mass pick up arm fitted with diamond stylus stereo cartridge. A pair of Book-shelf 3 way loudspeaker systems in matching teak finish with attractive cloth fronts complete the system and provide excellent stereo reproduction. Supplied complete with tinted transparent dust cover plus all leads, plugs, etc. for simple installation.



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A COMPLETE AUDIO SYSTEM FOR RECORDS, TAPE AND RADIO REPRODUCTION



Philips RH822 Stereo Cassette Recorder/Tuner Amplifier complete with Garrard Record Unit and separate speakers.

RH822 Specifications

Tuner Section

Incorporates 5 wavebands— LW: 800-2000 metres; MW1: 213-580 metres; MW2: 185-214 metres; SW: 30.6-50.4 metres and VHF/FM 87.5-108 MHz. On FM 3 pre set selection controls each with separate tuning scale and AFC ensure easy tuning and freedom from drift. Built in FM multiplex decoder automatically switches from mono to stereo reception and indicator lamp shows when stereo is being received.

Stereo Amplifier section

Superb 20 watt Hi Fi Stereo Amplifier with separate bass and treble controls. Overall response 35-20,000 Hz. Signal to noise ratio better than 47 dB. Crosstalk better than 38 dB. Automatic physiological compensation for low volume settings.

Stereo Cassette Recorder section

4 track stereo record and replay using popular Compact Cassettes. Records direct from tuner, record player or microphones with replay through 20 watt amplifier section. Automatic recording level control. Safety interlock to prevent accidental erasure of Musicassettes.

To complete this amazing system we have selected the popular GARRARD SP25 Record Unit with Stereo ceramic cartridge and fitted into deluxe teak plinth with transparent cover and a pair of superb ALLARD 553 HI-FI SPEAKER SYSTEMS to reproduce the truly outstanding performance of this wonderful system.

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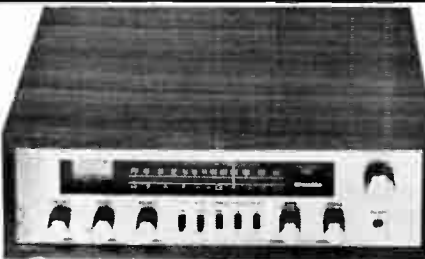
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gns.

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all leads and
plugs, etc.

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expect to pay
for a medium
priced stereo
tape recorder.



NUSOUND DUETTE STEREO TUNER/AMPLIFIER SYSTEM

The heart of this system is the top quality Duette SAT.260 Stereo Tuner Amplifier giving outstanding performances on AM, FM, FM Stereo Radio and stereo/mono record reproduction. Covering FM 88-108 Mc/s and AM 535-1605 Kc/s and incorporating stereo decoder and stereo tuning meter for crystal clear FM Stereo Reception. Providing 24 watts power output which when combined with the world famous Garrard SP25 record unit, NM77 stereo cartridge, and a pair of Allard 553 speakers make a truly Hi Fi Stereo Radio/Record Playing system to be proud of and available at a fantastically low price!

SAVE
£31 8 8

SYSTEM
PRICE

109 GNS.

Carr. & Ins. 50/-

SYSTEM "DI21"

SAT.260 .. £73 17 9
SP25 .. £16 8 11
Base/Cover .. £8 19 6
NM77 .. £9 19 6
553's (2) .. £33 12 0
Leads/Plugs etc £3 0 0

Total £145 17 8

Cash or Terms

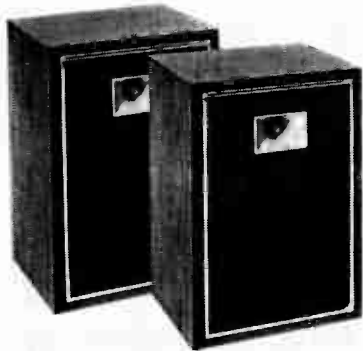
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Power Handling: 10 watts RMS. **Frequency Range:** 35-20,000 Hz. **Flux Density:** 11,000 gauss. **Impedance:** 8 ohms. **Dimensions:** 300 x 200 x 170 mm. **Finish:** oiled teak.

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Dual 1219 less Cart. ..	£60-40	£54-30	Armstrong M8 Decoder ..	£9-50	£7-95	Philips RH590 Amp. ..	£51-75	£43-95	Kef Chorale ..	£34-80	£30-85	
Dual 1209 less Cart. ..	£42-60	£38-30	Armstrong M4 Decoder ..	£9-50	£7-95	Philips RH591 Amp. ..	£76-75	£65-25	EMI 'Richmond' ..	Worth	£32-00	£22-95
Dual CK6 Base ..	£9-75	£8-80	Cambridge P40 Amp. ..	£75-00	£63-75	Pioneer SX440 Tun./ Amp. ..	£111-05	£92-75	Jordan Watts Module ..	£12-00	£10-50	
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Dual CK20 Base for 1219 ..	£12-10	£11-25	Dual CV40 Amp. ..	£73-50	£62-50	Pioneer LX800 Tun./ Amp. ..	£206-90	£181-80	Leak Mini Sandwich ..	£29-75	£20-50	
Dual CH20 Cov. for 1219 ..	£12-10	£11-25	Dual CV80 Amp. ..	£89-50	£76-00	Pioneer SX770 Tun./ Amp. ..	£156-00	£130-25	Tk/Rswd/Walnut ..	£29-75	£22-50	
Trans. Ref. Turnt. with Arm ..	£98-10	£86-25	Dual CT15 Tun. ..	£81-75	£71-85	Pioneer SX990 Tun./ Amp. ..	£193-10	£161-25	Leak Sandwich Walnut ..	£45-50	£29-95	
Trans. Turnt. with Arm & Cov. ..	£57-60	£50-95	Dual CT16 Tun. ..	£106-00	£93-15	Pioneer SX1500 Tun./ Amp. ..	£225-85	£188-65	Leak Sandwich Teak ..	£45-30	£31-25	
SPC4 Cov. & WB4 Base ..	£10-10	£9-15	Decca A3000 Amp. ..	£178-05	£156-50	Pioneer TX500 Tuner ..	£79-25	£66-00	Leak Sandwich Mahogany ..	£45-50	£33-95	
SPC1 Cov. & WB1 Base ..	£7-55	£6-75	Decca T1000 Tun. ..	£32-00	£28-80	Pioneer TX900 Tuner ..	£151-95	£126-75	Leads for above ..	45p		
SPC4 Cov. & WB5 Base (for SP25 playing with Cov.) ..	£10-10	£9-15	Decca T2000 Tun. ..	£59-00	£52-95	Pioneer SA500 Amp. ..	£61-95	£49-60	Lowther PM6 ..	£46-50	£39-55	
Goldring GL69 Trans. Unit ..	£26-60	£23-05	Decca X70 Decoder ..	£7-35	£6-95	Pioneer SA700 Amp. ..	£97-95	£78-35	Lowther PM7 ..	£58-00	£47-35	
Goldring GL69P & Plinth and Cov. ..	£39-85	£35-15	Dulci 207 Amp. Chassis ..	£25-00	£21-25	Pioneer SA900 Amp. ..	£133-80	£107-00	Philips RH491 ..	£23-00	£20-25	
Goldring GL69P with Base, Cov. & G800 Cart. ..	£52-85	£44-90	Dulci 207M Amp. Case ..	£30-00	£23-50	Pioneer SR202 Reverb Amp. ..	£45-40	£38-95	Philips GL561/70 Enc. ..	£26-95	£22-95	
Goldring GL75 Trans. Unit ..	£36-40	£33-50	Dulci FMT7 Tun. ..	£23-00	£20-50	Pioneer KX330 Tun./ Amp. ..	£78-75	£69-50	Philips RH481 ..	£11-00	£9-90	
Goldring GL75P with Plinth & Cov. ..	£49-10	£45-05	Dulci FMT7S Tun. ..	£31-00	£27-25	Quad 303 & 33 Amp. ..	£98-00	£87-95	Pioneer CS53 ..	£41-65	£35-40	
Goldring GL75P with Base, Cov. & G800E Cart. ..	£68-45	£58-10	Ferrograph F307 Amp. Case. ..	£59-00	£46-95	Quad FM Tuner ..	£51-00	£46-00	The new Leak Range of Loudspeakers Special prices on application			
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Pioneer PL11AC with Arm Base & Cov. ..	£48-85	£40-95	Lux SQ1220 Amp. ..	£124-50	£89-65	Quad AM3 Tuner ..	£48-00	£44-60	Radon 404 ..	£9-00	£6-50	
Pioneer PL11AC with AT35X Elipt. Cart. ..	£73-10	£55-90	Lux SQ505 Amp. ..	£97-50	£79-50	Radford SMT3 Tun. ..	£76-50	£64-95	Radon Amethyst ..	£13-85	£12-25	
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Goldring L75 Arm. ..	£12-50	£11-00	Lux SQ606 Amp. ..	£84-00	£69-50	Revox A50 Amplifier Revox A75 Tuner Special prices on application						
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Audio Tech. At 1005 ..	£19-95	£17-00	J. Sugden A21 Amp. ..	£59-00	£49-00	Rotel 130 Tun./ Amp. ..	£79-85	£67-60	Rotel FAX660 Tun./ Amp. ..	£129-00	£99-95	
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Acos GP96-1	—	£1-98	—	Shure M44/5	£11-11½	£8-95	£6-46	Beyer M81 HL inc. lead	£11-25	£9-55
Acos GP104	—	£2-50	—	Shure M44/7	£10-19	£8-95	£5-60	Beyer M818 HL inc. lead	£22-92½	£19-30
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Audio Tech. AT66 L/C	£6-23½	£5-10	£3-00	Shure M55 Elipt.	£12-97	£11-25	£8-00	Eagle DM16 HL	£6-61½	£5-75
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Goldring G800	£13-00½	£8-95	£8-75					Akai ADM4 Dynamic 600 ohm	£3-87½	£3-40
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Behind every Lux amplifier is the knowledge, experience and advanced technology of a manufacturer who supplies equipment to the Japanese Radio Corporation. All Lux equipment is precision built to the highest standards to give you top power and low distortion combined with an amazing frequency response of 10-50,000 Hz. Care in con-

struction and attention to detail at every point in the construction of a Lux Amplifier ensure that you get top quality sound combined with the highest reliability. And don't forget the styling, surely Lux is some of the most attractive equipment on the market today. Ask for a demonstration and prove for yourself the superiority of Lux.

MODEL 77T AMPLIFIER

This amplifier has been reviewed, and highly praised and recommended as a really top class unit by Gordon J. King. 60 watts RMS. Silicon Mesa type power transistors.

List price £66-35. Cash price £54-50.



MODEL 1220 AMPLIFIER

The zenith of Lux technology in solid state circuitry design all silicon transistor amplifier with many useful control functions. 100 watts RMS. Distortion 0.1%.

List price £124-50. Cash price £89-65.



MODEL HQ-555 TUNER/AMPLIFIER

100 watts RMS, ideal integrated combination of 1220 amp. and 515 tuner. FET and IC for maximum sensitivity.

List price £168. Cash price £119-90



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STR-122 AM/FM Stereo Tuner Amplifier

For those seeking good music listening on a modest budget combines good looks with Sony expertise in circuit engineering. Facilities include separate bass and treble controls, balance control and mode selector switch for AM/FM Radio Record Player or Tape Recorder. Special price on application.



STR-6040

Fully integrated solid-state AM/FM Tuner Amplifier 15 watts per channel field effect transistors, special filters in the tuner section, guarantee strong station selector and tuning accuracy free of interference from adjacent stations. A full range of controls and jacks are provided to allow complete flexibility in creating any hi-fi combination. Special price on application.

TA-1144

This 30 watt Tuner Stereo Amplifier combines elegant good looks with all-silicon solid state circuitry wide dynamic range and low harmonic distortion for the best performance at any sound level comprehensive selection of input/output facilities and front panel controls. Special price on application.



TC-255

This 4 track 2 channel stereo tape deck gives high fidelity due to its high bias-frequency and low distortion amplifier. Incorporating all silicon transistors and a vibration-free motor, twin recording switches and 3 speeds. It is mounted in an attractive walnut cabinet. Special price on application.



	List Price	Single Cash Price	3 or more Cash Price		List Price	Single Cash Price	3 or more Cash Price		List Price	Single Cash Price	3 or more Cash Price
BASF MAGNETIC TAPE				BASF LOW NOISE HIGH OUTPUT TAPE				PHILIPS CASSETTES			
5" 600'	£1-31	£0-95	£0-90	5" 900'	£1-89	£1-37	£1-25	3" LP	£0-55	£0-39	£0-36½
5½" 900'	£1-72	£1-25	£1-15	5½" 1200'	£2-17	£1-57½	£1-44	4" LP	£0-95	£0-68½	£0-63½
7" 1200'	£1-98	£1-45	£1-35	7" 1800'	£3-10½	£2-27	£2-05	5" LP	£1-45	£1-04½	£0-96
3" 210'	£0-56½	£0-45	£0-40	5" 1200'	£2-16	£1-57½	£1-43	5½" LP	£1-81	£1-31	£1-20
4" 450'	£1-13	£0-80	£0-65	5½" 1800'	£3-09½	£2-27	£2-04	7" LP	£2-58	£1-87½	£1-70½
4½" 600'	£1-30½	£0-95	£0-90	7" 2400'	£3-83	£2-81	£2-51½	3" DP	£0-73	£0-52½	£0-48½
5" 900'	£1-71	£1-25	£1-15	5" 1800'	£3-09	£2-81	£2-51½	4" DP	£1-30	£0-94½	£0-86
5½" 1200'	£1-97	£1-45	£1-15	5½" 2400'	£3-82	£2-81	£2-51	5" DP	£1-95	£1-42	£1-29
7" 1800'	£2-83	£2-05	£1-85	7" 3600'	£4-75½	£3-50½	£3-11½	5½" DP	£2-84	£2-08½	£1-85
3" 300'	£0-71½	£0-55	£0-50	BASF SPECIAL REQUIREMENTS TAPE				7" DP	£3-98	£2-92½	£2-60
4" 600'	£1-30½	£0-95	£0-90	8½" 1800'	£3-00	£2-25	£1-95	3" TP	£1-13	£0-82½	£0-74½
4½" 900'	£1-70½	£1-25	£1-15	8½" 2400'	£3-80	£2-85	£2-47	4" TP	£1-99	£1-46	£1-31
5" 1200'	£1-96	£1-45	£1-30	8½" 3600'	£4-10	£3-07½	£2-66½	5" TP	£3-35	£2-47	£2-10
5½" 1800'	£2-82	£2-06	£1-86	10" 3600'	£5-60	£4-20	£3-64	PHILIPS CASSETTES			
7" 2400'	£3-48	£2-55	£2-29	10½" 4200'	£6-95	£5-21	£4-51½	C30	£0-53	£0-42½	£0-37½
3" 450'	£1-09	£0-81	£0-71½	BASF CASSETTES				C60	£0-88	£0-67½	£0-62½
3½" 600'	£1-30½	£0-94	£0-86½	C60	£0-88	£0-55	£0-49	C90	£1-25	£0-97½	£0-87½
4" 900'	£1-76½	£1-24	£1-13½	C90	£1-25½	£0-61½	£0-74½	C120	£1-68	£1-30	£1-15
4½" 1200'	£1-95½	£1-42½	£1-29	C120	£1-68	£1-07½	£0-97½	ACCESSORIES			
5" 1800'	£2-81	£2-06	£1-85	PHILIPS MAGNETIC TAPE				SK10 Splicing Kit	£1-37½	£1-17½	—
5½" 2400'	£3-47	£2-55	£2-28	4" SP	£0-75	£0-54	£0-49	EL1907/52 Endless Loop	£3-55	£2-75	£2-37½
7" 3600'	£4-33	£3-19	£2-84	5" SP	£1-30	£0-93½	£0-86	Cassette CE10	£0-35	—	—
				5½" SP	£1-71	£1-24	£1-14	LT10/20/30 White, Green & Red Leader	£0-12½	£0-10	—
				7" SP	£1-98	£1-42½	£1-31½	EL3916/10 Joining Tape	£0-30	£0-25	—
								Cassette Cleaning Tape	£0-89	£0-62½	—

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		BASF		PHILIPS				BASF LH Hi-Fi		SCOTCH DYNARANGE	
Spool Dia.	Tape Length	Rec. Price	Cash Price	Rec. Price	Cash Price	Spool Dia.	Tape Length	Rec. Price	Cash Price	Rec. Price	Cash Price
3" LP	210'	11/4	7/3 (£0-36)	11/-	7/3 (£0-36)	3" DP	400'			19/3	14/- (£0-70)
3" DP	300'	14/4	10/- (£0-50)	14/7	10/- (£0-50)	4" DP	600'			29/3	21/- (£1-05)
3" TP	450'	21/10	14/3 (£0-71)			5" 5P	600'			25/7	18/- (£0-90)
4" 5P	300'			15/-	10/6 (£0-53)	5" LP	900'	37/9	24/6 (£1-23)	33/10	24/- (£1-20)
4" LP	450'	22/7	15/6 (£0-78)	19/-	13/- (£0-66)	5" DP	1,200'	43/3	28/6 (£1-43)	47/10	34/- (£1-70)
4" DP	600'	26/1	16/6 (£0-83)	26/-	17/- (£0-85)	5" TP	1,800'	61/9	40/- (£2-00)		
4" TP	900'	34/1	22/- (£1-10)			5 1/2" 5P	900'			34/4	24/6 (£1-23)
5" 5P	600'	26/3	17/- (£0-85)	26/-	17/6 (£0-88)	5 1/2" LP	1,200'	43/5	28/9 (£1-44)	45/7	32/- (£1-60)
5" LP	900'	34/3	22/- (£1-10)	29/-	19/6 (£0-98)	5 1/2" DP	1,800'	61/11	40/6 (£2-03)	63/1	44/6 (£2-23)
5" DP	1,200'	39/3	25/6 (£1-28)	39/-	26/- (£1-30)	5 1/2" TP	2,400'	76/5	49/- (£2-45)		
5" TP	1,800'	56/3	36/6 (£1-83)			7" 5P	1,200'			43/-	30/6 (£1-53)
5 1/2" 5P	900'	34/5	22/6 (£1-13)	34/3	22/6 (£1-13)	7" LP	1,800'	62/1	40/- (£2-00)	60/-	42/- (£2-10)
5 1/2" LP	1,200'	39/5	25/6 (£1-28)	36/4	24/6 (£1-23)	7" DP	2,400'	76/7	49/- (£2-45)	89/-	62/6 (£3-13)
5 1/2" DP	1,800'	56/5	36/6 (£1-83)	56/10	36/9 (£1-84)	7" TP	3,600'	95/1	61/6 (£3-08)		
5 1/2" TP	2,400'	69/5	45/- (£2-25)			8 1/2" LP	2,400'			84/4	60/- (£3-00)
7" 5P	1,200'	39/7	25/6 (£1-28)	39/7	26/6 (£1-33)	10 1/2" LP	4,200'	139/-	89/9 (£4-49)		
7" LP	1,800'	56/7	37/- (£1-85)	51/7	34/- (£1-70)	C60		17/7	10/9 (£0-54)	17/7	10/9 (£0-54)
7" DP	2,400'	69/7	45/6 (£2-28)	79/7	51/6 (£2-58)	C90		25/1	15/6 (£0-78)	25/1	15/6 (£0-78)
7" TP	3,600'	86/7	56/6 (£2-83)			C120		33/7	18/8 (£0-93)	33/7	18/8 (£0-93)

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25 dB/1,000 Hz. Impedance: 2,200 ohms at 1,000 Hz. D.C. resistance: 580 ohms. Load resistance: 50-100 kohms. Compliance: 8 x 10⁻⁶ cm/dyne. Tracking pressure: 3-5 grams. Tracking angle: 15°. Stylus: 0.7 mil diamond. Cartridge weight: 6.5 grams. Mounting: 1/2" or 12.7 mm.

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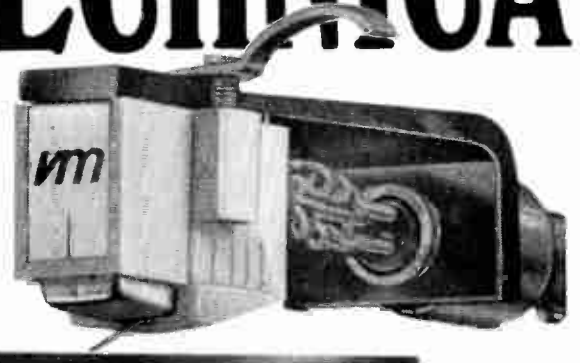
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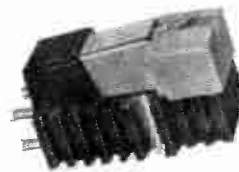


the outstanding stereo cartridge

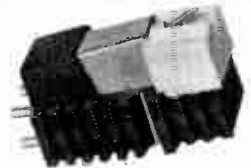
Technical specifications:

MODEL	AT.66	AT.21
Frequency Response ± 2 db Hz.	20-20000	20-25000
Channel Separation at 1 KHz.	25 db	30 db
Output Voltage at 1 KHz. 5 cm/sec	4 mV	4 mV
Static Compliance cm/dyne	30×10^{-6}	30×10^{-6}
Tracking Force-gms	0.5-2.0	0.5-2.0
Tracking Angle	15°	15°

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Model AT66 range



Model AT21 and AT215
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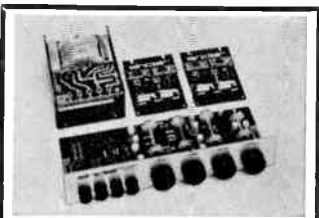
Revox 1102/4	£179-00
Revox 1122/4	£203-00
Revox 1222/4	£215-00
Revox 1122/HS	£253-00
Revox 1222 HS	£255-00
Revox 1102 HS	£222-00
Revox 1108 HS	£240-00
Ferrograph, all models	on request
Akai XV	£160-00
Akai 1800SD	£166-00
Akai X360	£320-00
Akai X360DS	£243-00
Akai 4000D	£69-00
Akai 4000	£98-00
Akai X330	£280-00
Akai X330D	£250-00
Akai 1710L	£69-50
Akai XS000L/W	£135-00
Akai M10L	£198-00
Akai 2000SD	£255-00

Ferguson-Marconi

3245-4245	£33-00
3246-4246	£36-50
3247-4247	£39-75
3248-4248	£45-50
Pye 9106	£49-50
Pye 9123	£83-00
Pye 9137	£83-00
Philips 4302	£39-50
Philips 4307	£39-50
Philips 4308	£49-75
Philips 4404	£69-25
Philips 4408	£111-00
Philips 4500	£104-00
Tandberg 3041X	£87-00
Tandberg 6041X	£150-00
Teleton FXBS10D	£47-95
Teleton 719	£77-00
Uher 714	£47-50
Uher 2325	£99-50
Uher 2345	£107-00
Uher 2527	£110-00
Uher 2547	£118-00
Uher 2825	£138-00
Uher 2845	£138-00
Uher Royal 2	£229-00
Uher Royal 4	£229-00
Uher Royal C2 & C4	£208-00
Uher 4000L	£120-00
Uher 4200/4400	£149-00

● KIT SYSTEMS, LOUDSPEAKER KITS (P/P on request)

Peak Sound Englefield mono tuner (P/P £0-75)	£31-50
Peak Sound Englefield amplifier (P/P £0-75)	£33-50
Sugden BDI kit (P/P £0-75)	£12-00
Wharfedale Unit 3	£10-70
Wharfedale Unit 4	£14-25
Wharfedale Unit 5	£20-60
KEF KK2	£20-25
KEF KK3	£30-00
KEF KK4	£14-25
Peak Sound Baxandall ES10-15	£12-00
KEF T27	£4-25
KEF T15	£5-25
KEF B110	£7-50
KEF B200	£8-00
KEF B139	£9-50
Tannoy Monitor Gold 12"	£30-50
Tannoy Monitor Gold 15"	£36-75
Peerless 3-25	£13-25
Peerless 20-2	£11-00
Peerless 20-3	£16-00
Peerless 3-15	£10-75
Wharfedale Super 10 RS/DD	£11-95
Wharfedale Super 8 RS/DD	£7-50
Wharfedale 8" Bronze RS/DD	£4-50



SINCLAIR PROJECT 60 £18-50 (P/P 50p)

(1 x PZS, 2 x Z30, Stereo 60 pre-amp)	P/P
Z30 £3-65	12p
Z50 £4-45	12p
PZS £3-98	12p
PZ6 £6-45	12p
PZ8 £4-95	12p

MULLARD UNILEX KIT £11-50 (P/P 50p)

(1 x EP9002, 1 x EP9001, 2 x EP9000)	Booklet 35p post free
Recommended loudspeakers (P/P 50p)	Celestion PS8-9470 8", 1S ohm
	£4-98 per pair
Celestion PS12-TC1789, 12"	£15-00 per pair
Spear control panel	£3-25 (P/P 15p)

● STEREO AMPLIFIERS (P/P 75p)

Armstrong 521	£44-50
Cambridge P40, P50, P100	on request
Goodmans Maxamp	£44-00
Ferrograph F307 Mk 2	£47-00
Leak Stereo 30 plus chassis	£45-00
Leak Stereo 30 plus cased	£49-75
Leak Stereo 70 chassis	£55-00
Leak Stereo 70 cased	£60-25
Metrosound ST20	£28-50
Quad 33 & 303	£85-00
Revox A 50	£84-25
Rogers R'brook cased	£38-00
Rogers R'brook chassis	£35-50
Rogers R'bourne cased	£51-50
Rogers R'bourne chassis	£47-50
Rotel RA 840	£55-00
Rotel RA 810	£32-00
Rotel RA 610	£53-00
Nikko TRM301C, 401C	on request
Teleton A105	£20-00
Teleton SAQ 203E	£19-95
Teleton GA 101	£27-75
Teleton SAQ 501S	£34-50
Sinclair Neoteric 60	£46-00
Sinclair 2000	£23-50
Sinclair 3000	£34-50
Philips RHS80	£23-50
Rogers R'brook Series 2 ch.	£38-50
Rogers R'brook Series 2 tk.	£43-75

● COMPLETE STEREO SYSTEMS (P/P £2-00)

Decca 603/4	£59-00
Decca 1203/4	£79-00
Decca Compact 3	£112-00
Decca 3000	£159-00
Decca 3001	£139-00
Ekco UAS	£130-00
Ekco UA6	£63-00
Ekco SRG607	£62-00
Fidelity UA1	£80-00
Fidelity UA2	£37-50
Goodmans 3000 suite	£115-00
GEC 2805	£66-00
GEC 2807	£99-50
HMV HiFi system	£160-00
Hacker GAR1000SRD/L1000	£185-00
Marconi Unit 3	£71-50
Marconi Unit 4	£62-00
Metrosound 10-10	£65-00
Philips GF417	£82-00
Philips GF823	£40-00
Philips GF824	£59-00
Philips RF833	£59-00
Philips RF834	£77-50

Teleton CMS300	£62-00
Teleton 2560F	£54-50
Nocturne 73	£47-50
Ultra 640S	£69-50

● TUNERS (P/P 75p)

Leak Stereofetic cased	£60-60
Leak Stereofetic chassis	£54-25
Armstrong S23	£44-00
Armstrong S24	£33-00
Armstrong M8 decoder	£7-95
Revox A76	£140-00
Rogers Ravensbrook cased	£42-90
Rogers Ravensbrook chassis	£37-50
Rogers Ravensbourne cased	£56-00
Rogers Ravensbourne chassis	£52-00
Rotel 120	£38-00
Rotel RT320	£44-50
Teleton STQ 201X	£29-50
Teleton STQ 204X	£39-75
Teleton GT 101	£34-50

● TUNER-AMPLIFIERS (P/P £1-00)

Akai AA 6300	£105-00
Armstrong S25	£75-50
Armstrong S26	£86-50
Goodmans 3000	£66-75
Rotel 130	£63-00
Rotel FAX 330A	£75-00
Rotel RX 200	£65-00
Teleton GR 24	£26-95
Teleton CR10T	£26-50
Teleton F2000	£33-50
Teleton F2300	£41-50
Teleton R4200	£36-50
Teleton R4300 LW	£44-50
Teleton TFS 50	£55-50
Teleton CR55	£89-00
Teleton 7AT20	£79-50
Teleton 7AT1	£81-00
Teleton 10ATI	£118-00
Wharfedale 100-1	£119-95

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B & W DM1	£25-50
B & W DM3	£53-00
Cambridge Audio R50	on request
Celestion 120	£19-35
Celestion Ditton 1S	£25-50
Celestion Ditton 2S	£50-90
Decca Deram	£14-95
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Goodmans Maxim	£15-90
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Goodmans Mamba	£18-50
Goodmans Mezzo 3	£23-50
Goodmans Magnum K2	£29-50
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KEF Cresta	£18-25
KEF Chorale	£28-50
KEF Cadenza	£31-50
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Leak Sandwich, walnut	£27-00
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Leak 600	£38-40
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Wharfedale Super Linton	£20-75
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Wharfedale Triton	£25-00
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Wharfedale Rosedale	£51-00
Rogers Wafer	£17-00
Rogers Ravensbrook, pair	£39-90

● STEREO HEADPHONES

AKG K60	£11-50
Akai ASE20	£7-25
Akai ASE9S	£5-50
Rotel RH600	£4-50
Rotel RH711	£7-50
Teleton SH301P & 307P	£4-20
Midland SH700	£3-15

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BSR MP 60 chassis	£11-95
BSR MP 60, plinth and cover	£20-60
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BSR 610	£16-45
Garrard SP 25 Mk 3	£12-95
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Garrard 5100 and GCM31	£7-00
Garrard 401	£32-00
Goldring 70S complete	£22-50
Goldring GL 69/2 chassis	£22-25
Goldring GL 69/2 P and C	£32-25
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Thorens TD 150A Mk 2	£41-95
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SME 3009 and S2	£28-25
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Lenco L69	£7-75
Lenco L75	£10-75
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Audio Technica AT100S	£16-15

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Empire 999TEX	£23-25
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Empire 909X	£7-50
Goldring G800	£7-50
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Goldring G800 Super E	£19-25
Goldring G850	£4-50
Goldring CS90	£4-25
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Ortofon SL15E	£24-25
Ortofon 2x15k transf.	£5-35
Orbit NM22	£3-75
Shure M3DM	£5-75
Shure M31E	£9-90
Shure M32E	£9-00
Shure M44.7 and .5	£8-15
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Shure M7SEJT2	£16-00
Shure M7S.6T2	£11-50
Shure M80ED19	£17-50
Shure M75GT2	£12-00
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Shure V15/2 Imp.	£30-00
Shure M75E	£17-00
Sonotone 9TAHC also "G"	£2-12
Teleton NM33	£3-75

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Teleton STP 800	£39-50
Akai CR80	£80-00
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Metrosound SS30	£69-50
Metrosound M148	£43-00

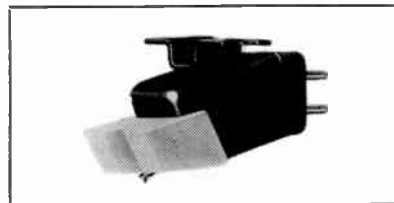
	STANDARD PLAY					LONG PLAY					DOUBLE PLAY					TRIPLE PLAY					
	Reel	4"	5"	5 1/2"	7"	3"	4"	5"	5 1/2"	7"	3"	4"	5"	5 1/2"	7"	3"	4"	5"	5 1/2"	7"	
BASF	300	£1-00	£1-30	£1-55	£1-18	210	44p	88p	£1-25	£1-43	£2-05	54p	£1-00	£1-40	£2-02	£2-45	85p	£1-20	£2-00	£2-45	£3-05
BASF round pack	44p	£0-76	£1-01	£1-18	£1-18	34p	68p	£1-01	£1-12	£1-74	43p	£0-76	£1-18	£1-74	£2-18	68p	£1-01	£1-74	£2-18	£2-79	
BASF low noise								£1-45	£1-65	£2-35			£2-10	£3-00	£4-65						
EMI	48p	£0-90	£1-23	£1-50	£1-50	43p	63p	£1-23	£1-53	£2-10	63p	£1-08	£1-80	£2-40	£3-30	98p	£1-63	£2-80			
PHILIPS		£0-92	£1-23	£1-40	£1-40	40p	60p	£1-03	£1-30	£1-83	53p	£0-95	£1-48	£2-13	£1-98	65p	£1-53	£2-50			
SCOTCH		£0-80	£1-05	£1-33	£1-33	35p	55p	£1-05	£1-33	£1-90	64p	£0-95	£1-58	£2-10	£2-83	93p	£1-50				
SCOTCH Dynarange		£0-98	£1-30	£1-66	£1-66			£1-27	£1-61	£2-26	70p	£1-13	£1-80	£2-36	£3-34						

(P/P 12p for first £5 of tape.)

PICKERING Micro Magnetic Cartridges

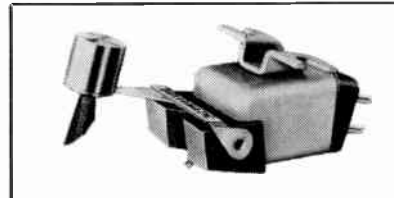
V-GUARD FOR P SERIES

Model No.	Application	Nominal Output ²	Nominal Channel Separation	Tracking Force ³	Frequency Response	Stylus Type
P/A TE	Manual Turntables, Light Tracking Automatics	5.5 mV	35 dB	$\frac{1}{2}$ to 3 grams	20 to 20,000 cps	.7 Mil Conical
P/A T	Automatic Turntables	6.9 mV	35 dB	1 to 5 grams	20 to 20,000 cps	.7 Mil Conical
P/A C	Record Changers	7.5 mV	35 dB	3 to 7 grams	20 to 20,000 cps	.7 Mil Conical



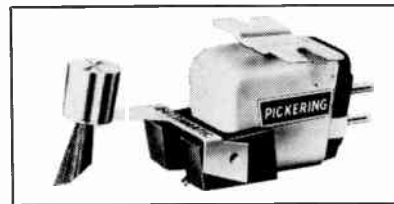
V-GUARD FOR V-15/3 DUSTMATIC SERIES

V-15/AME-3	Manual Turntables, Automatic Transcription Turntables, Light Tracking Automatics	5.0 mV	35 dB	$\frac{1}{2}$ to 1 $\frac{1}{2}$ grams	20 to 25,000 cps	.0002" x .0009" Elliptical
V-15/AM-3	Manual Turntables, Automatic Transcription Turntables, Light Tracking Automatics	5.0 mV	35 dB	$\frac{1}{2}$ to 3 grams	20 to 25,000 cps	.0007 Mil Conical
V-15/AC-3	Record Changers	6.9 mV	30 dB	3 to 7 grams	20 to 20,000 cps	.0007 Mil Conical



V-GUARD FOR X-V/15 DCF SERIES

XV-15/AME D.C.F. 400	Manual Turntables, Automatic Transcription Turntables, Light Tracking Automatics	4.0 mV	35 dB	$\frac{1}{2}$ to 1 $\frac{1}{2}$ grams	10 to 30,000 cps	.0002" x .0009" Elliptical
XV-15/AM D.C.F. 350	Manual Turntables, Automatic Transcription Turntables, Light Tracking Automatics	5.0 mV	35 dB	$\frac{1}{2}$ to 3 grams	10 to 25,000 cps	.0007 Mil Conical
XV-15/AC D.C.F. 100	Record Changers	7.0 mV	30 dB	3 to 7 grams	10 to 20,000 cps	.0007 Mil Conical



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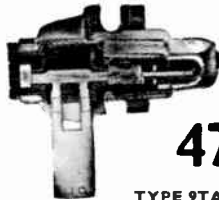
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PROFESSIONAL SOLID STATE FOUR BAND COMMUNICATION RECEIVER Model R.135

This is the communication receiver that you have long been waiting for. Fully transistorised and continuous coverage from 555 kHz-30 MHz in four bands including illuminated electronic bandspread for 160-10 metres. Also incorporated is an internal speaker, automatic noise limiter, SSB/AM/CW switch AVC Switch, S Meter, Receive and Standby Switch, external socket for headphone or speaker, bandspread control, BFO control, on/off/AF gain, band selector, antenna trimmer and RF gain. The R.135 will run off of 240v. AC, dry batteries or any 12v DC negative ground source.



PRICE: £45.00

10 WATT TRANSISTOR STEREO AMPLIFIER Model R.137



With separate tone and volume controls on each channel and inputs for both phono and tuner, this 10 Transistor Amplifier is the ideal start to an excellent budget system. Frequency response 70-20 kHz. Output impedance 8-16 ohm. Attractively styled with brushed aluminium front panel.

PRICE: £9.50

STEREO HEADPHONES MODEL R.328



Built up to a standard not down to a price the R.328 Stereo Headphones represent a breakthrough in value for money. A valuable addition to any stereo installation they will provide many hours of listening pleasure.

SPECIFICATION:
Matching Impedance: 8-16 ohms.
Frequency Range: 30-15,000 Hz.

PRICE: £2.40



16 WATT STEREO AMPLIFIER MODEL R.138

As well as separate bass and treble controls the R.138 feature switched main and remote speaker outputs so that the same stereo installation can be used to drive independent stereo speaker systems. Fitted in a well finished walnut cabinet the brushed aluminium front panel and sensible control knobs set this amplifier in the professional class.

PRICE: £16.50

SPECIFICATION:

Output: 16 Watts Total
8 Watts per Channel
Frequency Range: 30-20,000 Hz
Inputs: Phono & Tuner
Outputs: Speakers Main, Speakers Remote, Tape Out, and Headphones.
Controls: Bass, Treble, Volume, Balance (all ganged) Mode, Speakers Stereo/Mono and Power on/off.

5 WATT 8 TRACK CARTRIDGE STEREO AMPLIFIER MODEL R.133

Just slot in one of the many 8 track cartridge tapes available for a continuous programme of your favourite music. A Manual programme override switch enables you to switch from one track to the next at the push of a button, at the same time a numbered indicator lights up to show which track is playing. Beautifully finished in an oiled walnut cabinet the R.133 is mechanically engineered to provide long and reliable service.

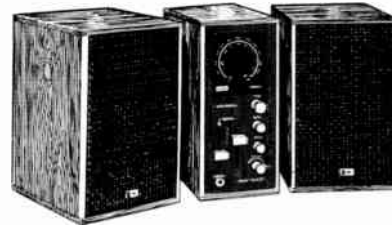


SPECIFICATION:

Tape Speed: 9.5 cm/sec (3 3/4 IP5)
Wow & Flutter: Better than 0.3%
Frequency Range: 40-12,000 Hz
Crosstalk: Better than 45 dB at 1000 c/s
Output: 5 watts total, 2.5 watts per channel
Amplifier Outputs: 200 mV.

PRICE: £36.00

Matching Speaker System R.088 £9.15 per pair.



36 WATT COMPLETE STEREO RECEIVER SYSTEM MODEL R.139

SPECIFICATIONS:

Amplifier Output: 36 watts at 8 ohm
Frequency Response: 30-20,000 Hz
Magnetic Input: 50 µV
Tuner Section FM Sensitivity: 2.5 µV
Built-in AFC
AM sensitivity: 100 µV
Built-in AM & FM antenna
240 V. A.C.
Speakers 6 1/2" acoustic bass
3" tweeter

The R.139 is a Solid State Stereophonic receiver system with an output of 36 watts, full controls for radio, tape and records, and a number of truly unique features including slider level controls and a pre-amplifier for magnetic cartridge.

This system provides full high fidelity performance in compact, upright bookshelf styling. Included are a pair of speakers which not only match the receiver in design but more importantly house a speaker complement made specially for the R.139

PRICE: £89.00



10 WATT BUDGET STEREO ALL TRANSISTOR AMPLIFIER MODEL R.136



SPECIFICATION:

Output: 10 Watts Total
5 Watts per Channel
Frequency Range: 35-18,000 Hz
Inputs: Phono and Tuner.

PRICE: £13.00

Ideal as a second stereo system or for the newcomer to Hi-Fi who wishes to upgrade existing equipment the R.136 sounds every bit as good as it looks. As well as inputs for crystal or ceramic cartridge the R.136 has a Stereo Tuner input which accepts the matching R.134 Stereo AM/FM Tuner.

The Satin Finish front panel carries a stereo headphone socket as well as volume, balance, tone (all ganged), speaker, mode and selector controls. Supplied complete with oiled walnut enclosure.



4 WATT STEREO FM/AM/MPX TUNER AMPLIFIER MODEL R.124

SPECIFICATION:

FM: Frequency range: 88-108 MHz
Usable sensitivity: 20 µV
Stereo Separation: 26 dB at 1 kHz
20 dB Minimum
Image rejection: 55 dB
AM: Frequency range: 535-1605 kHz
Usable Sensitivity: 300 µV
Audio Section:
Total Output Power: 4 Watts
Phono Input: 200 mV at 1 mg ohm
Tape Input: 100 mV at 100 K ohm

PRICE: 29.95

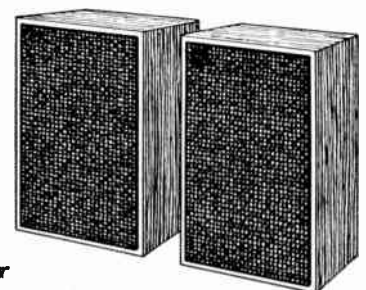
Another Roc Exclusive offering top value for money performance the R.124 is a Stereo Tuner/Amp with facilities only usually found in much more expensive units. Features like separate bass and treble controls, automatic frequency control switch and stereo headphone socket give the R.124 a price to specification ratio second to none. Housed in a handsome walnut cabinet the classical low line styling of the R.124 will grace any home.

MATCHED STEREO SPEAKER SYSTEMS MODEL R.088

Packed and supplied as a pair to ensure optimum balance both in performance and timber veneers.

SPECIFICATION:

(Each Speaker)
Power Handling: 8 Watts
Frequency Range: 40-15,000 Hz
Impedance: 8 ohms
Dimensions: 9" x 5 1/2" x 4 1/2"
Finish: Oiled Walnut



PRICE: £9.15 per Pair
MODEL R. 446

The R.446 matched system will handle more power than the R.088 and it features a larger dual cone bass unit and separate tweeter to give an extended frequency response and bigger handling capacity. Heavily lagged, the teak finish cabinet is tastefully finished in a dark grey vynair which will complement any setting.

SPECIFICATION:

(Each Speaker)
Power Handling: 10 Watts Peak
Frequency Range: 40-18,000 Hz
Impedance: 8 ohms
Dimensions: 14" x 8 1/2" x 6 1/2"
Finish: Oiled Teak

PRICE: £16.40 Pair

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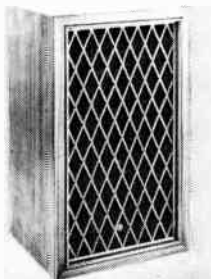
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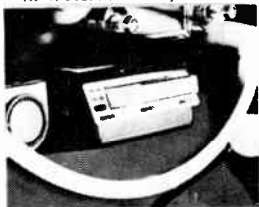


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DULCI 207	£25.00	£17.00
*DULCI 207M	£30.00	£21.00
FERROGRAPH F307	£59.00	£48.00
GOODMANS Maxamp	£54.00	£38.00
LEAK Stereo 30 Plus	£56.50	£44.75
LEAK Stereo 30 Plus, in teak case	£62.50	£49.50
LEAK Stereo 70	£69.00	£55.00
LEAK Stereo 70, in teak case	£75.00	£59.50
*LINEAR LT 66	£21.00	£17.00
METROSOUND ST20	£36.00	£28.00
PHILIPS RH 591	£76.75	£59.00
PHILIPS RH 590	£51.75	£39.50
PHILIPS RH 580	£28.00	£22.00
PIONEER SA500	£62.10	£43.00
PIONEER SA700	£98.00	£70.00
PIONEER SA900	£134.10	£97.00
PIONEER Reverberation	£45.50	£33.00
ROGERS Ravensbourne	£59.50	£47.00
ROGERS Ravensbourne (cased)	£64.00	£50.00
ROGERS Ravensbrook Mk II	£47.50	£38.00
ROGERS Ravensbrook Mk II (cased)	£52.50	£42.00
*SINCLAIR 2000	£30.45	£23.00
SINCLAIR Project 60/2 x Z30/PZ5	£23.90	£17.00
SINCLAIR Project 60/2 x Z50/PZ8 trans.	£32.88	£23.50
SINCLAIR Neoteric	£61.95	£46.00
SINCLAIR 3000	£45.00	£36.00
TELETON 203	£28.75	£20.00
TELETON GA 101 30w RMS	£37.50	£28.50
VOLTEX 100w Stereo Discotheque, eight electronically mixed inputs	£185.00	£139.00

Starred items above take ceramic cartridges only.

All others take both ceramic and magnetic cartridges.

TUNERS

*ARMSTRONG S23 AM/FM	£53.76	£45.00
*ARMSTRONG S24 FM	£41.89	£35.00
ARMSTRONG M8 Decoder	£9.50	£8.00
*DULCI FMT.7 FM	£22.05	£18.00
DULCI FMT.7S Stereo	£31.00	£25.25
GOODMANS Stereomax	£82.52	£49.95
LEAK Stereofetic Chassis	£66.50	£52.00
LEAK Stereofetic in teak case	£72.50	£59.00
PHILIPS RH 690	£44.50	£35.50
PHILIPS RH 691	£89.00	£75.50
PIONEER TX500 AM/FM	£77.94	£64.00
PIONEER TX900 AM/FM	£153.69	£125.00
ROGERS Ravensbourne	£61.89	£50.00
ROGERS Ravensbrook	£45.01	£40.00
ROGERS Ravensbrook (cased)	£51.26	£43.00
*SINCLAIR 2000	£26.73	£19.25
SINCLAIR Project 60	£25.00	£21.00
SINCLAIR GT 101	£45.50	£34.00
TELETON 201X FM	£36.00	£30.00

All above Tuners are complete with MPX Stereo Decoder except where starred.

TUNER/AMPLIFIERS

AKAI 6600	£142.53	£112.00
ARENA RS00	£82.00	£67.00
ARENA 2400	£90.30	£72.00
ARENA 2600 Stereo AM/FM	£111.30	£94.00
ARENA 2700	£105.00	£85.00
ARENA T1500F	£72.45	£60.00
ARENA T9000	£303.45	£258.00
ARMSTRONG M8 Decoder	£9.50	£8.00
ARMSTRONG S25	£91.89	£77.00
ARMSTRONG S26	£104.71	£87.00
GOODMANS 3000	£77.73	£53.00
*PHILIPS RH 781	£74.98	£55.00
PHILIPS RH 790	£135.00	£109.00
PIONEER KX330 AM/FM/SW	£78.62	£63.00
PIONEER SX770 AM/FM	£160.43	£126.00
PIONEER SX990 AM/FM	£194.74	£150.00
*TELETON F2000	£51.50	£32.00
TELETON 7AT20	£105.00	£80.00
TELETON 10ATI 150w. RMS	£160.00	£109.00
*TELETON R4200	£51.75	£32.00
TELETON TF550	£75.50	£56.00
*TELETON R.8000 with Speakers	£63.25	£50.00
TELETON CR55	£120.00	£95.00
WHARFEDALE 100.1	£131.25	£105.00

Starred items above take ceramic cartridges only.

All others take both ceramic and magnetic cartridges.

All the above Tuners and Tuner/Amplifiers include MPX Stereo Decoder with the exception of Armstrong where decoder is extra as listed.

PICKUP ARMS

	Rec. Retail Price	Comet Price
GOLDRING Lenco L75	£12.33	£10.50
GOLDRING Lenco L69	£9.29	£7.00
SME 3009 with S2 Shell	£31.31	£26.00
SME 3012 with S2 Shell	£33.36	£29.00

CARTRIDGES

GOLDRING 800	£13.00	£7.50
GOLDRING 800H	£10.69	£8.00
GOLDRING 800E	£18.86	£12.25
GOLDRING 800 Super E	£26.01	£20.00
*GOLDRING CS90 Stereo	£5.20	£4.25
*GOLDRING CS91/E	£7.81	£6.25
GOLDRING G850	£6.50	£5.25
ORBIT Magnetic NM 22	Special price £2.90	£2.90
PICKERING V15 AC2	£8.40	£7.00
ORTOFON SL15E	£29.65	£23.75
ORTOFON 2X15K Transformer	£7.00	£5.25
SHURE M3DM	£7.41	£5.25
SHURE M31E	£12.05	£9.50
SHURE M32E	£11.10	£8.75
SHURE M32-3	£10.20	£8.00
SHURE M44-5	£11.10	£8.50
SHURE M44-7	£10.20	£8.00
SHURE M.44C	£10.20	£8.00
SHURE M44E	£12.05	£9.50
SHURE M55E	£12.95	£10.25
SHURE M75G	£17.60	£14.00
SHURE M75-6	£16.70	£13.00
SHURE M75EJ	£19.45	£16.00
SHURE M75E-9SG	£23.15	£18.00
SHURE M75E	£21.30	£16.00
SHURE M75E/D19	£23.15	£19.00
SHURE V15-II	£40.75	£30.00
SHURE V15-II-7	£38.90	£29.00

Starred cartridges above are ceramic. All others are magnetic.

TURNABLES

GARRARD SP25, fully wired with Goldring G800 Magnetic Cartridge. Complete with base, plinth and cover—Special price £20.98.

DUAL 1219 Transcription	£60.40	£50.00
DUAL 1209 Transcription	£42.62	£35.00
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GARRARD SL95 B	£53.27	£38.50
GARRARD 401	£38.07	£29.50
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GARRARD 40B	£13.84	£10.97
GARRARD AP76	£28.88	£21.50
GOLDRING 705P with 850 Cartridge and Cover	£26.00	£23.90
GOLDRING GL69 Mk II	£26.63	£22.50
GOLDRING GL69 P Mk II	£35.14	£29.50
GOLDRING GL75	£36.41	£33.90
GOLDRING GL75 P	£46.94	£41.90
GOLDRING Covers for 69F and 75P	£4.21	£3.50
GOLDRING C99—plinth and cover for G99	£11.45	£9.90
GOLDRING G99	£26.90	£23.90
GOODMANS 3025	£37.74	£26.90
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McDONALD 610	£20.90	£15.90
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PHILIPS 228	£20.00	£17.00
PHILIPS GA 146	£31.50	£25.00
PHILIPS 217	£33.90	£28.00

PHILIPS 202 Electronic	£69.00	£57.50
PIONEER PL11	£57.90	£39.00
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THORENS TD125	£75.89	£62.00
THORENS TD150A Mk II	£43.63	£33.00
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THORENS TX11 Cover	£4.11	£3.75

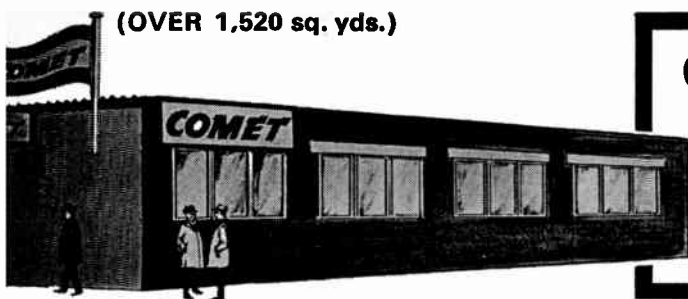
SPEAKERS

ARENA HT 16	£13.00	£10.95
B & W Model 70	£139.50	£115.00
B & W DM3	£63.00	£53.00
B & W DMI	£32.00	£25.50
CELESTION Ditton 120	£24.00	£18.00
CELESTION Ditton 15	£29.00	£23.00
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KEF Concord	£43.50	£33.00
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KELETRON KN 654/3 3 speaker system (pair)	£19.00	£14.97
KELETRON KN 824/3 3 speaker system (pair)	£23.00	£18.97
KELETRON KN 104/3 3 speaker system	£16.75	£12.97
KELETRON KN 123/3 3 speaker system	£18.75	£15.97
KELETRON KN 120/4 4 speaker system	£24.50	£18.97
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LEAK 300	£32.50	£23.50
LEAK 600	£49.50	£36.90
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LOWTHER Ideal Baffle	£35.50	£30.00
METROSOUND HFS 20	£18.50	£13.50
PHILIPS RH481	£11.00	£9.25
PHILIPS RH482	£18.00	£15.00
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STE-MA 275 3 speaker system	£23.10	£15.00
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Rosedale	£65.00	£52.50
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GOODMANS Axiette 8	£7.48	£6.00
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GOODMANS Axiom 10	£8.84	£7.00
GOODMANS Axiom 80	£26.07	£21.75
GOODMANS Axiom 201	£13.45	£10.00
GOODMANS Axiom 301	£19.25	£14.50
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GOODMANS 12P	£12.87	£10.00
GOODMANS 15P	£20.00	£16.97
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GOODMANS Crossover Net-works XO/5000 ..	£2.30	£1.75
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DECCA Sound 604 ..	£72.50	£61.00
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TELETON CM5400 ..	£52.25	£46.00
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TOSHIBA SP8507 ..	£75.00	£56.00
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ALBA R22 Twin Track Battery/ Mains ..	£50.25	£30.00
AKAI M10L ..	£245.05	£189.99
AKAI X200D ..	£190.00	£160.00
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BUSH TP 60 Cassette Tape Recorder ..	£29.40	£25.00
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TELETON SL40 Twin Track Battery/Mains ..	£38.50	£25.00
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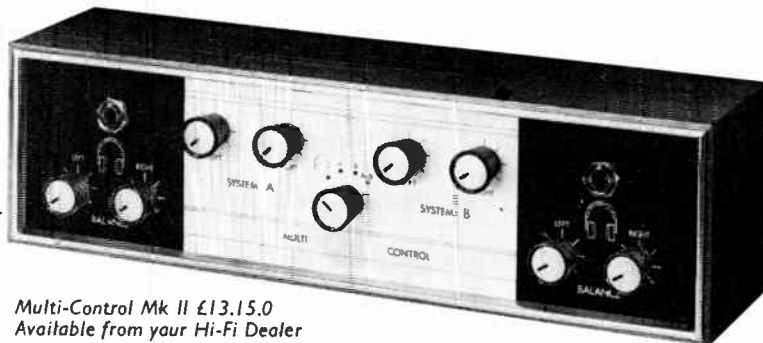


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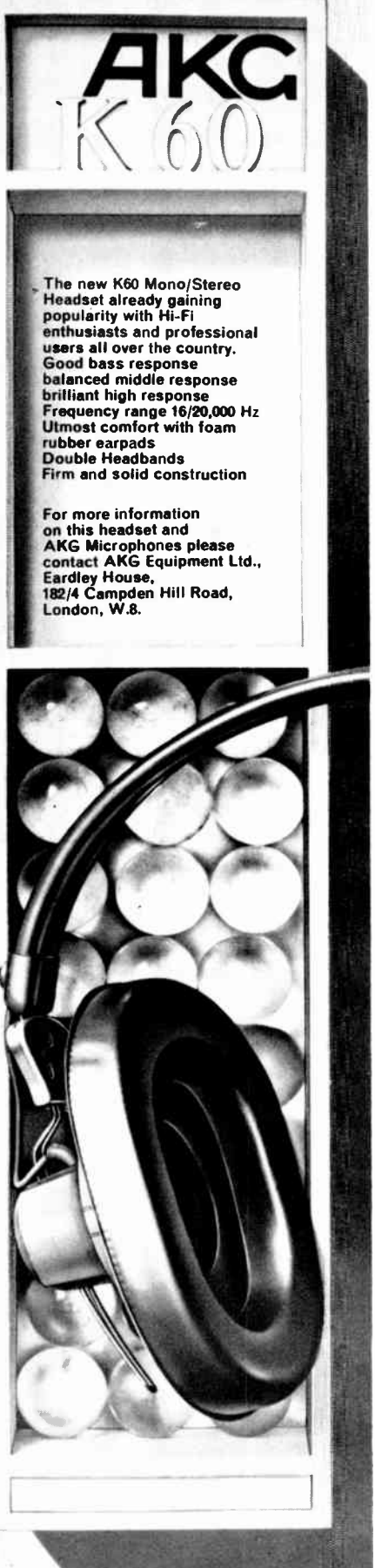
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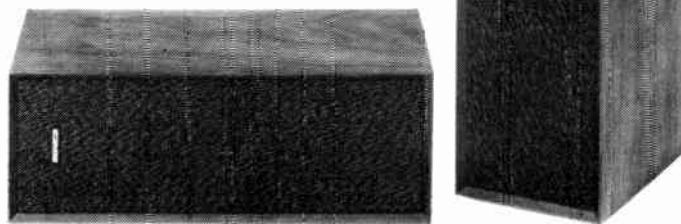
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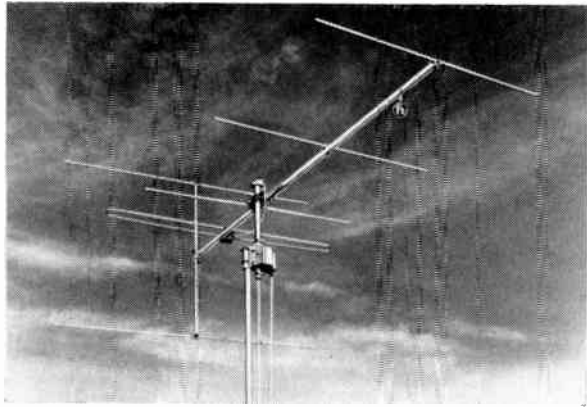
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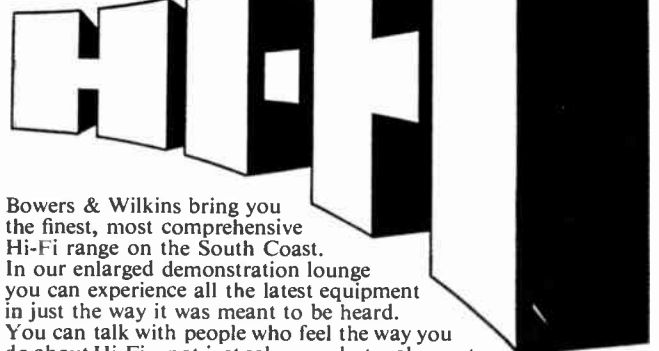


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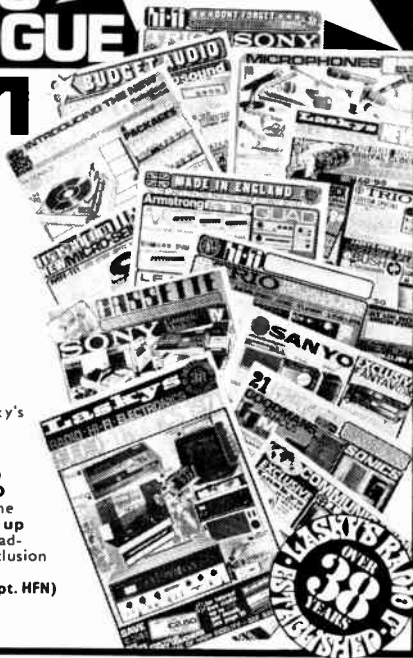
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Replies to Box Nos. should be addressed to the Advertisement Manager, Hi-Fi News & Record Review, Link House, Dingwall Avenue, Croydon, CR9 2TA, and the Box No. quoted on the outside of the envelope. The district after Box No. indicates its locality.

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One pair Concord Speakers, teak, perfect. Offers around £50 delivered. Tel.: Cuffley 3213.

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Pair Sanyo Speakers, indistinguishable from new, £24. Tel.: Mr. Kirk, Chesterfield 78933.

Hampstead cabinet. Walnut. Perfect condition. £25. Fry, 11 Hillcrest Avenue, Truro.

McDonald MP60, plinth, cover. G800 cartridge. Guarantee. £22. Tel.: Leeds 686006 or Box No. 2147 (Yorks.).

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Goodmans Maxamp 30 Mk II, £30. Chapmans FM1000 Transistor Tuner, £10. "Greystones", Upper Stanton Drew, Bristol. Tel.: Chew Magna 636 (evenings).

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(continued overleaf)

FOR SALE—PRIVATE continued

Hi-Fi News, October 1966 to December 1970. New condition. £3. Tel. 01-529 2597.

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Bound volume Hi-Fi News Jan.—Dec. 1969 and Audio Record Review July '67—Dec. '68. Offers to Box No. 2151 (Surrey).

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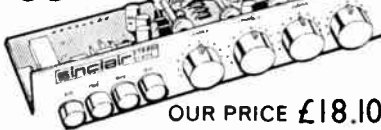
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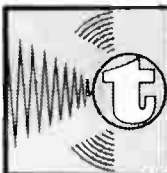
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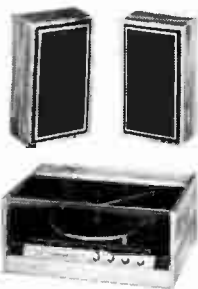
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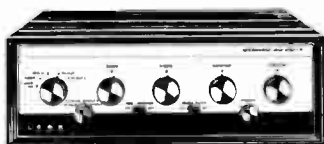


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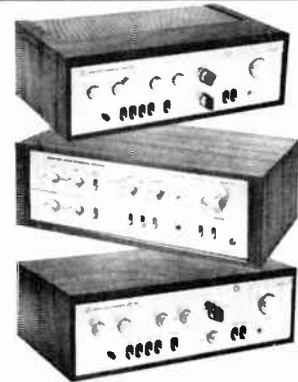
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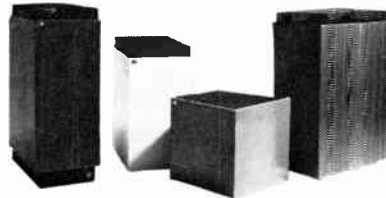
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