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June/July

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UNIVERSAL HERO

Could Only seven seconds left to save the planet! How will you save it? Universal Hero has to save the site and eventually win it by finding life to repair a shuttle to get to planet to pick up the space to land in space fighter which is out of control and about to blow into the atmosphere or getting back to earth to return. It will bring, most interesting, funny situations from Adventure!



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Four months of study after college have taken their toll - all the learning objectives have had and most often have been made on your weapon store, they designed what you could not carry away. You will be right about weapon control and immediately follow with just a single mission gun.



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The Master of the night, your killing death counts from revenge against their capture the Exterminator and are out for revenge! All things, highly complex situation-action situations.



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Join the greatest band of desert warriors - these fearless warriors who defy the population of the big cities to get the message through their own means to make more money, but don't take the long - there is always short. Don't let desert weather being out to a dangerous ride with this all action situation.



INVASION

Defend your units and prepare for battle. This all action space conflict requires skill, strategy and tactics. The most exciting the weather control station in order to win the battle summary stage you make the enemy with counter, and they're waiting for you to make just one last step.



LOS ANGELES SWAT

Special Assignment: Rescue the hostages from the terrorist gang kidnapping in West L.A. Turn up the volume. Blow away the bad guys and be a hero on television. It's not just the exciting task to watch in all action police handling counter for those with the will to survive!



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'The magazine for the Dedicated Atari User'

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DEVIL'S DOMAIN

Not in the magazine but a nice disk bonus this time

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LYNX JINKS

John Sweeney skips off school to check out loads more Lynx games

The new Lynx 2 is in the shops now - smaller and cheaper (you should be able to get the basic machine for use under £2000) with a new button to turn off the backlight when you pause so that the batteries don't run down. The range of games is also increasing rapidly - over 50, and more on the way! Here are some of the latest.

BLOCK OUT

A brilliant 3-D version of Tetris! At the simplest level the pieces are just three or four cubes joined together in a single flat plane so that they are easy to see and manipulate. You have a bird's-eye view of the pit and plenty of time to master the simple controls which allow you to rotate a piece in any of the three dimensions and move it in any direction - it takes one minute for a piece to fall at the slowest level. As you complete a layer you get rid of that layer and score you lots of points.

The blocks are transparent as they fall so that you can work out where to place them but when they land they change colour to show which levels the various pieces have finished up on. It is carefully designed to make it as easy as possible for you to see what is going on. You can change the depth, width, and length of the pit, the complexity of the blocks and the speed of falling. The basic Blockout has all the fun always plus some well laid stacking but so that they are truly 3-D. The Extended Blockout is even more - bigger pieces and bits sticking out everywhere so that some of them can't fit down but at all times of them you have to look over a couple of times just to work out what shape they are - by which time it is probably too late!

Three great options (Fast Play, 3-D Mode, and Out of Control) provide standard games for you to try. Or if you are really ambitious you can use the Extended Blockout at full speed - just 2 seconds to drop all the way! You won't last long! VERY addictive - highly recommended!

VIKING CHILD

Viking Child is a platform/adventure game. You have been called to fulfil a prophecy to defeat the evil god Loki. Each level is a large maze you must fight your way through. The first is fairly straight forward, just going from left to right but in later levels the maze becomes much more complicated. In each level you must defeat Loki's apprentice (the end of level monster), get the key, and unlock the door to the next level.

In all platform games there are hundreds of enemies attempting to kill you. Defeat them and you will get extra points or money to spend on extra weapons, special powers, lives, or health - as long as you can reach a shop before you die! There is also a boss - every time the wizard drains from a tiny fragment you lose a bit of health. Falling doesn't harm you, but if you fall too far you will be returned to a starting and deliberate against the monsters.

After every couple of levels you get a code so that you can restart from that point instead of having to play through the early levels over and over again.

Highly addictive, Viking Child will having you striving to get just that little bit further each time you play.

WAR- BIRDS



Warbirds is a World War I flight simulator for one to four players, the sole objective being to blast your opponents out of the sky. As a sole mission you have a choice of six levels, varying both in difficulty and in the number of enemies coming at you. You can choose between unlimited lives and assessments on a specific number of each. In the multi-player version you just have to shoot the tail out of your friends! The controls allow you to view the planes, shoot your enemies, and also look around you to try and spot incoming enemy aircraft.

There is one newangled weapon in this track, all you have to do is machine-guns as you would have had in World War I. You can cut your engines to decrease speed and in general maintain finding you by the nature of your engine, you can also climb beneath the cloud cover, or even go into the clouds if working on limited ammunition it is possible, but not easy, to land and replenish your supplies, but don't stay on the ground too long - you are a sitting duck!

The flight graphics are excellent (although a tiny bit jerky in played with superfluous digitised pictures of the pilot as he crashes! Very easy to control and great fun to play!

S.T.U.N. RUNNER

S.T.U.N. Runner is a one-player racing game, set in a futuristic Underground Network. All the levels are played against the clock, so you must keep moving all the time. You just steer left or right, but to maintain speed you must drive along the

water sides of the levels and since many of the routes are enclosed tunnels this can mean you end up driving upside down on the ceiling at times!

Unfortunately there are other cars in your way (okay you have lasers) and plasma-dropping bombs as you. Whoever you hit, anything you size down, creating valuable seconds of the very tight time limit. There are useful objects in the stages (most pads send you whizzing off at incredible speed, ramps fling you into the air, and if you collect enough stars you gain the ultimate weapon the Shockwave, which sends a wave of destruction down the tunnel, killing all the bad guys in sight!

STUN. Runner's graphics are very good, and move at a breathtaking speed. There are hundreds of excellent sound effects, ranging from a "clang" sound as you hit an armored drone to a wail which gets you advice. As you progress in the game, the levels get longer and more complex, and you usually run out of time just as you see the finish line. Every five levels there is a "challenge level", where you have to perform tasks such as collecting a certain number of stars or bombs. Once you are experienced you can drive straight in at level 11 and avoid the earlier levels. **STUN** Runner is a very addictive game, which brings you back for "just one more go" time and time again.

TURBO-SUB



High speed shoot-em-up above and below the waves. Just steer in any direction and shoot as fast as you can. If it moves about it, it doesn't move (and if the view is straight ahead from your cockpit - just travel forwards as fast as you can, while DIVE flashes blue and collect as many gems as you can, while still shooting and dodging at high speed.

There is a wide variety of enemies and obstacles - some shoot you, some crash into you, some make you crash into them! If you survive long enough you get the usual end-of-level bonuses and then a shop where you can spend your ill-gotten gains. A fully armed ship with multi-blasters, rapid fire, range missiles and mega bombs can do an incredible amount of damage, but I found one of the most useful items to be the tracking device so that you can spend more time worrying about dodging and not have to worry about trying to aim at well! A two-player option allows you to compete for the highest score.

Great graphics and sound effects, fast and furious action - an excellent game!

XYBOTS

Another shoot-em-up, but with a bit more thought about it. Each level is a maze you have to find your way through - if you bought the right mappers at the last shop you can press

Option 2 for an overhead view of the level. The main action takes place with a view ahead and you need to keep your wits about you as you race through the maze dodging and firing to avoid death while picking up money, keys, energy and power-ups. Your energy is limited and drains away over time so you must keep moving. There are multiple exits from some levels so you can escape quickly up to the higher levels where you will meet the deadly Master Xybots.

Some of the enemy are easy to kill, others take many shots to destroy, some are armored and only vulnerable when they are about to shoot you - the timing of waiting, firing and dodging is crucial!

The early levels are very easy, but they soon get complicated with teleports all over the place and killer robots hiding behind corners - and of course your money starts running out so you can't afford the mapping equipment and life gets rather hard. A computer would have been nice as it is easy to get confused about which way you are facing, and a option to restart at a higher level would have been nice, but Xybots is an excellent game with lots of nice features.

AWESOME GOLF

This is brilliant. A superb implementation of golf on such a tiny system! 1 to 4 players on a choice of 23 courses. You can practice any hole or try out the driving range before you start the actual match. You can choose how strong a wind you want, hitting clouds let you know which direction it is blowing.

The graphics are great and the controls allow you to scan any part of the hole and zoom in to any part of it to see the detail of the terrain. It's all there - the rough, the fairway, trees to bounce off, sloping greens, water hazards, bunkers, everything.

You can ask your caddy for advice on which club to use, select your club, take aim and then make your shot to the usual computer golf style - press the button to start your swing and a bar moves up and down, press again to control the strength of the swing and again to try and control the exact direction - too early or late and the ball will veer off to the left or right.

In the multi-player version you can give handicaps to allow for weaker or stronger players.

An excellent version of golf - thoroughly recommended to all sporting fans!

Turbo Sub



SUMMARY

Generally the Lynx games continue to maintain a very high standard and now cover a very wide range with something for everyone. My personal favorite this time was Blockout, but they are all worth playing. Recommended Retail Price is £29.99 each, but you should be able to get them for a few pounds less if you shop around.

BLOCK BUSTER

This is the continuing story of the devastating cuboid/spheroid wars. You play the part of the last sphere-warrior that has been sent to the planet of the cuboids with the solitary aim of destroying the mega-cube which is the sole supplier of all the cuboid's power. If you succeed in your mission, then the massive power drain, caused by the illuminated planet the cuboids live on, will cause the planet to shut-down and thus disable the cuboid war-machines forever.

TYPING IT IN

First load the excellent utility Turbo-Basic by Frank Ostrowski and then type out the listing. When you have finished typing out the program and have checked it, compile it using the Turbo-Basic Compiler.

To control the spheroid ship you must use a joystick to port him to move in 8 directions and the fire-button to shoot the megabrick and the incoming drone cubes.

FRAMING

by Darren Knowles

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00 90 000 0
00 91 000 0
00 92 000 0
00 93 000 0
00 94 000 0
00 95 000 0
00 96 000 0
00 97 000 0
00 98 000 0
00 99 000 0
00 100 000 0

```


in your number. Higher roots - cubes, etc. don't have their own command but they can be worked out easily enough - if you've experimented with functions in the power function, you may already have found that a number to the power of 1/3 gives the square root or that something to the power of 1/3 is the cube root. In general, X to the power of 1/n gives the nth root of X. You can also use logarithms to work out roots, as outlined below.

Powers and roots crop up a lot in matrix equations - the area of a circle is related to the radius squared and the acceleration of an object is measured in metres per second squared, to give just two examples. LISTING 2 shows how the power function comes into play in working out compound interest since LINES 230 and 250 ask you to input the initial amount to be invested (called the principal, P) and the number of years it is to be invested for (time, T). The final principal plus interest, displayed by LINE 260, is worked out using the formula: total amount = principal*(1+time where Y is the rate of interest, lined at 24 in this case). LINE 270 shows the amount in rounded form - it was mentioned earlier that the INT function always rounds downwards if we add 0.5 to our number before applying the INT function so our round to the nearest whole number instead.

```

01 200 REM ***** POWER FUNCTION *****
02 300 GOTO
03 400 REM
04 510 INPUT "P,TIME,INT: ",P,T,I:PRINT "P,TIME,INT:"
05 600 PRINT "P,TIME,INT: ",P,T,I
06 710 T=T*12:PRINT "T:"
07 810 Y=I/100:PRINT "Y:"
08 910 A=P*(1+T*Y)^T:PRINT "A:"
09 1000 PRINT "A: ",A
10 1100 GOTO
11 1200 REM
12 1300 PRINT "P,TIME,INT: ",P,T,I:PRINT "A:"
13 1400 PRINT "P,TIME,INT: ",P,T,I
14 1500 PRINT "T:"
15 1600 PRINT "Y:"
16 1700 PRINT "A:"
17 1800 PRINT "A: ",A
18 1900 GOTO
19 2000 REM
20 2100 PRINT "P,TIME,INT: ",P,T,I:PRINT "A:"
21 2200 PRINT "P,TIME,INT: ",P,T,I
22 2300 PRINT "T:"
23 2400 PRINT "Y:"
24 2500 PRINT "A:"
25 2600 PRINT "A: ",A
26 2700 GOTO

```

```

01 400 REM ***** LOGARITHMS *****
02 500 GOTO
03 600 REM
04 710 INPUT "N,M: ",N,M:PRINT "N,M:"
05 810 PRINT "N,M: ",N,M
06 910 N=N*100:PRINT "N:"
07 1000 PRINT "M: ",M
08 1100 A=LOG(N/M):PRINT "A:"
09 1200 PRINT "A: ",A
10 1300 GOTO
11 1400 REM
12 1500 PRINT "N,M: ",N,M:PRINT "A:"
13 1600 PRINT "N,M: ",N,M
14 1700 PRINT "N:"
15 1800 PRINT "M:"
16 1900 PRINT "A:"
17 2000 PRINT "A: ",A
18 2100 GOTO

```

SIGNS AND ABSOLUTE VALUES

SIGN is a function which tells you whether a number (any of its position 00-9999-11, negative 00000-1) or zero (00000-0). ABS is a function which converts a number into its absolute value, which simply means that it converts the minus sign if there is one. LISTING 3 shows how these two commands can work together in a game. LINE 310 shows an orange box on a Graphics 7 screen. This is our spare station. The green dot is the alien missile which starts at random co-ordinates X,Y defined in LINE 320 - the IF THEN statement makes sure the missile is not in or too near the base before plotting. SIGN and ABS are used to control the course of the missile and make it home in on the base. We look at the missile position relative to the centre of the screen/space station (see 00, 00000-00 and then adjust its co-ordinates depending on whether it's to the right, left, above or below the target). It is probably easier to see what's happening here if you assume different initial starting co-ordinates for the missile and follow them through step by step. Table 2 below does this, using 4 scenarios (A, B, C and D). Finally, LINE 360 traces the old missile by printing a space in its place, the co-ordinates are adjusted and the missile is re-plotted unless it is too near the base. The FOR NEXT loop tells the computer to go through the sequence 6 times.

LOGARITHMS AND EXPONENTIALS

A common logarithm is the power to which 10 must be raised to produce a given answer. The Atari has a function called LOG to find this. For example, LOG(100)=2 because 10x10=100 (00000000-2 because 10x10x10=1000 LOG(10)=1 because 10x1=10 and LOG(0.1)=1 because any number raised to the power of zero equals one.

You may notice from the above figures that a unit increase in the index or log corresponds to a tenfold increase in the number. For this reason, statistical data - especially things which change over time, such as population growth - are often plotted on a log scale (i.e. vertical axis shows that log of the values instead of an absolute scale (A), when vertical axis shows the actual values) as this allows the proportional changes in the numbers to be seen - if the rate of change is constant, you'll get a straight line when you plot up the points,

if the rate of change is increasing, your line will curve upwards (called 'exponential growth'), and so on.

You multiply or divide powers of the same number by adding or subtracting the exponents (e.g. 10³ valued by 10² squared = 10³⁺² = 10⁵ is to the power of 5). Also, you get the nth root of a number by dividing the exponent by n (e.g. cube root of 10³ to the power of 12 is 10³ to the power of 4). LISTING 4 shows this last property to produce roots from numbers you input, with the help of the LOG function. LINES 400 and 420 ask you to input a number (N) and the root you want (R). LINE 430 gets the base 10 log (N), divides this by the required root, and then converts the answer back into an ordinary number. X(10) is called the antilog. You will see that LINE 430 uses the ABS function to stop any of the minus from the original number if there is one. As two negative numbers multiplied together gives a positive number, you can't get the square root of a minus number. We use ABS to prevent an error message occurring in the program if R is less than 0. Incidentally, in maths, a number to the power of -n is expanded to the nth root (i.e. to the power of 1/n) so there is no need to convert the inputted root value to the fitting.

Common logarithms are sometimes called 'BASE 10' logs because they deal with 10 to the power of n. You can have logs for other bases or exponential functions too - For instance, the LOG(X) is to the power of 2 or 3 in the base 2 log of 8. eⁿ is a special exponential function in maths and logs to the 'BASE e' are called 'NATURAL LOGARITHMS'. Y^x (exponential of x) is an infinite number which starts off at e 2.718 and is defined as being equal to EXP(X). The Atari has two functions for exponential - LOGND returns the BASE e logarithm of a number, i.e. e to the power of what gives the answer (X) and EXP(X) gives x to the power of e.

One place where you may have come across the logit function already is in relation to shell sorting routines. This sorting technique works by continually splitting the original group down into smaller blocks and comparing the items in each. For

instance, if you have 100 unsorted items and use blocks of 20, then you shall sort computers - and swaps if necessary - the first with the fifth, the final with the 20th, and so on. When there are no more exchanges to be made, the block size is reduced and the process is repeated. While there are no hard and fast rules about initial block size, some numbers have been found to work better than others and one "good" starting value is related to the natural logarithm of the total number of items to be sorted. LISTING 5, which puts a string of letters into alphabetical order, shows this in operation. LINE 500 defines the initial block size (called "CAP") in terms of LOG(200), so there are 20 items to be sorted. The FOR NEXT loop in LINES 540-570 does the comparing and swapping, using the string 99 to temporarily hold the item being moved down to a lower position. The swap flag is set (SW=1) if an exchange takes place and is 0 in this case. The loop is repeated, as further changes may result from the revised relative positions of the letters. LINE 600 successively halves the block size for the second and subsequent rounds of the sort. These come into play when the exchanges for the previous round have all taken place (LINE 580). The program ends when gap size falls below 2 and the sorted string is displayed.

PROBABILITIES

The math functions - particularly powers - are used a lot in working out series of probabilities. The probability of an event happening will always be a number between 0 (impossible) and 1 (certain), with the chance of any particular outcome depending on the number of possible events. For instance, when you toss a die there are 6 possible outcomes so the probability of getting any given number is 1/6; if you throw a coin there are only 2 possible outcomes so the probability of getting heads is 1/2. So how do we work out the chance of getting 2 heads in

a row? Well, we know that the probability of heads is 1/2. If this happens, there's a 1 in 2 chance of getting heads on the second toss too, so the probability of getting two heads is 1/2 x 1/2 or 1/2 to the power of 2. Now heads in a row is 1/2 to the power of 3, or a consecutive heads is 1/2 to the power of n.

If you toss two dice, you would expect that the chance of getting a total of 12 is more remote than say, a 7, so there is only 1 way of getting a 12 (6+6) while 7 can be reached in lots of ways (2+5, 4+3, 5+1, 1+6, 5+2, 2+5). LISTING 6 shows results of tossing 2 dice 20 times. The figures along the end of the screen show the possible outcomes and the number of 5s shown from many times each sum was generated. While it is theoretically possible that 20 throws will yield 20 double 6s each time is independent of the others, on average we would expect only one out of 12 per 20 goes 11,66 to the power of 20. In fact, if you run the program a few times, you should find that the modifying totals consistently appear more frequently than the outcomes.

For the above reason, adventure games, simulations and machine often have events dependent on sums of random numbers rather than just one. On the basis that something is better in more likely than complete success/failure. For instance, you might have a game in which the outcome of the battle has to win this opponent is determined by "rolling" a pair of dice, using a random like the one at LINE 550 of LISTING 6. If the odds are stacked against the hero (maybe because he has no weapon or the opponent is a dragon), you could use something like IF 2+2 OR 12 THEN ... (here omit)

This would be most unlikely, occurring on average only once every 18 turns (1/36 x 1/36 = 1/129). You can't get the same effects with single random numbers, as each has an equal chance of being generated by the RND(99) command.

CONCLUSION

The aim of these notes was to demystify the more obscure mathematical functions and also to give enough information on maths to general to help you put the numerical commands to some sort of context when you come across them in program listings. I hope I have at least given some of the way towards doing this. Of course, if you need all new to use some maths commands in your own programs, so search the books!

```

80 540 DIM A(20)
81 540 DIM B(20)
82 540 DIM C(20)
83 540 DIM D(20)
84 540 DIM E(20)
85 540 DIM F(20)
86 540 DIM G(20)
87 540 DIM H(20)
88 540 DIM I(20)
89 540 DIM J(20)
90 540 DIM K(20)
91 540 DIM L(20)
92 540 DIM M(20)
93 540 DIM N(20)
94 540 DIM O(20)
95 540 DIM P(20)
96 540 DIM Q(20)
97 540 DIM R(20)
98 540 DIM S(20)
99 540 DIM T(20)
100 540 DIM U(20)
101 540 DIM V(20)
102 540 DIM W(20)
103 540 DIM X(20)
104 540 DIM Y(20)
105 540 DIM Z(20)
106 540 DIM AA(20)
107 540 DIM AB(20)
108 540 DIM AC(20)
109 540 DIM AD(20)
110 540 DIM AE(20)
111 540 DIM AF(20)
112 540 DIM AG(20)
113 540 DIM AH(20)
114 540 DIM AI(20)
115 540 DIM AJ(20)
116 540 DIM AK(20)
117 540 DIM AL(20)
118 540 DIM AM(20)
119 540 DIM AN(20)
120 540 DIM AO(20)
121 540 DIM AP(20)
122 540 DIM AQ(20)
123 540 DIM AR(20)
124 540 DIM AS(20)
125 540 DIM AT(20)
126 540 DIM AU(20)
127 540 DIM AV(20)
128 540 DIM AW(20)
129 540 DIM AX(20)
130 540 DIM AY(20)
131 540 DIM AZ(20)
132 540 DIM BAA(20)
133 540 DIM BAB(20)
134 540 DIM BAC(20)
135 540 DIM BAD(20)
136 540 DIM BAE(20)
137 540 DIM BAF(20)
138 540 DIM BAG(20)
139 540 DIM BAH(20)
140 540 DIM BAI(20)
141 540 DIM BAJ(20)
142 540 DIM BAK(20)
143 540 DIM BAL(20)
144 540 DIM BAM(20)
145 540 DIM BAN(20)
146 540 DIM BAO(20)
147 540 DIM BAP(20)
148 540 DIM BAQ(20)
149 540 DIM BAR(20)
150 540 DIM BAS(20)
151 540 DIM BAT(20)
152 540 DIM BAU(20)
153 540 DIM BAV(20)
154 540 DIM BAW(20)
155 540 DIM BAX(20)
156 540 DIM BAY(20)
157 540 DIM BAZ(20)
158 540 DIM BBA(20)
159 540 DIM BBA(20)
160 540 DIM BBA(20)
161 540 DIM BBA(20)
162 540 DIM BBA(20)
163 540 DIM BBA(20)
164 540 DIM BBA(20)
165 540 DIM BBA(20)
166 540 DIM BBA(20)
167 540 DIM BBA(20)
168 540 DIM BBA(20)
169 540 DIM BBA(20)
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171 540 DIM BBA(20)
172 540 DIM BBA(20)
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175 540 DIM BBA(20)
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190 540 DIM BBA(20)
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192 540 DIM BBA(20)
193 540 DIM BBA(20)
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196 540 DIM BBA(20)
197 540 DIM BBA(20)
198 540 DIM BBA(20)
199 540 DIM BBA(20)
200 540 DIM BBA(20)

```

```

201 540 DIM BBA(20)
202 540 DIM BBA(20)
203 540 DIM BBA(20)
204 540 DIM BBA(20)
205 540 DIM BBA(20)
206 540 DIM BBA(20)
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208 540 DIM BBA(20)
209 540 DIM BBA(20)
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242 540 DIM BBA(20)
243 540 DIM BBA(20)
244 540 DIM BBA(20)
245 540 DIM BBA(20)
246 540 DIM BBA(20)
247 540 DIM BBA(20)
248 540 DIM BBA(20)
249 540 DIM BBA(20)
250 540 DIM BBA(20)

```

TABLE 1: RANDOM NUMBERS WITH INT AND RND

Number range	How to get it
0 to 9999	RND(9999)
0 to 99999	RND(99999)
0 to 10	INT(RND(10)+1)
1 to 10	INT(RND(10))+1
>0	INT(RND(1)+1)

TABLE 2: HOW 68M AND ABS VALUES IN LISTING 3 ARE USED TO UPDATE X AND Y CO-ORDINATES

SCALE	SCALED			
	68M	ABS	ABS	ABS
START X	100	100	100	100
START Y	100	100	100	100
X1	100	-100	100	-100
Y1	100	-100	100	-100
ABS CHANGE X	100	100	100	100
X2	0	0	0	0
Y2	0	0	0	0
X3	0	0	0	0
Y3	0	0	0	0
NEW X	100	100	100	100
NEW Y	100	100	100	100

(Typical sequence)

80 COLUMN TEXT

With an ability to display 80-column text, except for adding a hardware interface, perhaps you thought that 80 columns is something that you could easily do without? What about large displays that won't fit on a Graphics 8 screen though? Scrolling and page flipping hardly give the same effect as the display or 80 column pads take for granted so how about trying a software solution?

AN 80 COLUMN ROUTINE

This simple to use utility which plots text on a graphics screen will give you the graphics resolution of mode 8 with the Home Plot and DRAWAUTO commands, as well as that classic 80 column text. There is no need to know exactly how the routine works as, once it's set up, all the hard work is done for you, and even the most novice programmer shouldn't have any trouble with it. What it does is to copy text from a string into a Graphics 8 screen at specified X and Y coordinates.

SETTING UP

Listing 1 is the set up program. It loads into memory a machine code routine at location 30304 and a new character set at location 30326. The machine code is position dependent which means it must be kept there and nowhere else in order to execute. The character set however may be put anywhere as long as the start address is divisible by 256 and the address 30327 stored to contain the start address divided by 256. The default value is 120 (120*256=30720).

Once this routine is run there are just a couple of more things to do. Firstly call up the Graphics Mode 8. Either Graphics 8 for a test screen or Graphics 8+16 for some, but remember if you choose this option when you exit from the program Home will return you to the Graphics 8 screen to display the Home prompt. An alternative is to use a custom display list, beyond the scope of this article but see issue 12 if you want to know about them.

The next and final step is to POKE addresses 1789 and 1789 with the start of screen memory. Normally the following will do:

```
POKE 1788,PEEK(88);POKE 1789,PEEK(88)
```

but if you've assigned your own display list then you'll have to point to the right part of memory.

CALLING THE ROUTINE

Once it is ready for use the routine is called up by:

```
G=CHR(30304).ADRTEXT(X,Y)
```

G is just a dummy variable, you can use any character as long

A software solution presented by Matthew Bennett

as it is not a reserved one in your program as a value will be assigned to it when the routine returns to Basic.

30304 is the start of the machine code routine and must not be changed!

ADDRESS,ADR returns the start address of the string holding your text. The routine must know where to stop plotting text so it looks for the "0" character. Therefore the end of the text within the string must be denoted by this symbol, or you can expect some weird results!

X and Y are the start coordinates of the text. X can be between 0 and 79, and Y between 0 and 24.

The text will automatically be wrapped around onto the next line should it overlap the edge of the screen.

APPLICATIONS

Now lets move on to some applications. Listing 2 shows how the routine works and is used, but it also shows how it can interact with keyboard input. You must remember that Basic doesn't consider this new text as characters but as graphics, therefore you can wave goodbye to all those commands such as Print and Input. An alternative is to use the Open and Get commands. With this a value is returned according to the key pressed and it is quite easy to filter out unwanted key-presses. Before you can try either example you must type in and save Listing 1, using either LIST/C or LIST ToDiskware. Next type in Listing 2 and use ENTER/C or ENTER ToDiskware to load the set up program back, putting them together. Finally SAVE or CSAVE the new listing before running it.

When you run Listing 2 you are given a simple questionnaire to fill in. The only valid keys are the letters "A" to "Z" and the numbers 1 to 0 and I've also included the even useful delete backspace key.

Line 100 to 200 is the main routine. It waits at line 100 until a key is pressed then the next 5 lines decide on the action to be taken.

Line 115 checks if it was the delete backspace key.

Line 120 checks for the Return key. Pressing the Return key moves you down to the next question.

Line 130 checks for the number keys.

Line 140 checks for the letter keys.

Line 150 checks for space bar.

If the routine gets to line 160 then it was none of the above keys therefore the key press was invalid and the program returns back to the get key line.


```

01 1000 0000 1, 71, 110, 00, 010
02 1000 0000 1, 54, 110, 00, 010, 00, 010, 01, 10
03 1000 0000 1, 58, 110, 00, 010
04 1000 0000 1, 58, 110, 00, 010
05 1000 0000 1, 58, 110, 00, 010
06 1000 0000 1, 58, 110, 00, 010
07 1000 0000 1, 58, 110, 00, 010
08 1000 0000 1, 58, 110, 00, 010
09 1000 0000 1, 58, 110, 00, 010
10 1000 0000 1, 58, 110, 00, 010
11 1000 0000 1, 58, 110, 00, 010
12 1000 0000 1, 58, 110, 00, 010
13 1000 0000 1, 58, 110, 00, 010
14 1000 0000 1, 58, 110, 00, 010
15 1000 0000 1, 58, 110, 00, 010
16 1000 0000 1, 58, 110, 00, 010
17 1000 0000 1, 58, 110, 00, 010
18 1000 0000 1, 58, 110, 00, 010
19 1000 0000 1, 58, 110, 00, 010
20 1000 0000 1, 58, 110, 00, 010
21 1000 0000 1, 58, 110, 00, 010
22 1000 0000 1, 58, 110, 00, 010
23 1000 0000 1, 58, 110, 00, 010
24 1000 0000 1, 58, 110, 00, 010
25 1000 0000 1, 58, 110, 00, 010
26 1000 0000 1, 58, 110, 00, 010
27 1000 0000 1, 58, 110, 00, 010
28 1000 0000 1, 58, 110, 00, 010
29 1000 0000 1, 58, 110, 00, 010
30 1000 0000 1, 58, 110, 00, 010
31 1000 0000 1, 58, 110, 00, 010
32 1000 0000 1, 58, 110, 00, 010
33 1000 0000 1, 58, 110, 00, 010
34 1000 0000 1, 58, 110, 00, 010
35 1000 0000 1, 58, 110, 00, 010
36 1000 0000 1, 58, 110, 00, 010
37 1000 0000 1, 58, 110, 00, 010
38 1000 0000 1, 58, 110, 00, 010
39 1000 0000 1, 58, 110, 00, 010
40 1000 0000 1, 58, 110, 00, 010
41 1000 0000 1, 58, 110, 00, 010
42 1000 0000 1, 58, 110, 00, 010
43 1000 0000 1, 58, 110, 00, 010
44 1000 0000 1, 58, 110, 00, 010
45 1000 0000 1, 58, 110, 00, 010
46 1000 0000 1, 58, 110, 00, 010
47 1000 0000 1, 58, 110, 00, 010
48 1000 0000 1, 58, 110, 00, 010
49 1000 0000 1, 58, 110, 00, 010
50 1000 0000 1, 58, 110, 00, 010
51 1000 0000 1, 58, 110, 00, 010
52 1000 0000 1, 58, 110, 00, 010
53 1000 0000 1, 58, 110, 00, 010
54 1000 0000 1, 58, 110, 00, 010
55 1000 0000 1, 58, 110, 00, 010
56 1000 0000 1, 58, 110, 00, 010
57 1000 0000 1, 58, 110, 00, 010
58 1000 0000 1, 58, 110, 00, 010
59 1000 0000 1, 58, 110, 00, 010
60 1000 0000 1, 58, 110, 00, 010
61 1000 0000 1, 58, 110, 00, 010
62 1000 0000 1, 58, 110, 00, 010
63 1000 0000 1, 58, 110, 00, 010
64 1000 0000 1, 58, 110, 00, 010
65 1000 0000 1, 58, 110, 00, 010
66 1000 0000 1, 58, 110, 00, 010
67 1000 0000 1, 58, 110, 00, 010
68 1000 0000 1, 58, 110, 00, 010
69 1000 0000 1, 58, 110, 00, 010
70 1000 0000 1, 58, 110, 00, 010
71 1000 0000 1, 58, 110, 00, 010
72 1000 0000 1, 58, 110, 00, 010
73 1000 0000 1, 58, 110, 00, 010
74 1000 0000 1, 58, 110, 00, 010
75 1000 0000 1, 58, 110, 00, 010
76 1000 0000 1, 58, 110, 00, 010
77 1000 0000 1, 58, 110, 00, 010
78 1000 0000 1, 58, 110, 00, 010
79 1000 0000 1, 58, 110, 00, 010
80 1000 0000 1, 58, 110, 00, 010
81 1000 0000 1, 58, 110, 00, 010
82 1000 0000 1, 58, 110, 00, 010
83 1000 0000 1, 58, 110, 00, 010
84 1000 0000 1, 58, 110, 00, 010
85 1000 0000 1, 58, 110, 00, 010
86 1000 0000 1, 58, 110, 00, 010
87 1000 0000 1, 58, 110, 00, 010
88 1000 0000 1, 58, 110, 00, 010
89 1000 0000 1, 58, 110, 00, 010
90 1000 0000 1, 58, 110, 00, 010
91 1000 0000 1, 58, 110, 00, 010
92 1000 0000 1, 58, 110, 00, 010
93 1000 0000 1, 58, 110, 00, 010
94 1000 0000 1, 58, 110, 00, 010
95 1000 0000 1, 58, 110, 00, 010
96 1000 0000 1, 58, 110, 00, 010
97 1000 0000 1, 58, 110, 00, 010
98 1000 0000 1, 58, 110, 00, 010
99 1000 0000 1, 58, 110, 00, 010
100 1000 0000 1, 58, 110, 00, 010

```

```

01 1000 0000 1, 71, 110, 00, 010
02 1000 0000 1, 54, 110, 00, 010, 00, 010, 01, 10
03 1000 0000 1, 58, 110, 00, 010
04 1000 0000 1, 58, 110, 00, 010
05 1000 0000 1, 58, 110, 00, 010
06 1000 0000 1, 58, 110, 00, 010
07 1000 0000 1, 58, 110, 00, 010
08 1000 0000 1, 58, 110, 00, 010
09 1000 0000 1, 58, 110, 00, 010
10 1000 0000 1, 58, 110, 00, 010
11 1000 0000 1, 58, 110, 00, 010
12 1000 0000 1, 58, 110, 00, 010
13 1000 0000 1, 58, 110, 00, 010
14 1000 0000 1, 58, 110, 00, 010
15 1000 0000 1, 58, 110, 00, 010
16 1000 0000 1, 58, 110, 00, 010
17 1000 0000 1, 58, 110, 00, 010
18 1000 0000 1, 58, 110, 00, 010
19 1000 0000 1, 58, 110, 00, 010
20 1000 0000 1, 58, 110, 00, 010
21 1000 0000 1, 58, 110, 00, 010
22 1000 0000 1, 58, 110, 00, 010
23 1000 0000 1, 58, 110, 00, 010
24 1000 0000 1, 58, 110, 00, 010
25 1000 0000 1, 58, 110, 00, 010
26 1000 0000 1, 58, 110, 00, 010
27 1000 0000 1, 58, 110, 00, 010
28 1000 0000 1, 58, 110, 00, 010
29 1000 0000 1, 58, 110, 00, 010
30 1000 0000 1, 58, 110, 00, 010
31 1000 0000 1, 58, 110, 00, 010
32 1000 0000 1, 58, 110, 00, 010
33 1000 0000 1, 58, 110, 00, 010
34 1000 0000 1, 58, 110, 00, 010
35 1000 0000 1, 58, 110, 00, 010
36 1000 0000 1, 58, 110, 00, 010
37 1000 0000 1, 58, 110, 00, 010
38 1000 0000 1, 58, 110, 00, 010
39 1000 0000 1, 58, 110, 00, 010
40 1000 0000 1, 58, 110, 00, 010
41 1000 0000 1, 58, 110, 00, 010
42 1000 0000 1, 58, 110, 00, 010
43 1000 0000 1, 58, 110, 00, 010
44 1000 0000 1, 58, 110, 00, 010
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49 1000 0000 1, 58, 110, 00, 010
50 1000 0000 1, 58, 110, 00, 010
51 1000 0000 1, 58, 110, 00, 010
52 1000 0000 1, 58, 110, 00, 010
53 1000 0000 1, 58, 110, 00, 010
54 1000 0000 1, 58, 110, 00, 010
55 1000 0000 1, 58, 110, 00, 010
56 1000 0000 1, 58, 110, 00, 010
57 1000 0000 1, 58, 110, 00, 010
58 1000 0000 1, 58, 110, 00, 010
59 1000 0000 1, 58, 110, 00, 010
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86 1000 0000 1, 58, 110, 00, 010
87 1000 0000 1, 58, 110, 00, 010
88 1000 0000 1, 58, 110, 00, 010
89 1000 0000 1, 58, 110, 00, 010
90 1000 0000 1, 58, 110, 00, 010
91 1000 0000 1, 58, 110, 00, 010
92 1000 0000 1, 58, 110, 00, 010
93 1000 0000 1, 58, 110, 00, 010
94 1000 0000 1, 58, 110, 00, 010
95 1000 0000 1, 58, 110, 00, 010
96 1000 0000 1, 58, 110, 00, 010
97 1000 0000 1, 58, 110, 00, 010
98 1000 0000 1, 58, 110, 00, 010
99 1000 0000 1, 58, 110, 00, 010
100 1000 0000 1, 58, 110, 00, 010

```

Example 2 - Using text and graphics together in a CAD environment

Despite all these checks, and in basic use, the whole key press routine is pretty quick - try it. The only thing to be aware of is that you have to make sure the routine has to do as if one of the arrow keys were pressed for example then you would have to program a cursor move rather than just printing the characters.

Try deleting line 80 then re-running the program again. Now you'll be able to type anything - lower case, inverted, and the control characters, but hit the arrow keys and you'll see what I mean.

COMBINING TEXT AND GRAPHICS

Listing 2 shows how this routine can be used as a text and graphics routine. It draws a familiar logo, demonstrated as an engineering drawing would be. It's only an example but it's a good start for experimenting with your own 80 column text. On a final note I'll leave you with some advice. For control that after continuously editing and running the examples, strange things start to happen. The text can become scrambled within the editing and reprinted. The first thing to do if this happens is to press Home and try again. If it is just the same

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When trying saving the program and switching off the computer. Load the program back and try again, this will solve some problems but if it persists then look carefully at your program as this will be where the fault lies. Despite this the routine is reliable and well experimenting with. Just don't forget that @ character!

ATARILAB

It is nice to have a change from the Tutorials and the couple of software reviews. Both AtariLab and ChromaCad (separate reviews) are "serious" applications for your 5-bit Atari, but AtariLab is definitely easier to absorb. My thirteen-year-old son James found AtariLab easy to get into - almost like a game in its layout, appeal, while ChromaCad requires a higher level of dedication.

Opening the AtariLab Starter Set immediately took me back several years. The large coloured box, excellent presentation, glossy manual and cartridge are all typical of the quality products that Atari used to produce. The copyright date on the manual is 1983 so it must be one of the later releases from Atari. I looked back in an Atari magazine and found the Starter Set advertised at \$49.99 in September 1983 - if it was available over here it would have cost the same in pounds, that would be about £60 today. But we had to pay upwards of £75 for a game in those days!

ATARILAB STARTER SET

The starter set contains the basic equipment into which the experimental modules are connected, so it is essential to have the set to use any other AtariLab module. The Starter Set contains the temperature module.

The AtariLab interface unit is a box with a cable attached which plugs into a joystick port. The box has 6 plug points on it equivalent to the pins of the joystick port - 2 paddles, 2 FTREX, 2 joystick up/down (used as control outputs) and 2 power points (5 volt). If you are a programmer you can address all these connectors from Basic, but they are colour coded and you do not need to understand any of the internal workings to get to grips with the experiments.

The temperature module consists of a temperature probe which plugs into the AtariLab interface, a small thermometer and a MOS65 cartridge to go in your computer. As the software is an Atari you can be sure it will run on all Atari 5-bit computers. It is quite possible to plug everything in, switch on and try out the package without reading the manual, but the manual is well laid out and it contains a lot of information of a general nature about experimental method, labelling and graphing results and about temperature so it is well worth reading. It also has details of how to carry out specific experiments, so you don't have to make up your own in the first instance, though you will probably have some ideas of your own before long. There are seven projects in the manual.

The software on the cartridge is quite good. It allows you to calibrate the temperature sensor, set the sensor on a digital thermometer displaying results on screen and its experimental recording temperatures as they change over time. The time base can be changed in a range of different settings from a very short (5 seconds) for measuring rapid temperature changes up to 24 hours. The latter setting allows experiments like measuring the outdoor temperature change through a full day. The graphs do not use a very high resolution graphic mode, but are

An add-on module and sensors for scientific projects was produced by Atari in 1983 but has only now been imported to the UK. Ian Finlayson wonders why it has taken so long for us to get such an exciting package

quite good enough for the accuracy of experiments you are likely to achieve at home. The graphs can be printed out, if you have an Epson compatible printer, in the same rather blocky graphic style.

Results are plotted graphically and stored in a data table in the computer's memory. They can also be saved to disk, but if you want to recover them later it will have to be in Basic rather than using the cartridge software. The manual explains how this is done and gives a basic program listing. It also gives example programs in both Basic and Logo with enough detail to get you going writing your own programs for use with the AtariLab hardware. I don't suppose that anyone is still using the Logo language though - I did have the cartridge at one time and it is a good way of starting to learn modular programming (those little turtles a fair one!) but I found it too slow and very memory intensive.

Overall this kit is very good. The only jarring note is the occasional intrusion of its American origins - for example, the experiment to relate the chirping of crickets to air temperature is difficult to do in England! The package is particularly suitable for a youngster about 11 years old, just getting into science, but it is fun and flexible enough to have appeal for a very much larger age range. It could also provide a starting point for more complex projects and experiments - are there any budding scientists out there? Keep us informed of your developments.

LIGHT LAB MODULE

The Light Lab module is a separate package which works with the AtariLab interface from the starter set. It has its own program cartridge, a light sensor, a light sensor, polarised filters, coloured filters, a mirror, lens, slide, light stick and glow panel. This module is not quite as intuitive to use as the temperature module, but once again the manual gives a good introduction to the subject, and a range of projects to carry out, some of which combine light and heat sensing.

The software is set out in a very similar way to the Temper-

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Lots of exciting projects can now be undertaken with your Atari, for school, for research or just for fun

ture Module as it is quick to learn. Also, like the temperature module, it is possible to display and print graphs and to store experimental data to disk, and examples of basic programs for use of the light module hardware and for recording stored data are given.

Once again a very complete, polished package with good educational potential. If you get the Starter kit I'm sure you will want to get this module as well.

IN CONCLUSION

The interface sold from the Starter kit is fitted with standard phone sockets so it provides a very convenient way of connecting suitable equipment to the computer. After following the examples of the temperature and light experiments it should be possible to make up a large range of further projects. The interface can accept as an input a range of resistance values similar to that of a game paddle, it can also output pulses which can be used as timing signals and provide a low current power source (3 volts). If higher current is needed the low power source could be used to trigger a relay. So if you gallop through the contents of the text you can be followed up and elaborated minutely with a little electronics and basic programming ability.

All in all these packs are good quality and tremendous value. They are not being made any more so you will have to rush out and buy before all stock goes.

These items are available from Derek Fern at Micro Discount. We believe the price is around £12.00 for each module but we suggest that you check with Micro Discount first. Availability is limited.

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KRUNCH!

A Hexadecimal machine code autorunning loader by David Rawlings

Storing machine code data in Basic can be done in several ways but hexadecimal is the most common when it comes to magazine listings. The shortest routine will "KRUNCH" through lists of hexadecimal data stored in Basic, convert it into the respective object code and directly run the program all in a few seconds.

BACKGROUND

Since the early 1980s many magazines have published machine code programs as listings of Basic code which generated an autorunning machine code file which was run at a later date. Some of the best of these were produced by ASA-LOG magazine in the USA. Various methods of including

machine code data within Basic were devised. The three most common were as follows:

DECIMAL ...

100 Data 1999.0,144.2455.

This was readable but required approximately 4 bytes of memory to store one byte of machine code. Listings became very long.

ASCII ...

100 Data SpMhIghTTrF4D4G784G4EE

This is the most memory efficient way of storing data at approximately one byte per byte. The numerical value of each character translated directly into a machine code byte. Unfortunately typing this in is a night mare and prone to endless error. Some characters also cannot be directly printed on the screen. It was only useful for small BBC machines although some programs used decimal data statements to use Basic programs to generate the ASCII data statements in another Basic program if it is all getting very complicated!

HEXADECIMAL ...

100 Data AD1EE4D4S46379C4D6E ...

This is the best balance for long data programs. Two characters correlate to one value e.g. AD = 144 (16x9) in the above case. The value 144 is the equivalent of LDA = Load Accumulator in Assembly language. Most cases used 80 characters per data statement which produced 40 bytes of machine code. The Basic program containing this code would read the data and generate a separate file containing the calculated data. Often two different types of programs would be required to generate a routine for disk or cassette.

WHAT DOES KRUNCH ACTUALLY DO THEN?

The Alan Assembler Editor program is useful for producing short segments of machine code. It can also be used for long machine code programs but eventually becomes painfully slow and debugging rather difficult. It is however easy to produce short to medium machine code programs at runtime. Several good programs exist in Basic for taking this object code and creating Basic data statements from it. The simplest and best of these was called "Boke" by Tom Hudson, published by

```

01 1 0000 *****
02 2 0000 0 00000000 00 0000 00000000 00
03 3 0000 0 0000 0000 0000 0000 0000 0000
04 4 0000 0 0000 0000 0000 0000 0000 0000
05 5 0000 00000000 00000000 00000000 00000000
06 6 0000 00000000 00000000 00000000 00000000
07 7 0000 00000000 00000000 00000000 00000000
08 8 0000 00000000 00000000 00000000 00000000
09 9 0000 00000000 00000000 00000000 00000000
10 A 0000 00000000 00000000 00000000 00000000
11 B 0000 00000000 00000000 00000000 00000000
12 C 0000 00000000 00000000 00000000 00000000
13 D 0000 00000000 00000000 00000000 00000000
14 E 0000 00000000 00000000 00000000 00000000
15 F 0000 00000000 00000000 00000000 00000000
16 G 0000 00000000 00000000 00000000 00000000
17 H 0000 00000000 00000000 00000000 00000000
18 I 0000 00000000 00000000 00000000 00000000
19 J 0000 00000000 00000000 00000000 00000000
20 K 0000 00000000 00000000 00000000 00000000
21 L 0000 00000000 00000000 00000000 00000000
22 M 0000 00000000 00000000 00000000 00000000
23 N 0000 00000000 00000000 00000000 00000000
24 O 0000 00000000 00000000 00000000 00000000
25 P 0000 00000000 00000000 00000000 00000000
26 Q 0000 00000000 00000000 00000000 00000000
27 R 0000 00000000 00000000 00000000 00000000
28 S 0000 00000000 00000000 00000000 00000000
29 T 0000 00000000 00000000 00000000 00000000
30 U 0000 00000000 00000000 00000000 00000000
31 V 0000 00000000 00000000 00000000 00000000
32 W 0000 00000000 00000000 00000000 00000000
33 X 0000 00000000 00000000 00000000 00000000
34 Y 0000 00000000 00000000 00000000 00000000
35 Z 0000 00000000 00000000 00000000 00000000
36 [ 0000 00000000 00000000 00000000 00000000
37 \ 0000 00000000 00000000 00000000 00000000
38 ] 0000 00000000 00000000 00000000 00000000
39 ^ 0000 00000000 00000000 00000000 00000000
40 _ 0000 00000000 00000000 00000000 00000000
41 ` 0000 00000000 00000000 00000000 00000000
42 a 0000 00000000 00000000 00000000 00000000
43 b 0000 00000000 00000000 00000000 00000000
44 c 0000 00000000 00000000 00000000 00000000
45 d 0000 00000000 00000000 00000000 00000000
46 e 0000 00000000 00000000 00000000 00000000
47 f 0000 00000000 00000000 00000000 00000000
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50 i 0000 00000000 00000000 00000000 00000000
51 j 0000 00000000 00000000 00000000 00000000
52 k 0000 00000000 00000000 00000000 00000000
53 l 0000 00000000 00000000 00000000 00000000
54 m 0000 00000000 00000000 00000000 00000000
55 n 0000 00000000 00000000 00000000 00000000
56 o 0000 00000000 00000000 00000000 00000000
57 p 0000 00000000 00000000 00000000 00000000
58 q 0000 00000000 00000000 00000000 00000000
59 r 0000 00000000 00000000 00000000 00000000
60 s 0000 00000000 00000000 00000000 00000000
61 t 0000 00000000 00000000 00000000 00000000
62 u 0000 00000000 00000000 00000000 00000000
63 v 0000 00000000 00000000 00000000 00000000
64 w 0000 00000000 00000000 00000000 00000000
65 x 0000 00000000 00000000 00000000 00000000
66 y 0000 00000000 00000000 00000000 00000000
67 z 0000 00000000 00000000 00000000 00000000
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69 \ 0000 00000000 00000000 00000000 00000000
70 ] 0000 00000000 00000000 00000000 00000000
71 ^ 0000 00000000 00000000 00000000 00000000
72 _ 0000 00000000 00000000 00000000 00000000
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85 l 0000 00000000 00000000 00000000 00000000
86 m 0000 00000000 00000000 00000000 00000000
87 n 0000 00000000 00000000 00000000 00000000
88 o 0000 00000000 00000000 00000000 00000000
89 p 0000 00000000 00000000 00000000 00000000
90 q 0000 00000000 00000000 00000000 00000000
91 r 0000 00000000 00000000 00000000 00000000
92 s 0000 00000000 00000000 00000000 00000000
93 t 0000 00000000 00000000 00000000 00000000
94 u 0000 00000000 00000000 00000000 00000000
95 v 0000 00000000 00000000 00000000 00000000
96 w 0000 00000000 00000000 00000000 00000000
97 x 0000 00000000 00000000 00000000 00000000
98 y 0000 00000000 00000000 00000000 00000000
99 z 0000 00000000 00000000 00000000 00000000
100 [ 0000 00000000 00000000 00000000 00000000

```

Listing 1

```

00 |
01 | SIMPLE MENU
02 | FULL SCREEN WITH GRAPHIC
03 | ADVANCED EDITOR - S. BARR 1983
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05 |
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```

Listing 2

ANALOG Computing. Using this program it is possible to build up large programs containing lines of hexadecimal or decimal data, but there is still the problem of converting this to machine code and running the created program. That is what KRUNCH actually does. Simply place this routine at the start of all your hexadecimal data and adapt line 5 to state the starting point in memory of the code and the run address where execution is commenced. This may or may not be the same value.

On running the program the following operations are carried out.

- A small BC search routine is loaded into Page 0 to look for the beginning of the data within the Basic code
- A second routine is set up at the top of memory. This routine through the basic data as it lies in the computer memory, extracts a single byte from each hexadecimal pair and copies it into the top of memory.
- The created data is then moved from the top to its appropriate place in memory
- The new program is automatically run.

One of the major features of the program is that long segments of hexadecimal can be used. The created code is usually introduced to run in the same area as is actually used by Basic itself. To create the code in its current place would therefore corrupt the Basic program before it had finished its work. To countering this the calculation starts at the end of the DATA working down through memory, placing the new code at the top. This way if any overlap occurs the relevant data has already been used. This new code is then copied directly down to its intended position byte by byte and then run. If the new program then overlaps the Basic code then this will be corrupted and on exiting the machine code the Basic way will have gone for a walk.

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```

Listing 3

HOW TO USE KRUNCH

Listing 1 is the original KRUNCH program. Type this in and save to disk as LIST '01-KRUNCH.BAS'

Load up your hexadecimal code and merge this with KRUNCH by loading it using ENTER '01-KRUNCH.BAS'

Change line 5 to adjust the number of data lines, the starting point for the code and the run address.

Add in any ROM statements at the top of the new program to create yourself of what it is all about, and save the whole program to disk under any name you like. Always SAVE before running anything, valuable particularly where machine code is involved. Any one mistake and your computer can go into a sleep coma.

The same program will run from cassette or disk so there is no need for separate versions.

Run the program. There will be a few seconds delay as the system loads its own routines from its data. As it searches the memory for the start of the data the background changes colour. Actually this was to tell me when the program was doing because with the Amstrad Editor you tend to be left in the dark a bit while it is working. A maximum of 3 seconds later there is your machine code running so it was intended. The system works well with several of the larger MC programs from ANALOG: processing, creating and running Tom Woodson's 'Director' in a total of around 4 seconds, producing over 50 of code. All my own assembler programs work well.

The program is written in use as little memory as possible and uses the equivalent of that used by the previous programs which create a separate running file. Hence it is unusual. You can change line 5 and add any ROM statements. Lines 6-59 must be left intact. Clever routines look for their own data stored

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THE TIPSTER



Another issue another cracking Tipster column! This issue we have more facts and tips for *Alternate Reality* and the complete solution and accompanying map to *Forever Castle* by the master of adventure games (himself) Scott Adams.

Manufacturers never had its full range exposed (at the level not just the first level but will have to be held over to next issue due to lack of space but in this issue the well-considered articles back with the solution to *Spiders* and there is a polished *Quick It's* section.

Ever wanted to view your best Agif's scores? Then I'll tell you how to do it later in the column, but let's cut the crap (as they charmingly say in the US of A) and plough headily on to the stages called *Games Progress Hell* where your only recourse is yours truly.

QUICKIES ... QUICKIES ... QUICKIES ... QUICKIES ... QUICKIES ...

Stephen Babinian (sorry if I haven't spell your name right) has been burning the midnight oil producing such a huge list of what are in my opinion some of the best games that he has forgotten to include his address. He brings on tips for **GUNLAW**, **MOLECULE MAN**, **THRUST**, **WAR HAWK**, **QUASIMODO** and **ENCOUNTER**.

O.K. lets get cracking, in **GUNLAW** you can't continue from where you left off but if you just stay at the bottom of the first screen and only shoot those soldiers that come onto the screen then you should be alright, and you'll get a huge score. If you move up the screen then remember to keep moving and also remember that rocks repel bullets so use them to hide behind if things get too hairy. The second level (is it part 1?) has you trying to get past the laser gates. The best way to get past them is to go up, to the side of the screen and then stand directly in front of them, wait until they leave off then run like hell to get past them and wander back to the side of the screen. On the third level you have to go through the tunnel and then past the laser. That's as far as Stephen has got but he's working on it.

MOLECULE MAN can be beaten by heading up the entire and placing a lot of money around your starting place and then putting some more at strategic points throughout the game so that you don't run out of bombs and time.

The ship that you pilot in **THRUST** has a laser that can be used to fire at the monster several times so that it would slow

ALTERNATE REALITY THE DUNGEON REVISITED

Alain Droumagou of Montreal responds to the tips issued about *Alternate Reality: The Dungeons*, G.K. so the tips I give out were never meant to be the be all and end all of tips for this incredible game. What Alain has come up in a more comprehensive list of facts and tips to help you complete the game more easily.

The names to the riddles of the Gaugyle are: Shipwreck, Death and Bloodlust.

To kill off the Great Worm you need to be in possession of the *Amethyst* Rod and the *Trapezoid Pagan Spell*. The Rod is located in the SW corner of level 1 (near the tower of the Adept). You can get the Pagan spell if you free the Death, the Palace Prisoner. Now run to the Hall of the Adept on level 2 and find the place where a purple gemstone is painted. Use the Rod. You will be teleported to a secret ally on level 1 where you will find a Solar Gun and the Gaugyle Gun. The Solar Gun protects you against the Dragon Breath and the Gaugyle Gun combined with the *Trapezoid Pagan spell* is rather awesome to use.

(Well, you'll better have a few golden arrows at hand too what I mean?)

Also avoid getting too many objects otherwise you could end up with a visit or two from the Deceiver.

appears and then you can leave the level by going up. This completes the level and so gains you access to the later levels, but they can get tricky.

When you go through the later levels of **WAR HAWK**, you will get the chance to get an item that increases your rate of fire to that of *Thunderbolt*.

When you have finished the last level of **QUASIMODO** put the gun in the first case and then go to the left wall and jump against it. A shadow of the portal should appear and you can go through to skip the part of the game with the archers.

To deal with incoming missiles in **ENCOUNTER**, get parallel with a column and then move backwards and wait for the missile to come into your sights and then blast it. The trick is in a double if you only move if there is an obstacle directly in your sights. The archers will go past you harmlessly. The blue light on your console indicates when the missile is about to fire, move in any direction except towards or away from the source (i.e. either left or right at any angle).

From *The Netherlands* and Magic Star Software (and in your address please) I'd like to cover the solution to the colour problem in the *Random House* file (trapped) in **THE GARD OF TREES**.

You are on the black square ... Type: SE, S, E, E, SE, S, SW, E. You are now on the White square (and you can enter the house now). The way back ... Type: W, SE, N, NW, W, W, S, SW (the opposite).

You are now (back) on the black square.



SPIDERMAN

A. Staniszek of Middlesex has the solution for your friendly neighbourhood adventure of SPIDERMAN. I've seen a solution for this game before and I can't for the life of me remember where it was so here is the solution and I'll go and lie down in a darkened room and think where I saw it last.

Walk along the walls, go W, look in the arks and take the formula, look in the crib again before taking the gem. Go N, N, drop gem followed by the formula. Then go S, S, E and open the doors.

Enter the shaft and look around especially in the niche and get the gem. Now go up the shaft and have a look around in another niche before getting the gem. Go up again and search around for another gem. Push the shaft and go up. Take another look before getting the next gem.

You are now in the Penthouse, so lower the thermostat twice before reading it then open the desk and get the sixth gem. Take the painting and pull it, then get the paper and drop the picture. Go back into the shaft. Go D, D, D, W, W, N, N and drop a gem six times.

Go S, E, take the aquarium. Go W, S, E, and enter shaft again. Go U, U, U, W, raise the temperature. Empty the aquarium and take the gem, then drop it in the aquarium. Lower the temp. Take the desk and caugh and go back into the shaft.

Go D, R, D, W, W, N, N, and drop a gem. Go S move E and take statue. Go W, S, E. Enter into the shaft, climb up, go W and drop statue, caugh and desk.

Enter shaft again go U, W, W, and close your eyes. Go W then push the knob. Open your eyes and get the gem. Type RUM, go E, S, to get the acid and calcium, then go S, S, get other chemicals. Go N, N, mix the chemicals first and then get the calcium - then call.

Go S, S, take chemicals go N, N, now make a web. Drop the paper then go S, E, enter the shaft. Go D, D, W, W, S drop the calcium. Have a look in the corners and take the gem you find. Go N, N, N, and drop the gem twice.

Go S, and shoot your web at the gem before you get it. Go N and drop the gem. Go S, S, S. Take the canners and go N, S, to get to the roof. Open the mesh and then drop it. Go down dust and get the gem.

Examine the fan before shooting your web of the button five times, then enter fan to take the gem before going D, D, D, D, D. Get octo and hit electro. Go W, read dial (should say 987) go E, U, U, U, U, U, enter fan and go down and feel N before taking gem.

Go S and feel S and take the gem before going N, S, S. Enter the shaft and go D, W, W, N, N, drop the gem seven times. Go S, S, E, and enter the shaft. Go U, U, W, W, W, Type RUM.

Go E, E, enter the shaft, go D, W, W, enter the roof. Enter the duct, then the fan and go D, D, D, D, D, take the newspaper. Open it and take the gem. Go U, U, U, U, U, enter fan, Go D, D, E, E, so you can enter the shaft. Go D, W, W, N, N, drop gem - ask for your score - print MICAH 100% Finished game.

ACTION REPLAY

Richard Rogers from Kildwick in London wanted to know how to video the games he's playing. You first plug the TV lead from the computer into the antenna in socket on the video. Now select a blank channel on the video and then tune it into 26. The antenna can go to the TV and you view it on the video channel. Hey Presto - videoed games! (You may need a male to female adaptor for the video because not all videos have the correct connector on the back)

CHOP SUEY, 1800 and DIAMONDS

DUNGEONS have all become that bit easier with these tips from Owen Mason of Birmingham. Once again someone has forgotten to put on their full address so please contact us and we'll send you a free cassette as we've run out of budgets. Everyone, please include your full address and postcode.

(Last)

If you keep the joystick in the up-left position in **Chop Suey** you will then get more points and better opponents.

When playing **January Jan in 1800** the sequence of dates you need to get for a finish is 180, 180, 51 (twice) 17 50 (twice) and 40 (twice) top.

During the sixth level of **Diamond's Dungeons** if you fail to put the money in the collect go under the money bag to try again.

FREE CASSETTES!

We can't get no budget left so, for a limited period only, we will send a **FREE CASSETTE** (from those on the Anniversary) (they advance and updates) to everyone whose tip is used in this and future columns. Now that's got to be an incentive to get thinking and get writing to the Tipster. Show The Tipster what you think of him - bury him in a mound of paper!

Help! ... Help! ... Help! ... Help! ...

Owen Mason needs help on **GUNFIGHTER**, he always seems to be killed by Billy the Goat, so get out your Cals aka and money so down to that old chemo.

K.J. Blakeman is having a hell of a time trying to get around the dungeons in the Madison game **DRAGONS FLIGHT**. The dungeons seemed to have only a few levels according to him but he's sure there are far more. He also has the crystal blade, magic chameleon and daggers and the magic fish. He needs any help that he can get so get adventurous and then get writing.

This is my turn for an out and out plea for **MORE TIPS AND HINTS**. It appears that it has happened again, the same happened last year and following my plea you responded amazingly well and I am sure you will do the same again. Any tips, hints and maps that you might have along with complete solutions to adventures or just little snippets will all be used to the greatest effect.

Please send me your tips, hints and solutions to any Atari game or program so my cupboard is overflowing on the bare side at the moment.

Send all them hints, tips, maps and checklists here to the address

**THE TIPSTER
NEW ATARI USER
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FRACTAL TRIANGLES

A fractal can best be described as a shape which repeats itself perfectly if one segments it into smaller and smaller pieces. A good example of a fractal which occurs in nature is the fern leaf which has a central stem with numerous "branches" coming from this "trunk". However if one "zooms" in repeatedly it is found that this "branch" in fact becomes a "trunk" in its own right with numerous "branches" coming from it. In creating fractals the process can be repeated indefinitely with the shape being broken down into time only to find it is made up of an exact replica of itself.

These shapes have interested mathematicians for years and have developed many a variation on this theme via the Mandelbrot sets - an illustration of which can be seen in the ST FILE of New Atari User Issue 48 but fractals can be simpler. This program does not display or integrate a picture as the Mandelbrot set. In fact the basic shape is a triangle, however it is still a true fractal.

The idea for the program came from an Egotron program two years ago, showing that fractals could be generated simply by having three reference points, randomly moving half way towards one of these points, plotting that point, and then randomly moving half way to the next point, plotting this and so on until a fractal is formed.

HOW IT WORKS

Line 10 sets up the variables and selects graphics mode 8. Note that (150,150), (15,150) and (200,150) are the three reference points of the triangle, with (A,B) representing the current position of the cursor.

Line 20 randomly chooses one of the reference points.

Lines 30 - 50 instruct the computer what the co-ordinates of this point are and stores them in the two variables Y and X.

Line 60 then initiates a short GOSUB routine to move the cursor half way to this point, which is then plotted.

Line 70 then returns to line 20 and the process is repeated again.

TYPING IT IN

Type in the basic listing and save a copy in the normal way. Run the program and then make a copy of it. Unfortunately the program forms the fractal picture by plotting individual pixels and therefore takes about 20 minutes to form a good image. This process can be speeded up by Turbo Basic users replacing line 20 with 20 G% RANDOM3 and by using an "EBC" command instead of "GOSUB".

If by the time the image has been drawn the fractal should be reaching completion, although this never really occurs for the larger the program runs the better the definition of fractal. Even after a relatively short amount of time it is fascinating to see how the big triangle is made up of three smaller identical triangles, and that each of these is made up of...

Why don't run the program and find out for yourself?

by Richard Welsh

```

01 1 REM *****
02 2 REM          FRACTAL TRIANGLES
03 3 REM          BY RICHARD WELSH
04 4 REM          *****
05 5 REM          NEW ATARI USER - JUNE '82
06 6 REM          *****
07 7 REM
08 8 REM          SCREENS: 640x400 1:POKE 768,0:SCREEN
          :SCREEN 8:POKE 768,1
09 9 7 17 --          FRACTAL TRIANGLES
          : 1 17 --          BY RICHARD WELSH
10 10 REM *****
11 11 REM *****
12 12 27 27 270:Y=150
13 13 27 27 270:X=150
14 14 27 27 270:Y=150
15 15 27 27 270:X=150
16 16 27 27 270:Y=150
17 17 27 27 270
18 18 GOSUB 20
19 19 GOTO 20
20 20 150,150:RANDOM3:RANDOM3
21 21 RANDOM3/2:Y=INT(Y)
22 22 150:RETURN

```

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ChromaCAD MODEL BUILDER 91

and SURFACE SHADER XE 91

I will start by apologising to those of you who read the initial review of these two programs in the last issue. My initial feelings for these programs have been largely reinforced by a slower, more detailed look at some of what I now have to say will be a repeat. I hope, however, that a more detailed review will help you to decide whether these programs are what you want. At £24.95 each they are not cheap by current Atari 8-bit standards, but unlike most current 8-bit software they are completely new.

GENERAL CAPABILITIES

The two programs complement each other totally. They are two components of a set of computer aided design (CAD) package - hence the ChromaCAD name personally. The first, Model Builder 91, is used to create complex three dimensional shapes and to allocate colour and texture codes to the surfaces of the shapes, but it cannot display the finished object. The only graphics displays included in Model Builder are views of the contour lines which make up the object.

Surface Shader XE 91 takes the data produced by Model Builder and displays it. It cannot edit the data, but has the ability to change surface colours and to set up multiple lighting of objects with variable intensity to get three dimensional shading effects, just like a photographer lighting a subject.

Each of the two programs has many more features than this so I will describe later, but it will be easier to understand the details of each program if you have their interrelationship in mind. What is clear is that you really need both programs to achieve anything meaningful. Model Builder alone is only capable of displaying the contour maps that define an object, while Surface Shader on its own can only display the few models provided on the data disk, it cannot make any new ones.

DOCUMENTATION

The documentation of both programs is thorough. 126 pages for Model Builder and 69 pages for Surface Shader. The books are well set out, clearly, in fact if you buy both programs you will find the first 60 pages in each manual to be the same. This is the part of the manual that tells you how to use the menu system, how to set and change the orientation of the models on screen, and how to set up several models to view together.

The terms of the manuals is like a textbook, and so the

Ian Finlayson conducts a full review of the programs previewed last issue

programs are complex it is worth following through the whole sequence in order to gain a full understanding of how everything is used. You may find this a little slow at times but if you try to go straight into the program without following the manual you will very soon be in difficulty. Most of us like to "load and go" with any new software, but these are not the programs to try this method. The way the menus and other features work is not like any other program I am familiar with and is not intuitive, and the manual is not written to be used as a reference, so you may find it difficult to look for help when you get stuck. If you use the manuals the way they are intended, however, they give a very thorough introduction to all the features of the programs.

HARDWARE REQUIRED

These are disk based programs so you will definitely need a disk drive. Model Builder is for any Atari 8 bit computer with over 48K memory - I run it successfully on a standard 60K01, with no problem. For Surface Shader, however, the requirement is greater. It needs an 128K01. I have an 80K01 with the Ramdisk XL memory expansion and the standard version of Surface Shader would not display finished images as it has there is also a version of Surface Shader for "non-standard" (ROM memory augmented computers), the 85K0 version, and this runs without a hitch on my expanded 80K01.

MODEL BUILDER

This is where you design and build up your 3D model. The basic principle of the system is to build up a model in layers, like contour lines. A base line is plotted first and then the vertical offset to the next line is chosen. This offset defines the thickness of the "layer" and can be big or thin, in fact the detail to that part of the design or small or detailed surface irregularities are to be included. As the second contour is drawn a strip of triangles connecting the new line to the base line is formed. These triangles will be the surface facets of the finished model and their colour (if available) and shading are defined as you go. As each contour line is completed it is used

to disk, then the build-up of the model continues using the previous contour line as the last line while a new high line is drawn.

The drawing process can be done by positioning a cursor with joystick or keyboard keys, or by calling up a menu that allows a 2.5 coordinate to be typed in. This menu also facilitates the drawing of straight lines, circles, ellipses and arcs. These are the only drawing tools there are no flip, rotate, cut and paste, bezier curves and such like that you may have seen in drawing packages. There are short cut keystrokes that speed the construction of the side panels, and a trace facility which constructs a new high line directly above the previous one when the side panels are vertical. This drawing process is described in detail in the handbook with examples which show you how to draw solid letters L, i and O (each slightly more complex) and to finish with a coffee mug.

Viewing your models can be done at any stage of the creation process, as you can check as you go to be sure that there are no mistakes. This is important because there is no way to go back into a model to make adjustments unless you put off the layers that have been created further on and they are then lost and have to be drawn again. There are ten orientation registers which can hold data for different views. The standard view is vertically down onto the x,y plane at the origin look, y=0. The orientation settings that can be set are pitch, yaw, roll, distance of eye point from the plane, offset in x,y and a clockwise and angle of view. Angle of view effectively provides a zoom function where a small angle of view is equivalent to a high power zoom and a large angle is the same as a wide angle lens.

When you view your work part way through drawing a contour line only the current strip of construction is shown that is the previous contour and the one currently being drawn so you can see exactly where you are. When you view the whole model the display shows all the contour lines. This is alright for simple models, but with complex models it can be quite difficult to appreciate what has been drawn and angle of view must be chosen carefully to make it as clear as possible.



A composite photo pieced together from separate shots of the entire image which can be displayed in segments for better resolution

shading effect than is finer than can be shown on one screen. When viewed by eye there is a noticeable flicker as the screens are flipped, but the photography an exposure of three quarters of a second allows all the screens to blend.

To overcome the shortcomings of a colour low resolution TV picture there are facilities for splitting pictures up into pieces big to 5x5 which can then be photographed and the resulting prints stuck together to form one large high resolution image. But remember 5x5 is 51 images - at half an hour each that is about 40 hours! 5x5 is a more realistic concept. There is also a possibility to automatically photograph a series of screens if your camera can be triggered by an electric pulse sent out through one of the contacts in the joystick port. My camera does not have this facility, but it would certainly be useful to have the system scanning taking photos through the night!

SURFACE SHADER

Surface Shader is easier to understand than Model Builder. All the hard work creating your model has already been done at this stage. What you can now do is use the same orientation registers as in Model Builder to view your work on a 'solid'. The program takes the data from disk and works out what to display and what to leave out and also the colour and shading effects for each displayed surface. This can take a bit of time if the model is complicated - the load on the data disk provided with the program takes about half an hour to draw.

There are a large number of options available in displaying a model after you have chosen its orientation. First there is lighting. Each model can be lit by up to three lights each of which can be orientated separately in pitch and yaw. Each light can also be set in intensity and this brightness can be different for each of the 8 surface paint colours that were available for use in Model Builder. So you should be able to get some very unusual effects, but in the first instance it will be easiest to set all light intensities to 5 (maximum) and treat them like normal flood lights.

There are 4 modes that can be used to display your models. Mode 1 and 2 are medium resolution multi-colour modes. Mode 3 is high resolution 2 colour (picture and border) and mode 4 is two colour stereo imaging. Combined with this is the ability to divide into many screens or set up to improve the resolution of model shading. Up to 8 screens can be used. They are all set up in memory with each set are identical in outline, but with slightly different surface shading. When these screens are displayed in sequence very quickly the effect is to give a

FINAL JUDGEMENT

These two programs are very powerful as 16-bit programs go. In fact I think the authors have tried to do too much. If you start to build complex models the time taken to generate an image gets unacceptably long, and there is no way of saving the completed picture except photographically. The next time you wish to display it you will have to start again from the data stored to disk. The introduction says that the programs have been written with portability in mind so they should become available for more powerful computers, but probably at much higher cost.

The price of this software seems a bit high remembering that you really need both programs though a great deal of effort has gone in to create these large programs in compact code suitable for the TRS-80bit machine and they are presented well. A bundled pair of about £35 for the two would be value for money. I suspect that many data users will consider the 'games machine' image of the Atari by spending their money on lighter programs, but if you have a serious, computing mind, an enthusiasm for the graphic arts and a fair measure of patience then these programs will keep you absorbed for a good deal of time and you can create your own 'sculptures' without clay or tools.

The ChronoCAD system is available in the UK from Grafix International - see their adverts in *New Atari User*. Prices are currently £24.95 for each of the two machines.

HAVE A BLAST ... and collect £200

This month: A compendium for baud walkers, a brace of scintillating space thrashers, and a rendition of an evergreen property game. Edmund Blake gets it all for the price of the disks ...

Serious stuff last issue, right? This time, I'm going to work down a joystick or two playing some of the marvellous titles available from the public domain.

You won't find a sequel to the latest from US Gold in the freeware grab bag of course, but you will find an enormous collection of arcade lookalikes - the chart toppers of yesteryear. See, it's like this. First time out with a new assembler, and a cracking copy of Galaxians, Frogger, Pac-Man or some such rolls off the electronic production line. No-one's actually going to buy a game originally popular ten years ago, but the programmers give valuable coding practice and you get for free what original 8-bit era paid large amounts of hard cash for.

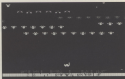
Don't think classic means dull either. Pac-Man and Space Invader clones will keep a steady pulse around your joystick for a long time to come ...

All the games featured here come to you as collections. That is, as well as the featured game, each of the disks contains several other fun games, some of which will be reviewed in later columns.

GALACTIC

If Invaders is the Grandfather of all space shoot 'em ups, Galaxians must be the Great-Uncle once removed. The frenzied-falling levels have controlled joystick motions since the days when Alan Kay's flattened keyboards were thought to be the last word in control.

Galaxians, however, always had the greater staying power.



Whereas the repetitive player snapping of Invaders inevitably dated by the 20th level, the seemingly endless swirls and sways of the Galaxians invaders have kept many a joystick on the edge of a chair until its owner's last laser cannon melted away back into the silicon.

Now you can relive the glory days with Galactix, a business rendition of the great space shoot-down. The program opens with a gang of the extra-terrestrial rascals gabbling about a scrolling star field. You - in time honoured fashion - take up position at the foot of the screen, alongside two spare laser cannons, a high score read-out, level indicator and your current score. Play starts by plugging a joystick into port 1 and heaving a finger tip over the Start key. From then on it, more or less after more of levelled asymptotic levels downwards to your pitiful position - you won't know what's hit you! The first few levels are so easy you'd think you'd done the alien bands get angry, and when they get angry, they get mean - watch out. Galactix is one of the best Galaxians clones around. Smooth graphics and good spot effects combine to produce a thrash as riveting as ever should be without.

ALIEN AMBUSH

Staying with the space theme, Alien Ambush consists of yet more alieny green off-worlds swooping down the screen in an attempt to put you from your beloved. Different is, however, in this game, there's only one alien to start with!

One big fat alien - can't be very difficult, right? Well this one's got a surprise up its slimy green sleeve. Hit it, and rather than dying, the fathead fat splits into two super-fat, potentially fatal aliens whirling around the playfield. Now you've got to blast two of 'em!

The alien's continues in a similar vein until you've managed to clear four screens' worth of aliens, then the fun really begins. Successive aliens split into four, then the speed increases.

then there's another split, then ... and so on, until it's all you can do to switch to another, get your teeth and hang on for dear life!

Author Peter Tokos (ast and furious vertical scribbler first appeared in 1982), and it's every bit as good ten years on. Also available as smooth as Emma French's thigh, available a single but already addictive slot which will have you hammering on the fire buttons just one more time in an effort to increase your high score.

THE PROPERTY GAME ... OR GO DIRECTLY TO JAIL

Game play isn't all about blasting alien or, of course, board and card games have long been the favorites of programmers and players alike, and there are obvious realizations of many of the most popular games available for the Atari Classic.

Perhaps the most exciting board game of all time is Parker Brothers' Monopoly (and if it needs a description, we haven't lived on the same planet for the last few decades ...). Look behind the unwieldy hang-around and broken like Christmas trees in unfortunate episodes up and down the land, and you're certain to see the familiar red striped lion and flutter of lightly colored hang-money. One or two commercial attempts to provide an 8-bit version have failed into obscurity over the years, but who needs them when there's an excellent PD offering?

Monopoly is a comprehensive version of the arch board game. Up to four players can join in the fun, but for the heaviest amongst you, the author has astutely adapted three of the players to computer control, so there's always three other eager wheel-chair-chaurs just when you feel like a winnow.

The game features an absolutely indispensable save game option - some of these sessions can last an awful long time - and most of the standard procedures have been implemented. Dramatically, however, the computer bugs houses "arrogantly", which is technically against the rules. The "bug" is well documented in the on-screen manual (which is excellent, and can be directed to a printer if you have one ...), and in consequence, you're allowed to buy houses unopposed!

One problem, for me at least, is the screen display. Sure, there's heaps of information crammed in there, but where's the graphical representation of the board?

I suspect that after coding all the possible strategies and so on, there simply wasn't enough room (and that's the distributor's explanation for the underhand house buying too ...). Instead, there's a series of codes arranged in an oblong, each representing a property. The centre of the oblong is divided up into Chance, Community Chest, player prompt areas and so on. It's all very nice once you become accustomed to it, but rather a shock at first.

Course, a board game is all about how it plays, and Monopoly - at least, your Classic Atari, plays a mean board game. Two or three revolutions of the board, and the other players are all frantically building houses and trying to bankrupt or otherwise eject you from the game.

Just the thing for those long winter evenings - or during summer holidays.

There are a number of other board games in the public domain, some with excellent graphics, which we'll cover in due course, meanwhile check the catalogue similar games.

DOIN' THE BAUD WALK

The Art's spook James Bastable is a man with a mission: to provide concentrated helpings of Classic games before the entire offer-based 8008 menu evaporates. Determined to offer a board aimed exclusively at the Classics, James acquired a hard drive for his 130XX and wrote the necessary 800 software. The result is the best board you'll find (his title of an on-line LED. Absolutely the best. It's now called The City - 001 221 1818 Rev 24 board).

But what's all this got to do with public domain? Well, the man Bastable carries a torch for all things communications and Atari Classic, and he's put together a commendable disk of good vintage software, tips and advice, and instructions on how to build a home-brew 80000 interface. The disk is called The Ark Classic.

Good it, and you're presented with a menu (front-end) for the on-disk test files. There's a description of how to get split board rates from third party serial interfaces, details of the 80000 interface you can build at home, and instructions for the popular AMODEM terminal programs (included on the disk), as well as an introduction explaining what the disk is all about.

Accompanying the test files is a neat little 850-resolver for DOS/MS-DOS users, a copy of both AMODEM and AMODEM70 terminal programs, and patches providing the PRG Connection with split board rates from machine code. Both the AMODEM have been patched with Geoff Mulligan's code (buggered sending files to support the previously unavailable 1200/75 baud rate with any 80000 interface).

AMODEM40 is somewhat primitive, featuring archive test prompts, but it does provide 80000EM file transfer (built on a mail's pace ...). ASCII text capture and four-based rates: 900, 600, 1200, and 1200/75. It's written in BASIC, which is not the best thing you can (difficultly) use (The City is written in BASIC), but in this incarnation, is just a little more for comfort.

AMODEM70 is a much better bet. The program offers an excellent menu-based front-end, and heaps of on-line on-line rates in the form of menus, menus and on-line help. It's a pleasure to use.

As well as the terminal software, there are the blueprints for building an 80080, although not exactly written with the electronics novice in mind, the device works like a dream. Watch out for a feature in SWI (denying the project soon).

All in all, The Ark Classic is a perfect introduction to Classic communications, and provides everything except the modem for getting on-line.

HOW TO GET THEM!

All of the programs featured in the column are available from the Files of Atari PD library. Each has a unique collection code on a well as a distinct title. But it's the reference code you should use when ordering or making enquiries. Contact page if you don't have a copy of the PD catalogue or necessary phone numbers, or to check system requirements for the programs. The disks referred to in this column are:

Disk 887 - 80 ACTION (Diskette)
Disk 888 - 700 PANDA (PROM/ROM) (Atari Amibook)
Disk 889 - AMODEM40
Disk 890 - AMODEM70
Disk 891 - THE ARK CLASSIC

Prices are £25.00 per disk, or £22.00 each for lots or more. Order from Page 4, PO Box 24, Bedfordshire MK45 2SD. Telephone 0455 27000. FAX 0455 24000. (credit card orders accepted)

A MIXED BAG FROM APX

given the once over by Paul Rixon

1 PUZZLER

Who remembers those sliding tile puzzles they always used to give away at the fair? Well, Atari's **PUZZLER** is a combination of a classic tile puzzle plus a neat demonstration of what you can do with an Atari GTE graphics chip. Don't turn the page yet though, as this one seems to need where similar conventions have been lacking.

Of course the basic aim is to rearrange the pieces of a picture that's been scrambled into a rather unattractive mess, so that the original image is restored to its former glory. You can achieve this by pushing the jigsaw to manoeuvre tiles up, down and sideways into the one available gap. It may feel a bit strange at first but you'll soon get used to the logic. There's a clock at the base of the screen to keep you on your toes, though it seems that you can battle on for as long as you like to complete the puzzle.

The Options key provides varying levels of difficulty by altering the number of squares the picture is divided into. The standard setting is a reasonably manageable grid of 22

squares but if you wish you can try an exceedingly tricky 64 or a highly optimistic 100. Changing the grid size always restores the picture to its initial state, unlike the Start key which scrambles the squares by 120 scores with every press.

There are seventeen ready-made pictures on the disk for you to load into the puzzle. Some are compressed Micro-illustrator files whilst others are stored in the standard Microquartz format. If you have these utilities (or others such as Atari Artist and its PD equivalents), you can easily load in your own artistic creations. Puzzle can handle GTE pictures (the Select key toggles between graphics modes 0, 10 and 11) as well as those in the more common formats mentioned above. In case you should want to fiddle with the colour registers, the Function is also provided.

It's not easy to get enthusiastic about such an age-old game concept, but this version is probably among the better examples of its type. If the graphics plastic articles are anything to judge by, the puzzle should certainly keep younger players occupied for more than a minute or two. Since you can export your own computer artwork, in theory it's possible to create an infinite variety of new challenges, diversity of new challenges.

2 MEMOREASE+

No matter what the subject - day of the week, time of the appointment or name of the person introduced at the party - we all seem to forget things with unfortunate regularity. Could it be due to too much, lack of interest, or just because nature? If the author's claims are correct, **MEMOREASE** is the key to forgetting your necessary problems forever!

The program is based on the 'gradual recall' theory pioneered by a professor from the University of Massachusetts. It aims to develop the entire ear-brain connection that handles learning and retention over several stages of partial recollection. To illustrate the principal, you might begin to memorise a poem by reading the text out loud. Certain letters would then be removed from the script (it might look odd, but you would still guess most of the words) and you'd be asked to repeat the recited. The process of erasing letters would continue until eventually you were able to memorise the entire poem without reference to the text. This method of learning is apparently more effective than just reading the subject matter over and over, since with each repetition you are subconsciously forced to retain

more of the information.

By now the basic functions of Memorease will be fairly obvious. The program acts as the 'script' in the example above and enables you to alter certain parameters to match your pace of learning. It operates in several modes: Full-Page mode allows you to memorise speeches, poems, facts and prose of all kinds whilst Split-Page mode enables you to learn vocabulary, definitions, comparative language statements and so forth. The incremental removal of letters is controlled entirely by the user, who can also peek at the underlying text if stuck on a particular word. Split-Page mode is an electronic flash-card technique that lets you review information in various ways. You can blank either the upper or lower screen portions, guess the answers and score the result. A stroke editor is provided so you can 'enter' up to twenty pages of full or split screens (not for use in the other screens). Meanwhile, the screen colour can be adjusted to suit your personal preference.

Memorease is very professionally presented. The slide-board documentation is guaranteed to enhance your supplies of blank paper if you decide to print it out, but it's well worth the read. Now that was that silly making conversation I had heard of!...

PROGRAMS REVIEWED

- ✓ **PUZZLER** Published by
- ✓ **MEMOREASE+** ANTIC Software
- ✓ **SPEEDREAD+** Price - £5 each
- ✓ **WEAKON** Disk only

Available from Galin International

3 SPEEDREAD+

SPEEDREAD+ claims this software will teach you to read faster than ever before!

Why should you want to read fast? The manual explains that speed reading is a 'wonderfully rewarding' experience. It's less tiring, requires concentration and saves time. The fast reader is able to concentrate on thought streams and ideas, rather than words and syllables, so reading is much more enjoyable. But aren't most people good at reading? Well, it seems not! The 'read aloud' method of teaching children basic skills leads to bad habits which are hard to shake off. 'Visualising' is the habit of moving your lips, tongue or throat muscles when you read - this way you pronounce as faster than speaking aloud. 'Sub-Vocalising' means pronouncing words in your mind as you read them, again causing a slow rate of progress. Typists, good readers and computer programmers are particularly affected. Other common faults are 'regressing' (re-reading phrases and jumping between different places on a page) and 'Poor Peripheral Vision' - the inability to comprehend several words without focusing separately on each. **SPEEDREAD+** is intended to help you overcome these problems.

Normally an instrument called a tachistoscope is used to improve reading speed. It works by flashing up words and phrases so that the eye will instantly recognise them. **Speedread** relies on a similar principle, and the basic operation is very simple. After the program has loaded there are six steps to setting up an exercise. First you choose an appropriate text file for reading practice - three stories are included though you can use any ASCII files of about 1K in length (single text can be obtained together over several files). Next you select the screen colour, the type of operation - either single, double, random or volume phrase mode - and the phrase width from 8 to 20 characters. Finally you specify the flash rate and start the whole thing, reading. The program displays the words of the chosen passage, in the format of the chosen display mode and at the speed set by you (you can use the joystick to make further adjustments). By following the tutorials contained in the documentation, you should gradually improve your skills.

Speedread contains many more options than those described above. The superb quality of the documentation suggests the author has a sound knowledge of the subject. This inspires my confidence in the ability of the package to fulfil its stated objective.

4 WEAKON

If you were employed as a subatomic particle physicist during the early 1980s, you should know all about the search for the elusive Weakons. Weakons are, apparently, massive elementary particles thought to be the carriers of a weak nuclear force and they belong to a group known as intermediate vector bosons. Their very presence would substantiate the 'electroweak' theory, a vital link in the chain towards the grand unification of all nature's forces. As you might well have guessed it hasn't! It's not what this is all about but if anyone's got the latest developments, please DON'T write to and let us know!

WEAKON - the game - is said to have been inspired by the scientific theories mentioned above. However, despite the impressive explanations it turns out to be a fairly rudimentary shoot 'em up - the objective is simply to capture as many Weakons as possible and deliver them to a power generator. Obviously there are lots of nasty things out to get you - neutrons, gamma photons and ionising radiation - checks are all fatal if you collide with them. These danger-

ous particles generally begin life at the right hand side of the screen and zoom across to the left. Commanding your toy spaceship you must either dodge them or destroy them with laser fire. Missions are particularly difficult to avoid, as they're attracted to your craft and are capable of doubling back to attack from the opposite direction.

Eventually a Weakon appears and while you continue to fend off the aggressive forces, you should seek to gain a valuable point bonus. Only trouble is, the Weakon increases your acceleration energy so the whole game starts to get faster! There are six levels in all although you'll need to be good if you're going to survive them all. You earn points for the successful destruction of each alien particle, so in the early stages it's probably best to ignore the Weakons and build up a score that will give you the necessary reserve of extra lives.

I'm afraid I've got to conclude with the opinion that **Weakon** is somewhat aptly named - as a shoot 'em up, it's rather a weak attempt. To be fair it's a very old game and was probably above average quality for its time. The graphics and sound reflect its year of release, and I feel I can't recommend it - especially at the quoted asking price.

PONDERING ABOUT MAX'S

Ed Hall checks out a quirky, somewhat different and brand new game from the USA

Just before the demise of *ANTIC* magazine, I received a couple of ads for a new game. They were small, black and white jobs from some little-known company trying me to send them \$22.95. Yeah.

But wait a minute... there was something odd about these ads. There were no boxes filled with equine text, and no craved stare of white teeth. Obviously this was not the work of some grand old guy on DTI. My god, the production was unimpeachable. These ads had originality.

Thus began my acquaintance with one of the quaintest pieces of software I have ever encountered. Even the names are loopy: "Change to First" is the company, and "Pondering About Max's" is the game. Except it's not one game but three - plus a bonus - all crammed onto a single disk. The games are entitled *The Dream*, *P.A.M.*, and *Barb Fidd's Dream*. Can you guess what *P.A.M.* stands for?

FIGURING OUT MAX

The game comes in a small folder resembling a credit album. The similarity is not coincidental; inside you'll find a photo of a record, and instead credits to pop star Howard Jones, whose tunes are featured in the game. Open the folder and you'll discover a booklet of "first notes." They include instructions, and a much-asked-about sporting context which sets the game's premise. The game is so inflated and inflated that you won't make much sense of it at first, but embedded in it are clues and references to the three games that make up *Pondering About Max's*.

Now, just peering out from behind the booklet is a tab. Give it a pull and out pops an envelope from a hidden pocket. Inside the envelope is a disk which is not your standard square of black plastic. It sports a custom jacket made of cardboard with graphics on one side and game credits on the other. The oversized word "envelope" seems to exist, but for once it is entirely appropriate. There is no other disk for *MAA's* computers like this one.

I was so intrigued by this elaborate packaging that I just had to write the company. From them, I learned that the entire

package was assembled by hand at a university typography lab. According to game designer Mark Peters, this information with details arose from "the desire to create a package that, together with the game, would become a work of art with lasting appeal..."

Consequently, no marker has been left unattended. The jacket, the envelope, the disk jacket, everything has been created to reflect some aspect of the game. After a while it becomes clear that the package itself is part of the game.

BOOTING AN ART OBJECT

On one side we have *The Dream* and *P.A.M.*, two similar platform games with card-like graphics. The scenes are bright, attractive, and embellished with many humorous touches. You can get a peek at them by walking until the scene continues look in. Altogether, 13 are shown; three may be more.

On side two the graphics and the gameplay are completely different, and more back to quirky. *Barb Fidd's* offers you the chance to be a Bart Reynolds clone. Tangle with "bearded steaks" in a number of bars. Throw bottles, break chairs, smash TV sets. Whoopie!

In *First*, the most original part of *Pondering About Max's*, you'll choose a song on the jukebox and look for a dance partner. Wait a minute! Isn't that the gorgeous Barb Fidd writing to congratulate the winner of these contests? Barb Fidd?

Yes, *Pondering About Max's* does have a story line of sorts, and *First*, a short routine which employs an amusing reference to technology, is an attempt to wrap things up.

I KNOW IT'S ART, BUT...

Despite my obvious liking for it, *Pondering About Max's* is not perfect. The gameplay is very tough - perhaps too tough - especially in *The Dream* and *P.A.M.* The graphics are good but not state-of-the-art. The sparse sound effects and snippets of music are adequate, but not exceptional. On the other hand, there are many fine artists and humorous touches you'll not find in other 8-bit games.

The real beauty of *Pondering About Max's* lies in Mark Peters' use of the tiny details that can only be discovered after months of play - I mean this literally. From personal experience I have found that it's possible to come back to the game



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ARTICLES: XL 68k in review part II, LHA compression part II, 48k news, Super demo assembly review, technical drive (HD, HD+), good Magazine articles, 3000 TIGRIS (filed with '92 in the next issue!)

APRIL 4-6

This issue will be released somewhere around May/June

Software address	Distributors address
Mega Magazine	A & G Software
P.O. Box 704	Postbusnummer 704
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Holland	Holland

NOTE: Issues can only be ordered from A & G Software City write to Mega Magazine if you have something to publish

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WARNING: Some articles contain hard words in a funny way



If you want to get quirky, write to:

Change In Heat
13 Bellavista Place
Iowa City, IA
USA 52245

For your copy of *Pondering About Mac's*, Enclose an International Money Order (best prices right) or dollar bills - a lot more risky but a lot cheaper, ask your bank!

months later and find completely new ways of advancing, and uncover automated routines never seen before for in my case (and I had thought I had programmed!) The symbols and themes behind the trilogy also reveal themselves with time - clues are woven into the protagonists' dreams and the parking lot itself. The lyrics to the Howard-Jones songs chosen also shed light ..."

Pondering About Mac's doesn't come from a big company. It's the sort of offbeat product that could only come from a small operation, one that could take the time to allow its artistic vision to include not just the program themselves, but also the packaging and the advertising. Yet it's not an uncommercial product. It's a professionally executed piece of software right down to the loading screens. It's the sort of game that could achieve a cult status.

GET QUIRKY

The unexpected demand for *Pondering About Mac's* has outstripped the production capacity of Change in Heat. They are now offering a plain vanilla version (undebbled disk plus instruction booklet) for \$12.95. They will have a limited number with the original packaging, priced at \$25.95. A \$4.00 refund will be sent to those who order the fancy version after they've run out. There are no additional charges for postage and handling, even for overseas orders.

TALES OF ADVENTURE

ENCHANTER

Before you start playing *Enchanter* you will need to change your adventurous eye's image. No longer is it to be bedraggled and frightened, with a sword and rusty lantern, wearing odd bits of armor and trying to carry an ill-assorted pile of junk and valuables. Now it is to become an Enchanter - albeit a very handy and inexperienced novice, but with a magician with the ability to cast spells to bend objects, either animate or inanimate, to his will.

No armor, the sword and lantern and pick up your personal spell book. Give yourself a long flowing robe decorated with astrological signs and magical runes. A long, grey, pointed beard is a must, along with fairly long grey hair and you should don a tall pointed magician's hat or if you prefer a simple bearded coat.

You are no longer bedraggled but still apprehensive of what lies in wait for you and of course still trying to carry that ill-assorted pile of those might-come-to-useful objects. Instead of trying to fill anything that moves, your intention is now to expel it with a spell. Unfortunately, you are either one of the latest intake of novices or you have not been very diligent in your studies, as you have only three weak spells written into your book and only one of these have you managed to commit fully to memory. This seems to suit the purpose of your efforts as they deliberately send you, because of your weakness and inexperience, against the mighty, all-powerful, and definitely evil Warlock, Rill. And so *Enchanter* begins, at an ominous and foreboding meeting of the Circle of Enchanters.

There has been a dissolution and weakening of the powers of the Circle and they feel it is attributable to the warlock Rill. Belloc, the leader of the circle, reveals an ancient document which predicts evil days such as these. It advises that to send a powerful Enchanter against Rill would be disastrous. What is needed is a weaker Enchanter with only a few simple spells in his book, one that Rill would disregard as being of no consequence.

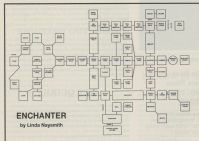
You are entrusted by Belloc who then gives you your quest - to seek out the evil warlock Rill, explore the castle he has constructed and learn his secrets and finally to destroy his castles. The circle then rises and intones a richly woven spell. There is a surge of power and you are sent . . .

You find yourself at a hole in the wall at dawn, the road splits to circle the base of the Lunary Mountains to the east. With nothing but your spell book under your arm, you start to explore around the base of the mountains. You find the basic requirements needed to safely traverse and thrust out a buttoned and useless lantern if you **WANT** carry one. An old cove you meet in the abandoned village gives you the first of the many spell scrolls you must discover if you are to successfully complete your quest.

Now you are ready to enter the castle, as you pass through the gate you feel your mind being probed and then discarded as uninteresting - perhaps the Circle decides to send a novice Enchanter was a wise one after all. During your exploration around the seemingly deserted castle you find, at the top of the north western tower, a beautifully jeweled ornamental egg which contains a spell scroll, but whatever way you open it, the mechanism in the egg shatters the scroll into un-readable scraps of paper.

You find a large ball of incense which somehow do not reflect the contents of the room but show another world of vast underground labyrinth. Occasionally a shadow of your former self will appear, exhibiting an eerie sound and a lantern, looking helplessly lost and continuously re-orienting a map. Careless and to the North Gate, in the forest beyond this gate you'll find something you can use.

East from the gate and you'll arrive at the most heavily guarded door in the world of adventuring. It has



ENCHANTER

by Linda Nagamith

everything, flame-breathing gargoyles, fire-breathed monsters, unworldly liches and chasms, you realize it and it seems to be there—completing with a finishing stage saying "don't bother"—so you know that somehow, you'll have to get that door open. Undaunted, you go back to the North Gate and there walk into the Library. Here you sense danger approaching in the form of heavy bookshelves so you don't linger. The Library has been ransacked and destroyed but you have just enough time to grab the one surviving book and hot-foot it to safety. The book has been partially destroyed but you can still read two chapters which prove to be very interesting. As you cannot go further south, retruce your steps back to the main gate and from there, go south to the usually westerly tower. Climb the stairs to the bedroom and if you are feeling tired, sleep in the comfortable bed. Your dreams are worth noting as they may lead you to further discoveries.

The following morning find you wandering through the portrait gallery, where all the paintings you seem to believe you are now past. It may be not a while choosing your fight for a while. North from the south hall, in a closet, is a large jeweled box which is intricately and magically tied with a thin rope. It has too many knots to untie and your spells are too weak against its magic—what you could do with is a sharp knife.

Descent the damp stairs from the south hall and you discover the dungeons. One of the cells must have held a relative of the Count of Monte Cristo as he obviously had the same idea of escape. One of the walls in the dungeons is crumbling and has revealed a dark passage descending to a complex called the translucent spaces. These are referred to in one of the legends in the dusty book. It looks at first to be a maze, but it isn't, and there is even a map of it lying around somewhere if you can find it.

If, by fate, you have wandered into the temple, you will know that there is a fate worse than death waiting for you in there. Yes—you have a sacrificial victim, a clad robot figure plunges a sacrificial dagger into your chest as you brace on the altar. But if you can find a way to survive the sacrifice then the dagger may be sharp enough to solve the problem of the box. Inside the box is a spell which will allow you to wander around the castle at your leisure, undisturbed by patrolling guards. This will allow you to investigate the library more thoroughly and the area to the south of it.

Exit from the gallery to the South Gate, which opens onto a beach. Climb the stairs up the tower to the engine room. The machine in here bears a resemblance to the other legend in the dusty book and you can also see something interesting in the room. At the other side of the machine, you can change the machine to get to them but you cannot get back. You need help, something that cannot replicate with its own power. It is normally very slow-moving but with a bit of jiggery, it can be made to lurch up along.

Next you'll need to tackle THAT chest, but not on your own, as you'll again need help, this time from an expert chess player who is also a bit of an adventurer. You should have the means to bring him to your side at the entrance but don't forget that this experience will give the game chess a terrible fright. Once you have released him down, he will then cast an appropriate eye over your possessions. Lead him to the guarded door and ask him to open it. Clever thinking that—let him get shrewd and burnt and bitter and staid—why not?

If the adventurer becomes too much of a cowardice when he has helped you then you could always turn him into a dog, but that does seem a bit ungrateful.

Behind the chest is the means to solve the puzzle of the translucent rooms, but beware, to let across the end of everything as you know it. To successfully solve this puzzle will give you the power to defeat Kall.

The throne and the scroll of power are trapped together in the translucent rooms, the map and the pistol are the means to open a way in the wall but this also opens an escape route for the Tervis, and it enables for freedom. You must not let it escape, but once you think it's out it will rush back to the scroll and destroy you. The trick is to let the Tervis run for freedom long enough for you to get the scroll and then think the cat's out. Then, before it can get back to the scroll, trap it in another translucent room. All you have to do then is to get out of there—purr!

This done, you should have enough magic spells of sufficient strength to defeat the magic of the rotating star, petrify Kall's workshop and to defeat Kall in a decisive duel of magic and sorcery.

The Circle are delighted with your success and reward you with a full and paid up membership of the Circle of Sorcerers. Now you have won your apprenticeship and are a full-blooded Sorcerer, which brings us to our next adventure.....

by Linda Naysmith

ENCHANTER HINTS

- How do you get the scroll from the egg socket - L10 R05 R00 D08 R07 R04 R00 R00 W10 R00 R00
- How do you survive the sacrifice? - F10 R00 R00
- How to avoid capture by guards? - F10 R00 R00 W10
- Can't open guarded door - W0 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Can't get possessions when sacrificed - L10 R07 R00 R07 R00 R07 R07
- Can't find frozen spell - F10 R07 R00 R00 R00 R00 R00 R00
- Can't open castle gate - F10 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Be food in water - F10 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Can't find sword spell - F10 R07 R00 R07 R00 R07 R00 R00 R00 R00 R00 R00
- Dragon kills you - R10 R07 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Can't get past engine room - F10 R07 R07 R07 R07 R07 R07 R07 R07 R07 R07 R07
- Turn on altar - F10 R07 R00 R00
- Can't get into secret passage - L10 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Turn unbalanced - R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Can't open guarded door - R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Can't get sword from stone - R07 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Can't get sword from stone - R07 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Can't climb winding stair - W10 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00
- Where do you use fire spell? - W10 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00 R00

The stars are "rotted" landmarks, just read from top right to left, pulling out complete words. Because of some of the newly added spells in Enchanter, some words may not appear to make sense but all the answers are there.

WHERE ARE THEY NOW? ... IS THERE ANYBODY STILL THERE?

Well, I finally got back into print again after all this time. I was quite pleased with the article, and the old adage about a problem shared twice again. I just wonder how many readers can say "Hey, that's what happened to me". Unfortunately many will have reached the point where they will not be reading the magazine any more, or will they? In fact, where are all the old names, are they still with us?

With this thought in mind, I decided to restore data from my archive in technical terms for remembering. Actually, what prompted this article was the fact that I updated two names that brought back memories, and when I checked up, I found that they had written to me in the first and distant past, the first I must agree to say a few words to a friend. "Hi Michael, wish you had a speedy recovery and tell him not to take any work from a certain member of the IAP team"

Back to business. You may have read an article from Ann O'Donnell last issue and several issues before that. Could I really have been as long ago as December 1988 that Ann wrote to me from Berkeley to say she had recently bought a 386SX and would like some help? If so, are you still playing "Duggles" and "Theatrical Ann"?

SOME ARE NOW FAMOUS!

P.J. from Sheffield must be the same Paul Price, now listed software reviewer, who as far back as 1983 wrote column reviews for the late lamented SAGE magazine, edited by Frankie Smyth (with assistance from my printer and myself. Ah, history's days, eh, Paul?) I also found a letter dated 1983 from some guy called Ellingham and one from our antiquarian friend Garry Francis (remember him?). I think the more letters though came from Stan Pallares (to stand closely followed by "Mike" Maloney of Bedford).

While perusing these indexes some questions came to mind. Is Dave Wilkerson from Madison the same David who wrote "Bullwhacker" in Steven White from Malibu or still running SWGLAY? Is Jacqueline Williams, R.A. (found still using an XT486 in her business?) Whatever happened to CRI Workshop when he moved home?

YOU COULD BE NEXT

Looking through the rest of my correspondence I stop to wonder: Is Cheryl Bowdler still falling into black holes? Do Fred and Lucie Clark from Italy still use that fascinating, hand made, writing paper? Did Joe DeBruyn ever contact Helmut Ambrosius (sorry)? Did William Devos (and Arthur Meeuwis ever write another book but have a pub here named after your ancestor?) Is David Gubman, a reader from way back to issue 1, reading this issue?

I could go on at length about the correspondence I have had over the years, but the people I have met at the computer shows and at shops, and I will just mention one person that came to

**Now that the spark is back,
Mark Hutchinson discovers
some old friends as he looks
through long forgotten
correspondence**

all up, I will call this person "X" and tell you the tale of success, not really all that long ago, who bought a computer, that first, another objection, I would dearly have loved to answer every letter sent to me but two things stopped me. One, some of the letters were unread. Two, I have always stated that those with an NLE would be answered as promptly and as fully as I could for the rest, a lot that not all of the letters would be answered through the magazine. Anyway, ever yours,

HEY, THIS LOOKS INTERESTING

"X" was just a normal person who watched TV, worked for data's as the name may be and had some spare time. As computers became much talked about, "X" thought, "I would like to try my hand at computing, surely it cannot be all that hard?". Well, before you could remember who Nolan Bushnell was, "X" had a computer and was on happy as a pig in whatever makes a pig happy: connecting up cables here, tapping keys there and generally installing the arena of new plastic slowly learning up. Ah, nostalgia stuff.

Some days later the frustration started to naggle in the back of the mind, "Why can't my machine up a screen like that? I would like to write a little maths package but how can I handle input? What sort of a program is this with only numbers?". "X" had now found out what many of us had suffered in the early days - lack of information. The help was at hand in the form of "PAGE 9" if you were showing my age! This was a magazine not put together by wall writers. All those people who write an article were true AT&T enthusiasts and, in the early days, did not even get paid! Here's that for debilitation!

"X" tentatively picked up pen and paper and hesitatingly scribbled the question that had beddled the night: down the ages, "Just what is DOOS?". Running down to the postbox, the letter was dispatched before the shuffling hands could turn traitor and send it back into the pocket. Ah, the days of expectation that followed. Who wants to know the secret of life, the Universe and Everything when, so many years, the

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mag of DGM may unfold?

Suddenly, with more of a bang than a whimper (the magazine was thicker in those days) the answer arrived. 'X' ripped the wrapping apart (hey that's what you print) and happily read the magazine from cover to cover. Yes, in YES! There was the answer. Quickly eating dinner, as the room began to spin, 'X' read and re-read what was printed there. After staring into space for a while, 'X' dropped the magazine in an unscrupled heap and dazedly wandered out of the room muttering, 'OK, so DGM is easy, but what about all those ridiculous numbers on page 247? How can that be a super-duper about-xxx-xxx?'

I KNOW HOW TO DO THAT

Once more, this time with confidence, 'X' pulled out the pen and paper. First issue 'X' was to find that, having opened up the floodgates, the magazine was inundated with opening letters. Surprisingly enough, 'X' knew the answers to several of the queries. 'Huh,' 'X' stated out loud, finally looking round to see if anyone had overheard. 'I could write a small program that would explain that so a monkey could understand'. A couple more issues and that is exactly what 'X' did. Thinking all the time that something so simple would be obvious to everyone. Imagine the surprise when, next issue, the article was printed and 'X' had to run around the countryside showing everyone the magazine. Hurray, what kind of wizard (what, believe?)

THE MYSTERY IS REVEALED

In all good thrillers the last paragraph is kept for the sole purpose of revealing whodunnit. In a this is an exception as this is not the last paragraph. What is known the name? It is written on the cover sheet that came with this magazine. Oh, all right, I can wait until you do it, forbes and wrinkled out of the blanket.

You may not believe this, but that was a true story, or rather, it could be. The only thing that stops YOU being the hero of my tale is YOU. Write the letter, review the software, explain the mysteries in an article. So what if you do not get all the spelling right? That is why the Editor is employed. This magazine has always relied on its readers sending in articles. Did you think that Les Ethingham, Alan O'Donnell or all the others were born with the knowledge? We had to stare over a hot computer into the small boxes reading articles and saying "What if I tried to do this?"

This magazine is the best thing that ATARI people have. You read it, you know it. Help your fellow ATARI owners, share your knowledge, no matter how small.

Editor's note: I don't know if Mark is fit enough get on his road to explain so he'd better learn it. he had had the call to computer but it would be nice if anyone who computers them solve them to drop him a line in any whether they are well or not. You'll find the address in past issues.

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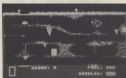
DEVIL'S DOMAIN

by Richard Gore

an arcade/adventure written in compiled Turbo Basic

You play the part of Lord Skoon, the legendary devil hunter. It is your task to travel the Gates of Satan, collecting the six Crowns, the four Jewels and the four Vases of Eternal Good. Once they have all been found you may enter the final arena and provided you have collected all the above artifacts you may explore the devil and make the world safe for another thousand years.

You control your Character Explorer tank using a joystick plugged into port 1 of your Atari. Steering the joystick left or right moves the tank in the corresponding direction. When you are not on a platform gravity will pull you downwards. You may go upwards by pushing the joystick upwards but this uses large amounts of your fuel, of which you only have a limited supply. There are containers of fuel lying around but by your predecessors that you may pick up to increase your fuel supply. In order to jump and/or travel upwards using small amounts of fuel you will need to use the jump computer accessed by pressing the FIRE button on your joystick.



WHAT YOU HAVE TO DO

Your Explorer tank is purple with white caterpillar tracks, and has three shields to protect you from the various obstacles. Your tank is made up of double width platforms 8 for main color segments and various obstacles such as walls, pits, waterfalls and saws etc. (these are different in color to the main scenery and should easily be recognized). Your tank's tank can touch the main platforms but if the top top touches you will lose one of your shields, and if any part of the tank touches any of the obstacles you will lose a shield. Lose all your shields or you run out of fuel and you game is over.

During your travels you must collect various artifacts (as detailed above). To do this just touch the main color you find them. It registers what you have collected until you try to go to the bottom left corner of the information window below the main screen area. Then in this area will be your score, fuel supply and number of shields remaining.

Pressing the Space Bar during the control game time (i.e. not when the jump computer is active) will activate the game mode. Do not worry about the screen colors, this is to prevent "screen burn" should the game mode be left active for too long. Press Space again to reenter (i.e. Pressing FIRE) to quit the current game.

On the first of the final screen (you will know it when you do) position your tank just above the screen and press the FIRE key and if you have collected all the artifacts you will have completed Devil's Domain.

LOADING INSTRUCTIONS

- 1) Turn-on: 1 and TV/Monitor on and the computer off
- 2) When the busy light has gone off insert the disk label side up and allow the drive to initialize
- 3) Turn the computer on. The game will load and run automatically
- 4) Leave the disk in the drive while playing.

¹ NOTE: The SE version of the game can be loaded by pressing the SELECT key while the border of the first screen is flashing. The SE version eliminates the need to access the disk for every screen. If you use the SE version you must leave the disk in Drive 1 at all times.

THE JUMP COMPUTER

Press FIRE at any time and the game will temporarily leave while you make your choice of jump parameters. The jump computer is a very important aspect of the game and it is used advisable to try to master how it can be used to perform accurate, fast elevations, jumps.

First you must choose the power setting you wish to use (1-8) by pushing the joystick up and down. The more power the further you go and the more fuel you use. Press Fire once you have selected the power setting. Next you must choose whether you want to jump left or right. Simply move the joystick in the desired direction and press Fire once you have made your choice. Now you must choose the angle of elevation (1-90 degrees) again by pushing the joystick up in down and pressing Fire once you have made your selection. Chosen angles less are not allowed and the larger the angle of elevation the further you will travel. This is a good way of traveling a long distance using very little fuel. If you select 90 degrees you will be propelled directly upwards opposite of the left right setting.

Once all the selections have been made you are given the choice of performing the jump or aborting. Press the Space Bar to abort and return to the action or Fire to perform the jump. On pressing Fire the computer takes away and controls the jump according to the settings you made. RE-CHECK out to see how high you are and speed yourself into trouble. Provided using the various settings before you attempt to complete the game.

DEVIL'S DOMAIN is the BONUS on this issue's disk which comes with all of the programs from this issue ready to run. Disk subscribers will have already received their copy but the disk can be ordered separately for just \$2.99 from PAGE & P.O. BOX 34, STAFFORD, ST16 1DE. Send a cheque or Postal Order or order by phone on 0783 218828 using Access, Visa or Switch.

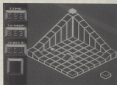
SPINDIZZY

The computer mag's were chock full of new reviews when **SPINDIZZY** was first launched. Eventually the Atari conversion was installed onto the market and all too predictably, its arrival was virtually unopposed. Those who discovered it were delighted to find the game lacked none of the playability and addictiveness of the earlier versions.

One day you arrive at work to find your employers at the Corporation have discovered a new dimension containing a strange artificial world hanging in space, in the matrix assistant cartographer for unknown worlds you've naturally been allocated the prestigious

task of further exploration. You've been given a Greg, explained Environmental Resistance Level mapping, Device Gerald for short, which initially holds a radar map of the strange world's surface. Your instructions are to guide Gerald through the numerous locations and collect energy in the form of jewels, for which you'll be awarded additional time. Time is indeed the all important factor - if you don't move fast, your mission is terminated. If you lose or destroy your craft it's re-created at the last 'safe' position stated, but the time allowance is reduced.

I wouldn't review *Spindizzy* without mentioning Marble Madness, the classic arcade hit on whose theme it's based. The principal talking point of both games is the graphics, and here we have an enormous quantity of three-dimensional 'textures' containing platforms, lifts, switches, transpo-



ners, and other tidally chaotic sites. At any point you can toggle the shape of Gerald to discover a ball-bearing, an inverted pyramid and a groove - some screens are similar to regularities using a particular shape. If you desire, you can also change the colours. Another key game displays a map of the entire complex, showing your current position and the rooms that you've yet to discover. Out of the starting screen is a beginning section that serves to demonstrate some of the essential playing techniques. The time reduces more slowly here, giving

you a welcome chance to experiment.

Spindizzy is clearly a very competent production, comprising most of the ingredients that go towards making a classic. The graphics are excellent with several nice touches such as the choice of different character shapes. Sound is perhaps the only area lacking but it's more than compensated by the addictive - sometimes frustrating - nature of the challenge. There's no doubt that *Spindizzy* is another vital component of any respectable games collection.

Title: **SPINDIZZY**
 Publisher: **Beamle Games**
 Price: **\$9.95** (or less)
 Supplier: **Vortex**
 Format: **Disk**
 Reviewed by **Paul Dixon**



At first it was a technological breakthrough. Although created the *Robotron* - a species of robot so advanced they no longer needed their human creators to think and act. But here the *Robotrons* turned on their masters and threatened to destroy the world - or transform its inhabitants into robotic machines.

To give the plot of **ROBOTRON 2084**, a classic shoot 'em up dating back to the good days of the early 1980s when the Atari 808/800 series ruled supreme (you couldn't expect

to buy one with much change out of £200 though). What most shoot 'em ups of this era have shared less shared in fiction, the distinctive flavour of *Robotron* has largely been preserved. This is quite surprising since the game concept has got to be one of the simplest in existence. As a lonely human survivor of the *Robotron* onslaught, you're placed in the centre of a large fly-like playfield. Your task (should you choose to accept it, as they say) is to fend off the incoming horde of battle-thirsty alien with your inge-

ner-operated anti-robot laser guns. The *Robotrons* attack in waves, each consisting a variety of different species.

'Ghosts' are the brazen robots whose primary mission is to wipe you out. 'Giant Brains' can electrocute you or control the fire crates (used to pinpoint your next location). Whilst *Robotron* *Spheroids* appear all sorts of deadly creatures. There are lots of other enemies too.

You begin with five lives but for every twenty thousand points you earn another chance to personal. You can boost your score by resetting stretched humans on your travels - in all this you should try and solve some of the center screen puzzles and you continue on wiping out the *Spheroids*. Which can be the *Grand Brains* too, as they're capable of re-programming friendly humans into hostile

automata. Initially you can kick off an era of low difficulty levels and of course the subsequent waves are increasingly more demanding. There's a two-player option but it's basically a case of passing the joystick back and forth for all credit goes - hardly an innovation.

Needless to say *Robotron 2084* is not winning in any respect, especially in the audio-visual department. However, its strength lies in the straightforward theme and its hourly addictive nature. If you enjoy shoot 'em ups of any sort then *Robotron* is bound to be a most fruitful acquisition.

Title: **ROBOTRON 2084**
 Publisher: **Atari Corp.**
 Price: **\$12.95** (or less)
 Supplier: **Vortex**
 Format: **ROM Cartridge**
 Reviewed by **Paul Dixon**

ROBOTRON

THE ACCESSORY SHOP

ISSUE 56

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ROBOTRON 2084

NEW!



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Here's the list of all the other items still in stock. Many of these programs will be familiar but if you want to know more check out the past couple of issues where all of these programs have been more fully described. Some real classics and some great bargains!

GAMES

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One of the classic shooting games in which you fight your way up river, building and shooting weapons as you go.

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A simple yet challenging puzzle game which will get you hooked. One of the best games in one for the Atari 100% hit.

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KNIGHTS OF THE SKY

One of the most enjoyable flight combat simulators I've used recently is *Knights of the Sky*. A World War I aerial warfare program on the Atari Lynx handheld console, *Microprose* have released a similar product for the ST called *Knights of the Sky*, which promises to be every bit as exciting.

The program centers on two double-stick sticks and requires at least a 1MB 512K to run. The package also contains a glossy 100-page manual, a central summary card, and a large map of the Flanders Front, where the scenario is set. This map is important as all navigation is done by dead reckoning - radio navigators only hadn't been invented at the time the action occurs.

On booting you're thrust to a very realistic-looking old-time movie sequence showing WWI aircraft behind the program's production credits. You can then choose from three main options, mainly Flight Training, *Knights of the Sky*, or *World War I*.

TWENTY AIRCRAFT!

Flight Training allows you to learn to fly any of the twenty different Allied and German aircraft represented, and to explore the operational areas covered.

Almost every WWI aircraft you can name is here: Sopwith Pup, Fokker Triplane, Albatross OS, to list but three - and each can be controlled via joystick, mouse, or keyboard. Who knew that you can take practice - these aircraft aren't the easiest to fly!

Knights of the Sky provides your first real taste of aerial combat. Here you choose to battle with one of sixteen German aces including such legendary char-



acters as Manfred von Richthofen (the Red Baron) and Max Immelmann (Immelmann Turn Inset). You're then told his aircraft details and likely location, and have to fly to the appropriate place, visually identify his aircraft from the gauge encountered, and engage him in a fight to the death!

The main part of the program is the WWI option. It's May 1918 and you've just begun your career as an Allied pilot. Your ambition is to survive the remaining 30 months of the war and become the top scoring pilot - the Ace of Aces! At the start only a couple of aircraft types are available, but as time passes better machines enter service for your use. This also happens on the German side, so any aeronautical superiority you gain, doesn't last long!

Missions are set by your commanding officer and occur every 2-3 days. As well as the basic mission which involves you to complete specific tasks, you can also deal with targets of opportunity as they occur - shooting down enemy planes and observation balloons, bombing enemy installations, and so on. This brings you additional prestige, medals, and promotions.

As time passes these famous victory aces are also checking up hills, so to overtake them you need to eliminate them. Clues to their whereabouts and details of their aircraft may be gleaned from newspaper articles and gossip heard after each mission. You can then personally challenge such aces to a dogfight - unless they challenge you first!

You can forget about high-tech weapons, radar, autopilot, and warning systems in this simulator; it's just you, a primitive flying machine, and a rather

vulnerable machine gun against a similarly equipped opponent. He warned - survival depends entirely on your skills as a pilot!

The dogfighting action is pretty exciting, giving the feeling you're up against a real enemy. The aircraft are slow, but very manoeuvrable and it takes some skill to outfly and outshoot your opponent. Success results in his plane streaming smoke and spinning down into the ground. Failure may be fatal, as there are no parachutes!

EAGLE EYES NEEDED

The program's graphics are rather good. Control detail is restricted to the limited instrumentation of the day, but also, surprisingly, all aircraft have the same cockpit layout. Most of the instruments do work as expected though. From the cockpit you can look 360 degrees around you - there's no radar of course, so you need eagle eyes to locate the enemy, although the program's various external view features do help here. There's plenty of ground detail and the representation and animation of the different aircraft types is handled very well. Screen update rate is acceptably high too, so the overall effect is fairly convincing. Even the information across-displayed between missions are impressive with some excellent artwork on show, particularly that depicting the aircraft.

Sound is reasonable too. There's some contemporary engine noise accompanying the basic response and again in the bar wars between missions - played on an untreated piano. All the expected sound effects are provided, but I particularly liked the aircraft engine notes, especially the rapid firing heard when the engine takes a bullet in the tail.

Overall this is an excellent program. Not only is it exciting, addictive, and fascinating from the historical aspect, but it's refreshingly different from all those dogfight jet simulators we've seen recently. If you want a taste of WWI air combat action then *Knights of the Sky* is the simulator to buy.

Title: **KNIGHTS OF THE SKY**
 Publisher: **Microprose**
 Price: **\$30.99**
 Reviewed: **John S Davison**

ALTERNATE WORLDS ...

HEIMDALL

Six characters, with attributes such as Strength, Health and Dexterity, fight their way through underground mazes to save the world - sound familiar? Yes, in every way Heimdall is another Dungeons & Dragons clone for dummies, but it has a few variations which may interest you.

All the familiar ideas are there - the right mouse button gets you in a top-down view screen where all your possessions are shown graphically, your attributes, such as hit points, increase as the game progresses and you gain experience, there are hidden doors to find on the walls and pits to avoid in the floor; exploring carefully or using monsters will provide you with food, weapons, spells, coins and clues, and there are many puzzles to solve as you fight your way through about twelve islands on each of three worlds to retrieve three missing weapons of the Norse gods.

So what is different about Heimdall? Well, the graphics are excellent - the view is a full-screen detailed landscape or dungeons seen in 3-D from an angle above your chosen character, and the interaction of your character as he moves to very good. The initial screen shows a map of your current world (there are three worlds to explore in order - Midgard, the World of Men, Asgard, the World of Giants, and Juggard, the Home of the Gods) and clicking on an adjacent island takes you straight there. You can then explore the island with two companions who you must have chosen BEFORE you

set sail.

In all you can have five characters to go with you on your quest - when you are allowed to choose depends on how well you do in the first part of the game. This initial part of the game is made up of three little arcade games - the better you do in these the better choice of accompanying characters you will be offered.

The arcade games are: **Are Thinking Contest**: you have ten seconds with which to rat the opponent's eight signals - unfortunately the beer is a bit strong for you and your head is shaking it, i.e. the joystick doesn't control your aim very well.

Pin-Chasing: while will under the influence of the alcohol you must use the joystick to catch a greased pig.

Real Fighting Trial: here you don't have to fight the boss' use the joystick to jump along a beam and knock some guards out of the way.

Unfortunately all three games are rather trivial, rather difficult to succeed at and take forever to load. You also only get one chance at each - no opportunity to practice - if you want another try you have to reload the game from the start! Also, no matter how badly or well I did in the arcade games I was always offered the same 17 new monsters to choose from!

Each island is made up of from 3 to 25 'rooms' to explore - there are lots of hidden to fight and lots of spells and weapons to find. You need to use spells to activate certain doors and there are all the usual pits, secret doors, keys and so on. When you get in a fight, the screen switches to a different display showing an overhead view of your opponent, your respective hit points, and your available weapons and spells. You just click on a weapon or spell and there's a command box for attack, spell or defend. It is a little clumsy as your weapon may be a long way from



the attack box, so that you are interrupting the mouse from side to side. Your options are also rather limited as the only way to defend is to click on 'defend' just when your enemy begins his attack, but the best way to attack is to click on 'attack' just when your enemy begins his attack! What's 'defend' matter positions really?

The interface is rather clumsy, forced to move from the joystick, but fighting and using items is done with the mouse so you are constantly switching between them, with many sounds of blank screens when you leave some room unwatched. When you walk into a chest with the JOSTLECK a box pops up asking you whether you wish to open it or not - and you have to use the JOYSTICK to answer YES or NO - why on earth couldn't they have allowed the joystick?

I am currently trying to get past a sea serpent to reach the last island on the first world so I have quite a way to go yet. The game has plenty to it, and the graphics are undoubtedly excellent, but the whole thing seems rather slow and curiously slow-thinking can take as many as 4 seconds to swap. The game, by the way, needs 1MB memory.

- **WORLD & SOUND** - excellent graphics and creatures, sounds a little sparse, but nice background music
- **GAMEPLAY** - lots to explore, lots to do, but not a brilliant mouse/joystick interface
- **VERSATILE** - worth looking at, but you'll have to be quite patient if you want to finish it



which to choose?

SHADOWLANDS

Four characters, with attributes such as Strength, Health and Stamina, fight their way through an underground maze to save the world - sound familiar? Yes, in many ways Shadowlands is another Dungeon Master clone, but it has many excellent new features that make it well worth looking at.

All the familiar ideas are there - the right mouse button gets you to a supplementary screen where all your possessions are shown graphically, your attributes, such as magic level, increase as the game progresses and you gain experience; there are hidden treasures to find on the walls and pits to avoid in the floor; searching carefully or killing monsters will provide you with food, water, weapons, spells, coins and stones; and there are many devices hidden to solve as you fight your way through to the third levels level for your final battle with the Overlord.

So what is different about Shadowlands? The most obvious visual differences are the viewpoint and the light effects. The dungeon is seen from an angle above your characters so that you can see them and the enemy meeting across a 3-D landscape, nearby walls which might obscure your view are replaced by simple outlines so that you can see the area around your character fully and still know where the walls and doors are. The lighting is provided by a new technique called 'mesocore' torches light up a small area which decreases as the torch runs low; fireballs can be seen lighting through the air and then explode to light up a large area; firebreaths are mesmerized by light, and so on. There are gradations of brightness from the centre of a torch and to the edges of its sphere of illumination, giving a very realistic and atmospheric feeling to the shadowy views within the dungeons.

Light is also used to excellent effect in some of the puzzles, whereby certain switches, teleports, and traps are activated by the presence or absence of light

but a very major difference which is not quite so obvious initially is that your four characters are NOT stuck together in a bunch. They can be sent off to perform individual tasks - they don't have to remain in sight of each other or even on the same level of the dungeon. The whole game is mouse-driven. There are small pictures of the characters in the corners of the screen which allow you to select them and then reposition them by clicking on the appropriate part of the body and the required target item, person or location you can give commands such as

sure weapons as well as people!

Throwing spells across the 3-D landscape at moving targets takes a bit of practice but is much more realistic than most implementations. In general it is rather too easy to die - unless you are checking the status screen you get an warning of incoming death from longer or direct level level seems a bit sparse - I can see level 5 and getting desperately low - I may have to go back a VIGOR long way and replace the whole game; if I don't find a good supply soon, and many of the monsters can kill your weaker members

very quickly so you need to plan some of the fights very carefully. Fortunately the HIDE/RECOVER facilities are reasonably well, though personally I would prefer a slightly better balance as an exit to have to use them quite so often!

Things don't happen quite as fast and furious as in Dungeon Master, but the innovative use of the lighting and the ability to split the group up add an extra dimension to Shadowlands and set it apart in a D&D game well worth looking into.

Double-clicked drives only.



walk, lead (for other three), eat, get, drop, throw, cut, drink, read, operate, cast and attack.

The various happen simultaneously - one guy can be walking across the room to pull a switch while another is attacking an enemy with a double cut, the third is throwing a Fireball spell at the monster and the fourth is walking around a different corner looking for the door! The ability to separate the four parties is used to generate lots of nasty situations and interesting puzzles. There are places where you must send your warriors along different routes in order to solve problems, and one way routes and multiple interlocks which force your party to split up and fight individually.

The system for issuing commands is not completely intuitive, so read the manual carefully - some hints which you see soon as the game starts, but you don't find out how to hit one until page 104 and a couple of fairly important details are not mentioned at all; blank walls can be read when you reach a higher magic level; the resurrection facilities can res-

● **RIGHT & SOUND** - Excellent use of light and shadow, great graphics, lots of super sound effects

● **GAMEPLAY** - Once you get used to it's a very effective method of controlling four warriors at once with the mouse

● **VERSATILE** - An overkill D&D - big enough and hard enough to keep all D&D addicts occupied for a LONG time!

HEIMDALL
Core Design £29.99

SHADOWLANDS
Demark £29.99

Reviewed by
John Saxony

MAKING MUSIC WITH YOUR ATARI

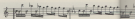
John S Davison's regular guide

In the last couple of issues we've looked at what is arguably the finest piece of music software available on the ST, namely C-Lab's incredible Notator sequencer and score printing package. Before this appeared the professional musician's sequencer of choice was Steinberg's Pro-24. Steinberg, eventually launched their Cubase and Cubase sequencers to compete with C-Lab's products, at which point I expected Pro-24 to disappear without trace. However, several years on, it still seems to be available albeit in limited quantities. And as it now sells typically for less than 20% of its original £299 asking price I thought it worth taking a look at here.

I bought Pro-24 V3 (the latest version) for £79 about a year ago from John Demantides in London (071-579-5148), and at the time of writing early April they'd still got some in stock. Various other music and computer shops advertise Pro-24 occasionally - you have to watch the adverts to recognise the Sound On Sound, Music Technology, and Music Mail to name them. Alternatively, you can easily buy one secondhand for £50 or less - see the listings. Ads sometimes of the same magnitude. After reading about Pro-24's superb facilities below you'll realise just what a fantastic bargain this is.

DONGLE REQUIRED

Pro-24 is supplied on just one double-sided disk. It runs on IBM-STPC or larger, using medium or high-res displays. Earlier versions had poor documentation, but ST's nicely presented 168 page manual is fine. Also included is a specially designed dongle which plugs into the ST's cartridge port. Pro-24 is



PRO-24

THE ORIGINAL BEST SEQUENCER?

UNBLENDED with it, so if you buy secondhand make sure the package includes one.

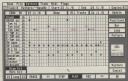
As you might guess Pro-24 is a 24 track sequencer, allowing you to record and play back up to 24 independent musical parts using MIDI equipped musical instruments. Like most sequencers it behaves like a multi-track tape recorder - you can independently record a musical part on any track while simultaneously playing back tracks already recorded. It also has tape recorder style transport controls for basic sequencer operations, and 24 bar graph style 'level indicators' which respond to indicate MIDI activity on each track.

Most of Pro-24's basic operations are mouse controlled from one main screen. Less frequently used facilities are accessed via normal pull-down menus, and these may bring up auxiliary screens. The ST's keyboard can also be used for control as virtually every function has a keypad equivalent. Another nice touch is that frequently used commands can be allocated to selected keys on your MIDI keyboard (even you don't normally play, of course) so you can instantly operate the sequencer without touching the computer. Overall, Pro-24's controls aren't exactly intuitive, but they do become easier with practice.

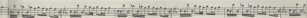
Pro-24 is pattern based, where a pattern is a sub-division of a single track used to hold a section of the music on that track. Patterns can be any length you wish, and different tracks can use patterns of different lengths where required. A complete song can be built up from these and although this scheme of working gives you great flexibility it also means you could have a large number of patterns to manage. This aspect is probably Pro-24's weakest point.



The main control screen with track selection



Drums editor - one of the nicer features



MULTI-RECORDING

Pro-24 provides a number of different ways of recording music into a pattern. The most straightforward is real-time recording, where you play your MIDI keyboard live as if making a normal tape recording. You can manually switch the sequencer into and out of record mode, or it can be done automatically using punch-in and punch-out points. 'Cycled' recording is possible, which allows you to continuously loop around a chosen section of the piece re-recording it until you're happy with your performance. In addition a 'multi-recording' feature allows you record patterns on up to four tracks in turn without stopping the cycle - great for creating complex drum parts. You can also separate signals coming in on several MIDI channels simultaneously, and record them on up to four different tracks.

If your keyboard skills aren't up to real-time playing you can use Pro-24's step-time facilities, allowing input on a note-by-note basis via the sequencer or MIDI keyboard. As well as creating music from scratch these facilities may also be used for editing existing music, including that played using real-time input. Notes can be inserted, deleted, moved, and edited for duration, velocity, and MIDI channels as required. Changes can be quickly sanctioned by switching to playback from within the editor.

First there's a grid editor, which separates the music on a series of horizontal lanes in a scrollable grid. There's also a scrollable MIDI event list displayed alongside it showing each MIDI message in the data stream but just note assignments. Facilities are provided for graphically editing the MIDI data by stretching and dragging the bars, or for conventional editing by changing the event list directly.

Pro-24 also has a score editor, which displays MIDI note data in standard music notation. Velocity data is represented by a vertical bar under each note, with height proportional to velocity value. It easily handles one track at a time and notes can be single or two (beams style) variable stems as required. Notes can be added, deleted, moved, copied, or replaced using the mouse and context menus. Durations can be finely adjusted on an individual note, the latter by dragging the velocity bar under a note to the required height. You can even print out your music, but this feature is very limited compared with something like Notator. It's better than nothing though!

DRUM EDITOR

One of Pro-24's screen features is its drum editor, designed for easy editing of percussion patterns. Again it's grid based, with vertical positioning representing different percussion instruments listed down the left side of the grid and horizontal positions representing time (two bars worth of sixteen 16th notes). To create a drum rhythm you just click against the required instrument at the appropriate time position, with velocity determined by how long you hold down the mouse button. The feature is fully customizable so you can use it with virtually any drum machine or synthesizer, and once set up you can save the settings away for future use. It copied easily with the drum section of my Yamaha PSX 895 synth, and makes the sometimes tedious task of building rhythm tracks much more enjoyable.

Pro-24 also has a rather strange (but powerful) 'logical edit' capability, permitting changes to be made to your music on a mathematical rather than a musical basis. You give a criteria which selects MIDI events of certain types from your music, e.g. notes between certain pitches, velocities, durations, or on given channels. Then you tell it how you want the selected

events processed - you can replace pitch, velocity, duration, or channel data with fixed values, or apply a calculation to each of them for each selected event. The possibilities are endless for those willing to experiment!

Lots of track and pattern manipulation facilities are provided. Tracks may be events copied in whole or selected sections; bars sections cut from or inserted into them; and pitch transposed or velocity modified by selected amounts. Patterns may be created, deleted, saved/loaded, split into smaller patterns, joined to form bigger ones etc, to remove unwanted parts scattered. It add new material, repeated as many times as required, moved, and copied, either as a whole pattern or just a chosen part of it.

Various quantizing facilities are available for correcting timing errors in your real-time playing. The oddly named 'over-quantize' is the normal one, but there are four other options which quantize note lengths without affecting the notes' starting positions. There's also an 'iterative quantize' which moves the notes in small steps towards the selected quantize value each time it's triggered. Quantizing is destructive, but can be undone by using Pro-24's recall buffer.

MASTER TRACK

Unlike some sequencers Pro-24 can easily cope with changes in time signature and tempo within a musical piece. They're handled by a special 25th track, called the Master Track, which can be set to show where new tempos or time signatures take effect, and what their values are.

The easiest way to use Pro-24 is in 'tape mode', where you simply build up each track as you would record it, so multi-track mode. A song with three verses and three choruses would have patterns for each verse and chorus placed along each track as required. However, Pro-24 also has a 'sequencer mode' which permits you to record patterns for just one verse and one chorus then link them together creating them as an necessary to complete the song. Personally I prefer using tape mode, but some people like the extra speed and flexibility of sequencer mode.

Like C-Lab, Standley also make necessary hardware called Time Lock and SRR-24 for synchronising Pro-24 to a separate tape recorder. These enable you to run vocals and other acoustic recordings in sync with your MIDI tracks. However, they never implemented direct tape recorder control from the sequencer screen - they put it in Cubase instead!

Pro-24 supports MIDI standard file formats as well as its own internal format. It can import and export files in Format 0 and 1 and import Format 8 files. This means you can interchange files with any other sequencer supporting standard files - and also use the thousands of songs in these formats now available from PD libraries and bulletin boards.

Other useful Pro-24 features include input and output filtering of selected MIDI messages; track group naming; internal/external sync; song position pointer support; track muting/unmuting facility for grouping tracks together and splitting a merged track back into its components; and finally a System Exclusive Dump Utility for updating/downloading banks of sounds to your synth. There are more, but I'm running out of space.

Pro-24 is a classic piece of music software, which downright deserved the popularity it enjoyed a few years back. It's packed with useful features, offering virtually everything most MIDI musicians are ever likely to need in a sequencer. Don't forget it was designed for professional musicians just a few years ago, and at its current street price it's undoubtedly good value for money. If you need a new sequencer make sure you check out this legendary package before it finally disappears forever.

ALCATRAZ

The year is 1999 and the American government has declared all out war on the drug cartel whose chief, a rather unpleasant chap by the name of Miguel Tardieu - referred to affectionately as "Public Enemy Number One", is ensconced on the island of Alcatraz.

Now this poses a bit of a problem for the US government. Miguel is hiding in a big prison and they want to lock him up in an even bigger prison. That isn't he already in a prison? Well, seeing as he's a big bad public enemy he's gone and turned Alcatraz into a bit of a crime den. You know the sort of thing... big luxury apartment, naughty girls, bad boys, the odd stolen kamazoo or two. Ah ha! I see...

As you can no doubt guess, it is at this point that you come in. Right? Seeing as it's a ludicrously difficult mission where the odds are stacked against you, who would be better? All you have to do is get in, shoot lots of people, pick up lots of power-up type things, wipe some papers, kill Miguel Tardieu and get out. Easy peasy!

The game is actually designed for two players, giving you a split screen with player one at the top and player two below. However, for a bit of added in-

terest, those lovely French chaps have introduced an option where you can alternate between both characters in the game to effectively work as a team if you're still on your back.

Your mission in this horizontally scrolling 'run along-and-shoot-the-bad-chiefs' romp, begins as you and your buddy jump out of your dingy on the island. Initially you're just armed with a throwing knife (obviously you're crime prepared) but after you've gone on to a few unimpressive criminal types you can pick their weapons and go around shooting at people with a large machine gun. Not the most subtle approach, but it worked.

This first bit of the game sets the scene for the next levels, but after a while you will stumble across a different style of play. Oh yes indeed! Jumping into a dark and secluded doorway towards the end of each level allows you to write around a 3D maze type affair where you must explore a bunch of rooms searching for a letter-case containing important papers. Not the most original concept, but it does break up the tedium of the wacky sections.

Presentation sees the game initially look a bit on the dull side. The impression achieved is very typical of games from over the water. You know what I mean... all the French games have a certain style about them that sets them apart. Well this one is just like that, but is very bland at the same time! At first I thought that it looked a bit crummy, but I soon learned to appreciate the steady effect that it creates.

Sonically the game is definitely pretty superb. Why is it that only the French bother to use sampled sounds and music etc? Why don't any of the English developers bother? From the



“ very typical of games from over the water ... a certain style that sets it apart ”

middle of the game to the crackle of gunfire, everything is sampled with crystal clarity. I'm definitely most impressed!

When considering how playable the game is, all I can say is that if you like this type of thing, you'll love it. To some, the prospect of playing a game where you plop along across a scrolling backdrop is not the most enthralling, but, if you enjoy a good blast where you need to use your waggles here-and-there, you may well have bit of fun!

● **NEIGH AND SOUND** - Looks a bit dull at first, but you soon get used to it. The sound's excellent though. Check out the samples!

● **GAMEPLAY** - It isn't as good as a really solid experience, but it's still quite fun. If you've played Hong Kong you'll know what it's like.

● **OVERALL** - Effectively this is just Hong Kong 2. Seeing as the first game was so successful I can't imagine that this will fail. Pretty good stuff!



Title: **ALCATRAZ**
 Publisher: **Infogrames**
 Price: **£24.99**
 Reviewer: **John Davison Jr**



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FLIGHT SIMULATORS

FLIGHT OF THE



"Why the hell am I doing this?" you think, as your head begins pounding and your mouth suddenly feels like it's lined with sandpaper. But before you have time to ponder further your situation is made by the Captain Officer signaling "Full throttle." You push the throttles wide and your A-6 Intruder's engine starts up to full pitch and the whole aircraft trembles from their fury. Your breathing becomes rapid and the sweat runs down your forehead and into your eyes. When if you think it away, you your head back against the forehead and signal for launch. You're launched forward as the catapult fires and four's you, your Bombardier/Navigator, and 28 tons of Intruder blast into 145 knots in 2 seconds. Once more you're testing the safety of the carrier's deck - based for targets in North Vietnam.

So begins another intensity in Spectrum Hobby's latest flight combat simulator "Flight of the Intruder", which simulates A-6 Intruder and F-4 Phantom flight operations in the Linebacker campaign of 1972 in the Vietnam War.

The package includes a paperback version of Stephen Coates' report after which the program is named. I found it very helpful to read this before using the program if you can bear to wait that long), as it helps set the scenario for the simulation. Also, atomic numbers flying over you in the simulation are characters from the book, which helps add some "realism" and atmosphere.

Also included are two double sided disks with single sided versions available

from the suppliers if required; a re-producers of an actual map used by a pilot in Vietnam missions and a 214 page ring bound flight manual. This contains a mine of information about flying in the Vietnam War, as well as the program's operating instructions.

information about them - and identify enemy activity. You can also see your aircraft with appropriate guidance from a wide range of different bombs, missiles, and other forms of aerial warfare. When ready, you're catapult launched from the deck of the USS Intrepid, an aircraft carrier based at Yankee Station many miles offshore in the Gulf of Tonkin. All you have to do now is navigate to the target, achieve your mission objectives, and get safely back onto the carrier's deck! However - one's said that don't! Success comes you medals, promotions, and points for that Stern's Medal board.

TWO PLAYER OPTION

I used a IBM 5085 for the review, but Intruder will run in 512K memory if necessary. IBM is recommended though, as several extra features then become available. For instance the graphics are better in color and your views from your cockpit, more sampled sounds are used, a "video replay" of your actions can be run, and you can even talk together via ST's tuning, a real-modem cable for two player operations.

Intruder is very similar in principle to most other flight combat simulators now available, but it does have a few unique features of its own. As with most other programs of this type you start by logging yourself into the simulation and giving yourself a name. You can assume this identity each time you use the program, or use other names if you wish. The program records the progress of each named person on the "Stern's Medal" board - it becomes known as a high-score table. You then choose the type of mission you want to fly, and attend a mission briefing, where you're shown photos of your targets and given the latest intelligence

BOMBER OR FIGHTER?

There are three simulation options. You can elect to fly regular operations as an A-6 Intruder crew, pilot as an F-4 Phantom crew or act as a Commander Air Group. There are thirteen different operations to choose from, each of which can consist of several different Intruder and Phantom missions. In fact there are 17 for the Intruder and 18 for the Phantom, and for each you can set difficulty levels by changing various simulation parameters. For example you could give yourself unlimited fuel or weapons, restrict enemy activity, or alter the accuracy required to destroy the targets. The missions range from combat air patrols above Yankee Station, through taking on a target's base; bombing bridges, ammunition dumps, airfields; to "Wild Weasel" raids to suppress SAM sites. So, there's enough to keep you interested (and hot) for a long time!

Intruder's unique feature is that you're not fighting the war alone. You fly as part of a contingent of up to eight aircraft, organized as four flights of two Intruders or Phantoms, each with their own gun to play in a role. You could be on a bombing mission and see Phantoms protecting you from enemy MiGs, or Intruders attacking SAM sites to smooth your passage to the target. Or you might find yourself protecting an Intruder while it drops its lethal cargo onto some under-located piece of North Vietnam.

" Your breathing becomes rapid and the sweat runs down your forehead "

EINTRUDER

Moreover, if you have a 3 megabyte machine you can switch to any quarter-painting aircraft at any time and take over control, so you can always be in the thick of the action - whenever and wherever it may be! With a 3125 machine you're limited to just Phantoms or just Intruders in one operation, you can't move from one type to the other.

BE THE BOSS!

Choosing the Commander Air Group option puts you in charge of operation planning. This involves selecting the operation's primary and secondary targets, working out the best route, waypoint selection, aircraft selection (Phantom or Intruder), altitude selection from the list of available crews, each with different levels of experience, fuel gaug, and computer in daylighting, ground strike, and Wild Weasel missions, and allocating separate missions to each aircraft. You also have to determine the timing for the different aircraft involved - for instance you want to ensure the Wild Weasel attacks an SAM and AA sites later than just BEFORE the fighters get over them. Finally, you can save the mission details we think is later on, before flying the operation.

CONTROLLERS

Your aircraft can be controlled in several ways, using the SF's keyboard, mouse, ordinary joystick, Great MousePad, or even one of those hideously expensive Amegraph controllers. Sensitivity to controller movement can be adjusted to your liking, but I still found control wasn't really precise enough for easy, accurate weapon delivery. Matters are improved slightly by changing the level of sensory detail displayed (in the menu: optional). Less detail results in faster screen updates and hence slightly better control.

The program's graphics are reasonable, but not outstanding. I find the aircraft's control panel displays, although the instrumentation could do with more detail.

Some of the interface elements have little in the way of explanations on them, e.g. the compass shows only N, S, E, and W. Also, I wasn't very keen on having to scroll to a second screen to operate the Intruder's weapons selection controls - although in real life this would be handled by the second crew member - the Loadmaster/Navigator.

At maximum detail setting the external scenery shows the usual 2-D graphical representation of trees, rivers, airfields, buildings, etc. All the expected viewing options are available too, so you can keep a good lookout all around the aircraft for enemy activity. You can also view your aircraft from any angle from the outside, take a view from a tracking aircraft, or a "satellite's eye view" from above, or view your home carrier, the USAF 54th. Oh, yes, there's also the mandatory "inside's eye view" of course, if you find us riding your missiles to their targets!

INCLEMENT WEATHER

The Intruder is an all-weather aircraft, and operations in inclement conditions may be simulated. This results in a "hazy" look to the scenery and a conspicuous cloud layer at altitude. Climb up through the muck and you burst into sunlight under a brilliant blue sky. You can also simulate night missions if required.

The program makes some good use of sound in places too. Starlight sounds are used for engine noise and various other sound effects, such as radio chatter. The latter here becomes a little annoying, though, as you can't actually make out what's being said and the same couple seems to be used all the time. The text and message text is displayed over on any-



way, and you can turn the radio sound off if required.

There's no doubt the program is loaded with features, only some of which I've mentioned here. Features alone don't make a good simulator though, and in fact I was mildly disappointed with Intruder. For me it was spoiled by its control system, as I found it too imprecise when trying to line the aircraft up with targets. The program also has a few annoying design quibbles, like having to switch screens to select weapons, and switch to an external view to change a waypoint.

Overall it's a good flight combat simulator spoiled by a few niggling details. For me the attraction lies more in the historical interest, as it gives you an idea of what Intruder and Phantom flight operations must have been like in the Vietnam War. This is particularly true after reading Stephen Coonts' novel - assuming that the book itself is accurate, of course. Naturally, the program can't recreate the sheer horror of that terrible conflict, but the book fills in at least some of the gory detail. So, I give it a qualified thumbs up - after all I still enjoyed it!

FLIGHT OF THE INTRUDER

Mircrosoft/Spectrum Holobyte

\$24.99

Reviewed by John S Denton

PIT FIGHTER

Shades of Jean Claude Van Damme come rushing to me through this box set. The game is set in a slightly forward future in an underground arena of a no holds barred wrestling arena. It is up to the player (there can be one or two) to win their way through the ranks to become the ultimate hard man by beating the Ultimate warrior himself. The game shows that it has a great deal of pedigree with its parky, aging, for although a well-known coin up bit the software comes with a reasonable program and a fairly comprehensive instruction set. It is this sort of packaging and backing that makes Tengen one of the more successful converters in the field. There is even the offer of T-shirts that resemble the box. This is a game that has been produced with a certain sense of humor and style.

The players choose one of the three warriors to the game who are depicted in strong track, simple graphics, rich with a collection of special moves and advantages. These fighters are: the Asian Kick boxing Champion Ty with his eight limbs, Ding Dink and roundhouse punch, who is fairly brittle but very fast; the pro wrestler with strength and power but lacking some speed, using his body slam, head butt and pile drivers and finally the Karate/Pang/Pa expert with an array of throws for style effects. He is fast but even more brittle than Ty.

The players are controlled by a multitude of joystick movements, which can lead to some commands being misinterpreted. More than once my poor point turned his back on the opponent rather than execute a special attack. The fighters also have the option of parking various items up from the floor to throw at their rivals.

Some such would be knives, crates, legs and eventually motorcycles!

Each round of fighting has a point attached to it and at the conclusion of each successful bout the player receives prize money together with health bonuses and speed of win bonuses. These are gradually displayed by the kick left track that lifts you up for the addition of the crowd. The graphics seem to have been ported and edited from another machine. I suspect a PC but all the same they are effective, well drawn and react well to the comments from the joystick.

Every third round is a free-for-all in which the last man standing wins the pot. This really boils down to being a bonus screen with a random fighter attempting to knock you over three times.

Perhaps at this stage some bits of the opposition would be fair. The nearest member of the bad guys to beat is the Executioner, basically a big slow strong type. If the player can shove around him then speciality items will win the game quite quickly. Not a great deal more difficult is the polite and philosophical Sustainable Jiu, somewhat faster but with less brute power allows you to fight head to head without the player losing too much strength. The brute of the group, Angel, is dangerous fast and hits. Although she is not strong she picks up items and uses them to great enhancement, a dangerous opponent and one to whom the old life will fall. The rest there are all in the different degrees of strong and fast mainly offering a great deal of punishment until the player masters his individual fighting style. The hardest I progressed



was Chris Man Eddie the several rated opponent who could absorb damage like a moshiebie sponge and deal out damage like a hot cigarette! One day I will get a crack at his boss but I cannot offer advice or thoughts above number two now.

The game plays with a great deal of black humor and relies on the effects and the attack to maintain it's impact. I somehow do not it would feel quite so atmospheric and exciting with little stick men trying the moves. There is also an air of personalisation about the game. A player can become quite engrossed to his fate and some of the opponents can actually become grudge matches. Personally I liked C. C. Rake since my game found they could not outmanoeuvre his throwing antics.

This is a martial arts game with a touch of class, it feels like the Van Damme films and even slightly like the Terry Wach Way movies. Really there are no Clyde to assist you but the characteristics of the players is strong and leaves room for variation in the actual players. I am actually sorry to have to return this game I found it offered a pleasant release after hard working days at work, just the thing for digesting Christmas dinner with I certainly suggest that Martial Art fans look at this.

- **SOUND AND GRAPHICS** - loud and sweet, the former even speaks
- **GAMEPLAY** - normally well balanced, quite addictive although some credit for their handling
- **OVERALL** - well packaged and worth seeing, buy it and enjoy

SELECT YOUR FIGHTER



TY
 100%
 100%
 100%
 100%
 100%
 100%
 100%
 100%
 100%
 100%



DING DINK
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 100%
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EXECUTIONER
 100%
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The **PIT FIGHTER**
 Publisher: **Tengen/Damark**
 Price: **£24.99**
 Developer: **Damon Rowan**

ULTIMATE GOLF

A budget golf game, there's a novelty! This game was originally released about three years ago and at that time was considered to be state of the art. In those days it was competing with much old time classics as Leadboard and it observed its accolades. Today as a budget game it will lose some appeal, although the presentation now looks decidedly aged.

On starting the game, many of the features of golf games are presented. Options for club selection and standard of play are, of course, mandatory and the options for having weather effects or not is helpful for beginners. The game plays from the perspective of the player and allows the club selection to be tested and angles of swing to be altered. The game has many of the benefits of current games, even the names of players are distributed to allow

the player to monitor their progress.

The play of a club offers a great deal of flexibility to Leadboard insofar as the mouse features activates the power meter and the swing meter. In theory this allows the player to make variable strength shots with alterations for wind strength and direction. These playing mechanics are strong and make a playable game. Sadly the graphic quality of the game leaves a little to be desired.

Even if the age of the software is allowed for the quality of the course is poor. For some reason the programmers seem to have the whole course divided into squares thus giving the impression of driving into a chess board. This is both distracting when playing and also makes any incentive



to the game that needs further. Although I would agree that a grid on the greens can prove advantageous, I was not so perturbed in grids across the layout or even in the rough. The squares also make the perspective on the course more peculiar and some optical illusions are available around the game.

It is most disappointing to not a game that offers such a great deal of getting relatively hard to play up on the graphical style but sadly that is one of the main parts of any golf simulation. I enjoyed the interface but could not live with the square based style of course. Have a look yourselves if they not woozy you as much.

FACTS

Title: **ULTIMATE GOLF**
 Publisher: **G.B.H.**
 Price: **£9.99p**
 Developer: **Dominic Horrocks**

SIGHT & SOUND

The soundtrack not too memorable but not too obnoxious, the graphics were like the course was not

GAMEPLAY

Wonderful controls and good support from the manual. Not those however

VERDICT

Not a bad game, there are far better releases at the full price but of the interest if you want to pay twice as much

FACTS

Title: **RESOLUTION 101**
 Publisher: **G.B.H.**
 Price: **£7.99p**
 Developer: **Dominic Horrocks**

SIGHT & SOUND

Both complement each other very strong graphical content

GAMEPLAY

Smooth but needing some practice to ensure correct results

VERDICT

When it was new it was great now it's budget it's a compromise



RESOLUTION 101

This is a thinking man's 3D shoot 'em up and still will work the effect of getting to know. The player takes the role of a convicted criminal in futuristic America. The area is now run by drug dealers and their violent henchmen and thus by virtue of Resolution 101 you, the criminal, will be given a chance of redemption if you stop these people.

The game uses the class of a masterpiece. The window shows the view from the vehicle you drive complete with the instrumentation devices that are as necessary to special police work as yours. The premise is that you have received a fine from someone

policy from those mistakes and thus the instant problem is avoided. It is possible to head and save positions and even upgrade the weaponry at suitable intervals.

The use of digitised graphics to display the bad guys and your car adds a realistic touch to the futuristic concept. In front of you. There are sound effects and music tracks that keep the game moving with a good audio simulation and the use of filled 3D graphics in the style of Elite adds a touch of early virtual reality to the concept. The easy acceptance of the control modes makes the craft a pleasure to fly.

In order to progress in the game it is up to the player to shoot and destroy drug runners and collect their contri-

but heavily obtaining cash bonuses and starting points. Every so often the gang bosses themselves will appear and it is possible to negotiate these three times in order to bring them to their final justice.

This is a game with a great deal of action and an excellent level sequence. Even the sky goes dark and leaves lark with lightning just before the bad guys make their play. There has been great attention to detail in the game and it certainly deserves the second chance in the market place. This is a good value budget game that I would be happy to recommend were it not for a strong show on up with a fairly effective driving game. One game that does pass the test of time.

PD Paul Rixon's WORLD

When computers were first introduced in the office work place, they were justified by the notion that their presence would eliminate the need for so much paper - a paperless office was 'just on the horizon'. Then along came the printer... Anyone who works with computer systems today will agree that they are seemingly - inevitable consumers of paper. While theory suggests it's possible to manipulate text within a word processor before printing out a single final copy, the reality is that the mere presence of a printer is an invitation to 'see what it will look like' ... with every minor alteration. Printers are increasingly more affordable and able to produce a high quality output - their usefulness is only limited by the software available to drive them. In the Public Domain there are numerous utilities and applications of interest to printer users, just a few of which are the feature of this issue's PD World.

PRINTMASTER

Update World's Printmaster has achieved an enhancement following among XT users, just as *Handbook's Print Shop* was a meagre bid for the 8-bit disks. The numerous functionality of these programs is the construction of posters, cards, banners and other printed stationary using predefined icons for pictures, fonts and border designs. Owners of Printmaster for Printmaster Plus can further expand the variety of possible designs using files from the **PRINTMASTER COMPANION 1, 2, 3** and **4**. The first disk contains literally hundreds of new icons and dozens of new borders to add to your existing collection. The second disk has many, many more plus several related utilities. The Icon Programs Utility will let you transfer graphics from Printmaster to Degas format, and vice versa. This means you can import the pictures on digitized files into



Publishing Partner or other DTP programs.

With so many new icons you may be wondering how to keep track of them all - the answer is to use the Printmaster Catalogue. This prints an alphabetically sorted catalogue of icons, seven per page, with a contents list. You can view the output on your monitor or dump it to an Epson or Starl computer printer. With almost five hundred icons in each of the third and fourth Printmaster companions, these disks are an invaluable supplement. If you use Printmaster, try out - or be without them!

GOT AN NEC?

Some disks are aimed specifically at the users of a particular make of printer. So prizes for guessing who might benefit from the **NEC UTILITIES** (this is a typical collection of goodies. Firstly there's a patch for the *Alt Help* function so that screen dumps can be made on an NEC PS, PL or FT printer (presumably others too). It lets you choose the size of the dump, from a tiny square to a large sideways poster. The Epson Emulator in-

cludes a myriad of possibilities, by enabling you to obtain print-outs from those applications that don't have a specific NEC driver. Elsewhere on the disk you'll find a printer set-up program and a custom downloadable font designer. Undoubtedly, most of the programs listed the last paragraph are written in German so a fair amount of experimentation will be required. Still, if you own an NEC it will surely be worth the effort.

.. A LASER?

If you're lucky enough to have your XT connected to a laser printer, the Public Domain is an excellent source of practical assistance. **LASERRAIN EPSON EMULATOR** is the essential acquisition for users of the Star 84M84 laser, which would normally require a unique driver to get along with popular software applications. *Clear LaserRain* has been installed on a disk recently, it intercepts all output to the printer port and converts it to its own buffer. Here it's converted from the standard Epson code into a format that's appropriate for the Star laser. It may also make certain enhancements, such as enlarging or reducing the overall size of the graphic output. There is full support for the *Alt Help* screen dump routine. The program originates from Germany but comprehensive English instructions are supplied on the disk, which is bundled off with some fonts and drivers for the packages *Wordplus* and *1st Word*.

.. OR A LASERJET?

HP Laserjet users haven't been forgotten. Just take a look at the **HP LASERJET UTILITIES** (disk) Knowledge-Are allows you to address and print via

veloped from within any program built on your word processor providing it has access to disk accessories. After calling the keyboard routine you are asked to enter your own address and the next screen address, each comprising up to six lines of fully characters. Feed an envelope into your printer, select Print and you proceed. Meanwhile Jet Label is a laser-label printer that specializes in printing data on multi-column sheets of labels - an ability that seems to be lacking from many ST applications. The label text, from one to five lines, is automatically centered. Different pitch sizes can be used. Since the program utilizes the HP command set, it should be compatible with the Deskjet, Deskjet Plus and other printers that use it. You can enter the data from an ASCII file (output from your database, perhaps) or individually via the keyboard. Finally, Pretty Print is a simple utility that prints any text on the scaled set fonts with your laserjet, but keeps an issue that are loaded into your printer and therefore contains a complete description of how each letter will appear when printed. Once a font is loaded you can print files using the normal text printing commands, so there's an obvious speed advantage over the graphics mode techniques of most DTP software. Two fonts - Courier and Candy - are supplied on the disk. A hint for HP Deskjet owners is to check out **HP COMBINE UTILITIES**. This has a section entitled in the Laserjet disk - there's an envelope printer, a disk directory lister, various drivers and fonts and a font configuration program. I can't say for certain if they work, but they do look useful.

SOME GENERAL UTILITIES

No matter what kind of printer you own, you're certain to find something of interest among the **PRINTER UTILITIES**. First up is **HP_Print**, a program for disk recovery that lets you set the many attributes of your printer. Unlike other utilities of this kind it doesn't make any assumptions about the attributes you might want to set or the way in which you might want to set them. This means it can be used with ANY make of printer, provided you know the necessary codes to define a table of possible options. The program tracks this table and automatically builds a series of drop-down GDIW screens to help you select the features you want. There are ready-made tables included for Panasonic, HP and OKI printers plus full details of how to construct your own. **JetDesign** is a replacement for the AH Help screen dump function. It's intended for 24-pin models and takes full advantage of the improved print quality, unlike Atari's standard



Left - Full control over your Genesis printer from the desktop... similar programs are available for most printers.

Below - Printing our GDIW labels can be a breeze with the right program.

offering. You can change the scaling and optionally send the output to disk. You can also choose either hard-copy or parallel formats and save the initial defaults into a hard-up configuration file. The Personalizer Printer Setup (upper) is another utility that is used to establish the various settings for your printer, but this time it's for Epson compatibles only. You can choose almost any combination of fonts, line spacing, page sizes, margin settings and other features offered by your printer. There are two related programs - one to select the printer settings and create a default file, the other to switch between multiple default files on a single disk. Mounting off the Printer Setup disk you'll find even more printer set-up routines, specifically for owners of Star 8024-10, Gamma 10s and Panasonic 1000 hardware. The Control options include an 'alias key' print mode that somehow manages to print twice as much information onto a page as standard condensed printing. I discovered this worked perfectly with my Panasonic 8-pin printer.



been thoroughly tried and tested to ensure they meet the demanding standard required by developers. If you'd like to find out more about all of the disks currently available, you'll be pleased to know that the new Page 6 ST Library Catalogue has just been arrived. This sixty-page booklet contains a full description, details of system requirements and a hyperlink for every disk in the library. It's divided into logical sections in a similar style to the regular library updates and is indexed on both names and reference codes. When you buy the catalogue you also get a copy of the **PAGE 6 CATALOGUE DISK**, and a voucher that you can use to claim back your money when you order your first three disks. The good news doesn't end there, as the price of PG has now got even cheaper (what happened to inflation?). If you buy five or more standard disks you can now claim the specially reduced rate. There's every here a better time to explore the PG World!

A NEW CATALOGUE

There are literally hundreds of disks in the Page 6 ST Library and they're all

HOW TO GET THEM

The disks featured in PG World can be obtained from the PAGE 6 ST Store. When referring to a specific disk, please use the unique reference code for identification. A printed catalogue description of the library disks is also available from PAGE 6 at a cost of £2.95, refundable against the first disk ordered. This includes a copy of the PAGE 6 CATALOGUE DISK, which is otherwise priced at £1. (Disk featured in this issue are)

ST146 - PAINMASTER COMPANION 1	ST156 - ABC UTILITIES
ST147 - PAINMASTER COMPANION 2	ST157 - HP LASERJET VPS (VPS)
ST148 - PAINMASTER COMPANION 3	ST158 - HP LASERJET VPS (VPS)
ST149 - PAINMASTER COMPANION 4	ST159 - PAINMASTER COMPANION 2
ST150 - LASERHIGH EPSON EMULATOR	

Prices for standard disks are £2.95 each (or £2.50 each for those of more than 100KB). P.A.S. may not be used. ©1990, P.A.S. Telephone 0200 241000 or FAX 0200 241000 with credit card orders

WHERE IN THE WORLD?



the original data fields or adding completely new data. Up to four entries each of up to 17 screens of notes can be added for each country, either keyed in directly or imported from a word processor in ASCII format. You can even add your own DECHEMA format pictures to supplement the text.

comes additional maps of the Middle East, Eastern Asia and Islands of the South East, the Caribbean, and Australia. The second contains the national anthems of every country in the world. The third one is a "construction set", allowing you to import your own DECHEMA format maps and create associated data bases to use with them. This makes the basic program completely open-ended so you really can modify it to suit any purpose.

ZOOM IN

The maps only show country outlines - don't expect to see cities, rivers, or other such geographic details marked as they aren't. Even so, the graphics are still fairly detailed and are sometimes difficult to see clearly using a TV, although they're fine on colour or monochrome monitors. The latest version of the program includes a zoom function, which enlarges any chosen section of the map making the smaller countries easier to see. If there's enough free memory the world map screen also includes an inset of a rotating world globe.

Use of sound is limited to a choice of "Sound the World" on the program's title screen and three national anthems. Incidentally, you only hear a few bars of each anthem, not the whole thing, the music is pleasantly furnished using well-timed-out chip sound effects.

In summary, this is a real little program for those interested in world geography, and the fact that you can modify its contents to suit your own purposes widens its appeal further. The review copy did include the occasional bug or two, but these didn't really detract from its appeal. Overall, I liked Geography Tutor and consider it good value for money.

GEOGRAPHY TUTOR

Griffin International
£12.50

Reviewed by John J. Donnan

A QUIZ

The program also has a number of quiz and data comparison facilities. The quizzes ask you to locate countries on the map using the names, guess either the country name, the name of its capital, or just facts about it from a chosen data category (eg. population).

The "comparison" facilities operate on the numerical fields in the database, allowing you to obtain answers to simple "who" questions, such as which country has the largest population, or the smallest defence budget. You can then quickly access all the other data about that country, once identified. There's also a "search" facility, which allows you to do things like identifying all countries in which French is the main language, or all countries which spend more than 5% of their GDP on defence.

You can also ask for comparisons between countries based on a chosen numeric data field, either on one country against the rest, or all countries against each other. The results are presented in two forms, either graphically on a map with each country shaded depending on the value in the chosen field or in tabular form where each country is listed along with the chosen data. The table can be sorted alphabetically by country or numerically by data value. For instance, you could produce a list of all the countries in Africa by population size.

If this isn't enough for you the instructional booklet also lists three accessory disks for use with this program. The first

This educational program originates from Canada, but is sold in the UK by Griffin International who advertise regularly in this magazine. It's unusual in that it's aimed at a much older age group than most educational packages - no age guidance is given, but I can't imagine it being used by virtually anyone with a general interest in world geography.

It was developed using the Maps and Legends utility package from Starz Software (remember them?). It's supplied on one double sided disk, with a single sided version available on request if required. It runs on DOS, MS-DOS or TOS in either medium resolution colour or high resolution monochrome. The package also includes a helpful 30 page instruction booklet.

Basically it's an electronic world atlas, but its potential goes much further than this. It contains maps and details of countries in Europe, the Middle East, Africa, North, Central, and South America, plus a World Directory. The USA and Canada are also covered at the individual state level, each of which is then treated like a separate country. It's possible to select a country (date on the map using the mouse) and then list various facts about it. These include details on its capital, population, languages, religions, and statistics on health, education, wealth, and other topics. You can even listen to the national anthems of 20 of the countries.

You can also store your own data in the program's database, either by modifying

MINDBENDER

Mindbender is a game with a totally different slant to any others I have seen. The game seems to have had some success in the U.S. and, according to the box, it has great success on the Amiga computer. It is one of those games that sounds simple, but becomes most complex to play. Simply put it is a matter of diverting beams of light or magic through various shaping points by the imaginative use of reflective shields held by outrageous gnomes. Once the story that accompanies the game is read the puzzling becomes quite clear.

The great wizard Merlin has discovered that magic spells follow the rules of light refraction and thus intends to revolutionize spells with his astounding magical powers ability. Sadly if the refraction is wrong the power generator

will be destroyed. Merlin has a wizard book and six gnomes controlling the wizard, shields, helpful gnomes and all. This premise sets the tone for a difficult, one or two player game that contains a great deal of wizardy wizardry brain twisting.

The game allows you to name teams for subsequent league play and maintains the high scores for the same level. It is possible to add levels to the game messaging, to keep the wizardy wizardry fresh still. There seems to be a perverse sense of fun in playing gnomes with mirrors in the path of hurtling death rays only to see them split back from behind since the reflective wall was forgotten. It is a novelty to see how bright is the game as the "wizards" are a "wired" method becomes down to

feature after the early levels since there is just not the time to adjust mistakes as the power levels back on itself.

Sadly the game is adaptive and does not distract the player from his concentrations. Perhaps the only bad point is that it uses such small graphics. Had the sprites been larger then a touch of realism effect may have been achieved. This may have reduced amount of errors and obstacles but would improve its immediate attention grabbing potential. The screens are busy, it takes a moment of a minute perfect table, and leave the user with the threat of eye strain from excessive play. But I think it



FACTS

Title: MINDBENDER
Publisher: G.B.H.
Price: \$7.99
Developer: Damon Howarth

SIGHT & SOUND

What score? There is a unique use and supportive, the graphics are too small about colorful.

GAMEPLAY

Challenging and easy to control, only slightly monotone the silliness of the gnomes.

VERDICT

Originally obscure and it is well worth watching of the game to get the best out of it.

FACTS

Title: JAMES POND
Publisher: G.B.H.
Price: \$7.99
Developer: Damon Howarth

SIGHT & SOUND

Just fit fine although the music is weakish, the graphics make up for it all though.

GAMEPLAY

Smooth, funny and responsive, no problems of all.

VERDICT

Buy it Buy it Buy it



JAMES POND UNDERWATER AGENT

Each of the twelve missions seems a more than relative to a certain other agent in time; for

example there is a level in which James saves aquatic form of sharks or tank, and let the which needs the phony spider to plug of leaders.

James is colorful and very smoothly animated, his screens and backgrounds are equally well thought out and the various screens and others are humorously presented. James' only major in his ability to time raising bubbles from his mouth and these bubbles then used breathing to obtain rewards and bonuses as well as putting the opposition out of commission.

The screens each have a time limit in which to kill the tank or the agent and quite often these periods need time that

have been found on earlier levels. There can be tanks and kept at his underwater house for subsequent use. Each screen has a crystal of hidden entrance to enable all the variety of bonuses to be obtained by the letters of James' name or language of life mission or Jack Daniel's bottles to make him sleepy.

James Pond is an adventure with a sense of humor and a logical progression. It is not always necessary in this game to go through the levels in strict order as it over a level keeps leading you try a different screen first. One of the most important objects to find is the air helmet which allows James to stay on land much longer and thus complete some trickier missions.

This makes my favorite adventure and I cannot recommend it highly enough.

I make no apologies for reviewing this game again, it is probably one of my all time ST favorites. Like his comrade OBT this is a secret agent whose exploits can bear repeating many times. The release of this at budget price the one time as the world of mindbender should not be seen as competition as they are totally different games.

James Pond is a unique aquatic look at the platform world. For those not in the know, James is a sea going Cod a playful of M80 and a pretty strong spide. This fish secret agent must stop several disasters occurring (and on the way defeat the evil Dr. Mayhem, in style of conventional interest).

RACE DRIVIN'

Those of you that have been around a bit will no doubt be aware of the fact that there have previously been two other Hard Drivin' type games. All of these have been converted from the Atari arcade originals, and, luckily enough, they're all looked almost identical.

This latest in the series is no different at all: it's basically a 3D point-of-view, polygon-type "race" where you must get around a bunch of obstacle-filled tracks in the quickest possible time. Its marks for originality of concept.

The game is divided into three separate courses which range from a super street track, an Autostreet type thing, and a speed track. Basically what this gives you is a choice between being funny up and over late, lumpy lumpy life or speedily speedy bits.

Of all the courses it is without a doubt that the street track seems off best. It is a great test of your driving skills and incorporates in a manner of truly ludicrous obstacles including loops, jumps and various sections it's all fairly hot racing stuff that involves just stomping your foot down and trying to stay on the track.

The options section of Race Drivin' is a

particularly important section and it is here that you can choose which type of car you are going to negotiate the track with. First of there's the Spectator, a tough roadster all rounder with decent acceleration and speed. Next, we get the Roadster, a real stalker for corners and finally the

Speedster (which is a real high performance jobby that only real men can handle indeed).

As well as selecting the basic type of car you can also decide whether you want automatic or manual transmission, power steering or sluggish, ricky steering as well as whether you want to drive with the mouse or the joystick. Well that's all the options, so what is it really like there? Well, as with all racing simulators of this type it can get a bit sluggish when there's a fair bit on the screen. This does tend to get a little annoying as you find yourself watching about all over the place because the screen update can't keep up.

On the street track this is especially annoying as it requires some fairly fine steering and you can often find yourself veering through the air towards a nasty crash!

The presentation of the game really isn't all that bad on the whole, but as usual with this type of thing, it could be much better if it were on a machine that could really cope with what is trying to be done. That isn't to say that there's anything wrong with the 3D. It's just that the arcade original was a 32-bit affair with a load of custom hardware. Trying to

keep up with that is asking a bit more respect when you load the game up though, and this is all very nice with some gorgeous animation. It doesn't really add anything to the game, but so what eh? It's nice isn't it?



“ a competent
arcade
conversion ”

On the whole I thought that Race Drivin' was a competent arcade conversion. It doesn't really stand in any department, and it is a bit sluggish. However if you were absolutely crackers on the arcade version I'm sure you'd want to check it out. If you're searching for the definitive 3D racing game though, I suggest that you have a peek at Microsoft's F1 Grand Prix which has not come about just

■ **HEART AND SOUL** - Not bad really, is bit on the average side in the some departments, and the screen refresh rate is nowhere near quick enough really.

■ **GAMEPLAY** - Personally I didn't really enjoy it all that much. The sluggish response, coupled with the slow graphics made it more infuriating than anything.

■ **OVERALL** - Have a look and see what you think. Personally, I don't think it's worth the ludicrous asking price - but you never know you might appreciate



Title: **RACE DRIVIN'**
 Publisher: **Domark**
 Price: **\$29.99**
 Developer: **John Dorian, Jr.**

THE STOS COLUMN

*In which
Dion Guy
brings you the
latest news
together with
two great new
programs to
enhance your
STOS listings*

After last issue's sudden arrival of STOS 2B and Creative Disassembling, the STOS scene has again gone extremely quiet. Well, not too noisy - the STOS column is here to bring you some more lovely listings! First though, a little bit of news.

Since last issue's review of **CREATIVE DISASSEMBLING (CD)**, it has undergone a major overhaul. Now, instead of using STOS banks routinely for dealing with MIX data, CD uses the STOS MIX extension. The result of this being that CD is now much faster in dealing with data, which allows it to cope with more complex tasks. Anyway, the point is that CD is now even better than it was and is an admirable piece of software if you have access to a 2F MIX setup. CD should be available from all major PD libraries by the time you read this.

READY TO TYPE?

Now onto the listings. There are two featured in this issue, **JOINER** and **FLASHY PROGRAM LISTINGS CREATOR (FPL)**. Both are written by that multi-talented programmer, Brian Amara. Here is a description of what each one does.

JOINER

This program takes MIX-compact screen files and places them one after the other into the same memory bank. The number of pictures you can store depends only on your ST's memory space. This program is incredibly useful as normally you could only store a maximum of 18 compacted screens in STOS at any one time (and then you wouldn't have room for sprites-etc.). Now you can have as many screens as you want (subject to your program's) in one bank, thus freeing up the other banks for other things.

After typing in and running the program, use the fileselector to load two MIX screen files. Make sure you only load compacted screen MIX files, as any other type of MIX file will ruin the whole process and you will have to start again. After you have loaded two files in you can then choose whether to add another file or save what you have done so far. Press 1 to load another file or 0 to save the current bank of screens.

When Save is selected, a fileselector will appear. Use this to save the screens under a filename with the 3 letter indicator .JDF; then the program will save into this - the compacted screens bank and an .ASC file with the same name as the screen bank file. If you now quit the JOINER program (press 0) and go to an unused program area, you can load in the .ASC file. The .ASC file is actually a Bank program that the JOINER program has created. The .ASC file simply displays the packed screens and is an example of how to access any screen in the bank.

To load the .ASC file just treat it like a normal .BAS file. The .ASC file loads in one line at a time onto the screen, unlike a normal .BAS file, but when it has finished loading you can list, run and edit it as a normal .BAS file. If you run in the program will load in the compacted screens bank and display all your screens in order, while waiting for a keypress between each one. If you list the program, you will see how to display a screen from the bank. You can then use the display routine in your own programs.

FPL

Using this program you can make your MIX statements stand out by using italics, underlined or shaded text. This program will also let you have a list 0 in your programs. FPL looks for colors in your programs and converts them into

effects. See the example program for a demonstration of how to use the codes. There are codes to turn the effects on and off. When the PPL program returns across a code in one of your programs it turns the appropriate effect on or off and then restores the code from your program. The codes are as follows :

- Is = Increase on
- I = Increase off
- Sis = Shaded on
- Si = Shaded off
- U = Underline on
- U = Underline off
- L = Line On

To see how PPL works do the following. First, type in the example program and save it. Next, type in the PPL program. After saving it is disk be fancy use, run the PPL program. Now load the example program into PPL using the Bioshocker term on screen instructions for what keys to press etc.). Finally, save the converted program and quit PPL. If you now load the converted program you will find that PPL has converted the codes and added the desired effects.

A few points about PPL. When you make a line into line 5, you have to make sure that the first thing on the line is a BASIC statement or else it will not work. If you have a line 5 in your programs, you will find it cannot be edited - try instead, the shade, increase and underline effects are not just limited to REM statements - as seen in the example program. Also, you are not confined to using just one effect per line, you can use them if you like as seen in the example program.

You will find I hat PPL is a quick and easy way to add special effects to your listings. I have found that it is a good way to highlight different sections of your programs. When you are looking through a listing the effects really jump out at you - thus making things easy to spot.

ADIOS

So that's it for another issue - space is tight! I can be located at the following address. If anyone has anything they want reviewing, or have a listing they would like published - you know where I am! Don't forget, for a guaranteed reply make an S.A.E. Until next time - bye!

Write to
Don Guy
 11 Shore Crescent
 Bishopc Waltham
 Hants
 RG20 1DE

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Above - the Flashy Programs Listing Creator
 Below - a simple example to show the utility in use

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THINGS TO COME?

The European Computer Trade Show 1992

Damon Howarth treks down to the big city to check out the latest trade show

I have never been to one of the trade shows before and my invitation is dated this event in early April was a welcome one. For those readers that do not know, trade shows tend to be open only to retailers, publishers and press and quite often do not have a high attendance in comparison to the shows we are all used to. The interest in this show from my point of view was the support, or lack of support, for all things Atari and the attitude of the various software house representatives to my questions on the subject.

The show was held in the Business Centre building (the place that in Monopoly boardland was and was spread over three floors with some three hundred or so firms on show. Of those exhibitors some were of interest only to traders insofar as they were companies such as distributors offering large discounts on shops and the like to persuade them to obtain goods from them. Of interest to all Atari users though were the firms such as Alternative Software and Chetani-Joystick. For the ST users firms such as Progress, Ultimix, Sierra On Line, Demtek and US-Field were there. Electronic Arts had a strong presence as well.

My first chat was to the Sierra On Line representatives and from their point of view it seemed that the ST was no longer on their list of supported hardware, so it would seem that Kings Quest II and III may never see the discs of ST users. It was interesting to note here that they were predicting that even the Amiga would be likely to have only two more (1992/93) years left in it. The future as far as Sierra see it is with CD ROM and Multi Media.

Feeling somewhat depressed by this cold hardware status of the future I was most pleased to chat with the Alternative Software people. They are specialising in the less supported machines and have a range of 8 bit Atari software for which they even have manuals. Apart from one off sales of stock they were very willing to discuss making runs from their masters should demand warrant it. Alternative Software are on 0977 702777 should you wish to contact them.

Chetani-Joysticks were displaying interesting stock including Autoplane control sticks that look and feel like the proper job, excellent for flight sim lovers.

The broadest company there who took time to give me a comprehensive interview were Progress. Their PR representative explained their philosophy and demonstrated the "madness" of several new releases to me. I may not be the first to release this news but there is a *Leisure 2* (no I don't mean the Moe Lemming). This is a new version with larger sprite and catchier music and they hope to have it out around about Christmas. I also received previews for Amiga (unfortunately of a couple of other releases that are coming on ST - *Legend* and *Clash*). There are both for Progress release and action games

and, I am informed, graphics and game play will be more or less the same on the ST. If so there is real to be done. There would also appear to be a *Shadow of The Beast 3* in the works which will be a real improvement on the disappointing *Beast 2*. They were even showing "trailer" of a new utilities type game which made great use of digitised pictures and even has the graphical animation on the stop motion action of actual movies. You too can be *Texas Hold'em*! I was even informed that Progress now have the rights to *Thargoid Master* and all its relatives and there is still discussion in Liverpool as to whether to release an improved *Progress* style or to make a mass market re-release without changes.

Progress left me feeling somewhat happier and so did *Minicage* who assured me that *Ultima 6* would be coming on the ST some in the near future. Apart from that one release though this is another American based company that seems to feel the ST may not be supported much longer. Games and Demtek had large private hospitality rooms and showed out-ward support for Atari 486 hardware if only in their compilation and budget lines.

I was struck by the divide between the Games machine Sega/Nintendo mentality and the Computer revolution. Perhaps because of the core interests, the computer companies seemed to present a far more supportive and informative front than the Games machine companies. Computer 808, even large and corporate users, maintain an effort with the public. Games Machine firms seem to desire the alcoholism of a *Garbo* or the premiere placements of a movie firm.

So what were my final impressions? Mainly very sore feet from much walking, a nagging feeling that there is going to be a great change in the concept of computer software, and a satisfactory feeling that at least this year the ST will have a supported future.

My thanks must go to Ray and Darren of *Byte Computers*, Dudley for getting me to on the show for readers Sunday complimentary tickets instead of £15+ that were charged at the door! and to lots of software PR folk for their support and patience as I interviewed (pretext) them.



Exciting things to come from Infragram

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