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Telecom Gold: 72:MAG001
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Published by:
Database Publications Ltd,
Europa House, 68 Chester Road,
Hazel Grove, Stockport SK7 5NY.

ABC 33.573 January-June, 1986

Subscription rates for
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£30 – Overseas (Airmail)

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Euro link set up

ATARI users can now have instant access to Europe's most influential database, thanks to a new permanent electronic link to Luxembourg.

It has been set up by MicroLink in conjunction with the EEC's Directorate General for Information Market and Innovation.

The venture provides a direct link between the main MicroLink computer and that of Euronet/Diane, which is part of a far-reaching project by the European Commission to create a "Common Market of Information".

And it means that MicroLink now has access to more than 600 European databases.

New databases available to MicroLink subscribers through the European link contain information from many sources which are not available through any other online host.

They range from facts on research projects, reports and organisations to an online directory to help find the right hardware and software.

Among the facilities on offer is a multilingual terminology databank of scientific and technical terms containing more than 380,000 words and over 90,000 abbreviations.

It is being updated at the rate of 2,000 new items a month.

The European connection comes only weeks after MicroLink achieved a similar world first - a transatlantic hook-up with the giant American database Mnematics which contains a dynamic section for Atari users.

Our latest link-up will prove invaluable in opening up new computing and business opportunities in Europe for Atari users", said Derek Meakin, head of MicroLink.

ALL program listings in Atari User are now available for free downloading on MicroLink, the UK's fastest growing electronic mail service. They join hundreds of programs already available in the telesoftware section, one of the most popular areas of MicroLink.

Mac emulator for ST starts rumpus

A PLUG-IN cartridge giving ST users access to some of the most sophisticated software on the market has gone on sale in the US.

West Coast manufacturer Data Pacific is selling the device for $50 - about £35.

When plugged into a 1040ST with monochrome monitor it effectively turns the machine into an Apple Macintosh.

This means the ST can run programs such as Macintosh Plus, MacWrite, MacPaint, MacDraw, PageMaker, LaserWriter, Excel, Lotus Jazz, and the Gem suite of software. As well as providing access to an entire new range of top-flight business software, the device also opens up the possibility of professional standard desktop publishing on the ST range.

The product was first shown in America earlier this year but hurriedly withdrawn when Apple threatened legal action.

This was because the original design incorporated two Macintosh ROMs necessary for an effective interface between software and ST.

But Data Pacific has now re-released the device without the ROMs for sale by mail order.

Purchasers have to persuade their local Apple dealers to supply them with the ROMs from the official Apple spares list.

Apple Computer is said to be dumbfounded by Data Pacific's decision to go ahead and launch the product - particularly since it enables the ST to run Macintosh programs faster than Apple's computers does.

David Small, the man behind Data Pacific, is unrepentant and insists his product does not infringe any Apple copyright.

But Atari User sources in the US say they expect Apple to haul Data Pacific into court in the near future.

ALL CHANGE AT ATARI UK

A MAJOR reshuffle has taken place within the executive ranks at Atari UK.

Out goes general manager Max Bambridge and sales boss Bob Harding. In comes Bob Gleadow, a former Commodore man, to take over the number one spot.

However, company officials insist that all the changes have been voluntary. And that rumours of a corporate blood bath are without foundation.

"A certain coincidence factor has crept in here", explained an Atari spokeswoman.

"It just so happens that two of our key executives revealed they would be leaving our headquarters in Slough on the same day".

Max Bambridge has been offered the key role of running the Atari operation in the Far East. He has been asked by Jack Tramiel, chairman of the Atari Corporation, to become the supreme of the critical manufacturing side.

As such, his area of responsibility will encompass the company's Taiwan factory which employs 1,500 people.

However, Bob Harding is to sever all connections with the company, opting instead for a new job in the brown goods sector.

Atari UK's new general manager is 37-year-old Bob Gleadow, a former Commodore executive.

Gleadow is a Jack Tramiel appointee, as was Bambridge before him. He was previously general manager of Commodore UK before becoming vice president of Commodore...

November 1986  ATARI USER 9
POLY YOUR CHRISTMAS PRESENT
EARLY AT THE ATARI SHOW

CHRISTMAS will come early this year for those Atari users who go along to the Royal Horticultural Hall in London at the end of this month.

More than 100 stands will be loaded with new products and bargain buys from the leading Atari suppliers.

The spacious 20,000 sq ft exhibition hall will play host to big names like Software Express, Swillstar, CDS, Microdeal and Advanced Systems & Techniques.

This means that the top Westminster location is set to see a repeat of the scenes at the first Atari Computer Show last March which attracted 15,000 visitors.

Once again exhibitors have guaranteed there will be no shortage of new and exciting releases for the entire range of 8 and 16 bit Atari machines.

From recently formed Aaron-fay Marketing comes the 300 and 1200 full duplex Trinitas Phasor 2221 modem at a special show price of £345 which includes a choice of software and RS232 cable.

Advanced Systems & Techniques is launching ST titles General Ledger Accounting for £49.95, animating program Make-It-Move for Neochrome and Degas screens priced £39.95, and previewing a new graphics tablet which will cost under £100.

First Software is launching several software titles for the ST together with a range of new books.

Software includes PC Board Designer, a computer aided design program for circuit boards, and Dbase II is on offer for the first time at £119.

The new books are Dbase II Tricks and Tips priced £14.95, Graphics and Sound £12.95, Machine Language £12.95, and Graphic Applications £11.95.

Microdeal is launching its space shuttle flight simulator Shuttle II for the ST at £249.95, and previewing Karate Kid II which is said to have the most magnificent graphics ever devised for the ST.

Also from Microdeal comes Trivia Challenge, the popular pub game, and Bulletin Board V2, multitasking software which allows the user to carry out work on his board while it is in use.

For 8 bit owners Tynesoft is bringing out Jet Set Willy at £7.95 and Draw Master, an art utility program, at £14.95.

The Atari Christmas Show takes place Friday, Saturday and Sunday, November 28 to 30.

Opening hours are 10am to 6pm Friday and Saturday, 10am to 4pm Sunday.

CAD for circuit boards

AN interactive computer aided design tool which automates the planning and design of printed circuit board layouts has been launched for the 520ST and 1040ST.

Produced by First Publishing in conjunction with Data Becker, PC Board Designer is aimed at small electronic engineering firms, independent electronics engineers and hobbyists.

Its main feature is its automatic routing capability – traces are automatically drawn on the screen or, if required, redrawn. Price £299.

TRIMBASE UPGRADED

AN upgrade of its Trimbase database for the Atari ST has been released by Talent Computer Systems.

Version 1.42 can handle both daisywheel and matrix printers.

It can send a report to a file rather than having it printed directly, allowing Trimbase to be linked to independent word processing equipment.

Other features include the ability to move directly from module to module without dropping into desktop, widening of case letters, and removal of the security procedure when defining new record cards or changing existing definitions.

Trimbase Version 1.42 costs £89.95.

THE ACCENT ON AMERICA

ATARI 8 bit users looking for some American-flavoured entertainment are being offered two new programs by Strategic Simulations.

Gettysburg: The Turning Point is a recreation of the famous battle in the American civil war.

Players can keep track of individual artillery pieces, men and ammunition for each unit.

Price: $99.95.

Followers of the American sporting scene can update their major league match-up statistics using the 1985 Baseball Data Disc covering all American League and National League teams. Price: $15.

LEVEL 9 QUITS BBC FOR AN ST

AFTER four years of using a BBC Micro to compile the words and pictures for its adventure games, Level 9 Computing has switched over to an Atari ST.

"Our games are now so complex that a program would take several minutes to compile on a BBC", manager Margaret Austin told Atari User.

"But on the ST it just takes seconds".

All future Level 9 games will be produced for the ST and enhanced with digitised pictures based on designs by artist Godfrey Dowson.

Level 9 entered the ST games market in September with Jewels of Darkness, a £19.95 compilation of previous releases Colossal Adventure, Adventure Quest and Dungeon Adventure.

The first Level 9 game designed specifically for the ST is Knight Orc which goes on sale in January priced £19.95.

IMAGINE if you can, pool or snooker played in a true 3-D world and you have a slight idea of what English Software's first release for the Atari ST is about.

But, apart from a requirement to knock coloured balls into holes, Qball bears little resemblance to its traditional table-top forerunners.

For instance, it is played inside a revolving cube and the balls when struck travel through air instead of on a surface.

It adds up to 262,144 possible viewing angles, 2.5 million different directions of shot, and 2.5 million angles of shot.

Despite sounding like a mathematical nightmare, the game for one or two players is described by its publisher as 'relaxing and entertaining'.

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The first ever Atari Show last spring was an outstanding success. From all over Britain Atari enthusiasts flocked to London to find out all they could about their favourite machine.

Soon the record-breaking Atari Show will be back – with three days devoted to the exciting developments in this expanding market. Make a note in your diary NOW to make sure you don’t miss this great Christmas extravaganza!

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Joy at Konix

FOR the first time since it launched its Speed King joystick for the Atari, manufacturer Konix is producing enough units to meet demand.

"Since January, when the product came on to the market, UK orders have outstripped supplies three times over," says managing director Wyn Holloway (pictured above). "In the summer we even had to turn down an order for 60,000 joysticks — and this was despite fulfilling orders in the UK for 100,000 units!"

But now the situation has been remedied and production capability has increased to 60,000 units a week compared with January's 3,600 a week.

"I'd like to thank all our customers for their patience over the last few months," said Holloway.

FROM being on the verge of collapse less than three years ago, Atari has fought back to profitability.

And now the company is preparing to set the seal on its return to financial stability by offering its shares on the open market.

Atari has registered with the US Securities and Exchange Commission for the sale of 4.5 million shares. This is expected to raise about $50 million.

Equally important, it will mark Atari's remarkable comeback from near collapse to the status of a public company.

For a positive response to the stock offer from private investors and financial institutions will be the ultimate accolade of respectability and acceptance.

And it will be further proof for the previously sceptical computer industry of the ability and leadership of Jack Tramiel and his sons.

The stock offer prospectus says sales of Atari computers and video games are currently worth $200 million a year. And profits for 1986 so far total $12.4 million.

Tramiel and his family will still own half the company if the public takes up the 15 per cent on offer.

And the Tramiels will have cleared off the outstanding $36 million debt left over from their purchase of the firm from Warner Brothers in 1984.

A leading American financial observer told Atari User: "Atari's debut as a public company will unveil its full financial standing and market strategies for the first time.

"At last we'll get a chance to look at what they've got and what they've really done!"

Michael Murphy, editor of a leading stock and shares publication said: "This latest development in the Atari saga caps an amazing story — I think Jack Tramiel has pulled it off!"

ST Editing package

AN editing package for creating and maintaining AES resource files on Atari ST computers has been released by Kuma Software.

Called K-Resource, it is implemented to make full use of Gem features and includes a built-in full function icon/image editor.

There are options for auto snap which aligns objects in character sized grid, auto size in which string/text object sizes are automatically calculated, and compatibility which helps create files that work on colour and monochrome monitors.

K-Resource operates in both high and medium resolution and will produce output files for inclusion in C-Pascal, Modula 2 and Fortran 77 programs, enabling symbolic reference to resource objects. The package is also compatible with most other resource editors.

Resource files can be copied, renamed and deleted without leaving the program. All trees and object types are supported, including menus, free strings, free images and alerts. Price £39.95.

Starquake for 8 bits

ARCADE adventure Starquake — a chart-topping hit in its versions for other micros — has become the first Atari 8 bit release ever from Bubble Bus Software.

Starquake is set on the edge of the galaxy where a highly unstable satellite has been emerging from a black hole.

Blob, a biologically operated being, is chosen for a mission to stabilise the planet by rebuilding its core.

The Atari version has more than 450 different locations featuring anti-gravity lift, teleport systems, planet surface, security doors, sub-planet exploration, propulsion pads, and asteroid fields.

Starquake costs £8.95 on tape, £12.95 on disc.
KEYBOARD BUFFER
from ADRIAN COX

HAVE you ever wished you could type
the next command line into your Atari
while it is busy doing something else —
such as loading or saving a
program? Well with this great little
fiveliner, you can do just that.

Type the program in, and save a
copy before running it because after
installing the machine code routine in
Page 6 the Basic segment will delete
itself. The routine can be turned off
by pressing System Reset, and turned
back on again by typing
A=USR(1536). Disc drive owners
can use the SETUP.COM file with
Dos 2.5 to make the program
automatically run on power-up.

Once the machine code is installed,
anything that is typed in while the
computer is not accepting input —
such as during disc operations — is
stored in a buffer and produced when
the computer is ready for it. The
workings of the routine are too
complicated to go into here, but the basic
method used is to replace the rom
keyboard interrupt handler with a
revised version which stores each
keypress into a 112 character buffer.

A vertical blank routine pulls the
characters back every fifteenth of a
second as fast as the computer can
cope with them.

10 DATA 184,165,21,144,0,2,165,6,144,9,
2,165,6,185,185,6,2,226,226,96,17
3,9,210,205,242,2,206,5,173,241,2,206
20 DATA 62,173,9,210,281,159,280,18,17
1,295,7,72,255,141,255,3,176,45,141,24
2,2,135,7,213,29,210,174,145,6,236,142
30 DATA 5,248,29,157,146,5,238,143,6,11
73,145,6,281,112,288,5,169,145,6
104,170,169,3,141,241,2,169,0,133,77
40 DATA 169,48,41,43,2,184,64,173,242
2,281,255,288,24,174,142,6,232,224,13
2,286,2,162,8,226,142,6,248,5,187,144
50 FOR A=1556 TO 1679:READ B:POKE A,B:
NEXT 0:A=050:1536:NEW 10560,8,141,252
,2,142,142,6,76,95,226,6,6,6,0,10,11

COLOUR QUEST
from DONALD ASHTON

THIS plays a game somewhat similar
to the Simon electronic toy which you
can buy in the shops. It is a memory
test: You try to remember and repeat
a sequence of randomly chosen
colours.

The computer will display a short
sequence to start with, and you have
to echo it — typing R for red, G for
green, B for blue and Y for yellow. If
you're successful a longer sequence is
played, and you have to keep going
as long as possible. When you finally
give an answer wrong you will be
given the correct sequence and your
score. The high-score will be
maintained for you between games.

AS controls the colours POKEed
into location 710, the Ascii values of
the characters being the colour
register values. CS contains the
random colour sequence used.
Locations 204 and 205 are free
addresses which are used to keep
track of the current score and high
score values. If you're something of a
memory genius then the game's
difficulty can be altered by changing
the delay value used in the X loop in
line 30.

10 POKE 752,1:FOR X=1 TO 100:NEXT X?
CHR$(125):DIM 85(4),85(5),85(6),85(7)
:85("HOLD")=85("RBG")=A:PEEK(204)
20 C=PEEK(205):FOR D=0 TO C+3:INT(44)
RND$(0,13):CS(5,0),D$:85(E,0):E$=RND$(5,85(8),
E,0):NEXT 0:D=POKE D:C
30 POKE 728,400:D=0:FOR X=1 TO 500:NEXT X
:POKE 400,D:FOR Z=1 TO 100:NEXT Z:NEXT
:OPEN MI.4,0,"E":"ENTER NOW";
40 FOR D=0 TO C+3:GET MI.(D):CHR$(D)
50 IF CHR$(C):=CHR$(D) THEN NEXT 0:POKE 20
5,C+1:CHR$(252):RUN
50 P<"":?"";CHR$(D):CHR$(D)
60 ?"Score=":C,"";
70:POKE 265,8:IF C THEN POKE 265,10

GRAPHICS 8 INVERTER
from KEVIN JOHNSTON

THIS solves a problem that a number
of people have been writing in to
Mailbag about — that of reversing a
Graphics 8 screen for dumping to a
printer.

Not only can it reverse — or invert
the whole screen, but also portions of
it. In order to demonstrate its use we
have printed some extra lines which
print a pattern on the screen and then
invert portions of it. That's why we've
listed a five-liner with more than five
lines.

The first five lines are the routine
itself. To use it, simply set the four
control values and then GOSUB 1 or
GOTO 1. The X and Y values tell the
routine where to start the invert
operation (with X in character positions,
not pixel positions). W is the width of
the section to invert, and D the depth.

X and W may have values between
0 and 39, and Y and D between 0 and
191 (assuming no text window). To
invert a normal Graphics 8 screen you
would use X=0, Y=0, W=39,
D=159.

You can achieve special effects
during the conversion by changing
the value 255 in line 2 — any value
between 0 and 255 is acceptable.
DATA CREATOR from JEFF DAVIS

This useful routine will read a predetermined number of memory locations and force-write their values into DATA statements.

To give you an idea as to the efficiency of the program, the whole of Page 6 will be converted to DATA in under 15 seconds. 5000 memory locations can be handled in under 4 minutes - considerably faster than typing them in by hand! This will appeal primarily to assembler programmers wishing to write machine code routines to be accessed from Basic. After assembling the object code can be saved to disc using the DOS K option. Afterwards re-boot Dos with Basic present and use the L option to load the object code back into memory. Finally, run the Data Creator to place your code into DATA statements for your Basic programs.

The program works by firstly requesting you to enter the starting line number, which should be greater than five to avoid overwriting. Next you enter the start and end addresses of the machine code program you want converting. The routine then PEEKs the memory locations within that range, eight at a time, and arranges them into DATA lines prefixed with a line number. The over popular Return Key Mode is used to enter each line straight into the Basic program as it runs.

Since the program creates eight values per line, the final line may contain a few extra numbers that were not required. These may be ignored or removed depending on your preference. Once the routine has finished, delete lines one to five and SAVE or LIST it to tape or disc.

1. GRAPHICS 0: "ENTER START LINE";:INP
2. UTI L: "ENTER START ADDRESS";:INP
3. MEMLOC: "ENTER END ADDRESS";:INP
4. MEMEND: "ENTER END ADDRESS";:INP
5. IF Z<> THEN "'";
6. MEMLOC+1:NEXT Z?: "CONT";
7. POS:ION 2,8:POKE 842,13:STOP ;POKE 842,12
8. IF MEMLOC )MEM THEN "CHR$(255):POKE 842,121:1ST"; : ? ; : "Your Data statements are Completed...":END
9. GO10 2

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Pod power

Program: Thrust
Price: £1.99
Supplier: Firebird, Wellington House, Upper St Martin's Lane, London, WC2H 9DL.
Tel: 01-379 6755

THRUST is a little like a combination of the Lunar Lander and Asteroids games of old. You control a triangular shaped craft which can be rotated clockwise and anticlockwise and thrust forward by firing its rockets.

Controlling the craft from the keyboard is tricky at first - you have to know just when to fire the rockets to overcome inertia - but it soon becomes easier with practice.

The idea is to steal Klystron pods which can be captured with a tractor beam. To do this you must position the ship just above a pod, hover, activate the tractor beam (by pressing the Option key) and then thrust away with the pod in tow.

The programmer must have a degree in physics because the pod hangs beneath the ship like a pendulum and swings realistically from side to side as you manœuvre the craft through the tortuous tunnels.

Should the swing become uncontrollable you will surely be dragged into a cavern wall.

You defend yourself against enemy fire by shooting at and disabling their power plant, using your shields for extra protection.

Fuel can be taken aboard using the tractor beam, and bonus points can be gained by both capturing a pod and sending the power plant's reactor into a critical phase.

Success at the first level leads you into more dangerous zones where you may encounter reverse gravity or worse.

Thrust was first released on the Commodore 64, and shot immediately to number one in the charts.

However the Atari version is a disappointment. The graphics are fairly crude, the sound is only average and there is no joystick option.

Despite that, the game does offer a good challenge and has a certain addictive quality.

Bob Chappell

Sound .................................. 6
Graphics ................................. 6
Playability ............................... 7
Value for money ....................... 7
Overall ................................. 8

Programming aids

Products: XOS/80 Column chip (£29.95)
XOS/Ultimon chip (£49.95)
Tripler board (£22.95)
Supplier: Computer Support, 26 Seacourt Road, Abbey Wood, London SE2 9UW.
Tel: 01-311 7339

IN the States you can buy almost any sort of hardware or software add-ons you require for your 8 bit Atari, but there has long been a lack of such support in the UK.

Now London based company Computer Support can fill that gap. XOS is its modified operating system, and forms the basis of many of its products.

It will allow most old 400/800 programs to run correctly on an XL or XE because it basically converts the new OS back into a reasonable facsimile of the older version and uses the extra 4k now available to good effect.

It includes a whole host of extra features such as 820 baud cassette saves and holding the bank select status upon reset.

Most of its features are simply window dressing, but it really comes into its own when linked with other programs - such as the 80 column version and Ultimon.

The 80 column XOS chip allows you to select 80 column mode simply by holding down the Select key on power-up.

The 80 column display is based on a Graphics 8 screen in black and white and is reasonably readable on a cheap monitor. On a TV, though, you could end up with eye strain.

But be warned - the 80 column mode may not work with your particular word processor or database.

Ultimon is another option available with XOS and it provides a permanently resident machine code monitor. This can be called from Basic, or by holding down Select and pressing the Reset key. The display shows you the current status of the processor, plus the contents of the current program counter and a section of memory.

It has the facility to view, disassemble and alter memory, load and save given disc sectors and run programs.

There is no breakpoint facility, but there is a very limited single step mode. This should be very useful to the machine code programmer who wants to check and modify his code before running it.

The 130XE version uses the extra banks to avoid corrupting the main screen display and zero page locations, which is a major failing of the older versions.

You could consider using the Computer Support tripler board to allow you to put both the original OS and two new chips into your machine and switch them in and out as required.

This is very useful when you bear in mind that some games will not run at all with an XOS chip in place.

These chips are of limited appeal to the straightforward games player, but if you are a programming enthusiast they could be right up your street - if a little on the expensive side.

André Willey

November 1985  ATARI USER 17
Running repairs

Program: War-Copter
Price: £7.95 (cassette), £9.95 (disc)
Supplier: Red Rat, Fennel Street, Manchester, M4 3DU.
Tel: 061-835 1055

TWO nations separated by sea are in conflict. One decides to attack, sending out warships and missiles against the other.

You are the defender of the attacked nation. Flying a helicopter, you must seek out the enemy ships and destroy them before they zap you.

The view is above, with the land and sea stretching and scrolling over several screens. Your copter has some ammunition but to get more you must visit a factory on the far side of the island.

The ammunition is produced from raw materials gained from the wreckage of enemy ships. You destroy ships to get ammunition so you can go out and destroy more ships, and so on.

To gather the raw material you land your chopper on a sinking ship and ferry the wreckage to the factory.

The more debris you carry the more fuel you use up. Further supplies of fuel can be obtained by landing on either of two fuel dumps, though they may be damaged by enemy fire.

Repairs to the dumps and your war-copter can be made by calling for aid from Repair Control which may in turn be damaged but can even repair itself. All very circular isn't it?

Repairs are made at a speed commensurate with the amount of damage. If Repair Control is destroyed, the game is over.

The scrolling of the scenery as your copter flies around is efficiently done.

Moving the joystick left or right rotates the copter while pushing forward sends it on its way. Pulling back launches a missile and hitting the button fires bullets.

A command bar at the top of the screen is activated by pressing the Select and Start keys. This bar lets you land, take off, display fuel and load carried, call the repair ship, drop debris and pick up ammo from the factory.

Graphics and sound are fairly simple and, although there are one or two new elements, the game is hardly original. Even so, it's a reasonable enough attempt.

Bob Chappell

Pre-emptive strike

Program: Raid Over Moscow
Price: £9.95
Supplier: US Gold, Unit 2-3, Hollord Way, Holford, Birmingham, BR 7AQ.
Tel: 021-356 3388

LIKE the successful Beach-Head programs, Raid Over Moscow is a multi-scenario game. One of the good things about it is that the entire game sits in memory - none of that painful multi-loading needed here.

Another welcome feature is the demo. This not only lets you see parts of the game you might otherwise never get to, but also allows you to play out any of those scenes simply by taking over control during the demo.

As a squadron commander of the US defence space station, it is your task to stop a nuclear attack by knocking out Russian launch sites and then leading an assault on the Soviet Defence Centre in Moscow.

Not exactly in the best possible taste, would you say? Best forget the blurb and just enjoy the game as an arcade shoot-em-up.

Game 1 is probably the toughest. You must fly as many vertical-takeoff fighter planes out of the station hangar as possible.

Due to the plane's semi-weightlessness and having to control three thrusters as well as open the hangar doors, this part is far from a doodle.

In game 2, you fly your craft at low level from left to right across the screen. You must shoot enemy craft and missiles and avoid being shot down yourself.

You're among the missile silos in game 3. Here you're facing forwards and must knock out the four silos by launching rockets through their window silts.

Due to the plane's semi-weightlessness and having to control three thrusters as well as open the hangar doors, this part is far from a doodle.

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You're among the missile silos in game 3. Here you're facing forwards and must knock out the four silos by launching rockets through their window silts.

Game 4 sets you in Moscow, hiding in a trench facing the defence centre. Armed with a rocket launcher - a silent one, to boot! - you must hit the towers of the building and the soldiers who are taking pot shots at you from behind two walls.

The final game places you inside the reactor room where you hurl disc grenades at a moving maintenance robot. (I told you to forget the silly plot.)

The graphics and sound are not particularly exciting but with three skill levels and five different shoot-em-up games, you certainly get a decent run for your money.

Douglas Woofer

18 ATARI USER November 1986
Three in one

Program: Greatest Hits
Volume: 1
Price: £5.95 (cassette)
£11.95 (disc)
Supplier: Databyte, Suite 31A
Grove Terrace, Highgate
Road, London, NW6 1PL.
Tel: 01-482 1755

THIS is probably one of the best collections released. True, there are only three games—Astro Chase, Bristles and Flip and Flop—but there's not a dud among them.

Astro Chase is a good old fashioned space shoot-em-up, using graphics and sound to great effect. Up aloft and chasing round the planets in a flying saucer you destroy mines that are closing in on mother Earth.

Disturbing you from this mission of mercy are a fleet of attack fighters. There are 34 levels to progress through and you can start on any one you like.

Your weaponry fires in eight different directions and you can hoist shields for short periods for added protection. Bonus saucers are gained as you proceed through the game.

Should you lose all your saucers, the mission terminates with the spectacular explosion of Earth.

The smooth scrolling action, multi-levels, music and other sound effects all add up to a classic game.

Flip and Flop is a sort of Q-Bert with a difference. The idea is to guide a kangaroo and a monkey over a series of tiles suspended in mid-air.

Many tiles are marked in a special way and all of these must be touched—they then change colour before the clock runs out.

When the kangaroo is on, it hops above the tiles. When it's the monkey's turn, it swings underneath the tiles—and that is really disorrientating.

Apart from falling off, other hazards include sticky tiles and a pursuing zoo keeper. There are 36 levels.

Finally, Bristles is a game for up to four players in which you endeavour to paint all the rooms in eight buildings. Six skill levels are available.

A time limit, elevators, ladders, brushes, rollers, flying buckets, dumb buckets, safe rooms, Brenda the Bra, the Bucket Chucker and steam pipes are just some of the elements in this fast moving game.

Overall, an excellent compendium in which each game offers a wealth of entertainment. Every player should have this in his or her collection.

Bob Chappell

Fast and furious

Program: Sun Star
Price: £9.95 (cassette)
£14.95 (disc)
Supplier: CRL, 9 Kings Yard,
Carpenter's Road, London
E15 2HD.
Tel: 01-533 2318

GAMES that are able to convey the impression of high speed and the pulses of even the most jaded player. And Sun Star can certainly shift.

Sun Star is your space vehicle, the screen your cockpit. But you won't be flying through outer space—no twinkling stars and flashing meteors in this one.

Instead, you skim over the surface of a massive grid, moving as slowly or as fast as you like.

The main part of the screen is taken up with your forward view. Long and short range scanners at the sides assist navigation.

The idea is to zoom around the grid trying to avoid lumping into the blue grid walls, yellow obstruction pulses and red energy pulses. Contact with any of them puts a drain on your limited energy.

You are looking for white disrupter pulses. Repeated firing at one causes it to get browned off and move elsewhere on the grid, leaving behind a moving green energy crystal. You have to pass above this to grab it before it disappears.

Having collected 10 greenies, you head for a revolving warp gate and blast a laser bolt into the orange hyper warp cell in order to warp to the next grid. The plot is no dather than most and a good excuse for doing lots of zapping and zooming around.

Movement is really fast when you let the throttle out on your machine and the feeling of motion is quite exhilarating.

The graphics are pretty basic—all you have here, when you get down to it, are loads of squares, some with different colours. But fancy graphics don't always make the best arcade games.

The qualities of Sun Star lie in the chase against time theme, the high speed and the furious but atmospheric sound effects. Fast, noisy and simple—that'll do for me.

Douglas Woller

November 1986 ATARI USER 19
The video way to Atari graphics

Fingers all thumbs? André Willey finds the answer for those who cannot draw well.

The package consists of a small black box which plugs into the first and second joystick ports, a disc containing the software and a small manual.

Plug the lead from your video recorder or camera into the black box via a phono socket, and you are ready to go.

After booting the disc you are confronted with a multitude of options on the main menu.

First you adjust the sync control by selecting the first option and turning the knob until the screen lets you know the picture is in sync.

The manual then tells you to adjust the brightness. I found that this should be set to different positions for the different types of capture, but more of that later.

Once set up you can start to digitise your own pictures.

The modes available each took a different length of time to complete the process, possibly because the unit does a complete scan of the picture for each grey level required.

The more grey levels you want, the longer it takes.

Normal capture is the quickest at six seconds, and this gives you a Graphics 8 screen with a high contrast image of dark and light pixels.

There are two other Graphics 8 modes – four level and eight level – which take about 25 and 50 seconds respectively and give a shaded texture to the picture.

The Atari high resolution

The pictures above were digitised with a Canon VC30 video camera. Two from black and white photographs in Graphics 9, and the Dalek in Normal Mode from a 12n model kit.
colour modes have not been forgotten, with options for both a high and low contrast capture on to a Graphics 15 screen.

They use the four colours available as black, white and two grey tones, and take about 18 seconds to complete.

These screens are compatible with the Micropainter format, so you can enhance them later with the Touch Tablet or any similar package.

The final mode allows you to capture a full Graphics 9 image, with 15 grey levels, but at the expense of horizontal resolution.

This mode took more than a minute and a half to complete, but was usually worth the wait.

The other menu options allow you to load and save pictures and obtain a disc directory.

A nice feature was the inclusion of help screens for every option, which could prove very useful to the beginner.

The disc also has a number of demonstration pictures for each of the modes - some of which we've printed to allow you to compare the same image digitised in different ways.

I found the best results were most often achieved by using the Graphics 9 capture, but a little experimentation could yield good results in most modes.

The brightness requirements seemed a little odd - for the same video image, the more grey levels required, the darker the brightness control needed to be.

This was a little annoying when trying to find which mode worked best with which images.

The results were fine when using a video camera on a tripod, but most video recorders do not produce a good enough freeze-frame to allow you to capture a good image from tape.

This was most noticeable in the Graphics 9 mode because this takes longer to complete.

Computereyes performed well, and presented some very passable results as you'll see from the illustrations. If you want to get seriously into graphics on your 8 bit Atari you should take a good look at this product.

Product: Computereyes Price: £119 (disc only)
Supplier: Stern Computing, 3 Blackness Avenue, Dundee, DD2 1ER.
Tel: 0382 65113

The Computereyes main menu

Graphics 8: 8 Level Mode
Graphics 15: High Contrast
Graphics 9
Here's the key to programming musical games

Part 6 of LEN GOLDING's series on using your Atari to control devices

THIS month's project is a simple keyboard which can be used for playing live music — or as a programming aid to help you add music to your Basic games or educational programs. It has a two-octave range (E to E) which is adequate for most popular tunes — and it's very easy to build.

We've opted for a stylus system, which means you can play only one note at a time but this keeps the cost down and simplifies construction and programming.

A diode matrix decodes the signal from each key into a five-bit binary word which is sent to pins 1, 2, 3, 4 and 6 of the joystick port. Last month's project explained the technique in some detail, so we won't go into it again.

A short driver program converts the five bits into a decimal number between 0 and 25, which can then be used in any music program you care to write.

Figure 1 shows the printed circuit board pattern, reduced in size so that it will fit on to the magazine page. Its actual dimensions are 230mm x 85mm, so you'll need to enlarge it if you want to make your own PCB. Alternatively you can buy the professionally produced version from RHG design.

Construction could hardly be simpler. Figure II shows the board layout - make sure all the diodes are soldered with their black or coloured bands towards the keys. A bending jig — see Figure III — will save time and ensure that the diodes all slot neatly into place.

Although type 1N914 is specified, almost any silicon signal diode will

---

Figure 1: PCB foil pattern
work and you may be able to pick up a job lot fairly cheaply — Tandy stores sell a pack of 50 for about £2.50.

The stylus is made from a standard test probe and is connected by a flexible lead to the point marked stylus on the PCB. The terminal marked NC is not connected to anything.

When everything is soldered together, fit the joystick lead and stylus using a cable clamp or P clip to take the strain. Plug the gadget into Port 1 and run Program I. You should see a zero displayed on the screen.

Touch the stylus to the lower 'E' pad at the left-hand side of the keyboard and the number should change to one. The next key (F) should produce two, and so on up to the top E, which should return 25.

If any are at fault, make sure that all the diodes connected to the offending key are wired the right way round. Also check that the solder has correctly joined each component lead to its intended track, and that no blobs of solder have bridged the gaps between tracks.

Mounting the PCB in a case requires a bit of care. The keys must be supported along their length, and you'll want to hide the solder blobs somehow. The prototype case was made entirely from a 6ft length of 25mm x 9mm planed Ramin. This size can often be found among the hardwood mouldings and beadings in large DIY stores.

Programming is straightforward. Four of the five bits are returned at address 632, while the fifth appears at address 644. Our software must

---

**Figure II**: Layout showing the position of the diodes on the reverse of the PCB.
combine these into a single five-bit word, and store the result as a decimal number from 0 to 25. This can be accomplished by Program I, but it's more elegant and faster to use a short machine code routine.

Program II shows one way of doing this. Lines 10 to 40 contain a machine code routine (Program IV gives the source listing) which decodes the keyboard's output fifty times a second during the vertical blanking interval. The result is stored in address 1791, and can range from 0 (no key pressed) to 25 (top E). Lines 50 to 70 set up a matrix P which contains all the pitch values in ascending order.

Line 80 generates the sound, using the number held in 1791 as an index into the matrix to retrieve the appropriate pitch value. For example, key 6 will select matrix entry number 6 and this value (144), used in a SOUND statement, produces the note A.

The program also resets address 77 to 0 every time a key is touched. This prevents the screen colour rotation which would otherwise occur after about ten minutes.

Program III shows one way of recording and playing back your tunes. Add these lines to Program II, deleting the existing line 80. This program waits for your first note, then stores its pitch and duration in two matrices named PITCH and TIME respectively.

Duration is calculated by using the real-time clock at address 20. This address increments automatically every fifth of a second, so it's easy to time an event by checking the before and after values. In Program III the counter is set to 0 whenever you touch a note, and read again when you move the stylus. The count value at that moment is stored in matrix TIME and indicates the note's

---

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---

24 ATARI USER November 1986
duration in fiftieths of a second.

When you've finished your live performance, press any key on the console keyboard — the spacebar is convenient — and you can then ask for an action replay, or start another tune.

The replay option lets you increase or decrease the playback speed by up to ten times — a tempo of 1 gives roughly the same speed as the live performance. 2 is twice as fast, 0.5 is half as fast, and so on. Try picking out the Flight of the Bumble Bee at dirge speed then playing it back at warp factor ten...

Replay is a simple reversal of the recording process. Pitch and duration values are read from their respective matrices, then PITCH is used directly in a SOUND statement (line 200) and TIME is used in conjunction with the tempo value to control a delay loop at line 210.

That's all for this time. Next month we'll describe a four-channel, low voltage model motor controller.

The parts for the keyboard are available from Maplin Electronic Supplies, PO Box 3, Rayleigh, Essex SS6 8LR. Tel: 0702 552911.

A joystick extension lead is available from Tandy stores (code 276-1978) or from large computer shops.

The printed circuit board (order code DBP3) is available from: R.H. Design, 137 Stonefall Avenue, Harrogate, North Yorkshire HG2 7NS. Tel: 0423 508359.

Price £5.95 including VAT and postage.

Program I: Test routine for the musical keyboard

10 FOR X=0 TO 35:READ D:POKE 17551H,D:
20 NEXT X:REM Vertical Blank Routine
30 DATA 104,162,6,168,238,165,7,32,9,2, 228,96,172,127,2,10,10,18,18,24,109 -
30 DATA 128,7,73,31,141,255,6,248,4,16
50,X=132,76,79,98,228
60 K=USK(17553):REM key values 0 to 255
70 IF K=132 THEN 140
80 G=USK(17573):REM key values 0 to 255
90 REM automatically returned at address
100 1791
110 IF DIM P(255):FOR K=0 TO 25:READ D:P(255)
120 :NEXT X:REM Pitch values
130 DATA 0,152,182,173,162,153,144,126, 128,121,140,182
140 DATA 56,91,85,81,76,72,60,54,60,57, 53,50,47
150 REM Pitch(100), Time(100):REM maximu
160 m number of notes allowed — change if
170 IF necessary.
180 REM PRINT(125);"START WHEN READY"
190 100 K=POKE 764,255
200 IF PEQK(1753)=3 THEN 110:REM wait for
210 first note
220 :POKE 28,8:KEY=P(255):REM start
230 timer and read key value
240 IF P(255)=K THEN 250:REM get pitch valu
250 e for that key
260 IF POKE 764,160:POKE 108,0:REM generate t
270 he appropriate tone
280 IF P(255) AND 255 THEN 764,255
290 IF X=108:REM branch if any keyboard
300 :NEXT:REM wait until value of KEY changes
310 178 TIME(99):PEEK(99):X=16GOTO 120:RE
320 M store duration value and return for
330 next note
340 IF X=108:REM branch if any keyboard
350 NEXT X:REM set start replay
360 IF X=108:REM branch if any keyboard
370 PRINT "Press SELECT to replay";
380 IF X=108:REM branch if any keyboard
390 PRINT "Press START to start again"
400 IF X=108:REM branch if any keyboard
410 PRINT:GOTO 764:REM then ?"INPUT TEM
420 P0":INPUT W:GOTO 190

Program II: Simple note playing program

18 FOR X=0 TO 35:READ D:POKE 17551H,D:
20 NEXT X:REM Vertical Blank Routine
30 DATA 104,162,6,168,238,165,7,32,9,2, 228,96,172,127,2,10,10,18,18,24,109 -
30 DATA 128,7,73,31,141,255,6,248,4,16
50,X=132,76,79,98,228
60 K=USK(17553):REM key values 0 to 255
70 IF K=132 THEN 140
80 G=USK(17573):REM key values 0 to 255
90 REM automatically returned at address
100 1791
110 IF DIM P(255):FOR K=0 TO 25:READ D:P(255)
120 :NEXT X:REM Pitch values
130 DATA 0,152,182,173,162,153,144,126, 128,121,140,182
140 DATA 56,91,85,81,76,72,60,54,60,57, 53,50,47
150 REM Pitch(100), Time(100):REM maximu
160 m number of notes allowed — change if
170 IF necessary.
180 REM PRINT(125);"START WHEN READY"
190 100 K=POKE 764,255
200 IF PEQK(1753)=3 THEN 110:REM wait for
210 first note
220 :POKE 28,8:KEY=P(255):REM start
230 timer and read key value
240 IF P(255)=K THEN 250:REM get pitch valu
250 e for that key
260 IF POKE 764,160:POKE 108,0:REM generate t
270 he appropriate tone
280 IF P(255) AND 255 THEN 764,255
290 IF X=108:REM branch if any keyboard
300 :NEXT:REM wait until value of KEY changes
310 178 TIME(99):PEEK(99):X=16GOTO 120:RE
320 M store duration value and return for
330 next note
340 IF X=108:REM branch if any keyboard
350 NEXT X:REM set start replay
360 IF X=108:REM branch if any keyboard
370 PRINT "Press SELECT to replay";
380 IF X=108:REM branch if any keyboard
390 PRINT "Press START to start again"
400 IF X=108:REM branch if any keyboard
410 PRINT:GOTO 764:REM then ?"INPUT TEM
420 P0":INPUT W:GOTO 190

Program III: Additional lines for the music recorder — enter these after typing in Program II

Program IV: Source listing of Vertical Blank routine
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This is rather different to the usual arcade and shoot-'em-up games. It is a challenge of wits, not joystick dexterity.

The micro will select a random pattern of blocks on a three-by-three grid. Your task is to rearrange the blocks so that they are all illuminated, bar the centre one. It is simple when you get the hang of it — but then so was the Rubik Cube!

You control the program with keys 1 to 9. Each will invert a section of the grid, as shown in Figure 1. For example, if you press 5 every square is affected — each dark square will light and each illuminated square will go blank.

On the Novice level you have as long as you want to complete your task, so it is a good idea to get some practice here.

On Advanced level you have a time limit of 20 seconds to finish — which isn't too hard once you've got the hang of the controls.

Genius level is the hardest of all — you have only 15 seconds per game, and the Atari will occasionally throw in a move of its own to throw you off the scent.

The program was written in machine code with the assembler/editor cartridge, but we have printed a version which will allow everyone to use it.

After typing in the listing check it out with Get-It-Right! This is most important because the entire basic program is simply a set of DATA statements containing the machine code.

If you have made a mistake your micro will almost certainly crash as soon as you type RUN, and you'll have no hope of recovering your hard work. Make sure that you have not missed typing a number — or even worse, a whole line.

Once you're sure you've typed it correctly, save a copy and then type RUN. The screen will go blank while the machine code is POKEd into memory, and after about 30 seconds you'll be greeted by the main title screen.

At this stage you can use the Select key to change the level of play, or the Start key to begin. You may press Option at any time to return to this screen.

For those interested in machine code programming we have included the full source listing on the monthly disc and cassette, and it will also be available on MicroLink. Unfortunately, space restrictions mean that we can not print it in full here.

By MICHAEL LEVIEN

Novel November 1985 ATARI USER 27
2400 DATA 12,141,33,71,169,193,145
2490 DATA 213,165,213,24,185,20,133
2580 DATA 213,165,214,105,0,122,214
2510 DATA 296,73,71,173,73,71,200
2520 DATA 231,152,24,165,4,160,206
2530 DATA 32,71,173,32,71,280,206
2540 DATA 96,72,162,15,173,71,69
2550 DATA 141,299,65,173,295,59,141
2560 DATA 10,712,141,23,200,24,195
2570 DATA 2,141,299,65,282,16,238
2580 DATA 162,15,173,295,69,141,10
2590 DATA 212,141,23,200,56,233,2
2600 DATA 200,59,173,200,69,280,286
2610 DATA 200,200,173,200,69,280,286
2620 DATA 169,3,141,200,69,233,210
2630 DATA 97,109,10,141,23,200,104
2640 DATA 64,112,112,112,71,34,71
2650 DATA 5,6,5,6,5,5,5
2660 DATA 5,6,5,6,5,5,5
2670 DATA 5,6,5,6,5,6,5,5
2680 DATA 117,67,0,0,105,100
2690 DATA 100,117,399,100,110,97,116
2700 DATA 100,117,399,100,110,97,116
2710 DATA 5,6,5,6,5,0,121
2720 DATA 5,6,5,6,5,0,121
2730 DATA 5,6,5,6,5,0,121
2740 DATA 5,6,5,6,5,0,121
2750 DATA 5,6,5,6,5,0,121
2760 DATA 5,6,5,6,5,0,121
2770 DATA 5,6,5,6,5,0,121
2780 DATA 69,65,70,0,0,0,0
2790 DATA 0,0,0,110,111,116,105
2800 DATA 97,101,0,0,0,0,0
2810 DATA 0,0,0,0,0,0,0
2820 DATA 0,97,100,118,97,116,99
2830 DATA 0,101,0,0,0,0,0
2840 DATA 0,0,0,0,0,0,0
2850 DATA 0,103,101,118,105,117,115
2860 DATA 0,0,0,0,0,0,0
2870 DATA 216,120,56,24,130,40,152
2880 DATA 216,120,56,24,130,40,152
2890 DATA 216,120,56,24,130,40,152
2900 DATA 216,120,56,24,130,40,152
2910 DATA 216,120,56,24,130,40,152
2920 DATA 96,121,121,0,0,0
2930 DATA 0,0,0,0,0,0,261
2940 DATA 245,245,241,160,144,9,9
2950 DATA 62,64,56,68,70,0,103
2960 DATA 112,121,120,129,144,157,166
2970 DATA 176,70,70,70,70,70,70
2980 DATA 70,70,70,70,70,70,70
2990 DATA 21,22,48,41,42,4
3000 DATA 6,24,25,26,44,45,46
3010 DATA 9,10,20,25,30,30,46
3020 DATA 49,59,68,81,120,101
3030 DATA 102,120,121,122,84,85,86
3040 DATA 104,105,106,124,125,126,86
3050 DATA 97,100,105,100,110,120,129
3060 DATA 130,160,161,162,160,161,162
3070 DATA 200,201,202,164,165,166,164

3880 DATA 105,186,284,285,286,158,169
3990 DATA 170,186,189,199,280,289,210
4100 DATA 13,10,26,24,29,27,51
4110 DATA 51,48,211,216,220,225,229
4120 DATA 239,241,244,252,78,70,70
4130 DATA 78,70,70,70,70,70,70
4140 DATA 1,3,4,255,0,1,2
4150 DATA 255,1,2,4,5,255,0
4160 DATA 1,6,255,0,1,2,3
4170 DATA 4,5,6,7,8,255,2
4180 DATA 5,8,255,3,4,5,7
4190 DATA 255,6,7,8,255,4,5
4200 DATA 7,8,255,52,41,45,37
4210 DATA 243,284,175,144,180,128,96
4220 DATA 81,68,68,58,42,47,40
4230 DATA 27,0,0,0,0,0,0
4240 DATA 0,0,0,0,0,0,0
4250 DATA 0,0,0,0,0,0,0
4260 DATA 117,109,105,118,97,116,105
4270 DATA 111,110,115,0,0,0,0,0

Tired of typing? Take advantage of our finger-saving offer on Page 49.
TO conclude this series on the player missile graphics system, we will now take a more detailed look at playfields, the backgrounds that all the action takes place on.

The player missile system recognises 4 playfields — numbered 0 to 3, which means that if you use a graphic mode with more than 4 colours things can get tricky. The system normally works with playfields that are set by colour registers 708 to 712, and drawn by the use of COLOR commands 0 to 3.

If, for example, you enter graphics mode 12, then only 4 out of the 5 colours in this mode can be used as playfields for the purposes of the player missile system. The fifth colour can still be displayed on the screen, but cannot be involved in any collision detecting routines.

Using collision detection and priority on modes with less than 4 colours is fairly straightforward — though of course the number of playfields is restricted. There are two exceptions to this rule — the GTIA graphics modes 9 and 11 cannot normally be used to detect playfield collisions.

Graphics mode 10 is very strange. This is a 9 colour mode, but only colours set by registers 704 to 707 (and not 708 to 712 as in other modes) are recognised as playfields. Registers 704 to 707 also control the player and missile colours, so players and missiles will take on the same colour as the corresponding playfield number.

To help you design playfields for inclusion in your player missile programs, this month's program is a utility which can be used to draw playfields in graphic modes 3, 5, 7 or 15 — all 4 colour/4 playfield modes. The playfield designs can then be saved to disc or cassette ready to be loaded back into your programs.

Playfield Designer is a much improved version of the Computer Canvas program from October 1985 issue of Atari User. A display list interrupt routine (lines 1030 to 1120) has been included so that the text window at the bottom of the screen will not change colour when the colour registers are altered. Extra commands have also been added.

When you run the program it first asks you to choose the resolution of the graphics screen — 40 x 20 pixels (Mode 3), 80 x 40 pixels (Mode 5), 160 x 80 pixels (Mode 7) or 160 x 160 pixels (Mode 15).

After a few seconds delay for the initialisation routines, a cross appears at the centre of the screen. This is a player and acts as a cursor.

Commands are accessed by pressing the key indicated in inverse letters in the text window. A key prefixed by S/ means that the appropriate key must be pressed at the same time as the Shift key is held down.

To exit from some commands (such as Draw or Fill), press the joystick fire button. The full details are given in the accompanying panel.

At the bottom of the text window the current X and Y coordinates of the cursor are displayed (X is the horizontal coordinate, Y the vertical). This is useful for working out routines for use in Basic programs that involve the DRAWTO and PLOT statements. By taking note of the X and Y coordinates, the data for these Basic statements can be calculated.

The load and save routines contained in Playfield Designer can

Color (C) This changes the colour of the current playfield. Colours are numbered from 0 to 15 as shown in Figure 1. Brightness must be within the range 0 to 14, even numbers only — an odd value will default to the even number 1 below. Press Return after entering in the colour and brightness values.

Draw (D) A pixel is plotted beneath the cursor. Move the cursor around the screen by means of a joystick in order to draw a design.

Erase (E) Erases any pixel that is beneath the cursor.

Fill (F) Used to fill in enclosed areas. A line is drawn from beneath the cursor and to its right until it touches another pixel. By moving the cursor around the inside of a shape this command acts as a paintbrush to fill in the area. If the Fill command is used outside of an enclosed area then the line will wraparound the screen. This can be used, for example, to colour the whole width of a section of the screen.

Line (L) Press the joystick fire button and a pixel will be plotted beneath the cursor. This is the beginning of the line. Move the cursor to another part of the screen and press the fire button again and a line will be drawn from the beginning point to the cursor.

Change (0 to 3) Keys 0 to 3 change the playfield which the program operates on. Playfield 0 is the same colour as the background so, unless you are drawing on top of another playfield, no pixels will be visible on the screen. You can change the colour of Playfield 0 to alter the background colour.

Circle (O) When key O is pressed a pixel is plotted beneath the cursor which is the centre of the circle. Move the cursor either horizontally or vertically (but not diagonally) to another part of the screen and press the fire button. The distance between the current cursor position and the centre of the circle is the radius.
be easily adapted for use in your own programs to enable you to save or load graphic screens from within a Basic program. You may need to renumber them to fit into your program.

The save routine is contained in lines 1500 to 1610 and the load routine in lines 1730 to 1820. Both access the subroutine found in lines 1830 to 1980.

Lines 1830 to 1950 calculate the length of the screen data file according to which graphics mode you are using. Although Playfield Designer operates in modes 3, 5, 7 and 15 only, the listing calculates these lengths for all 16 Atari graphics modes to enable you to adapt it for use with any screen.

Obviously, if you use this routine in a program that loads a screen or screens in one graphics mode only, then you could delete all the lines between 1830 and 1950 except the

Disc (Shift+D) Disc uses the same plotting routine as Circle, but adds a fill command to give a solid circle or disc.
Wipe (W) Erases the whole of the screen display and re-initialises the program.
Save (Shift+S) Saves the screen. The program asks if you want to save to cassette or disc and then writes the appropriate data to the chosen device. If using cassette with Graphics Mode 15 (160 x 160 pixels) then, because of the large amount of memory involved, this will take about six minutes to save or load.
Load (Shift+L) Loads previously saved screen area.

Figure:1: Numbers for use in the Colour option

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<td>Light Orange (Gold)</td>
<td>1</td>
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<td>Red Orange</td>
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<td>4</td>
</tr>
<tr>
<td>Purple</td>
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<tr>
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<td>8</td>
</tr>
<tr>
<td>Blue</td>
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<td>7</td>
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<td>11</td>
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<tr>
<td>Orange</td>
<td>14</td>
</tr>
<tr>
<td>Light Orange</td>
<td>15</td>
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</table>

One appropriate to the mode you are using.

Lines 1960 to 1970 contain a short 6 byte machine code routine that is stored in the variable IOS. This is used during the save and load routines to access the IOCB system that takes care of reading and writing the data file.

If you are using a cassette then the following alterations need to be made to the routines as listed if you are to copy them to your own programs:

In the save routine delete line 1550 and change line 1540 to read:

1540 OPEN #1,8,0, "C:"

and in the load routine delete line 1740 and alter line 1730 to:

1730 OPEN #1,4,0, "C:"

Disc users should delete line 1540 and change line 1550 to:

1550 OPEN #1,8,0, "D:PLAYF"

and delete line 1730 and alter line 1740 to:

1740 OPEN #1,4,0, "D:PLAYF"

The data file is given the name

"PLAYF", but of course any other file name could be used by altering lines 1550 and 1740.

If you have lowered RAMTOP, (stored at address 106), then the load routine will change the RAMTOP value to the value held when the data was saved.

This series has been designed to provide the Basic programmer with a working knowledge of the player missile graphic system. Machine code programmers should find that a lot of the information given in this series is also relevant to them. Once you understand how the player missile system works, then controlling it in machine code is relatively simple. The series on writing an arcade game (Atari User January, February and March 1985) demonstrates such machine code player missile techniques.

November 1986 ATARI USER 31
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STORY SOFT

18 Crown Close, Sheering, Bishop's Stortford, Herts CM22 7NX
THIS year’s PCW Show marked the first anniversary of the revitalised Atari UK and the area devoted to Atari products reflected the company’s position in the market.

Taking pride of place between the business and home sections of the show, Atari had sub-let over 1000 square metres of stand space to the companies that keep the Atari business alive—the third party hardware and software manufacturers.

New products on display on the Atari stand included the XEP-80 80 column box for the 8 bit range. About the size of a 1050 disc drive but half the height, it connects into either joystick port one or two and gives an 80 column screen on a black and white monitor. Programs can access the screen by using the "E:" driver. The XEP-80 also incorporates a centronics standard parallel printer interface. Hopefully software companies will soon be adapting their word processors and spreadsheets for the XEP-80.

On the 8 bit software side, Atari was showing Star Raiders II—the follow up to the first game that Atari produced for the 8 bit range six years ago, which has you in command of an Atariian space ship, battling against the evil Zylon fleet in deepest space.

On show for the first time were the new 2080 and 4160 STs with 2 and 4 megabytes of memory respectively. Running all programs for the 620 and 1040 STs, the new additions to the ST range are claimed to be fully compatible with their older counterparts.

The much talked about blitter chip also made an appearance inside a 1040ST. Two 1040s were displayed side by side, running exactly the same animation demonstration—a flock of birds flying across the screen. The 1040 containing the blitter chip was running the program about four or five times faster in a very impressive demonstration of the blitter’s automatic speeding up abilities.

By Andrew Bennett

offering all the standard communications features it supports split baud rates for accessing Prestel and other 1200/75 systems.

Atari also demonstrated completed versions of several pieces of software that have previously only been seen in test-only states. These included Neochrome and the much awaited ST version of Star Raiders.

In one corner of the stand an ST sat in front of what looked like a BBC computer's screen display. This was in fact the first showing of Atari's BBC Basic emulator. This very clever program allows use of BBC Basic programs on the ST, which will help Atari to sell STs to the educational market. The emulator provides all of the BBC Micro's colours, screen modes and VDU commands. A future version will even allow use of 6602 machine code using BBC Basic's built-in assembler.

At one point in the show, Leonard Tramiel (who is interviewed in this issue of Atari User) could be seen demonstrating Microsoft Write to a delighted crowd of passers-by. Microsoft Write is the ST version of Microsoft Word which has been very successful on the IBM PC and Apple Macintosh. The ST implementation does not include outlining, but does include all of the facilities of professional word processing programs including footnotes and multiple fonts.

Also on the Atari stand were several companies demonstrating their new pieces of software. Microprose was showing its Silent Service submarine simulator which has just been converted for the ST. Microprose promised that most of its other bestselling titles would also be converted for the ST, but was reluctant to give specific details.

Mirrorsoft was previewing its Art and Film Director packages for the ST. Art Director is a professional drawing and painting program which
Show Report

Just a few of the many and varied stands at the show

includes such tools as smudge, smear, rotate and distort. It also features colour cycling for animation effects and will show a picture on screen in grey scales so that you can see what the printed work will look like.

Film Director allows you to create every element of an animated sequence on screen. It includes such commands as cut, invert, zoom and even slow motion. Music and sound effects can also be added to complete your films or presentations. Both packages will sell for £49.95 and will be available from the beginning of this month.

Next to the Atari stand GST was demonstrating 1st Word Plus, its new word processor for the ST costing £99.95. 1st Word Plus is based on 1st Word, which is bundled with all STs, but it includes footnotes, a built-in spell checker and mail merging, as well as allowing graphics to be pasted into documents. To complement 1st Word GST has released a mail merge program called 1st Mail, which costs £19.95.

GST has also signed a distribution deal with American software house Antic. This will make Antic's ST programs easier to buy in the UK, including the much sought-after CAD-3D, a 3D drawing program from Tom Hudson, the author of Degas.

On the Advanced Systems and Techniques stand two new ST memory expansion boards made their debut. The first allows 520ST owners to upgrade their machines to 2Mb of memory and the second lets 1040 owners upgrade to 4Mb. Both boards will cost approximately the difference between your present ST and a 2080 or 4160 model.

Star attraction of the Computer Concepts stand was the Fast ST Basic cartridge. Fast ST Basic is far more powerful than Atari's version of Basic, being faster, integrable with Gem and featuring a range of debugging facilities. Computer Concepts was also selling a new cartridge called BackPack, which contains nine desk accessories. Both cartridges are reviewed in this month's Atari ST User. FastBasic sells for £89.90 while BackPack costs £49.95.

Software Punch from Liverpool was demonstrating its 20Mb hard disc units and Boffin its ST word processor. Boffin costs £99 and has a built-in graphics editor which allows you to design diagrams and pictures for pasting into your documents.

Even outside the specific Atari area there was plenty of interest. Rainbird and Activision could be seen showing off new and old titles for the Atari 8 and 16 bit ranges. Gathering large crowds on the Rainbird stand was StarGlider, the new 3D game loosely based on the Star Wars theme.

Activision was displaying several new games for both Atari ranges. Most notable of these were Hacker II, the follow-up to the successful Hacker, and two new games from Infocom: Moonmist and Leather Goddesses Of Phobos. In Moonmist, you play an amateur detective who must solve a murder mystery in a spooky castle. Leather Goddesses has you kidnapped by evil women from Phobos, one of the moons of Mars. It can be played in any of three modes which range from rude to lewd. The program's descriptions and adventures become more adult as you progress through the modes. Watch Brillig's column for more details soon.

Softtecnics followed up its successful Rhythm spreadsheet with another desk accessory, a word processor called DeskWrite. Not only is DeskWrite extremely easy to use, but it is available from within any other Gem program that you might be using.

Beyond had designed its stand to resemble the bridge of the starship Enterprise, for the preview of its latest game - Star Trek. The game features superb digitised pictures of the various crewmembers. Beyond is producing the game to commemorate the 20th anniversary of the TV series. The game hits the shelves this month on the ST with hopefully an Atari 8 bit version following soon.

Llamasoft was demonstrating the 8 and 16 bit versions of Colourspace plus its range of 8 bit games. Owner Jeff Minter could be seen with a large grin on his face - a result of seeing the blitter demonstration. Apparently ST Colourspace will run faster with the blitter fitted. He also hinted at the possibility of Colourspace II for the ST range.

Overall the show demonstrated not only Atari's commitment to its whole product range, but also the vast support provided by third party companies. On both the 8 and 16 bit fronts, Atari's future looks assured.
BIG TOP GOES ON-LINE

COMPUTER communications have transformed the business operations of Britain's biggest travelling circus.

MicroLink membership means that the American Circus – so called because of its three-ring, US style presentation – can utilise the very latest telex and electronic mail facilities.

But more importantly, a cellular radiolink to the public telephone system ensures that the “office” is no longer cut off from the outside world when the 30-trailer circus is travelling hundreds of miles between venues.

The computer and modem in the administrative trailer ensure that even when the show goes on the road there is constant communication with headquarters and with booking agencies in the town ahead.

“Using the Racal Vodada system and MicroLink we can do business just as efficiently as any permanent-based entertainment, like theatres for instance,” says Ian Butson, administrative director of the circus.

“With 12 shows a week and up to 3,500 people at each under our Big Top, you can imagine what a difference PSS, telex and E-mail have made to running our operations.

“We are on the road from March to November and again over the Christmas/New Year season so you can see why I believe very strongly in the value of computer communications as a business resource”.

Technology aids race relations

AS community relations officer for Hillingdon, the third largest London borough, Charan Rai has a big job on his hands.

His main function is to see that, in accordance with the Race Relations Act of 1976, there is no race or colour discrimination by employers in his area.

The size of his task can be seen from Hillingdon's 230,000 population and its concentration of large-scale employers such as Heathrow Airport – 50,000 work there.

British Airways, Rank Xerox, EMI, Heinz and Express Dairies.

Fortunately, Indian-born Mr Rai has MicroLink's electronic mail and telex facilities to help keep him in touch with the many firms, union branches, central and local government departments he has to deal with.

Large numbers of the general public also come to him with questions.

Says Mr Rai: “Hillingdon has a large, racially diverse population living in an area that encompasses the extremes of run-down tower blocks and the stockbroker belt.

“But we have excellent community relations here, and we intend to keep things that way.

“We are greatly helped in this respect by our computerised case record system and by other new technology advances such as MicroLink”.

Transatlantic link

MICROLINK has made history with the first ever interactive transatlantic computer hook-up.

With the aid of a communications satellite, MicroLink and giant American database Mnematics have set up a complex electronic gateway enabling the exchange of messages between micros in all parts of the US and UK.

It allows MicroLink subscribers not only to send messages to America, but also to take advantage of a vast array of services offered.

Stock market watchers can access instant information on share movements from Dow Jones and there are over 40 sections for doctors, dentists, lawyers, writers and other special interest groups.

Leading news agency Associated Press supplies a 24-hour-a-day global information service.

Wildlife lifeline

THANKS to MicroLink, UK birdwatchers were able to follow the progress of a unique Japanese wildlife fund-raising event.

The 24-hour Birdathon was held to raise money to buy land for a breeding preserve for Japanese cranes.

Organisers hoped for five million yen through sponsorship of 16 teams who spent a full day and night scouring the Japanese countryside for different species of birds.

Taking part was MicroLink subscriber Yuichi Ishikawa. Armed with a mobile phone, acoustic coupler and portable micro, he was able to send regular reports to the MicroLink computer.

Phones' wasted weeks

A NEW survey by British Telecom has revealed that the average businessman wastes the equivalent of one week a year failing to communicate by telephone.

Statistics show that one in five messages left is either misinterpreted or lost, and four out of five calls find the number engaged or the other person unavailable.

As a result more and more business people are turning to electronic mail as a means of ensuring their messages reach their destinations – and the fastest growing of these systems in the UK is MicroLink.

According to the BT survey the average business person makes 2,500 calls a year, two-thirds of them to individuals who, for some reason, are unavailable at the time.
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Accent is on pure adventure

By Brillig

ON my inquiring why I had seen so little correspondence from readers of late, one of my YTS filing gnomes shamefacedly confessed that he had recently filed away a huge pile of unanswered letters after a lunchtime liquid celebration of his pet budgie's birthday.

Following a rigorous search of my office suite of caves, a large pile of missives was discovered filed under K (Kries for help). Said apprentice has been duly reprimanded and told to desist from lunch-hour imbibing of Brillig's Best (mine concoction, adapted from an ancient recipe for leather tanning and molasses and often used in the treatment of flatulent bats). As I warned him, even a half-pint of my famed brew requires a convalescent period of no less than two weeks.

So if you haven't yet seen your request for assistance answered in these pages, please be patient — all my apprentices are on double overtime trying to catch up.

Those of you wanting help this month range from Conrad Dillon of Lllangollen who's had trouble in the Payoff, to J. Brassington who wants to know about the map that he's found behind the guarded door in Enchanter. Hopefully the clues I've provided will give you a game without giving it away!

My thanks to Kevin Creasey of Leicester for his hints on Quasimodo and to Mike Moulton of Halstead and Dave Fox of Kemsing for their tips.

CLUES CORNER

THE PAYOFF
Can't put the bit back when the drill breaks?
STIB EROM ROFK OOL
What use is the list of numbers?
NEPO OTXO BNCHI HWUO YSSL ETTI
Trying to get into the car in the car park?
YEKE HTSA HENO EMOS
Can't open the safe?
NOIT ANIB MOCE HTRO FHSA BURN ETH SATE G
Want to get past the guard dog?
TADM EVIG NEHT TADM GURD Costumer proving an obstacle?
REI MUTS OCTI H
Trouble with the fire escape?
ROOD ERIF OGHE HTRO ODER IFNE PORO ODER IFTL OBNU TENI BACE VOM
Sticky problem with the window?
PMUJ NEHT REPA PSWE NKCI TSEL CAER TDAE RPS

LORDS OF TIME
Can't get past the cave people?
ELOP EPEV ACEH TTAN IAGA TIEV AWNE HTSU RUAS OTNO RBHE TTAR ORRI MEHT EVAW Want ale from the bartender?
DLOG FOTE GUN EHTM IHEV IG
Need access to the starship?
TELT NUAG EHTG NIRA EWEI IHWR ATSN ELLA FEHT YRRA C

ENCHANTER
- SMOO RTNE CSUL SNAR TEHT FOPA MASI TI
- LICN EPEH THTI WPAM EHTN OSTN IOPG NISA REDN AGNI TCVEN NOCY RT
- SMOO RTNE CSUL SNAR TEHT FOTU OVAL EHTS EGNA HCSI HT

HULK
Can't leave the dome?

EDIS TUDO GNEH TPIE ETIB NOTT UCHS UP
Want to go somewhere else other than the underground room, field and dome?
TSEW OGNE HTTI RETN EEMO DAEE SUOY REVE NEHW

SNOWBALL
Stuck after leaving the coffin?
- NRUT NISN OTTU B3HS UPNE HTHT RONO G
- NIFF ODOT NOPU OGNE HTNI FFOC EVEI RTER OTHT UOSO G
- HTRO NOGN EHTY RAUT ROMO TPUO G

MORDON'S QUEST
Pygm trying a pest?
YMGY PULLI KHEH TEPH PWWL BEKA MSEI RREB DNAS NROM TOOB MABH TIVW Carnivorous plant a problem?
YMGY PHTI WTNA LPDE EF
with Mediator. As useful as those tips were, I have decided that for the time being the subject matter of this column will be restricted to pure adventure: That is, themes that do not require arcade skills to solve them but rely purely on the old grey matter.

Although games like Mediator and Quasimodo involve problem cracking and are clearly very popular, they do not come under my personal definition of adventures. I am becoming rather more conservative in my old age and prefer to rely on my intellect (which is, like Marvin's brain, the size of a planet) rather than my hand and eye coordination (which has become a trifle slower now that I'm 246, despite regular fusillades of Old Warlock's Wonder Tonic.

And now it's your turn to help. Can anyone assist Patty Hearne and Dave Edward of Liverpool who are bemused by Waxwork's? They've opened the sarcophagus and fallen through the trapdoor but all to no avail, it seems.

Brian Houghton is having difficulty

GLITCH OF THE MONTH

CLIVE B्रadwood of Bromborough in the Wirral has spotted this "feature" in The Payoff. Once you've sold the gem for £40,000, it's possible to go back to the safe deposit box, open it and take another priceless gem! A large T-shirt is on its way to you, Clive.

with QA and Opera House. In QA, he has the orb and disc but is stuck at the river. He's been into the village, volcano and two of the three huts but can't get into the third hut without getting spiked.

In Opera House, Brian can get into the Phantom's lair and back up again into the opera house but all he seems to do is go round in circles.

Chris Heath from Oswestry cannot get past Pluto, god of the underworld. He doesn't mention the title of the adventure, though - can anyone identify it and help?

Finally, I made passing reference in the September issue to what I believed to be Belboz's close friendship with Software Express of Birmingham. I have since received this amusing letter from Peter Fellows, Technical Director of Software Express.

"Belboz does indeed drop in from time to time but you know what wizards are - sometimes he looks like a postman and sometimes he looks like the van driver from our freight forwarders. Dealing with shape changers can be very confusing. He's also very excitable. The last time he came a traffic warden tried to give him a ticket for parking his broomstick (cunningly disguised as a Sharpa van) on double yellow lines. The flashback from his vain attempt to turn her into a frog put a huge crack in our front window - now how do we explain that to the insurance company?"

"Nice one, Peter... Keep writing, adventurers, my gnomes are really on the ball now. Exciting adventuring!"
I RECENTLY bought Solo Flight and Kick Start for my Atari 800XL. The instructions for both cassettes are exactly the same regarding loading procedures.

Both say: "Press Play on cassette, then switch on computer and hold down the Start button, then press Return and the program will load".

When I first did this with Solo Flight I thought perhaps I had made a mistake. I then started again and got the same results.

At first I thought I had a faulty cassette, until I started all the loading procedures again, except this time instead of just pressing the Start button when switching on the computer I held down both the Start and Option keys, and my programs loaded.

Is this just a misprint or are the cassettes supposed to load under these instructions? — M.I. Ally, London SE23.

- The normal load procedure with the 800XL is to hold down both Start and Option while you switch on. The Start key tells the computer to do a tape load and the Option key tells it not to use the built-in Basic language.

- The normal of these games came out — before the XL series was released — Basic was on a separate cartridge which could be inserted or removed at will, but now the Option key takes care of that for you.

- Unless a game specifically states that it requires Basic to be present, hold down both Start and Option for all tape loads.

**Getting it right**

Is it possible to alter the Get It Right! checksum program so that you can check a section from the middle or end of the game being typed in instead of waiting for it to be checksummed from the start each time?

That is, if you find you have made typing errors several times between, say, line 1000 and 2000 then after correcting the typing mistakes you have to wait for lines 10 to 1000 to come up on the screen before you can check your amended errors.

- Is it possible to LIST "C:1000-2000", or any other lines you want to check, instead of waiting for the lot to be run through?

- I hope you can help as it gets a bit tedious if you happen to make a mistake towards the end of a long listing. — K. Edwards, Runcorn, Cheshire.

- You can indeed use Get It Right! to check sum certain portions of a program.

This is very useful when you already know that 99 per cent of the program is correct, and you just want to re-check a couple of lines.

To do this use LIST "C:" as normal, but follow it with a comma and the line number range you want. For example:

- LIST "C::1000,500" would list only lines 100 to 500, and:

- LIST "C::1000" would list line 1000 only.

You can then feed the tape to Get It Right! exactly as before.

**80 column extensions**

**I TYPED in the 80 column text and graphics programs from the August 1986 issue of Atari User into my 130XE and was very impressed with the results.**

**I intend to buy a word processor — either Paperclip or Superstart — and a database, is there any way in which I could obtain an 80 column display from those software items on the TV or monitor?** — K.N. Turner, Herne Bay, Kent.

- Most commercial programs do not recognise any of the third-party 80 column add-ons at present. However, now that the Atari XEP-80 is on its way we can look forward to 80 column versions of the more popular word processors and spreadsheets.

Some allow 80 column already, but you'll have to check which kind of 80 column board they support.

**Plugs and ports**

**IN the Gadgets article in your August 1986 issue you mentioned that when you use pins 3 and 4 it is possible to omit T1, BR1 and C1 from the second board. Does this mean it would be possible to omit the second power plug too?**

- Is port 2 (and 3 and 4 on the 400/800) usable at the same time for the same or other purposes?

- Is it possible to turn one port to output while the other is used for input?

- In the parts list you did not mention where you got the case you showed, it looked like there was room for two PCBs. — M. van Nisselroy, Heeren, The Netherlands.

- If you omit the power supply components from the second board you may also miss out the second power plug. Connect the mains supply to the 240V AC connectors on both boards.

- Also connect the 12V and 0V terminals marked Auxiliary Output on each board to its counterpart on the other
board.

If you read the first article in the series — Atari User, June 1986 — you will see that you can make each pin on the joystick port act independently of the others.

One pin may be used for input with seven outputs, or any other combination.

If you want to use ports 3 and 4 on an Atari 400/800, just use Port B at location 54017, and the Port B Control register at 54019. They function in exactly the same way as their Port A counterparts.

Don’t attempt this if you are using an XL or XE, as Port B is used to control the operating system and Basic — POKE them wrongly and you can say goodbye to your program.

Cases are available from Maplin Electronics.

Getting gadgets

I WAS looking through my Atari User magazines the other day for something to do when I came upon the first part of Ken Golding’s new series about gadgets showing how to construct a simple flight sensor via the joystick port.

Seeing there were no complications I decided to do it, so the very next day I went to Tandy’s to obtain the parts.

Surprisingly the man said they had never stocked the parts. Would you please tell me where they are obtainable as I am quite keen on making this light sensor: — P. Stewart, Wembley, Middlesex.

If you can’t get the parts from Tandy, pop into your local W.H.Smiths and get a copy of the Maplin Electronics catalog. They should be able to provide you with everything you require.

Out in the cold

THE Atari 800XL has been on the market for at least three years now. Why is the software for the Atari still only written in 48k?

Whenever I load a game on my 800XL 16k is lying idle in the machine.

For this reason there are games, like Solo Flight 2, that lack digitised speech, even though the Commodore 64 version has this luxury.

Old 400/800 owners don’t have to be left in the cold. A 48k and 64k version of the same game would ensure we are using our machines’ memory to the full. This has already been done on Mercenary by Navagen.

Finally, it seems that some software houses like Effio still don’t want to know the Atari.

To prove we are ready to buy their software, every one of us Atarian must write to these anti-Atari software houses and ask them for software releases.

But remember each letter counts, so if you want to play Commando, or even Ghost N’ Goblins in the near future on your Atari, get writing to them.

— Nadeem Parvez, Wavertree, Liverpool.

We can only echo what you have said — if you want to see Atari versions of all of those wonderful new games you’ve been drooling over on the Commodore 64 and the Spectrum, then write to the companies concerned.

There is no point writing to us about it as we have no hold over what software houses decide to release. What will make a difference is a flood of your letters on their desks.

The same applies to the 48k/64k debate, but don’t forget that it costs the software houses more to produce two versions of a game, which might push up the price.

Roughly 20 per cent of the Atari market consists of old 400 and 800 owners, so they can’t afford to ignore the old machines completely, nor would we wish them to.

Printer interfaces

IS it possible to link an Atari 1027 printer to an Atari 520 ST? — Michael Woods, Chadderton, Oldham.

Sorry, but the answer is a plain and simple no. The 1027 uses a special form of serial interface specially designed for the Atari 8 bit range, whilst the ST uses a Centronics parallel interface. Sorry!

Boot error

I OWN a 130XE and a 1050 disc drive with which I have a problem.

Every time I boot up a disc, the drive busy light comes on and the computer beeps every two seconds, then comes up with a “BOOT ERROR”.

This only happens with my

Player Missile Graphics

It’s apologies time folks! Last issue’s Player Missile Graphics article by Stephen Williamson featured two programs and unfortunately the lines from Program I were accidentally reprinted instead of the first few lines of Program II.

For those of you who are having trouble getting the checksum to match, here are the correct lines for Program II.

The checksum printed was correct, and after you’ve typed these lines in it should match.

Our thanks to Mr. K. Miller of Blackpool who pointed this out — a T-shirt is on its way to him.

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ATARI USER

Mailbag

WE welcome letters from readers about your experiences using the Atari micros, about tips you would like to pass on to other users ... and about what you would like to see in future issues.
The address to write to is:
Mailbag Editor
Atari User
Europa House
68 Chester Road
Hazel Grove
Stockport SK7 5NY

tape has not saved correctly and there is no way to recover it if this is the case.
Try loading the program back from the \LSTed version you used with the checksum. If your type NEW, then use ENTER "C:" to load it back in again.

Cassettes and copyright

I AM thinking of buying the 1050 disc drive, but since I received my 800XL I have been a cassette user, so all my programs and games are on cassette.
Would I be able to transfer my cassette games to disc, that is, of course, making sure that I wouldn't infringe the copyright? — Karl Westerdale, Winsford, Cheshire.

The problem is that you would actually be doing just that! In your case you have bought the cassette games and now want to transfer them to disc for your own use.
This is a fair enough aim, and one that software companies would not object to.
However, if they made their tapes so that this sort of transfer was easy then they would be encouraging the pirates to do the same, so most commercial tapes are protected against this sort of copying.
There are programs which claim to copy a cassette game to disc, but we rather doubt their effectiveness on the more recent protection methods, and you would probably be wasting your money.

Faulty keyboard

MY 800XL keyboard has gone wrong. The semi-colon key seems jammed because it constantly repeats after any key is pressed.
Is this due to the Revision B Basic, because I tried the test in your March issue and the answer was 96?
Will the Rambas program in
the July issue cure this bug?
With regard to the solution of the Play key on the 1010 data recorder: I glued the key back together again using superglue. 3
Then, knowing the repair job would not last very long under constant use, I swapped it with the pause key. — James Ryan, Southampton.

This sounds more like a faulty keyboard than a Basic problem. There are no known bugs that behave like that, so you'd be better off taking it back to your dealer for repair.

Printer programs

I AM amazed by the numerous letters condemning the apparent lack of software for the Atari 1029 printer. It is true that the Printshop program will not work but most others do, with only slight differences.

I have two screen dumps (Micro-Painter and Touch-Tablet) and about four other programs which work fine.

Superscript has a built-in printer driver for the 1029 and Rubber Stamp, Typesetter and so on will all work if the saved screen is printed using a separate screen dump.

Using these utilities, fonts of all styles and sizes can be obtained and all most graphics imaginable. — Alan Wheatley, Buckie, Banffshire.

High scoring

IN Bruce Lee, third screen, for an unbelievably high score wait at the bottom of the screen for both the enemy. Climb up the rigging about three moves then fall off (by moving joystick left or right).

Quickly try to grab the rigging. If you have done it right you should be stuck in an endless loop of trying to fall and trying to hold on.

If you get the enemy underneath you they will not be able to touch you, but you knock the stuffing out of them. — S.K. Stupper, Mansfield, Notts.

Emulating the others

MY son would like to know if it is possible to buy an emulator for the BBC Micro or Spectrum computers. If so, is it possible to load and save Basic programs for these computers on the Atari 130XE?

Finally, can we obtain Cobol (rom or disc) for the Atari? Any idea how much these would cost? — P.S. Jakubovic, Leeds.

There are no BBC Micro or Spectrum emulators (besides the thought...) for the Atari 130XE.

If you want a more advanced version of Basic look no further than BasicXE, from OSS. Contact one of the big mail order companies for information.

If you want to run BBC Micro or Spectrum games on the Atari, then the only solution is to write the software houses concerned and push them into having Atari conversions written.

There is really no point in trying to implement Cobol or a 48 or 64k system, and there are not yet enough 130XE's around to make it practical to write one for the 128k Atari.

Basically, Cobol was written with large mainframes in mind and is an extremely inefficient language at the best of times — and a waste of time and money at the worst.

You would be much better off buying a more micro-oriented language such as Action!

Coldstarts and Resets

PLEASE could you tell me the POKE command to switch the computer off and back on again? Also the command to do the system reset? — Simon O'Hara, Skegness, Lincs.

Actually, it's not quite that simple. There is no POKE to turn the computer off — although there is a little switch at the back!

You can do what is called a coldstart, which means that the computer will clear everything from memory and start up again as though it had been turned off and back on again. This can be achieved by using:

A = USR(55487)

Don't forget to save your program first, because it will be wiped out. You can make System Reset do the same thing by typing:

POKE 580,1

We printed some other methods for handling the System Reset button in the August 1985 Atari User. These allow you to re-run the program when Reset is pushed.

USING XIO FROM BASIC

I AM trying to customise DOS 2.5 so my own wording and extra functions are installed.

I have written a small program to read in and POKE the new values (location 15400 decimal, or thereabouts) into memory.

Whenever I check that these values are in memory, using the memory monitor published in a past issue, they are all there and the ASCII values are also correct.

When I call up DOS 2.5 the old values are there, but when I return to Basic and call up the monitor, my values are the same ones which I have POKE'd.

Is there something that I have missed, or is there a checksum which totals the values and then converts them back?

Another problem arises when I use the Micropaint utility program. This file loads in Paint picture files to the screen, to the top half. Should this happen?

An additional problem is that I am writing a DOS-type utility program and one of the options is to go to DOS. This program is heavily protected, and I wish to keep it that way, but when I return from DOS it leaves the user in Basic, which I do not want.

Are there some POKE's which will allow DOS to jump back to the start of my Basic/machine code program?

— Barry Finlayson, Carrickfergus, Co Antrim.

Your problem is being caused by the fact that there are two parts to the DOS system.

The first, DOS.SYS, is held in memory permanently, taking up about 5k. The second part, DUP.SYS, is only loaded in when you type DOS, and contains all of the menu systems.

This means that every time you type DOS all of your POKE'd corrections are being overwritten as DUP.SYS is loaded into ram again.

If you want to edit the menus try editing the file DUP.SYS rather than POKEing into memory. Be careful not to increase the length of the items, or the machine code may be corrupted.

A Paint picture is in Graphics 7, and a Micropainter picture in Graphics 15.

As the only difference between the two is that Mode 7 pixels are twice the height of mode 15 ones, the screen memory for a mode 15 screen is twice as large as that for Mode 7.

So when you load a Mode 7 screen dump into a mode 15 display it only fills the top half.

There is no easy way of making a Basic program re-run from the DOS menu, but why not miss out the DOS menu completely and use XIO commands from Basic instead? Nearly all DOS functions can be emulated in this way.

POKE 580,1

We printed some other methods for handling the System Reset button in the August 1985 Atari User. These allow you to re-run the program when Reset is pushed.
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<td>£15</td>
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