TI-99/4A - ITEMS FOR SALE

Hardware & Peripherals   Price

Texas Instruments TI-99/4A Computer with 16k RAM	£25.00
Tensai CRE 106 Cassette Recorder with TI cassette cable	£10.00
Suncom joystick adaptor lead with Slik Stik joystick	£10.00
TI Solid State Speech Synthesizer	£10.00

Utilities

TI Speech Editor (cartridge)	£5.00
TI Household Budget Management (cartridge)	£2.50
PikaDee Graphics Creator & Screen Editor (cassette)	£2.50
TI Teach Yourself Basic (cassette)	£2.00

Entertainment - ROM Cartridges - all £5.00 each

Parsec (TI)
Buck Rogers (TI)
Car Wars (TI)
Hustle (TI)
Alpiner (TI)
TI Invaders(TI)
Munch Man (TI)
Donkey Kong (Atarisoft)
Pole Position (Atarisoft)
Picnic Paranoia (Atarisoft)
Frogger (Parker Brothers)
Popeye (Parker Brothers)
4A Flyer (Triton Products)

Entertainment - Cassettes (all in TI-Basic) - all £2.00 each

Adventuremania (Intrigue Software)
Mania (Intrigue Software)
Santa and the Goblins (Intrigue Software)
Atlantis (Intrigue Software)
Hunchback Havock (Lantern)
Daddie's Hot Rod (Lantern)
Crystal Sweep (Program Factory Ltd)
Kat Traxx (Program Factory Ltd)
Robopods (Virgin)
Fun-Pac 2 (Virgin)
Blast It! (Christine Computing)
TI Trek (Apex Software)
Hectic Vector (Harlequin Software)
Man & Monsters (Stainless Software)
Planet Destroyer (Stainless Software)
Crazy Cosmic Caver (Stainless Software)
Addvance (Centresoft Ltd)
Goblins Revenge (Pewterware)
TI Ludo, Music Maker & Charset 1 (PikaDee Software)

Books

6 Various programming and games
Mr. A.D. Soskin, 158 Manor Park, Hither Green, London SE13 5RH.
P & P for single orders:
£1.00 for each book, cartridge or up to 4 cassettes;
hardware & peripherals P & P by negotiation.
Discounts available for bulk orders.

TI*MES

TI99/4A USERS GROUP(U.K.)

Anderson, Tim - Cassette Librarian   041.337.1291
Ground Floor(Left),47,Apsley St.Glasgow G11 7SN   Bus.041.339.96??
Bailey, Alan - TI*MES Editor   01.508.1053
14,Shelley Grove,Loughton,Essex IG10 1BY
Ballinger, Jim - General Secretary   0332.772612
5,Offerton Avenue,Derby DE3 8DU
Bennett, Christine - Publicity Officer   061.430.7298'
20,Oak Avenue,Romiley,Stockport,Cheshire SK6 4DN   Bus.061.430.7645
Coan,Geoffrey - Programming Languages   025.72.41041
14,Pine Grove, Hartwood Park,Chorley,Lancs.PR6 7BW
Goddard,Mike - Hardware Librarian,DIY Projects   0978.843547
"Sarnia"Cemetary Rd.,Rhos,nr.Wrexham,Clwd,WalesLL14 2BY
Mehew,Christina - 4,Thornton Lane,Ulceby,South Humberside,DN39 6SG
Rutherford,Alan - Treasurer   0625.524642
13,The Circuit,Wilmslow,Cheshire SK9 6DA   Bus.061.223.1301
Scally, Clive - Chairman
4,Woodbank Park,"Summerfields",Oxton,Wirral L43 9WN
Shaw,Edward H.- Modules Librarian   0538.360382
Crow Holt Farm,Basford,Leek,Staffs. ST13 7DU
Shaw, Stephen - Vice-Chairman,Disc Librarian,"Rambles",Intl.Journ.
10,Alstone Rd., Stockport,Cheshire SK4 5AH
Walker,Peter - Membership Secretary,Communications   0707.873778
24,Bacons Drive,Cuffley,Herts. EN6 4DU

MAGAZINE CONTENTS

ISSUE NO. 24   SPRING 1989

EDITORIAL

The editorial this time is taken up by a summary of the decisions of a meeting of the Committee on 14.2.89.to keep you in touch with developments in the operations of our Group.
Probably the most significant is the search for a new Chairman! Clive Scally is most definite in his resolve to give up this post, owing to new and pressing commitments, including periods in the USA. Other Officers of the Committee are already fully occupied with their special functions, and we must find ourselves a new Chairman at the AGM.
We will also of course be taking the opportunity of expressing the gratitude of all of us to Clive and Audrey for all the efforts that have gone into keeping the Group alive all these years. We hope that Clive will remain a member of the Committee.
It will also be necessary to appoint a permanent Publications Librarian at the AGM. Temporary arrangements have as you will see elsewhere in this issue, been made, but the load on the Committee members concerned will have to be lightened as soon as possible.
It was agreed to invite representatives of other UK Groups to join the Committee ex officio. Other groups will be invited to provide reports on their activities for this magazine, and they and Parco to exhibit at the AGM Show.
BACC membership will be continued, so that we can have the benefit of their insurance scheme.
Mike Goddard will run the Hardware Library as a financially separate entity.
Christine Mehew will be invited to remain a Committee Member while she is in Italy.
Special efforts to include Basic programmes in the magazine will be made, including listings from the Cassette Library, with reviews. Please consider if you could demonstrate interesting items at the AGM fair on 17th June. Write to Stephen Shaw if you have any ideas. It has been suggested that the magazine cover should again carry artwork instead of using it to provide an extra page. Please let us have your views.

PUBLICITY

Christine Bennett, in addition to her sterling work on the venue for the AGM, reports that she has supplied Group details to "Computer", "Micro Mart", "ACE","Computer & Video Games" and "Popular Computing Weekly".

ANNUAL GENERAL MEETING, SHOW AND FAIR.

Details of the venue, facilities and access, including a map follow.

LA99ERS DISK CATALOGUE

Jim Ballinger has kindly agreed to copy the disk containing the above for any member who is interested. Arrangements for obtaining any of the programmes listed will be made on request, individually or possibly on a group basis. Usual terms for disk copying.

WELCOME MAT FOR NEW MEMBERS

I'm glad to report that TIUG continues to attract new members. During 1989, so far, we have welcomed Peter Hutchison, Hugh Stothert, Stephen Williams, Susanna Currie, Henry McCook, Cyril Street, Leon Becker, Robert Bates, Stephen Bellamy, Nick Bullock, Ernest Kerr, David McKie and David Deacon. I hope you enjoy TIUG and the 99er community.

Peter Walker, Membership Secretary

Dear Alan,

I have succeeded in booking the Romiley Centre for the AGM on 17th. June as agreed and have advised Alan Rutherford of the cost.

No doubt there will have to be further correspondence or even a meeting to finalise details. The room which I have booked is 60' x 30' and has ample power sockets. There is also a cafe in the same building although there is no bar!. Romiley is well endowed with public houses should anyone require alcoholic refreshment!

Unfortunately, a map proved a little complicated because there is some uncertainty as to whether or not the new extension to the M63 will be open or not. However I have copied the local A-Z which shows both alternatives and also written out detailed instructions for getting to Romiley by road and by rail. Hope this is satisfactory.

There is a car park at the rear of the building, but it does tend to fill very quickly on Saturdays. Further car parking is available in the Station car park and surrounding streets, although the residents of Oak Avenue would appreciate it if that wasn't used as many of them have no off-street parking.

I trust that you will be able to print the map without too much difficulty.

Yours sincerely,

Christine Bennett.

Christine Bennett

DIRECTIONS TO ROMILEY CENTRE.

From all directions one should be able to arrive on the M63 to Stockport. If the new motorway extension has opened by the 17th. June come off the M63 at Junction 15 and turn right onto Ashton Road. At the end of Ashton Road is a set of traffic lights. Bear left here and continue to the next set of lights. *Turn right onto Higher Bents Lane (signposted Romiley) and follow this road into Romiley. At the station continue under the bridge and turn first right into Oakwood Road then first left into car park. Romiley Centre is on the first floor of Romiley Forum which is in the shopping precinct.

If the motorway extension has not opened, take the second exit off the roundabout (A560) at the end of the motorway. Carry straight on at the traffic lights and at the next lights bear left. Follow this road until you come to the junction with Ashton Road. There is a pub called The Travellers Call on your left. Carry straight on and follow directions from * above.

Rail travellers should go to Manchester Piccadilly or Victoria depending where they are coming from, and then take the train from Manchester Piccadilly to Romiley. Trains are approximately every 30 mins. When you come out of Romiley Station turn left and go under the bridge. Continue along the main road and cross at the pelican crossing which is directly opposite Romiley Forum.

CONSOLE ONLY CORNER

by Peter Walker

No tutorial this quarter, but instead a foray into the mathematics of integer arithmetic. This is designed to show how even console Basic can be used to solve what appears at first to be a difficult problem.

Consider the two following problems:-

A man buys 7 bags of apples and 11 bags of pears, which gives him 140 items of fruit in all. How many apples in each bag, and how many pears?

A man sells theatre tickets at £5.50 for adults and £3.45 for children. He takes £160.25 in all. How many adult tickets and how many child's were sold?

The first problem can be algebraically represented by the formula:

$7x + 11y = 140$

Similarly the second can be represented as:

$550x + 345y = 16025$

Now in each case we have 2 variables but only one equation. Classical simultaneous equation theory says that these cannot be solved, since an infinite number of (x,y) pairs will satisfy the equation. However, we have the additional proviso that x and y must be integers. There will in fact be a finite number of solutions where x and y are positive integers. This sort of puzzle is quite common in magazine and newspaper quizzes since the method of solution is not taught in schools and is rather obscure. Below is a console Basic program to solve the integer equation of the form:-

$Ax + By = C$

For many of you, the program will be enough to satisfy you. I haven't got room to give a full mathematical treatise here but the following may assist the more mathematically minded or those who wish to follow the program logic.

These integer equations are known as Diophantine equations. The solution is found by first creating the continued fraction of the ratio A/B. (Array CF holds this). The two residue numbers D and E are found from the continued fraction less the last element. The residues have the important property that they satisfy the equation:

$A*D - B*E = G$

where G is either + or - 1, if A and B share no common factors (Co-Prime) or is equal to the Highest Common Factor of A and B if they do.
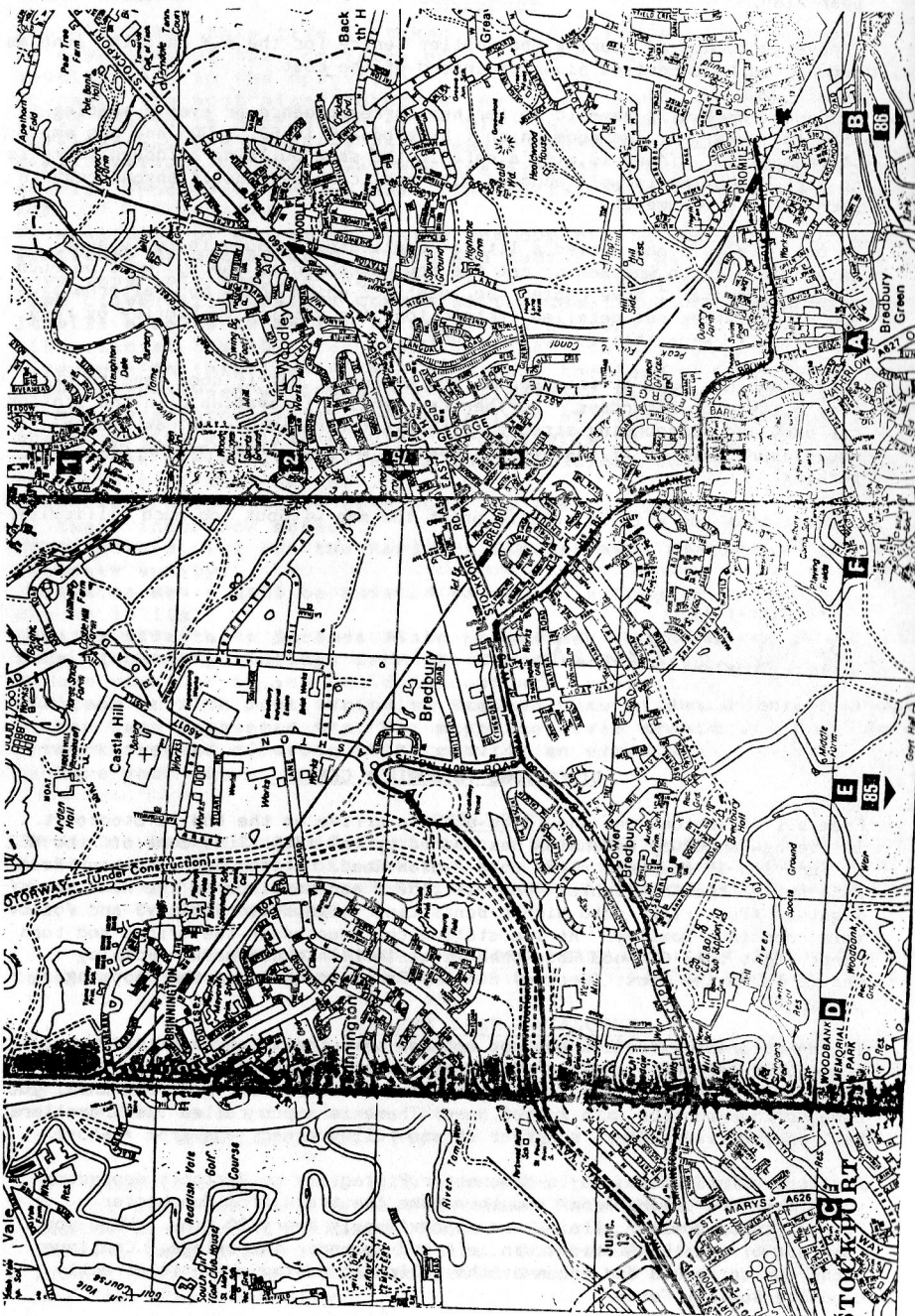
We can then write:

$$A*D/G - B*E/G = 1$$
and
$$A*D*C/G - B*E*C/G = C$$

All we now need to do is to convert this into the form of
Ax + By = C by changing the multiples of A and B. We thus find an
integer or integers L which allow:

$$A*(D*C/G - L*B/G) + B*(L*A/G - E*C/G) = C$$

Valid solutions are those where the value of L makes both
multipliers of A and B positive. The other requirement for a
solution is that if A and B do have a common factor (ie G<>1) then
this must also be shared by C.

I hope you enjoy this.

PJW.

```
100 CALL CLEAR
110 DIM CF(50)
120 PRINT "TO SOLVE AX + BY
= C"
130 INPUT "A? ":A
140 IF (INT(A)=A)*(A>1)THEN
170
150 PRINT "POSITIVE INTEGERS
 ONLY (A>1)"
160 GOTO 130
170 INPUT "B? ":B
180 IF (INT(B)=B)*(B>1)THEN
210
190 PRINT "POSITIVE INTEGERS
 ONLY (B>1)"
200 GOTO 170
210 INPUT "C? ":C
220 IF (INT(C)=C)*(C>1)THEN
250
230 PRINT "POSITIVE INTEGERS
 ONLY (C>1)"
240 GOTO 210
250 D=A
260 E=B
270 FOR X=1 TO 50
280 CF(X)=INT(D/E)
290 F=E
300 E=D-CF(X)*E
310 IF E=0 THEN 360
320 D=F
330 NEXT X
340 PRINT "NOT ENOUGH SPACE"
350 STOP
360 D=1
370 IF X=1 THEN 450
380 E=CF(X-1)
390 FOR X=X-2 TO 1 STEP -1
400 F=D
410 D=E
420 E=D*CF(X)+F
430 NEXT X
440 GOTO 460
450 E=A/B-1
460 G=A*D-B*E
470 IF G*INT(C/G)<>C THEN 68
0
480 H=D*C/B
490 I=E*C/A
500 IF H>I THEN 520
510 GOTO 550
520 K=H
530 H=I
540 I=K
550 IF INT(H)+1>=I THEN 660
560 PRINT :"SOLUTIONS ARE"
570 FOR L=INT(H)+1 TO I
580 IF L=I THEN 620
590 M=D*C/G-L*B/G
600 N=L*A/G-E*C/G
610 PRINT A;"*";M;"+";B;"*";
N;"=";A*M+B*N
620 NEXT L
630 PRINT
640 GOTO 120
650 PRINT
660 PRINT "THERE ARE NO SOLU
TIONS"
670 GOTO 630
680 PRINT
690 PRINT A;"AND";B;"SHARE";
SQR(G*G);"AS A COMMON FACTOR
. ";C;"DOESN'T, SO THERE IS
NO":"SOLUTION"
700 GOTO 630
```

CASSETTE REVIEWS.......   Nicky Goddard

==

All of the games reviewed here are available from the group cassette
library at the current library terms.

STAR RATING GUIDE.
One star = Terrible,Two stars = "OK",Three stars = quite good, Four
stars = very good, Five stars = Brilliant..........

SANTA AND THE GOBLINS.   LIBRARY No G208

This adventure is about Santa's elf who has lost Santa! and has to
go through a maze of different rooms to look for him,collecting
pies for energy aided sometimes by Elvin who pops up here and there
and threatened by Goblins who steal pies and childrens presents.
The program responds to commands typed in such as N S E W for
directions EATPIE(without space)and INVentory. One snag is the fact
that the screen scrolls upwards if too many commands are typed in
and you lose the graphics. Also, because it runs in BASIC there is
quite a delay between screens. The graphics are excellent and no
joysticks are required. To play the game all you need are a bare
console and a cassette recorder. All in all it is very enjoyable
and I like playing it.
STAR RATING ****

ISOLA.   LIBRARY No G135

There are good graphics in this game which is a bit like playing
Chess with kings only. The on screen instructions are very good. You
can use a Speech Synthesizer as well. It will run in Extended Basic
if you delete line 320. You have to isolate your opponents man by
placing blank squares around him. You can also play against the
computer and say what skill level you want it to play at. This game
can get quite interesting and exiting. A good game which I quite
like and will probably play a lot.
STAR RATING ***

TENPIN.   LIBRARY No G224

If you like Ten Pin Bowling this is the game for you, but the
graphics are a bit basic. The alley is drawn across the screen and
the ball from side to side of the alley. When you think the ball is
aiming where you want it to press any key to bowl. The ball goes in
a straight line from where you bowled, you can guide it slightly
using the E and X keys (up and down). It occupies 3.4K of memory.The
directions needed are on screen and up to 4 players can play at once
and each player enters his name. The computer does not play against
a single bowler. The scoring is the same as ordinary bowling. A nice
game, well written and I like it.
STAR RATING ***

Dear Editor,

Is there anyone out there that does not have a diskdrive and are still using CASSETTES? If there is can I tell them about two utilities obtainable from the Cassette Librarian. They are in machine code, YES machine code on cassette. They both require XB and 32K.

HSTAPE

This utility will dllow you to load and save up to 24K. First load it with RUN "CS1" the screen will tell you that you have two new commands:- CALL LINK("OLD") and CALL LINK("SAVE"). These new commands when used, replace the normal OLD CS1 and SAVE CS1. and are not compatible with normally taped programs. When you have loaded HSTAPE, OLD CS1 your selected program in, then add to it via., the keyboard, when you want to save it use:- CALL LINK("SAVE"). CALL LINK("OLD") will expect to find it in this new format, or you will get an ' ERROR IN DATA ' message. Your enlarged program can be used with these new commands this way up to 24K, instead of the usual .... 12K!.

MERGE/QL

This utility will allow you to join up short programs together up to 24K. After it has been loaded, the screen will tell you that you have a new command:- CALL LINK("MERGE"). This new command will allow you to 'merge' a number of short programs into one program of approx., 24K. But you cannot Save then as one program. Or RES. them once they have been 'merged'.

So first sort out the programs you wish to merge together, RES. each of them in turn so that the first line number is higher than the last line number of the program that precedes it, because if any two programs use the same line numbers the second program will edit out the first program. Make sure each program will run into the next one by removing the END and STOP commands. Change them to an IF - THEN statement, ie, goto next game or return to start, or maybe have a MENU as the first program.

Next load and run MERGE/QL, then in the command mode type in :- CALL LINK("MERGE") and in go's the first program, and you will get a message 'merge completed'. Repeat using the new command as required. If you go over 24K the screen will tell you 'merge aborted', All this means is there was not enough room for the last program, all the rest are still there and will run.

There are a lot of good fast machine code games in the Cassette Library as well as XB and TIB, why not send aS.A.E. to the Cassette Librarian for details.

All we cassette users need now is a clever programmer to link these two utilities together and then who needs a diskdrive?. One is not expecting Freeware, but I bet it wouldn't cost an arm or a leg.

All right I admit using a cassette is slow. SO WHAT?. Thats the pace I chose to use my leisure time, while CS1 is loading a long and slow program. CS2 is playing my favourite slow Country music........

Roy Johnson, 15, Ross Close, Tilgate, Crawley, Sussex. RH10 5DT.

MEMBERSHIP NEWS

This is the time of the year when most of you will need to renew your membership subscription. If you are one of these, you should have received a renewal form with this copy of TI✱MES. We have held the present level of subscriptions for many years, and regretably we must now increase them if we are to continue with TI✱MES at its present size. Therefore subscriptions will YES now be £12.50 for UK members, £15 for European or Sea Mail members and £18 for Air Mail members in other continents.

We have had a little trouble banking some overseas cheques which has resulted in our having to pay bank charges so high that it is almost more worthwhile to throw the cheque away! Can I therefore ask our valued overseas members if they could pay by one of two methods: either an International Money Order or a Sterling Bankers Draft drawn on a London bank. This also applies to cheques sent to librarians.

I have now taken over from the Publications Librarian the role of providing TI✱MES back issues. Issues that are still available are Nos 4, 8-14, 16, 18-20, 22-23. Prices are £2 for members and £3.50 for non-members, plus postage charges which are:

UK 2nd class: 22p
Europe & seamail: 55p
Airmail: 1.70p

Many of you will have noticed that on the renewal forms I have been asking whether you would like your name to be published in TI✱MES. The thinking here is that this would allow members living in the same district to get in touch with one another and perhaps start their own local TI99/4A group. Local groups already exist in East Anglia, West Midlands and in Dorset (contact me for details), and we would like to see more, since as a national group we cannot effectively organise local activities, though I hope that many of you will have met us at the Alternative Micro Show in London on April 1st and look forward to seeing you at the AGM in June, details elsewhere in this issue.

Here are the lists of members in Yorkshire, Humberside, Manchester & Merseyside , the North-East and the North-West that have agreed to their names being printed. I have indicated the number of other members we have in these areas. We are fairly strong in the North - and if a local group is organised, there may be others who will wish to join in. Let me know if anything is organised; all you need is the house room to invite other 99ers to chat over their experiences and problems, and perhaps demonstrate some of your software.

Peter Walker

YORKSHIRE & HUMBERSIDE

DEREK R HAYWARD	2 DORE HALL CROFT, DORE, SHEFFIELD, YORKSHIRE, S17 3HD
PETER J HUTCHISON	6 MOORLANDS VIEW,FREE SCHOOL LANE, SAVILE PARK, HALIFAX, WEST YORKSHIRE, HX1 2XQ
CHRISTINA MEHEW	"HOLLYCROFT",4 THORNTON LANE, ULCEBY, SOUTH HUMBERSIDE, DN39 6SR
JONATHAN TYLER	13 HIGHLAND CLOSE, PONTEFRACT, WEST YORKSHIRE, WF8 2JZ
DAVID J WESTMORELAND	6 GLENHURST GROVE, KEIGHLEY, WEST YORKSHIRE, BD21 4RN

+11 others

MANCHESTER & MERSEYSIDE

PAUL BAKER	33 WALTER SCOTT AVENUE, WHITLEY, WIGAN, LANCASHIRE, WN1 2RH
CHRISTINE & ROSS BENNETT	20 OAK AVENUE, ROMILEY, STOCKPORT, CHESHIRE, SK6 4DN
WARREN BRAY	117 FITZROY STREET, ASHTON-UNDER-LYNE, LANCASHIRE, OL7 0HY
ALAN BROWN	20 AINSDALE AVENUE, BURY, LANCASHIRE, BL8 2RW
PETER FARRELL	36 WRAY AVENUE, CLOCK FACE, ST HELENS, MERSEYSIDE, WA9 4SB
ANTHONY J LEES	33 FLORIST STREET, CALE GREEN, STOCKPORT, CHESHIRE, SK3 8DW
LESLIE MCEWEN	15 CROXTETH DRIVE, RAINFORD, ST HELENS, MERSEYSIDE, WA11 8JZ
BILL MORAN	30 ELSIE STREET, FARNWORTH, BOLTON, LANCASHIRE, BL4 9HT
ALAN B RUTHERFORD	13 THE CIRCUIT, WILMSLOW, CHESHIRE, SK9 6DA
THOMAS N SHAW	15 TOWNFIELD AVENUE, ASHTON-IN-MAKERFIELD, WIGAN, LANCS, WN4 9PD
STEPHEN SHAW	10 ALSTONE ROAD, STOCKPORT, CHESHIRE, SK4 5AH
TOM SOUTHWELL	12 CHEQUER LANE, UPHOLLAND, LANCASHIRE, WN8 0DE
HUGH G STOTHERT	45 FITZWILLIAM COURT, SALFORD, MANCHESTER, M6 5LN
COLIN C STREDDER	84 GREENWAY ROAD, BIRKENHEAD, L42 6QS

+ 7 others

NORTH EAST

KEITH BULLOCK	8 ST MARGARETS GROVE, THORNABY, STOCKTON-O-TEES CLEVELAND, TS17 8JR
DAVID DUNCAN	15 INGLEWOOD CLOSE, DARLINGTON, CO. DURHAM, DL1 2TX
PHILIP TROTTER	80 MARTONBURN ROAD, GROVEHILL, MIDDLESBROUGH, CLEVELAND, TS4 2TH

+ 1 other

NORTH WEST

ROGER G NICHOLL	"SUNNYHURST", FOXFIELD, BROUGHTON-IN-FURNESS, CUMBRIA, LA20 6BX
J H TROY	2 GIRPLE STREET, BURNLEY, LANCASHIRE, BB10 2ES

THE HARDWARE LIST. ────────────────── Mike Goddard

Listed below is the current stock of the hardware library ,if
there is anything you want that isn't listed please feel free to
ring as this list will probably change before it gets into
print.The prices in brackets refer to non members and is subject
to availability members have priority.All prices are in pounds.
CONSOLES 15.00(20.00),POWER SUPPLIES 5.00(7.50),MODULATORS
5.00(7.50),JOYSTICKS 7.50(9.00),CASSETTE LEADS 3.00(4.00),DISK
DRIVE INT SS SD 50.00(60.00),DISK DRIVE EX 80.00(95.00),8056
SERIAL PRINTER 80 COL + 2 PACKS PAPER + TI RS 232 LEAD
40.00(50.00) In addition I can now offer a made to order lead
service ie printer parallel and serial ,twin disk drive into PEB
etc call for details. Also available at various times USERS REF
GUIDE & BEGINNERS BASIC MANUALS + MODULES ETC SURPLUS TO LIBRARY
NEEDS . TERMS cheque or PO by post made out to M.GODDARD.Check
stock position before ordering. CARRIAGE:D/Drive int 5.00,ext
8.00,printer 8.00,consoles 5.00,psu + modulators 3.00,cass lead
50p,j/sticks 1.00.

MERA BLONIE PRINTER REVIEW............... Mike Goddard

==

While looking around recently for another printer among all the
secondhand "bargains" and various odds and ends I stumbled across
a printer advertised as Epson compatible for seventy five pounds.
When I rang to enquire why it was so cheap and what was wrong
with it I was told yes it was Epson compatible and it was cheap
because it was made in eastern Europe and built to operate in
places like Outer Siberia.Well my curiosity got the better of me
and I had to have one of these beasts. So I duly sent off my
cash and three days later an enormous parcel arrived (it weighs
20 Kg !) I opened the parcel and there stood a nice shiny "MERA
BLONIE D100" printer on opening the manuals (there are three of
them operating,parts list and technical description)I discovered
that the machine is in fact a Polish Epson FX80 clone and as
such is completely compatible and has all the standard Epson
features such as LQ and graphics printing.However this
particular machine had been bounced by the carriers and
unfortunatly wouldn't work another quick call to the suppliers
and two days later another arrived this fortunatly hadn't been
bounced and works perfectly. This article will be printed on it
to give some idea of the quality of print.
        The printer is indeed built like a tank! it is 18" X
14" has tractor and friction paper feed and standard centronics
parallel connector at the back. Power,paper and on line lights
on the front along with line, line feed,form feed buttons. On
the head drive mechanism is a lever which allows you to vary
the gap of the head from the paper very useful for altering the
print density another useful feature is that it can use standard
Epson ribbons so there should be no difficulty obtaining them.
It is extremely well built and the instructions although
translated direct from the Polish are comprehensive and
understandable also provided is a complete set of fuses a spare
ribbon and even a pair of plastic gloves to change the ribbon
with.Mind you they do advise you that your fuses might DEFECT !!
so much for perestroika!!!!
        I haven't yet mastered all of the features of the
machine but feel quite confident it will be with me for quite a
while.

==
MERA BLONIE D100 PARALLEL PRINTER. 75.00 + 8.00carr + V.A.T
Supplied by:-
COMPUTER INTELLIGENCE
THE QUADRANT CENTRE
LIMES ROAD
WEYBRIDGE
SURREY KT13 8DJ
Tel 0932 849723

MODULES MODULES MODULES MODULES

APPEAL TO ALL DISK DRIVE OWNERS........

Do you have any modules that you would consider selling or donating to the module library. Reasonable prices paid. Games modules and utilities are the most sought after. For more information please contact me at the address given below.

Since the end of November the module library has proved to be very popular. Most of the modules in stock at that time have been sold and fresh material has been aquired. The latest list follows; please remember that often there are only one or two modules of each title held and it helps if you can give alternatives when ordering. Terms are strictly first come, first served.

ADVENTURE and PIRATE TAPE	5.00	ADDITION AND SUBTRACTION	2.00
EARLY LEARNING FUN synth reqd	2.00	TERMINAL EMULATOR II	9.00
EXTENDED BASIC AND MANUAL	20.00	DECIMAL3	4.00
BEGINNING GRAMMAR	3.50	VIDEO CHESS	6.00
MASH	6.00	BLASTO	4.00
HANGMAN	4.00	INDOOR SOCCER	4.00
TI INVADERS	2.00	JUNGLE HUNT (ATARI)	6.00
MUSIC MAKER	6.00	CONNECT 4	4.00
DISK MANAGER 1	3.00	DISK MANAGER 2	4.00
SPEECH EDITOR	5.00	DEMONSTRATION	4.00
PERSONAL REPORT GENERATOR	6.50	PERSONAL RECORD KEEPING	6.50
HOUSEHOLD BUDGET MANAGEMENT	6.50	MICROSURGEON	4.00
SHAMUS (ATARI)	6.00	PARSEC	5.00
VIDEO GAMES 1	3.50		

I also have the following original TI disk programs for sale all at £1 each. MAILING LIST, STRUCTURAL ENGINEERING LIBRARY, INVENTORY MANAGEMENT# AND INVOICE MANAGEMENT#. #The last two require either the personal record keeping module or the statistics module.

PURCHASING MODULES FROM THE LIBRARY

You may return any module purchased within four weeks and be refunded the purchase price less postage which will be charged at the rate of 45 pence per module.

Application to loan/purchase modules.

Name:.................................   Modules required:...........
Address:.............................   ....
....
....
....
I enclose cheque/PO for £.......(as indicated on the list) & post to
Please make cheques payable to TIUG(UK).   MR. E.H. SHAW
Foreign orders can only be accepted if a   CROW HOLT FARM
BANKERS DRAFT is enclosed drawn in STERLING   BASFORD
on a LONDON bank. It also helps if a little   LEEK
extra is added on for postage overseas.   STAFFS. ST13 7DU

LOGO FOR GROWN-UPS

by Peter Walker

Many of you probably look on LOGO as a kid's language. Some of you may know nothing about it at all. Its true to say that LOGO cannot work with data files nor with the printer, except for printing out the program procedures, so it cannot be used for much serious programming. However LOGO does have its serious side which I hope to demonstrate in this article.

LOGO is, like Forth, a procedural language. It comprises 'procedures' which call one another to form a program. This forces the programmer to adopt a disciplined well-structured programming method. (No GOTOs, though strictly speaking, LOGO does have a GO command, but you should never need to use it.)

It is also a list processing language, taking many concepts from LISP, the grandad of list processing languages. This means that LOGO as well as acting upon single numbers and strings is designed to act upon lists: lists of numbers or lists of words or even lists of lists. The elements of a list may be a mix of numbers, words or other lists. Lists can be nested. In this respect a LOGO list differs from, say, a BASIC array where all elements must be of the same kind.

LOGO also allows recursion. Recursion is a technique which at the simplest level is the equivalent of FOR NEXT loops from BASIC. However used to the full, recursion allows a function to be defined in terms of itself. Those of a mathematical bent will immediately recognise the power of this. One way of understanding recursion would be to imagine the DEF function in BASIC. If BASIC supported recursion you would be able to use such statements as:

DEF F(X)= 1 + F(X-1)

In BASIC you can't define a function in terms of itself, but you can with recursive LOGO.

By way of example, I give here a program I have developed to convert numbers into Roman numerals and vice versa. It uses many recursive routines to achieve the tasks which are very much list processing tasks. This is not a program that kids will understand, though they might enjoy using the program. The particular Roman number conversion routines are ones I have programmed both in Fortran and Basic, the former some 21 years ago. The logic is far from simple since the Roman numbering system is very oddly structured. Designing the program in LOGO is very instructive however, in forcing a methodical, well-structured approach, and is intellectually very challenging.

By way of some explanation of the program, the following notes may assist understanding.

ROMAN is the main starting routine. All procedures eventually return here and the program then loops.

CON.ROMAN is the first main routine called to convert a number into Roman format.

CON.ARAB is the second main routine called when the input number is not an ordinary (Arab) number. CON.ARAB, having checked that the number is a valid Roman number will convert it to a normal number.

ROCON is called by CON.ROMAN. It is a recursive routine that converts a number into a Roman number, using the procedures ROCHAR and PICK. The list ROCODE defines the structure of a Roman number in each decade.

ROCHAR is a recursive routine that assembles the Roman characters for each decade using the list ROCHARS defined in ROMAN.

PICK is a typical LOGO recursive routine for picking a single item from a list.

DISPLAY is a recursive routine that prints out the resulting list as a Roman number.

SEQUENCE is a recursive routine that creates a list which is an index to ROCHARS equivalent to the given number.

SEQCHAR is a recursive routine which locates characters from ROCHARS, and is called by SEQUENCE. It also detects characters which are not valid Roman characters.

SYNTAX? is a recursive routine which checks that a Roman number is correctly structured, rejecting such sequences as IIV or VX etc.

FRST is a modification of the FIRST command, designed to cope with 'empty' lists. Similarly BTFIRST is a modification of BUTFIRST. Both are used by SYNTAX?

ROM.CHAR? checks to see if a number is in the quoted list and is used by SYNTAX? Another recursive routine.

CALC is called by CON.ARAB to calculate the resulting Arab number. You guessed it - another recursive routine.

Here are the program procedures and a structure diagram. (PP 13 & 14. ED.)

Now that I have written a structured conversion program, perhaps someone will convert it to FORTH! Also if anyone without LOGO is desperate to convert numbers, I have a version of the program in good old unstructured TI BASIC (console only), where you can just revel in the multiplicity of GOTOs!!

Have Fun.

Peter Walker

To simplify reading, each line is terminated with a backslash \.

```
TO ROMAN \
MAKE "ROCHARS [I V X L C D M
] PRINT [ARAB / ROMAN &
ROMAN / ARAB ] PRINT [CONVE
RSION PROGRAM ] PRINT [ ] \
PRINT [PLEASE INPUT A NUMBER
] \
PRINT [BETWEEN 1 AND 3999 ]
\
PRINT [OR ANY ROMAN NUMBER ]
\
PRINT [ ] \
MAKE "NUMBER FIRST READLINE
\
TEST NUMBER? :NUMBER \
IFT CON.ROMAN :NUMBER \
IFF CON.ARAB :NUMBER \
PRINT [ ] PRINT [PRESS ANY
KEY TO CONTINUE ] \
MAKE "DUM READCHAR \
CS \
ROMAN \
END\

TO CON.ROMAN :N \
IF :NUMBER > 3999 PRINT
[THAT'S TOO BIG! ] PRINT [ ]
STOP \
IF :NUMBER = 0 PRINT [THE
ROMANS DIDN'T HAVE A ZERO! ]
PRINT [ ] STOP \
MAKE "ANS [ ] \
PRINT [ ] \
DISPLAY ROCON :NUMBER \
END\

TO CON.ARAB :N \
MAKE "SEQL [ ] \
MAKE "SEQ SEQUENCE :N \
TEST NUMBER? FIRST :SEQ \
IFF PRINT :SEQ STOP \
TEST SYNTAX? :SEQ \
IFF PRINT [INCORRECT SYNTAX
] STOP \
MAKE "SUM 0 \
PRINT [ ] \
MAKE "ROVAR [1 5 10 50 100
500 1000 ] \
PRINT CALC :SEQ \
END\
```

```
TO ROCON :NUM \
MAKE "ROCODE [[ ] [1 ] [1 1
] [1 1 1 ] [1 2 ] [2 ] [2 1
] [2 1 1 ] [2 1 1 1 ] [1 3 ]
] \
IF :NUM = 0 OUTPUT :ANS \
MAKE "ROL PICK ( 1 + :NUM -
( :NUM / 10 ) * 10 ) :ROCODE
\
MAKE "ROS [ ] \
MAKE "ANS SE ROCHAR :ROL
:ANS \
MAKE "ROCHARS BUTFIRST
BUTFIRST :ROCHARS \
OUTPUT ROCON :NUM / 10 :ANS
\
END\

TO ROCHAR :R \
IF :R = [ ] OUTPUT :ROS \
MAKE "ROS LPUT ( PICK FIRST
:R :ROCHARS ) :ROS \
OUTPUT ROCHAR BUTFIRST :R
:ROS \
END\

TO PICK :N :X \
IF :N = 1 OUTPUT FIRST :X \
OUTPUT PICK ( :N - 1 ) (
BUTFIRST :X ) \
END\

TO DISPLAY :X \
IF :X = [ ] THEN PRINT [ ]
PRINT [ ] STOP \
TYPE FIRST :X \
DISPLAY BUTFIRST :X \
END\

TO SEQUENCE :N \
IF :N = [ ] OUTPUT :SEQL \
MAKE "I 0 \
MAKE "SEQC SEQCHAR FIRST :N
:ROCHARS \
IF :SEQC = FALSE THEN OUTPUT
[THAT'S NOT A VALID NUMBER!
] STOP \
MAKE "SEQL LPUT :SEQC :SEQL
\
OUTPUT SEQUENCE BUTFIRST :N
\
END\
```

```
TO SEQCHAR :D :LIST \
IF :LIST = [ ] THEN OUTPUT
"FALSE \
MAKE "I :I + 1 \
IF :D = FIRST :LIST OUTPUT
:I \
OUTPUT SEQCHAR :D BUTFIRST
:LIST \
END\


TO SYNTAX? :SQ \
IF :SQ = [ ] THEN OUTPUT
"TRUE \
MAKE "Q1 BTFIRST :SQ \
MAKE "Q2 BTFIRST :Q1 \
MAKE "Q3 BTFIRST :Q2 \
MAKE "Q FIRST :SQ \
MAKE "Q1 FRST :Q1 \
MAKE "Q2 FRST :Q2 \
MAKE "Q3 FRST :Q3 \
IF BOTH ( :Q2 > 0 ) ( :Q2 >
:Q ) THEN OUTPUT "FALSE \
IF BOTH ( :Q2 = :Q ) ( :Q3 =
:Q ) THEN OUTPUT "FALSE \
IF BOTH ( :Q1 > 0 ) ( :Q1 =
:Q ) TEST ROM.CHAR? :Q
[7 5 3 1 ] \
IFF OUTPUT "FALSE \
IF BOTH ( :Q2 > 0 ) ( :Q2 =
:Q ) THEN TEST ROM.CHAR? :Q
[7 5 3 1 ] \
IFF OUTPUT "FALSE \
IF NOT :Q1 > :Q OUTPUT
SYNTAX? BUTFIRST :SQ \
TEST ROM.CHAR? :Q [5 3 1 ]
\
IFF OUTPUT "FALSE \
IF :Q1 - :Q > 2 THEN OUTPUT
"FALSE \
IF NOT ( :Q > :Q2 ) OUTPUT
"FALSE \
OUTPUT SYNTAX? BUTFIRST :SQ
\
END\


TO FRST :R \
MAKE "R FIRST :R \
IF :R = [ ] THEN OUTPUT 0 \
OUTPUT :R \
END\


TO BTFIRST :R \
IF :R = [ ] THEN OUTPUT :R
\
OUTPUT BUTFIRST :R \
END\
```
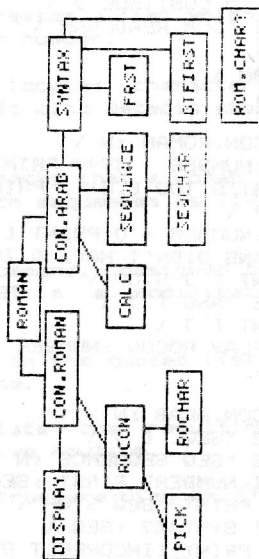
```
TO ROM.CHAR? :C :LIST \
IF :LIST = [ ] THEN OUTPUT
"FALSE \
IF :C = FIRST :LIST OUTPUT
"TRUE \
OUTPUT ROM.CHAR? :C BUTFIRST
:LIST \
END\


TO CALC :S \
IF LENGTH :S = 1 THEN OUTPUT
:SUM + PICK FIRST :S :ROVAR
\
IF FIRST BUTFIRST :S > FIRST
:S THEN MAKE "SUM :SUM -
PICK FIRST :S :ROVAR ELSE
MAKE "SUM :SUM + PICK FIRST
:S :ROVAR \
OUTPUT CALC BUTFIRST :S \
END\
```

FROM "TOPICS"-LA99ERS : KIDS KORNER.

```
10 MSG$="======THE NUMBER GA
ME======"
20 ! *-Originnal prog. by-*
30 !    MICHAEL W. ECKER
40 !       SCRANNTON,PA
50 !    *-enhancced by-*
60 !    Chick De Mart:
70 !    LA 99 ERS
80 CALL SCREEN(13)
90 RESTORE
100 DISPLAY AT(2,2)ERASE ALL
:MSG$
110 DISPLAY AT(12,3):"Please
 think of a whole":TAB(5);"n
umber from 1 to 63"
120 DISPLAY AT(24,1):"[press
 <ANY> key when ready]"
130 CALL KEY(3,Y,Z):: IF Z=0
 THEN 130
140 S=0 :: CALL WIPE
150 IMAGE ##   ##   ##   ##
160 FOR J=1 TO 6 :: T=1
170 FOR K=1 TO 8
180 READ A,B,C,D
190 DISPLAY AT(2*K+4,7):USIN
G 150:A,B,C,D
200 NEXT K
210 DISPLAY AT(22,2)BEEP:"Do
es your number appear on  th
e screen (Y/N)"
220 CALL KEY(3,Y,Z):: IF Y=8
9 THEN S=S+2^(J-1)ELSE IF Z<
1 THEN 220
230 NEXT J
240 DISPLAY AT(12,3)ERASE AL
L:MSG$
250 DISPLAY AT(17,2):"Okay,
concentrate very hard now. I
 am reading your mind!"
260 R=INT(RND*4)+1
270 FOR TIME=1 TO R+3
280 CALL SOUND(500,131,3,131
,3,-4,5):: CALL SOUND(500,11
0,3,110.3,-4,4)
290 NEXT TIME
300 DISPLAY AT(17,1):"":"":"
"
310 DISPLAY AT(12,3):MSG$: :
:"  Your number is ... ";S
320 DISPLAY AT(22,2):"Do you
 wish to play again":TAB(10)
;"(Y/N) Y"
330 ACCEPT AT(23,16)SIZE(-1)
:Y$ :: IF Y$="Y" OR Y$="y" T
HEN 90 ELSE CALL CLEAR :: EN
D
340 DATA 1,3,5,7,9,11,13,15,
17,19,21,23,25,27,29,31,33,3
5,37
350 DATA 39,41,43,45,47,49,5
1,53,55,57,59,61,63
360 DATA 2,3,6,7,10,11,14,15
,18,19,22,23,26,27,30,31,34,
35,38
370 DATA 39,42,43,46,47,50,5
1,54,55,58,59,62,63
380 DATA 4,5,6,7,12,13,14,15
,20,21,22,23,28,29,30,31,36,
37,38
390 DATA 39,44,45,46,47,52,5
3,54,55,60,61,62,63
400 DATA 8,9,10,11,12,13,14,
15,24,25,26,27,28,29,30,31,4
0,41
410 DATA 42,43,44,45,46,47,5
6,57,58,59,60,61,62,63
420 DATA 16,17,18,19,20,21,2
2,23,24,25,26,27,28,29,30,31
,48,49
430 DATA 50,51,52,53,54,55,5
6,57,58,59,60,61,62,63
440 DATA 32,33,34,35,36,37,3
8,39,40,41,42,43,44,45,46,47
,48,49
450 DATA 50,51,52,53,54,55,5
6,57,58,59,60,61,62,63
460 END
470 SUB WIPE
480 FOR I=4 TO 24 :: DISPLAY
 AT(I,1):"" :: NEXT I
490 SUBEND
```
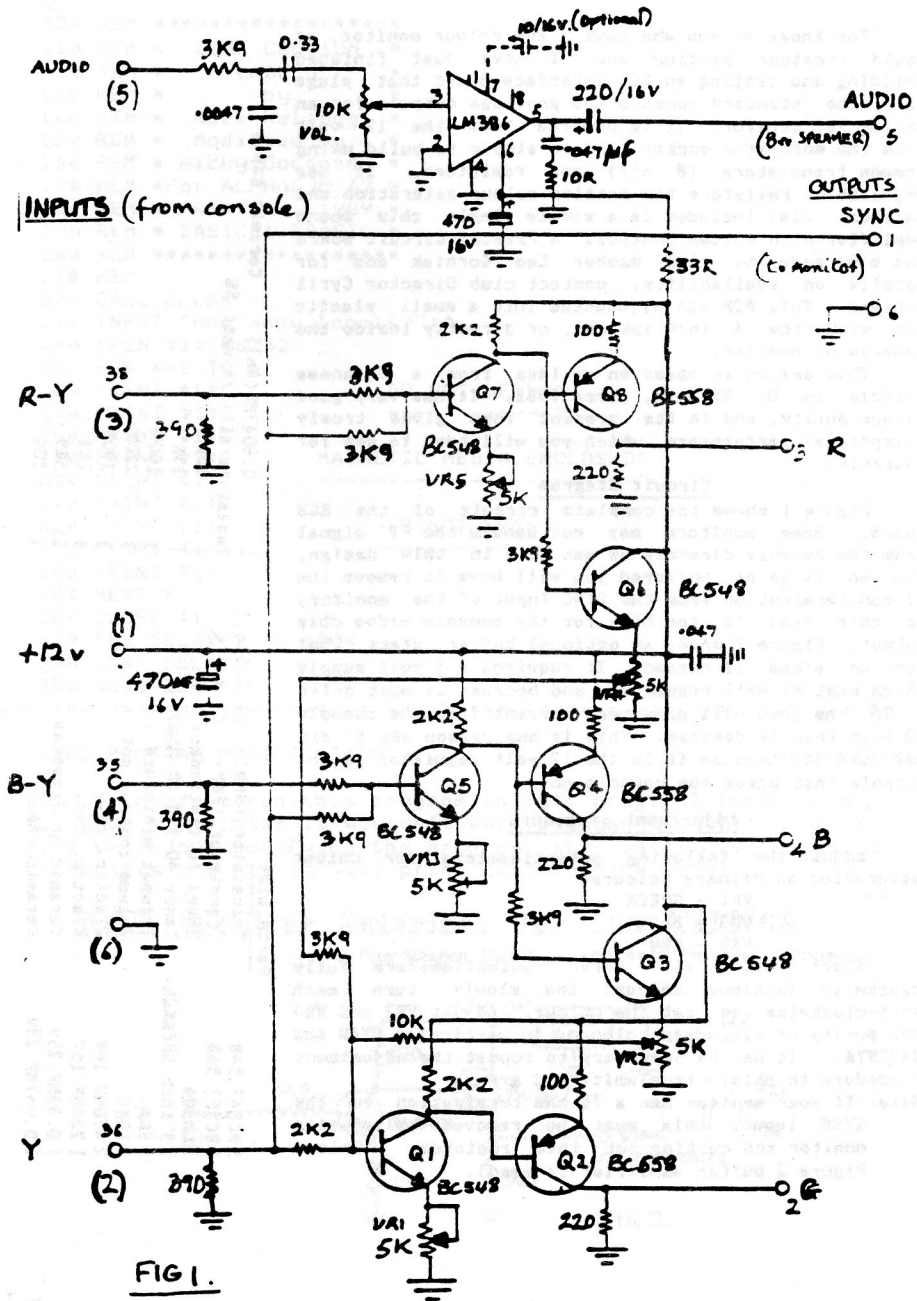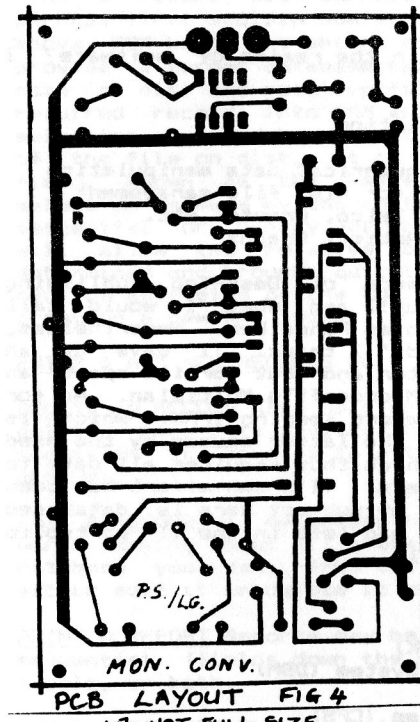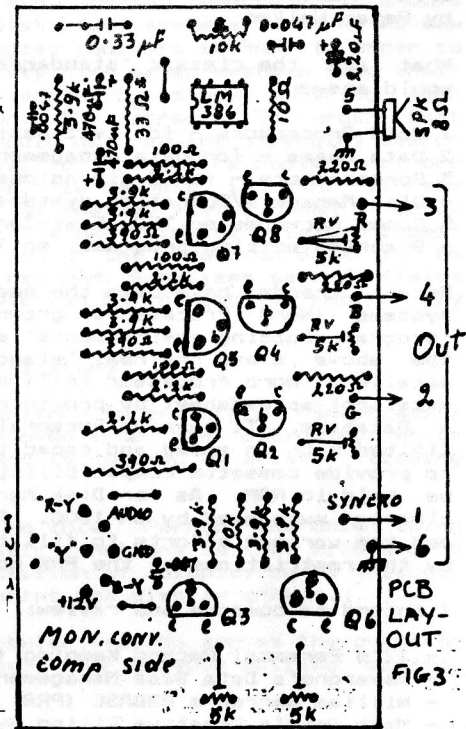
14

```
100 REM *******************
110 REM *   DISK CAUTION   *
120 REM *      LABELS       *
130 REM *        by         *
140 REM *   Rick Kellogg    *
150 REM *   Modified by     *
160 REM * Nicky Goddard     *
170 REM *For ALPHACOM 42 *
180 REM * PRINTER, 1989 *
190 REM * BASIC & XBASIC *
200 REM *******************
210 REM
220 CALL CLEAR
230 INPUT "How many labels?":A
240 OPEN #1:"RS232"
250 FOR X=1 TO A
260 PRINT #1:"       DO NOT BEND!"
270 PRINT #1:"       ---------------"
280 PRINT #1:""
290 PRINT #1:"   MAGNETIC MEDIA ENCLOSED"
300 PRINT #1:"   ------------------------"
310 PRINT #1:""
320 PRINT #1:"       DO NOT XRAY!"
330 PRINT #1:"       ---------------"
340 PRINT #1:""
350 NEXT X
360 CLOSE #1
370 FOR DELAY=1 TO 1000
380 NEXT DELAY
390 GOTO 220
```

==

LABEL PROGRAM MODIFICATION......   Nicky Goddard

When I tried to run this program(in it's original form) on my
ALPHACOM 42 printer it wouldn't work because of the control codes.
So I set about modifying the program, it doesn't give expanded
characters etc but it will print quite a nice label.

RGB Monitor Interface for the TI99/4A
by Peter Schubert, TIsHUG   ABSTRACT BY MIKE GODDARD

FIG2

For those of you who have a RGB colour monitor, or
would consider getting one, I have just finished
building and testing an RGB interface board that plugs
into the standard console and provides outputs for an
Analog RGB monitor. It is powered from the 12 volt
from the modulator socket, and is simple to build using
common transistors (8 off) and resistors. It has
adjustable resistors for setting colour saturation and
balance. Also included is a simple single chip sound
amplifier with volume control. A Printed Circuit Board
has been made by club member Leo Gorniak and for
details on availability, contact club Director Cyril
Bohlsen. This PCB can be mounted into a small plastic
box with the 3 inch speaker, or directly inside the
Console or Monitor.

This design is based on an idea from a Japanese
article by M. Shibuya, circa 1982. It has very good
colour purity, and in its present form gives truely
exceptional performance, which you will have to see for
yourself.

Circuit diagram

Figure 1 shows the complete circuit of the RGB
Board. Some monitors may not handle the 'Y' signal
from the console directly as was done in this design,
and as it is not buffered you will have to remove the
75 ohm termination from the SYNC input of the monitor,
as this load is too high for the console video chip
output. Figure 2 shows an optional buffer stage that
can be added if needed. It requires a 5 volt supply
which must be well regulated, and because it must drive
a 75 ohm load will draw more current from the console
12 volt than is desired. This is one reason why I did
not use it, because it is the 12 volt regulator in the
console that makes the console hot.

Adjustment procedure

Adjust the following potentiometers for colour
saturation on Primary Colours;
        VR1 - GREEN
        VR3 - BLUE
        VR5 - RED
Start with all three potentiometers fully
clockwise (minimum colour) and slowly turn each
anti-clockwise to get the colour. Adjust VR2 and VR4
for purity of secondary colours, in particular CYAN and
MAGENTA. It may be necessary to repeat the adjustment
procedure to obtain true white and grey.
Note: If your monitor has a 75 ohm termination on the
SYNC input, this must be removed by opening the
monitor and cutting out this resistor. (Unless
Figure 2 buffer amplifier is used).

FIG 1.

18

PCB LAYOUT FIG 4
N.B. NOT FULL SIZE
SAE FOR FULL SIZE DRG. (ED.)

MON. CONV.

MON. CONV. comp side

PCB LAYOUT FIG 3

Reprinted from LA 99 ers TOPICS

I was given a MAY issue of Greater Akron 99ers. What a dirty trick! Because there was this info. on PR-BASE I could have used five ago.

While trying to create a new database, PRBASE would not accept ay PIO....why? WHY? According to the column "EDITOR'S NOTE:"..when using a freshly initializes disk and designing a new database ... when the program asks for 'OUTPUT DEVISE NAME', it presents you with a field full of characters 229s, ()E5)...

If you try to output to a common device like PIO, you will actually be trying to output to a devicename like, PIOxxxxxxxxx, where the x's are)E5s

The "FIX" is simple...enter Fctn 3 (erase) before you enter the output device name. This clears out the)E5s from the field and fills it with true spaces.
spaces".

D/V80 FILE READER

```
100 ! * TO READ or PRINT *
110 !      D/80 FILES
120 ! Chick De Marti version
130 !
130 DISPLAY AT(14,3)ERASE AL
L:"Enter name of file"i" DS
K2."
140 ACCEPT AT(15,6)SIZE(-12)
iF$ :: F$="DSK"&F$
150 OPEN #1:F$
160 DISPLAY AT(17,3)i"<P>rin
ter or"i" <S>creen S"
170 ACCEPT AT(18,13)SIZE(-1)
iP$ :: IF P$="P" THEN P=1 ::
OPEN #2:"PIO"
180 FOR L=1 TO 500
190 LINPUT #1:M$ :: IF EOF(1
)THEN END ELSE IF P=1 THEN P
RINT #2:M$ :: GOTO 210
200 PRINT M$
210 NEXT L
```

19

BATTLE OF THE DATABASES
by Peter Walker

What are the classic 'standards' in the realms of software? I would answer:

1 Word Processors - for text manipulation
2 Data Bases - for data management
3 Spreadsheets - for 2 dimensional numerical data manipulation
4 Disk Managers/Operating systems - for disk file management
5 Comms packages eg TE2, Fast-Term, Telco, Prestel etc.
6 Graphics editing programs, eg TI Artist, Graphx

Recent trends have been the emergence of Desk-Top Publishing systems (Word Processors grown up!) and what I would call 'program loading environments' such as FunnelWeb. Nevertheless, the above 6 are the real 'standards' I think. TI gave us an excellent Word Processor in TI-Writer and (but for its speed) an excellent spreadsheet by providing Microsoft's Multiplan. As for a Database, TI gave us Personal Record Keeping (PRK) which is limited both in speed and capacity, the latter caused by the need to provide cassette compatibility which thus requires all data to be held in RAM. As for Disk Managers, TI's own effort has been clearly surpassed by DM-1000. But my subject here is databases and the various efforts to fill the gap left in the TI portfolio by the restrictions of the PRK module.

I intend to compare and review:

  - TI's Personal Record Keeping (PRK)
  - Navarone's Data Base Management System (DBM)
  - William Warren's PRBASE (PRB)
  - Mark Beck's Creative Filing System (CFS)
  - Inscebot's new TI-BASE (TIB)

PRB and CFS are 'Fairware' available from our Disk Library, contact Stephen. DBM is available from Parco, as is PRK. TIB can be ordered via Stephen subject to sufficient bulk orders.

First of all however, I think it useful to say something in general about the expected features of a database in order to put my later comments in context.

So what is a database? It's a general purpose program which allows the creation and management of data in structured datafiles and report generation from it. Many provide much more than this. Lets look first at the common features which are shared by almost all databases.

CREATION The process of defining the database in terms of number, length and type of field within each record, entry/display screen format and report formats. Field type is generally text, but some special arrangements may exist for numerical data.

SELECTION & DISPLAY of a single record. Two main methods are used. Firstly selection by record number, which is OK as long as you know the number. More useful is selection by field content eg

find a record with surname field set to "WALKER". I should perhaps first explain how most disk based systems work. As we saw above, PRK keeps the entire database contents in RAM. In order to provide a larger database capacity disk based systems keep their data on disk and relative file addressing is used to bring each required record into RAM and onto the screen. In order that selecting a record by content should not require a lengthy search of the file on disk, it is usual for the entire contents of one field, known as the key field, to be held in RAM. If the selection is made by the content of the key field, then a quick sequential or binary search of the RAM-held key field "index" will allow the relative position of the record on disk to be determined and brought quickly into RAM. Sometimes several fields can be keyfields or the key field can be changed for another by creating a new RAM index.

ENTER & ADD NEW RECORDS Self explanatory

DELETE A RECORD Also self explanatory in principle. Sometimes a deleted record is physically removed from the database, while sometimes it remains in situ and is removed by a later tidying process.

EDIT A RECORD All databases can do this. Perhaps the only thing worth saying about all these basic functions is that with a good database you can, from the position of displaying a record, either edit it or delete it or print the display screen.

PRINT A REPORT Reports may be tabular (fields across the page) or sequential (fields down the page), for example mailing address labels, or both.

OTHER FEATURES The above features are provided by virtually all databases. These below are desirable extras, not universally found.

PRINT SCREEN The ability to print an individual record as it appears on the display screen.

TRAILING BLANK SUPPRESSION The ability to remove trailing blanks on fixed length data fields so that the contents of two fields can be printed adjacent to one another eg a Surname immediately following a Forename.

REVIEW The ability to list on the screen the index of the key field or sometimes several fields from the database.

SEARCH The ability to search through the database (whole or one field) or just through the key field index for a record or group of records meeting a given content. The given content may be searched as a precise field match or as a field stem or as free text.

SORT The ability to sort the database into a different order based on the content of a particular field. Sorts can be of two broad types, those that create a new file separate from the original, and those that sort only the key field index so that

the database can be addressed in a sorted form.

SELECT A SUB-FILE Often closely associated with sort routines, selection allows a sub-file to be created from the main file for records meeting certain equality criteria or lying within certain upper or lower bounds. As with sorting, a sub-file can be physically separate or a sub-index only.

NAVIGATION The ability to move from displaying one record to the next or previous, based on record order or sorted order. Also moving to top or bottom of the file.

SCAN The ability to review the database quickly by bringing each record sequentially onto the screen for a short period.

HELP The ability to view on-screen help notes about the system or perhaps individual fields.

PRINTER CONTROL The ability to transmit printer control codes either separately or as part of a report.

DATA MANIPULATION The ability to change the data contents according to some formula. Also the ability to total or sub-total fields as part of a report.

FILE TIDYING sometimes called repacking. For databases where deleted records are not physically removed from the file, tidying is used to reorder the file and remove records marked for deletion. Sometimes re-sorting into keyword order is done at the same time.

DISPLAY OR PRINT FILE STRUCTURE Most databases provide a fair degree of automation in the construction of the datafile. However for the design of reports it is usually desirable, sometimes essential, to refer back to the file structure. Thus the ability to display or print the file structure is very useful.

INTERFACING WITH OTHER PROGRAMS Perhaps a database program does everything you need all in one package. However, it is quite likely that you might wish to exchange data with other programs or other databases. The ability for a Basic program to read or construct a datafile for the database in question is a useful feature.

So how do the 5 databases compare? First a few words of introduction. PRK is of course a TI module of 1979 vintage. It works with both cassette and disk, since it stores the entire database in RAM. This limits the total stored information to about 10K bytes. It is also well known for its lack of speed, which is due to it being written in Basic. It has limited report capability; if you want customised reports then you have to use the complementary Personal Report Generator (PRG).

The Navarone Data Base Management System is a proprietary offering comprising a module and disk. There are 4 sub-systems on the module menu: Setup (ie creation), Entry (add, edit & delete), Print Reports and Sort. The disk programs are required for all but the Entry sub-system. The data screens (32 by 24) use colour to distinguish the entry fields from the rest of the screen. Function keys are extensively used to drive the system.

PRBASE is a fairware program written in Assembler. There are two sub-systems: creation and management. The latter handles all functions after creation, including printing and sorting. A utility program put together by John Johnson also complements the PRBASE and all on one SSSD disk. All data screens are 40 by 21. A very wide range of search/sort/review/scan facilities are provided, making it very easy to use. No manipulation functions are provided and the use of a non-standard data file structure makes writing your own manipulation programs very difficult.

Creative Filing System is another fairware offering, but very different from PRBASE. Much of it is written in Extended Basic and it requires 2 SSSD disks to hold all the sub-systems. Its features are almost too many to describe, yet the simplest function of displaying a record is surprisingly difficult to achieve. Field lengths are virtually fixed, as is the data display screen, which makes for added 'user unfriendliness'.

TI-BASE is a very different sort of database and was reviewed by Stephen Shaw in TI✳MES no 22. Its fundamental difference is that it features a very wide range of manipulation functions, including between up to 5 simultaneously open files, using a command language. These commands can be combined into a program, just like Basic, to carry out quite complex manipulations. The downside of TI-BASE is that it is not easy to master and you need to use the command language to generate your own custom screens or reports, features that other systems provide in a much more integral way. This review is of Version 2.

Lets look at some specifics; first some size parameters.

Total file size/maximum no of records

PRK: Limited by RAM to about 10K bytes.
DBM: 32K records max, in practice limited by disk space.
PRB: Max 348 records (ver 2.1) on an SSSD disk, one record per sector.
CFS: 1000, in practice limited by disk space.
TIB: 16129 records max, in practice limited by disk space.

Maximum record length	Maximum no of fields
PRK: 225 bytes	PRK: 15
DBM: 255 bytes	DBM: 25
PRB: 255 bytes	PRB: 32
CFS: 224 bytes	CFS: 16
TIB: 4335 bytes	TIB: 17

Maximum/Minimum field lengths

PRK: 15/1
DBM: 255/1
PRB: 255/2
CFS: Field length may only be 14 or 28.
TIB: 255/1

Now lets look at some of the core features of the 5 databases.

Creation

PRK: Creation is straitforward. A fixed data screen is used, so only field detail needs to be input: Name, type & length. Print formats are fixed, so no creation needed. Custom reports can be defined using PRG. Creation information and the data itself is stored in PROGRAM format.

DBM: Creation is achieved by laying out red fields on a blue screen, 32 by 24. For each field you then define whether the field is a Key Field (there may be several), a numeric field and define a help text for each field. The creation information is stored in PROGRAM format, separate from the data itself. Report formats are created in a similar fashion and stored in separate DIS/VAR format. A nice feature is being able to move a field until in the desired position by "picking it up" with the cursor, though this only applies to creating reports.

PRB: Fields are set out on the 40 by 21 screen using pairs of brackets, [ ] for upper case only fields and ( ) for others. No colour here of course since this uses text mode. A nice touch is the use of control codes to provide various edge characters to "pretty-up" the data screen. Report creation is not screen based as in DBM and is therefore rather slow. All creation information is held in the first ten sectors of the data file, which uses a special format unreadable by other TI programs.

CFS: Fields are named as far as needed, ending by entering the 'name' STOP. To create a 28 character field you merely skip the naming of the right hand field on any line. All creation information is stored in record 0 of the database. This means that the record length is determined by this record 0 requirement rather than the data records themselves. INT/FIX records are used.

TIB: Creation is very similar to PRK in style. Using a screen display you name fields and enter type and width information. The setup information is filed separately in a Structure file in INT/FIX 255 format, while data is stored in INT/FIX N format. The structure file also records the key field index and marks 'deleted' reords.

Selection & Display

PRK: By record number only, which can be located by review.
DBM: By exact key field content entry.
PRB: By stem (max 8) of key field content, or by record number.
CFS: By record number, which can be located by scan.
TIB: Selection can be by record number or by sorted key field content (FIND command). Display is best achieved by the EDIT command rather than the DISPLAY command. The former brings up the standard entry screen, while the latter is better employed as a Review function.

NB. With PRB and CFS, search features can also be used for selection. Only DBM and PRB allow customized entry/display screen design.

Enter Records

With DBM each key field entry must be unique. With CFS you have to enter "STOP" in the first field to cease repetitive record entry. CFS assumes all fields are 14 char length during entry. TIB's screen is fixed (one field per row) with horizontal windowing for fields longer than 25 characters.

Delete

PRK: A deleted record is completely removed from the file.
DBM: The last record and the deleted record are swopped, the latter being erased but with the first byte set to ASCII 127. This causes a sorted file to become unsorted again.
PRB: A deleted record is blanked but left where it is in the file.
CFS: As PRB
TIB: A deleted record is merely marked for later deletion during packing. A marked record can be recalled.

Edit

With DBM, when editing a key field entry the content must remain unique. The ability to edit or delete a record from the display position, referred to above, is not possible with PRK or CFS.

Print a report

PRK: Fixed format reports, down the page or tabular can be achieved. You need to use the PRG module to create customized reports.
DBM: The report sub-system is quite friendly and allows reports to be easily printed. One limitation is that 80 columns maximum can be used.
PRB: Any one of the 5 stored report formats can be used. There are some restrictions on the length of reports. One or Two-across mailing labels can also be printed.
CFS: No less than 3 methods of printing are available, which is somewhat confusing to grasp without a lot of practice. The Print Utility allows 'down the page' type reports but with up to 4 records across the page, eg for mailing labels. The Report

Generator is for columnar reports. Finally the Report Formatter allows reports with added non-data text (though the Generator allows simple headers).
TIB: All reports have to be individually crafted using the command language and the PRINT command in particular.

Now lets look at some of the more 'optional' features.

Print Screen

PRK: Yes
DBM: No
PRB: Yes
CFS: No
TIB: Yes when in Command mode, No in Edit mode.

Trailing blank suppression

PRK: No
DBM: Yes
PRB: On mailing lists only
CFS: Only between fields 1 and 2 in a mailing label
TIB: Yes, using the TRIM command.

Review

PRK: Any field can be reviewed, always starting from the file beginning.
DBM: No
PRB: The key field index can be reviewed across the bottom of the screen, but without record numbers.
CFS: No
TIB: By DISPLAYing named fields. These should be less than 40 characters wide in total, since longer displays wrap around the screen which makes the fields hard to read.

Search

PRK: No
DBM: No, except that selection itself is a key field search.
PRB: Two forms of search are provided, search within a field and global search throughout each record.
CFS: Single and multiple condition searching is possible. Fast searching on a sorted key field is also provided. However the output of these searches as with all other selection processes in CFS leads to a scan rather than a discrete selected list.
TIB: Using the FIND command on a sorted field.

Sort

PRK: File can be sorted on any field in ascending or descending order.

DBM: The separate sort sub-system features 6 nested sorts. The sort routine uses one or more intermediate work files on the same disc drive as the output file. It is therefore possible to run out of disc space on a complex sort on a long file. Since the sort is a separate sub-system, it can be used on any DIS/FIX datafile.

PRB: Sorting is limited to sorting the key index into alphabetical order.

CFS: A 2 nested sort creates a Sub-file. A novel search arrangement is provided to cope with situations where the sort element is not in a fixed place within all records.

TIB: The SORT ON command allows sorting on up to 8 nested fields in ascending order. The sorted order is saved in the structure file, which is useful since the FIND command requires the field to be pre-sorted.

Select a Sub-file

PRK: Selection is on upper and lower bounds on one or more fields. For multiple conditions, 'any' or 'all' conditions can be used. The selected subfile brings the selected records to the front of the main file.

DBM: The sort sub-system has an integral selection facility that may be used alone or as part of the sort. Records are selected by equality or non-equality with a quoted string at any point in the record. The inequality function acts in an odd way. If you wanted all records to be found that did not, say, begin with "AB", the inequality routine would reject "AC" and also "CB" on the basis that one of the characters was the same as the match string. (ie it works as a NOT-OR function rather than the expected NOT-AND)

PRB: The indexing function can be set to selective mode. It then creates a partial index of records equal with a quoted match string. The match string can use '?' as a 'wildcard' character.

CFS: Whenever a display is done, a subfile can be created based on:
   -Specified records
   -A range of records by number
   -A range of records by upper & lower bounds, eg D to G . The bounds may be up to 4 characters long.

TIB: TIB can have 5 files open at any time. One of these can be used to create a sub-file from the main file using the extensive programming capabilities of the command language.

PPS.
Stephen has pointed out that it is possible to convert PRB files to TIB by first printing a report to disc. The resulting file can then be CONVERTed. However, the total record length must be less than 132 for this to work. This doesn't seem to work for PRK as this can't print to disc.

Navigation

PRK: None
DBM: Next record in file, using "REDO" key.
PRB: Next and previous records in file (FCTN X/E)
Next and previous records in sorted order (FCTN D/S)
First record in sorted order (CTRL D)
(Last in file can also be found quickly as select by number
(Command N) has last record number as default input.)
CFS: None
TIB: In Edit mode, Next and Previous in file (FCTN 5/6)
In Command mode, navigation commands are TOP, BOTTOM and
MOVE. The latter allows one to move forward or back by a
quoted number of records.

Scan

PRK: No
DBM: No
PRB: Forward or backward scan possible. Scan can be paused and
restarted.
CFS: All forms of selection and display in CFS are Scans. They
can be stopped but not restarted.
TIB: No, but one could be programmed.

Help

PRK: None, though screen prompts are very easy and comprehensive.
DBM: Yes. Help screens are available and individual help prompts
for each of your fields can be created.
PRB: H command gives a help screen with command summary.
CFS: None; a pity since screen prompts are sometimes missing and
actions not obvious.
TIB: Several help screens are available but TIB is a complex
package and no amount of help text can replace the manual!

Printer Control

PRK: None
DBM: Yes. Any control characters can be inserted anywhere within
a report.
PRB: Yes. Up to 6 control characters can be used with a report.
CFS: Yes, in all 3 types of printing (Utility, Report Generator
and Report Formatter)
TIB: Using a printer "driver" file customized for one's own
printer, control signals can be sent by mnemonic eg (DS) for
double strike.

Data Manipulation

PRK: 18 mathematical functions, statistics and linear fit. PRB
also sums numerical columns on printing.
DBM: No manipulation is possible, but during printing column
totals and sub-totals can be made. Special dollar and numeric
formats can be used.
PRB: No data manipulation is provided.
CFS: Data manipulation is provided for columnar reports using the

4 main maths operators (+,-,*,/). This is a particularly strong
feature of CFS.
TIB: 12 maths, 2 string, 5 boolean, 3 logical and 3 date
functions can be used. Fields can also be summed with the SUM
command.

As a general comment, I would say that if you really need to do a
lot of data manipulation beyond say column totalling etc, you may
be better off using a spreadsheet rather than a database.

File Tidying

PRK: Not applicable
DBM: Not needed because of deletion method used, qv.
PRB: John Johnson's PRBASE Utility can do this.
CFS: CFS can create a sub-file with blanks omitted, thus
achieving packing.
TIB: Using the PACK command.

Display or Print Structure

PRK: Yes
DBM: No, but position and length of individual fields can be
displayed.
PRB: On creation, a printout of the display screen format can be
made, from which structure can be determined.
CFS: Because of simple structure this is not needed.
TIB: Can be displayed, but not printed.

Interfacing with other Programs

PRK: Though not mentioned in TI's official documentation, it is
now widely known that PRK's Basic is 'enhanced' with extra CALLs
that allow Basic programs to access, and create if needed, the
PROGRAM data files used by PRK.

DBM: The manual explains how the DIS/FIX datafiles can be created
or read by Basic. You must create the Setup file using DBM.

PRB: This uses a totally non-TI standard disc format for data.
You can exchange data with Basic only by writing special routines
employing direct sector access methods.

CFS: The INT/FIX files can be directly read by Basic. A CFS file
requires the structure information in record 0.

TIB: The data is stored in DIS/FIX format, but the file
descriptor is set to INT/FIX! This is somewhat similar to the
situation found with Multiplan SYLK files. It makes the files
next to impossible to read or create with Basic, unless you use a
sector editor to change the descriptor to DIS/FIX. Why did
Inscebot do this to us? However, Ver 2 has a CONVERT command
which allows certain types of database files to be read and
converted to TIB files, creating a structure file at the same
time. Of those under review, only DBM and CFS files could be so
converted.

THE VERDICT

Even as long as this article is, it is not possible to do justice to any of these databases. My hope is at least that the information I have given is accurate. In the end its horses for courses. Some databases will be well matched to your requirements, some may be more complex than you wish to cope with. Here is a summing up, necessarily subjective to a degree, of the 5 databases.

Personal Record Keeping

Good points: Cassette compatible, easy to use, comprehensive analysis and data manipulation.

Bad points: Slow, limited capacity. Restricted reports, unless PRB is used. Not being able to 'select' a record from review list.

Judgement: If you don't have disks, this is the one for you!

Data Base Management System

Good points: Customized display/input screen, nice use of colour. Excellent report creation. Good Basic interfacing. Excellent help features and a good 6 nested sort.

Bad points: Limited navigation, no data manipulation, 80 column limitation on reports. No Print Screen.

Judgement: The most expensive database to acquire, its nearest rival is the fairware PRB which is much cheaper. The Basic interfacing is a point worth considering though.

PR Base

Good points: Customized display/input screen using 40 column text mode. Excellent navigation and searching. Almost all functions take place from the one display screen which makes it very 'user-friendly'.

Bad points: No manipulation. Exceedingly difficult to exchange data with other programs. Since it uses one sector per record, it is storage hungry for small record files.

Judgement: One of the best fairware programs around. If you don't want to manipulate lots of numerical data, eg you are storing names and addresses, this is the one for you. I found it very easy to use.

Creative Filing System

Good points: Very comprehensive offering, especially for numerical reports.

Bad points: Very complicated. Has presumably grown over the years to its present version 7 in a stepwise manner; thus there are 3

---

separate report printing methods. Very difficult to select a single record due to the Scan method of display. Virtually fixed format is a weakness.

Judgement: This user did not find this package friendly, though it has many fans. Such a large package has however to be good value on a fairware basis. Consider this one especially if the fixed format entry is what you want.

TI Base

Good points: Command language makes this very close to the professional databases for PCs eg dBase. 5 datafiles can be open at the same time. Highly customized reports can be created that otherwise might have needed an external program to produce. As a proprietary offering the price is also excellent.

Bad points: This is NOT a package for the beginner. The command language is not easy to learn, though the Ver 2 manual is an improvement. The writer found that under some circumstances the package can crash or exhibit progressive 'insanity' after command files have been run. The limit of 17 fields is lower than I would like, though being able to have 5 datafiles open partly makes up for this. The use of INT/FIX on the file descriptor instead of DIS/FIX makes data interchange difficult.

Judgement: This is the one for you if you are prepared to put the effort in. The rewards are enormous, but this is not recommended for a beginner.

CONCLUSION

There can be no outright winner in this Battle of the Databases. Many 99ers will never need to progress beyond PRK, especially if they only possess cassettes. For Disk users, the 2 fairware offerings, PRB and CFS, have both had a lot of programming effort put into them and are worthy of your support, though they are very different animals indeed. DBM perhaps offers less now than it did when it originally came on the scene, though I still like its simple file structure, good sort and easy report creation. TIB is cheaper and far more comprehensive for the advanced user who needs the extra flexibility provided by its command language.

Postscript: I originally set down to write this article because there had been calls for tutorial articles on PRB and CFS. Will I now write these tutorials? Perhaps the answer is no. It is very hard to improve on the manuals that come with most of these offerings, though I can point to a few issues that the manuals gloss over. If these packages are difficult to learn, this is because they are complex pieces of software and there is no short cut to the knowledge. However, if any of you have individual queries or problems with any of these databases, I will be happy to help you and perhaps print the advice in later issues. PJW

RAMBLES.
by Stephen Shaw. March 1989.
for TI✱MES #24.

Hello and welcome. As ever, my address, the same as the Group's disk library,
is:
10 Alstone Road   STOCKPORT,   Cheshire,   SK4 5AH
and I WELCOME your letters, especially your queries and requests, but if you
want a direct reply an SAE is requested (if you are overseas, make that two
International Reply Coupons, purchasable at your local post office).

A note for international dissemination- the Chicago group have discovered that
they have had real problems in the past year- their postal distributor was ill
and mail was not forwarded (resulting in members being struck off the data
base); they have changed their membership database (resulting in more members
being dropped off), they have changed their BBS phone number; their "hotline"
telephone number has been inactive; their Chairman has been very seriously ill;
and they are onto their third membership secretary in little over a year, as
one became bogged down in his paid work, and the other suffered severe health
problems.... their brand new President Don Jones is very sorry and please would
anyone offended please drop him a line now as matters are now in hand.

Anyone think we have problems now? Life for ANY user group is made very much
easier the more members actually contribute!

The Chicago group- possibly one of the largest "User" groups for any computer,
even have a member in Tianjin, so now we can add China to the list of countries
with a working orphan!

The Chicago group have also listed the TI peripherals which did not make it
(not in any quantity anyway!)... how many of you have heard of:
  1. Modem CARD (Novation Cat 300 baud modem on a card)-no TE2 needed!
  2. IEEE48 controller card.
  3. VCR Controller.
  4. Debugger card (code for which is in DEBUG for ED-AS).
  5. Grom library peripheral.
  6. Hex bus controller (to connect battery operated RS232/pio, colour printer
     and wafertape drive).
  7. Special PEB interface card for the 99/8.
  8. TIs own hard disk controller card.
and of course there were (and still are) a number of cards produced by third
parties for all sorts of things. Now perhaps you can understand why the PEB has
room for 8 cards???

Depending on how you look at the records the Chicago group has from 600 to 800
members!

Following on from the product announcement in the last issue of TI✱MES about
the new wordprocessor, PRESS, the Lima (Ohio) group reporting on a get together
organised by the Chicago group, saw a demo of an unfinished product- additional
info is that the spell-checker is on THREE DISKS. Files are NOT saved in the
usual Text style of DV80 format, but utilities are provided to convert between
PRESS and TIWRITER formats.

From the Hunter Valley in Australia, Tony McGovern advises of a "fundamental
flaw" in the ROS for the HRD (=ram operating system and horizon ram disk
respectively!). NO probem for you if you have all TI peripherals and stick to
them... problems if you have the Myarc disk controller, the Dijit AVPC card or
an Australian made ram-board. Tony's comments refer to Version 7.3 ROS and
earlier, and he has advised both interested parties of the difficulty.

Liz Lawrence, age 11, has three favorite games: TI Runner, Jumpy, and
Flooraway. One of these was written in the UK. Two of these are in machine
code- the UK program is in pure and simple TI BASIC. Don't give up on Basic too
fast! Liz has scored 34500 on Jumpy.
....
From earlier days...
  100 CALL INIT
  110 CALL LOAD(-31879,0)
  ..
  200 CALL PEEK(-31879,A)
  210 PRINT "TIME=";A/50;"SECONDS"
  220 GOTO 220
Requires minimem or ed/as plus 32k ram or XB plus 32k ram.
You can put code between lines 110 and 200, and time how long that code takes
to process- maximum time is about 5 seconds then it goes back to zero.
....
Got a DF80 machine code program that does not autostart, and need to know the
name to make the !@#$% program start? Well, the easy thing to do is load
FUNLWEB and load the file with that- Funlweb then gives you a list of DEF
names, and it is usually the first you choose. The harder way is:
  Using Editor Assembler OR Minimemory, load the DF80 file by:
  CALL INIT
  CALL LOAD("DSK1.FILENAME")
  (remember you MAY need more than one file to make the program work!).

Now, type:
  CALL PEEK(16176,A,B,C,D,E,F)
  PRINT CHR$(A);CHR$(B);CHR$(C);CHR$(D);CHR$(E);CHR$(F)
  and there is the start name to use...
[from an anonymous bulletin board, dated 8th June 1987]
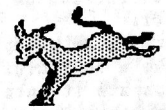
The July 1988 issue of RAMBLES is now available on GEnie if you subscribe! The
9T9 User Group of Toronto extracted and reprinted it, and kindly sent me a copy
(for which many thanks).

Extra Terrestrial Mail... just before Christmas I received a newsletter from
the Chicago group. Not too odd you may think. Well, it WAS the April 30th
issue....

What do you mean you don't subscribe to MICROpendium department... and look
what you are missing...
In the October 88 issue (I keep saying, I get mine by seamail, ok!);
   Articles on: Basic (Using Trace); c99(arrays); Configuring Funlweb; The
Geneve; Review of Bunyard Hardware Manual (recommended); and several mini
reviews and lots of ads.
In the November 88 issue...
   Machine code- amending a CHARA1 file easily; c99(using filenames); Geneve,
Review of TI Base Vn 2.0, micro reviews and lots of ads! news that NAVARONE
lost all interest in their TI products as of Dec 1987 and will not consider any
support for them (even if you bought them November 30th 1987!);
   Sub details in back issues or drop me an SAE!

What is the use of the Editor Assembler module if you have Funlweb... well you
do get a nice machine code manual with it.... apart from that, you also get the
source code for TOMBSTONE CITY on disk... and of course you can bung in 8k of
ram and have yourself a SUPER SPACE module!!

```
TTTTT EEEE  888 TTTTT
  T   E     8     T
  T   EE    88    T
  T   E     8     T
  T   EEEE  888   T
```

My reader has written in asking if I can stimulate some interest by setting
tests! Well, I'll try anything once... so, is there anyone living out there?
Here is a little test to find out...
   The object of this excercise is to stiulate a little active programming, and
as it may have been some time since you last did any of this, we shall start
off with something nice and easy.
   No prizes. No closing date. As many entries as you like. Any language you
like- as many languages as you like! In each issue the best response will be
printed- and I am not entering, so if no one enters, you won't see any results,
so there! Entries on disk or paper.
   TEST #1:
      Here is an example first:
      Take a four digit number (3025)
      Separate it into two halves, of two 2-digit numbers (30 and 25)
      Add these two numbers (30 + 25 = 55)
      Square the result (55 x 55 = 3025)
      And we have our first number!!

   REQUIRED: A PROGRAM (in any language) which will print out (to screen)
every four digit number for which this is true.

   This is a programming test in which the problem is spelt out. Now you must
put together the best problem solving algorithm you can and program it!!! If
you find BASIC easy, send in your Basic entry then try to do it in another
language- you have several to try: XB, Forth, Pilot, Lisp, Logo, Assembly,
c99, TP99, what have you?!

The book list in the last issue puzzled some members... it was just a book
list, otherwise called a bibliography, to let you know what books were known of
in the USA relating to the TI99/4a. Now if you see books mentioned in adds,
find them in boot sales, etc etc, you have a very rough idea if you'd know 'em
or not. Did YOU know there were so many books around? And of course, all the UK
published books are missing...
============================
NEW USERS:
   Cassette troubles....
a. The remote control (the small 2.5mm plug) works on about half the worlds
recorders- the other half use a different polarity, which matters as the
switching is electronic, not mechanical. If you can switch the wires in the
socket around it should work.
b. cos electronic switching is used, there may be a voltage drop across the
electronic device used, and if you are using batteries and the voltage is low,
the drop may be enough to prevent proper operation. Mains power is highly
recommended but it may still - rarely! - be necessary to leave the remote plug
out.
+++++++++++++++++++++++++
From Los Angeles, comes a 19 page TUTORIAL on TI BASE- by Bill Gaskill, this
is for version 1.02 but is equally applicable to Version 2. A trifle long to
reprint here, but if you are interested, perhaps you might wish to send me the
necessary for copying... our local copy bureau charges 15p plus vat per page
(but copy beautifully). If you have copying facilities available, and would
like a free copy, ask for the loan- which will be free if you return the
originals plus two extra copies!!! Loan copies will be covered by a refundable
deposit of two pounds and must be returned in seven days please!!! If no spare
copies are supplied a charge of one pound will apply for loan.
Please quote: TOPICS/TIBASE/NOV-DEC 88/JAN 89
+++++++++++++++++++++++++
The AGM is coming up- if you would like me to bring anything (light!!!) or do
anyhthing (demonstrate/show something?) let me know well before (eg today), as
I came back from the Alternative Micro Show in November with almost everything
I took there, and will not be repeating that loss of energy!!! I do still have
some copies of Micropendium I can sell you for 2.00 each too... mainly Sept 88
issues but they give a good idea of what the magazine is like!
....
THE AGM: THE GROUP IS YOURS: BE THERE.
....
There are some lovely programs in some of the newsletters I see. Some of them
are widely reprinted, yet I cannot offer them to you. Why? 'Cos they contain
significant errors which stop them functioning. Some of the programs we have
reprinted contain errors (the ones we dont have the time to actually key in!)
but we have always printed corrections (maybe an issue or two later!). In so
many cases though the other groups do not print corrections... maybe nobody
keys the programs in??? Where at all possible (and time is sometimes a little
short!) the listings you find here ARE from working programs, so if you have
any problems, please drop us a line!!! then we can print a correction...
....
Reminder... articles, however short (preferably!) or long, are WELCOME on any
subject- games or adventure hints or reviews, reviews of disk or cassette
library programs, tutorials on anything!, anything you wish. If you can supply
on disk in DV80 format, please send your disk directly to our editor, or
otherwise please write to me and I shall transcribe.
   I also welcome your comments and queries! SAE for a direct response please!

When the FIRST UK based TI User group was formed the subscription was 9.50 per year, and that was several years ago, and prices have I think doubled since then... apart from computers which now sell for a fraction of their 1981 prices! A paperback book published in 1982 for 85p is published in 1988 for 1.99... and our sub is mainly for publication! Also, as our numbers inevitably decline, unfortunately the cost per copy of the magazine goes up- printing costs per unit really fall as volume rises! So please try to be understanding when you see the group raise its subs... we have no unspoken for reserves, and would like to continue to serve TI users for a little longer...!!!

In the last issue I asked that if anyone wanted anything- or wishes to dispose of anything- please contact me. One wish received. One sale offered, but as no-one had advised me that they wanted a PEB with disk controller and drives and 32k ram (offered at 150) that one went by the way (dont ask now, its gone, probably for a great deal more and probably out of the country)- if you want to obtain or sell anything, contact me. The group does not carry stock but we can possibly put you in touch with someone who can help you, and perhaps a little faster than having to put an ad in the next magazine (which can be up to four months away!!!).
.....

TI BASIC:
POLISHING A BLACK BOX or
LESSONS IN TI BASIC...
In the last issue, I submitted a very old TI Basic program I wrote back in 1982!! and which had not been polished since. My wrists having been roundly slapped for inefficient programming, let's see how we can improve that coding! Get out your copy of issue 23 and turn to page 16.

340. CALL KEY... by using key unit 5, it does not matter whether the alpha lock is up or down, so we can improve the friendliness of the program by changing this line to CALL KEY(5,A,VR).

Once the key unit has been set to 5, we do not need to use it again, as each following use of 0 merely repeats the use of unit 5. If we needed to input lower case then we would need to use Key Unit 3.

2190. By reversing the logic we can do away with the time consuming ELSE and write this line as:
    2190 IF B(J,I)=1 THEN 2220

I have been challenged to suggest a use of the ELSE statement which is actually required- generally speaking, leaping around from one part of a program to another is not merely frowned on, but actually quite difficult in any language but basic. The only jumps generally allowed being either downwards or to a subprogram or function which returns. Any good reasons for using ELSE? Drop me a line and I'll see if I can always think of a better (more elegent!) way of doing it!

Further examples of misuse of ELSE in the last issue can be found on page 25, where line 990: IF CDE=HOLE THEN 1000 ELSE 1050
is better entered as: 990 IF CDE<>HOLE THEN 1050

Similar amendments to the listing on page 25:
    1050 IF CDE<>REP THEN 1040

    1070 IF (RR<>11)+(RR<>12) THEN 1040
     ...or maybe even better:
    1070 IF (RR<11)+(RR>12) THEN 1040

The use of ELSE in Extended Basic is a little different, as it is used effectively to join lines together. For instance, the listing on page 29 is equivalent to a TI Basic code:
    180 IF EOF(1) THEN 220
    181 LINPUT #1:A$
-the ELSE has merely been used to join this line 180 to this line 181, not to create an excessive program leap!

======================

Those of you who have dealt with PARCO in the past may wish to purchase any ardules you may want (and cannot obtain from the Group!) from the Parrish family without too much delay. For necessary reasons the name is now DATABASE but the telephone number remains 0404 44425 (Devon) and Access card still accepted. A telephone order to check stock is recommended, and a credit card order is despatched promptly if the goods are in stock.

There remain a number of worthwhile modules available, and I can recommend the following, prices quoted from a price list received in February and subject to confirmation when you order!

LOBO 2... this REQUIRES 32k ram, but is happy to operate from tape. £40.00. Logo is a good language to learn to get used to procedures and recursion. The list processing is pretty complex... not just turtles!

PERSONAL RECORD KEEPING £9.00, a slightly limited fixed format but fairly easy to use database module.

STATISTICS...£10.00... this is one module you won't get on disk (if you do I want a copy!) and does all the statistical work you could ask. Good manual but some idea of what stats are is a great help!

STARTER PACK 1,2, GAME WRITER PACK 1,2..£2.50 each, each is a book and a cassette, and between them they will teach you lots of good things about programming in TI BASIC. Some good programs too...

DATABASE has a number of educational modules from £3 to £7.50.

Games modules are from £5 to £9, with a limited stock at time of writing of MICRO PINBALL at £28.00

Some of my favorite games are Hustle £7.50, with three types of "snake" game; Othello £7.50, which plays a MEAN game- fortunately several levels of difficulty; Jawbreaker 2 £7.50- some similarity to PacMan, but I just like having my teeth scrubbed after I've eaten the sweets...; MunchMobile £9.00, a scrolling driving program I have difficulty getting to screen 2 on, but one I find quite delightful!; Defender £5.00 is VERY similar to the original arcade game... speaking of which TI INVADERS £7.50 is a remarkable adaption of the original arcade version (the best I've seen on computer), can you remember how slow that first screen started out (and how fast it finished...).

==============================

I have received letters relating to the GENEVE, the new TI99/4A compatible computer, which REQUIRES the TI PEB, and also a letter from a member detailing problems obtaining support for Myarc products.

In a past issue I did ask members with Myarc products to contact our member Richard Sierakowski and that advice was not heeded by our member in trouble, so

it is repeated now! And as Richard has a Geneve, and has had one longer than anyone else in the UK (as far as we both know) I asked him to write a little article for your edification, and it is sent in with this valuable text.

If we are lucky, Richard may be at the Annual Meeting with his Geneve to show you! and if we are VERY lucky may also have some of the latest US software for both the Geneve and the TI99/4A available on disk... you'll have to come along to find out!

There are an awful lot of things to consider when buying any computer product, and the overwhelming reason I don't buy a Geneve is sheer cost!!! There are reasons for and against, but if you should be looking for a more powerful computer, the Geneve is at least worth some consideration!
================================
....son of LOGO the Turtle.... son of FLOPPY the Diskus..... son of COBOL the incomprehensible....son of NUMERIC the Constant....

Of such are schools radio broadcasts made. Can you think of any more for this high-tech genealogy? The names should sound classical, and the descriptions be apt and should it be possible maybe even humorous?! Send your ideas in to me and I'll list all the GOOD ones I get in future issues!
================================

HIGH SCORES...
Long time since we had any of these... these are all mine... hopeless aren't they... beaten any of 'em.... write to me...

ALPINER...19224	BARRAGE...562870	DEFENDER...24900
DIG DUG...21350	HOPPER...34900	JAWBREAKER...11350
MICRO PINBALL 2...722500	MS PAC MAN...24330	MUNCHMOBIL...9760
PAC MAN...30940	SNEGGIT...3780	SLYMOIDS...77770
STAR TREK...116625	VIDEO GAMES 1 PINBALL...10028010!!!!	

================================
Well it's time to wrap this up and start printing it all out ready for despatch to our Goode Editor... remember to write in with any discoveries or questions, anything you want or don't want, remembering we are a very wide ranging group!!! Stay with us through 89 and ENJOY your computing...

Stephen Shaw

++

Members may wish to contact the following. Please ring at a reasonable evening hour, please be patient and above all be POLITE. Only one of anything for sale.

SELLING UP:
Converted console with 32k ram,printer interface and ham radio peripheral;
Supersketch graphic pad and module; speech synth; mini memory, lots of tapes and books. Please contact Simon G Pryce on 0743 67799 for details and prices.

Lots of cassette software plus modules- Extended Basic, Parsec, Music Maker, TI Invaders, Hunt the Wumpus... ring Jim McCready on 0244 332222

Full rig clearance, the lot for 175.00 buyer to collect from NORFOLK, or telephone to discus, Sid Oliver, 0953 860832.

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PUBLICATIONS (Write Stephen Shaw):
Our friends in the LA and Chicago groups have collected together articles from many newsletters and photocopies are available (delivery 5 weeks). These collections may contain duplicated information, erroneous information or uncorrected errors. They are a "scrap book" of related articles. No guarantee you can read all the copy- some original articles were not too legible to start with. Prices include post and packing.
LOGO DIGEST. 20 pages. Editor Chick DeMarti. £3.00
NEWSLETTER BEST. 1985. 28 pages. Editor George Hutton. £3.00
ORPHAN CHRONICLES. 175 page book by Ron Albright Jnr. £7.00
ORPHAN SURVIVAL BOOK. Ron Albright Jnr. 212 LOOSE pages, unbound. £12.00
SPRITE PROGRAM BOOK. Millers Graphics. 72 pages. £5.00
ASSEMBLY DIGEST. Editor:Chick DeMarti. Size unknown. £3.00
FORTH BEGINNERS. Ed Chick DeMarti. Size Unknown. £3.00
FORTH #1-#6. Ed Chick DeMarti. 100 pages. £11.00
GPL INTERN. Console ROM/GROM listing. £9.00
HANDY REFERENCE. Ed Chick DeMarti. 20 pages. £3.00
HARDWARE REPRINT. 150 pages. £9.00

SOFTWARE:
Keep an eye on Richard Sierakowski who is negotiating UK rights for some software. Via the LA Group we can offer (delivery 5 weeks...):
ADVANCE DIAGNOSTICS DISK. Millers. £15.00
EXPLORER. DISK. Millers. £16.00
FONT WRITER II. Asgard. £18.00
MACFLIX. Genial. £9.00
THE PRINTERS APPRENTICE. McCann. £17.00
THE PRINTERS APPRENTICE FONTS 1. McCann. £7.00
THE PRINTERS APPRENTICE FONTS 2. McCann. £7.00
THE PRINTERS APPRENTICE TOOL BOX. McCann. £13.00
SUPER EXTENDED BASIC. Module. Triton. £44.00

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ANNUAL GET TOGETHER... JUNE 1989... ROMILEY

This is your opportunity to meet other TI99/4A users, and to see some software and hardware in action that you may have been thinking of but wish to see first, or to ask questions....

WANTED...
   What would you like to see demonstrated? What would you like a short tutorial on? What would you like a question and answer session on? Please write in to Stephen Shaw with your requests, and within the timespan and space available we will try to help you. If you do not ask, you may not receive!

WANTED...
   Volunteers to handle a one hour or less session, either a question and answer piece on a specific topic, or a demonstration of a bit of hard or software, or a short tutorial (for example, I think many members would like to see a demo/tutorial of configuring Funlweb!).
   Volunteers to "be in charge" of proceedings for one or two hours, to give out raffle tickets, to handle an auction....
   The more volunteers, the less work everyone has to do, and the more every visitor will receive. Everyone has the ability to volunteer for something. Please write to Stephen Shaw.

WANTED...
   Consoles, expanded and unexpanded. If you are coming to the show, can you bring your system with you? If you can bring a colour tv and console, we can offer you a 50% reduction on your next renewal, if you can bring an expanded system, we can offer you a free renewal... but only if agreed in advance of the show, as while we don't want too few demo systems, we also don't want too many! Please write to Stephen Shaw indicating what hardware you can bring along and your likely time of arrival (set up before opening time is preferred!).

Consoles will be in use demonstrating various items, and we plan on having at least one console available for games/ educational module demos.

DISK LIBRARY orders can be taken at the Show, and orders received posted more than seven days before the show can be collected there by arrangement. Some library disks will be there for demo purposes, and if the equipment is available! copying may be possible.
●●●
FREE RAFFLE for all who attend... with prizes for both expanded and unexpanded owners... prizes not finally selected at time of going to press, but likely to include the likes of a Konix Navigator joystick with TI adaptor, a games module such as the superb MICRO PINBALL, an excellent simulation of an arcade pinball machine, or XB module, TI Base, TI Artist, a couple of Artist companions....
●●●
TRAVEL...
   Romiley is just to the North East of Stockport, and Stockport is placed on the A6 London to Carlisle road, also at the end of the M63- which usefully terminates to the East of Stockport!
   Before publication, a new Railway timetable is due, but at present, Romiley station, which is near to the venue, is served by trains between Manchester Piccadilly and Sheffield, with a more frequent service from Manchester than from Sheffield.

   There is a regular bus service from Stockport bus station, services 383 and 384 going in opposite directions around a circular route- 384 is the best from Stockport to Romiley and 383 the best going back. Half hourly service.
   If you are arriving at Manchester Victoria by rail, there is a direct bus link across town to Piccadilly station, take the small "Centreline" bus Route 4, fare presently 25p, no change.
   Anyone flying in? There is a 757 bus every 30 minutes from the airport to Manchster Piccadilly station, and it only takes 30 minutes to get there!
   Watch out for the map in this issue!!!

The FIRST get together of UK TI99/4A owners, back in 1984, was held in Manchester, and was extremely crowded! 1988 is an opportunity for our members to show their continued interest, and perhaps to learn a few answers to their questions... BE THERE!
●●●

MORE EXCERPTES FROM "GETTING STARTED WITH THE TI99/4A"
(c) S SHAW 1983

   FOR TO STEP
Note that in TI Basic you must always use the variable name after NEXT . NEXT on its own is in error. In some early computers you were not allowed to transfer to another line once a FOR NEXT loop had been established, but with the TI99/4A you need not worry. You may leave a FOR NEXT loop before the loop has been completed.
   Sample use:
   100 FOR FREQ=110 TO 200
   110 CALL SOUND(100,FREQ,0)
   120 NEXT FREQ

For..to..step may also be used to provide delays:
   100 FOR DELAY=1 TO 300
   110 NEXT DELAY
will take a little over a second to complete in TI Basic.

   INPUT
Try to use a separate INPUT for each variable. It IS possible to input more than one variable eg by using INPUT A,B but this requires the program user to input two numbers separated by a comma.

   The TI form of input, INPUT "HOW MANY?":N uses a colon separator (:), most other Basics use a semi colon (;).

   VARIABLES
   When you wish to refer to a number, you may use that number, or a 'label' representing the number. For instance, if we tell the computer:
      A=2
Then whenever the computer comes to 'A' (without other letters, that is, with spaces or brackets on either side), it will treat it as the number 2.

   'A' is a VARIABLE, and can be allocated to any number. The TI99/4A may have variable names up to fifteen letters long: you may for instance use:
      HIGHSCORE=12000

A variable representing a number is a NUMERIC VARIABLE and a variable representing a letter, a word, or a group of words is called a STRING VARIABLE. A string variable always ends with the dollar sign:

    MESSAGE$="YOU WIN"

Strings (as they are called) are dealt with later.

READ...DATA...RESTORE

TI Basic is slow at reading DATA lines, and if you need to use a number of READs, it is essential that you do not do it more often than absolutely necessary. It is a good idea to fill a variable array, and refer to that.(ARRAYs are dealt with at some length later)

```
eg FOR I=1 TO 5
   READ A
   IF A=1 THEN 200
   NEXT I
   DATA 2,3,1,0,6
```

if used often, could be replaced with:

```
   FOR I=1 to 5
   READ B(I)
   NEXT I
then when a check is required
   FOR I=1 TO 5
   IF B(I)=1 THEN 200
   NEXT I
   DATA 2,3,1,0,6
```

It is worth mentioning that DATA causes more problems in debugging a program than any other command. There must be enough DATA to fill all the READs in the program, and they must be numbers if a numeric variable is READ.
Be careful how many commas you use in your DATA lines : too many or too few can cause many hours searching for errors. The error messages you will receive may be some distance from a READ line, if you have loaded an incorrect value into a numeric variable due to missing out just one comma.

DATA hint: adding an additional value to your data list, which is never read or used, causes the computer to be notably faster in reading the actually used last item.

PRINT

TI Basic has a fairly slow screen scroll, but your information will appear more quickly if you use the print separators instead of a number of separate PRINT lines. You will also save memory.

```
eg 100 PRINT "PRESS"
   110 PRINT "1. TO START"
   120 PRINT "2. TO TERMINATE"
   130 PRINT
   140 PRINT "H FOR HELP"
```

Will appear more quickly if you use:

```
   100 PRINT "PRESS":"1. TO START":"2. TO TERMINATE"::"H FOR
HELP"
```

---

continued....
TI Basic allows you to key in a program line up to 4 screen lines long, so use this facility. Notice that instead of a single PRINT to scroll one line, an extra colon has been used in our single line amendment. Each colon causes the screen to scroll once.
          END.
....

BOOK REVIEWS....

All of the following books are published by Interface Publications, and are available for £1.55 each, postage included, from:
    Interface Publications Ltd.,
    9-11 Kensington High Street, LONDON, W8 5NP.
(Overseas readers could expect to pay an extra four or five pounds postage per book, depending on weight).
    As at January when this review was written, stocks of the Scott Vincent books were limited (80 copies each) so do not delay if you would like them!

DYNAMIC GAMES FOR YOUR TI99/4A by Scott Vincent.
    I have already reviewed this a while back, but did not then know that it was still available! so a brief mention is appropriate. I used one of the programs in this book to demonstrate Turbo Pasc 99 a few issues back. 159 pages, 30 programs, all in TI Basic. Each program has brief comments. The programs are fairly simple but well done for all that, and the book provides a good source of ready to key in TI Basic programs, which can if required be decorated with fancier graphics or extra bits and pieces, or even used as inspiration when trying out a new language such as Turbo Pasc 99...

MAKING THE MOST OF YOUR TI99/4A. By Scott Vincent. June 1984. 256 pages (!!).
    An addition to the TI Basic manual, with lots more examples, this book commences, neatly, with two longish programs to key in! There are numerous programs, and quite a fair bit of interesting text, and it must rank as one of the better books on TI Basic. The comment that User Groups might purchase your programs (coupled with a lack of contact addresses!) is odd, but is just about all I can take issue with.

PROGRAM DESIGN: THE ART OF STRUCTURED PROGRAMMING by Peter Juliff. May 1984. 247pages. Peter Juliff is/was the Head of the Department of Computing at Victoria College, Australia.
    Do not let the title put you off- this book is readable and relevant! It is worth the price for the cartoons- you can probably guess the illustration for file processing, but can you guess how to illustrate stacks? I have spent many happy hours debugging and rewriting programs written by other people, and also have long programs of my own which have been subject to continuous development, so by a process of need, I have become rather fond of the style of programming this book proposes.
  Not perhaps a book for the raw beginner, nevertheless, it is probably better read before you develop any odd programming practices- but never too late if you have! Some of the concepts are by their nature quite heavy, but the author manages to make it all so readable. If you don't get it all in one go, just go back and start again... IF you are interested in programming -especially commercially- do read this book. There are appendices covering Basic and Pascal too.   CONTINUED......>

THE BIG FAT BOOK OF COMPUTER GAMES. Tim Hartnell. 389 pages. 34 programs.
November 1984.
   Written in "standard basic" you won't find exceptionally good graphics in this
book! You WILL find a mention of the TI99/4A though, and you will find
reasonable and playable games, just waiting for you to add all those nice
things that OUR computer is capable of, like sounds and graphics. I have
previously reviewed a book by the same author, with a very similar title, but
published by Fontana- the two books have totally different programs.
   Once again, this is a great book for learning to key programs in, to get lots
of programs cheaply, and to learn- by improving them- how to program. SOME
conversions are required but these are not difficult and I'd be happy to help
anyone who got stuck. Good range of programs.

CREATING POLITICAL AND MILITARY SIMULATION GAMES ON YOUR MICRO by Mike Rose.
August 1985. 187 pages. Ten programs.
   The first sixty odd pages deal with the basics on how to program, and can be
applied to almost ANY form of computer game. I would have appreciated an essay
on "playability", but not to worry. As with the previous book, the listings are
in a "standard basic" which is just crying out for decoration with graphics and
sound, and will provide many hours of programming enjoyment. The simulation
programs include Corridors of Power, Laserfight in the OK Space Zone, Nuclear
Crisis, The Road to Valhalla, and the Siege of Doune Castle (no Trojan Rabbits
though!). A good mix for everyone here, and you will probably pick up a few
ideas and tricks.

THE 3D ANIMATED APPLE by Phil Cohen. May 1984. 198 pages.
   Another Australian author I think... sorry about the title, but the Apple
Basic used is very close to TI XB, and this book forms a good introduction to
hi-res graphics, suitable for use with the several different ways we have of
using hi res graphics in the various Basics we have...
   Ignore the first 54 pages, and start on page 55, which deals with the Apple
command HPLOT, which either plots a point, or draws a line between two points.
There is a lot of text to read which will help you to follow the Basic
listings, and make the necessary translations. The odd POKE bits are of no
importance and you can follow what they do in the text and do the same thing
more easily with Basic (well, in Myarc basic anyway- other utilities may
differ!). Any variable ending with % is an integer variable and can be defined
as such in Myarc XB otherwise ignore the %! The Apple numbers its screen points
from the top left (0,0) with a screen definition of 280 x 160, you can easily
scale this to our own 256 x 192! The book includes programs for both 2d and 3d
graphics, including 2d and 3d transformation programs, but omits coverage of
"hidden lines" (eg its all wire-frame models). A good introduction to hi res
graphics, read carefully, and very inexpensive. Buy now while stocks last!

These books are "out of print" so do not delay in ordering. You have an
opportunity to obtain quite economically, a useful collection of computer
books.

✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳✳

THE TIGER DOESN'T SLEEP TONIGHT.
Staying up nights for Graphics.
By Paul E Scheidemantle.
From Spirit of 99, Jan 1989.
Retyped by S Shaw.

Outside of programming I find graphics the most fun. Please forgive me if I
don't mention your favorite program here as unfortunately space is limited as
well as the fact that I can't afford to own all of them! I'd like to cover the
interfacing of different graphics programs [see also article by sjs in an
earlier TI✳MES]... but first a little bit of reminiscing.
   LAook at what we have gone through. The first graphics program that I can
remember for the TI is of course Video Graphs [a module- available on disk from
the Group library-sjs], and how much fun it was to play with... but alas you
were really limited to very simple graphics and it only saved to cassette, as
well as the fact that you couldn't print it out... fun but not enough.

TI BITS * Number 8 and 12
By Jim Swedlow
(Edited by S Shaw)

[This article originally appeared in the User Group of Orange County,
California ROM]

FAIRWARE REVIEW: DISK UTILITIES
By John Birdwell

You may have a favorite disk editor - one that you know and love (?) - one
that meets your needs. Mine has been Miller Graphics' Advanced Diagnostics.
At least until now. John Birdwell's DISK UTILITIES has jumped to the top of
my list. It is easily the best sector editor I have used.

It is what a sector editor should be. You can dump a file to your printer in
HEX and ASCII. DISK UTILITIES will follow the file on the disk even if it is
fractured. The file dump is like Disk+Aid with HEX on the left and ASCII on
the right. The print out can be in condensed print. You can also print a
sector or a group of sectors.
You can compare two files or disks. Any sectors that do not match will be
dumped to your printer. It can also give you a detailed file report.

DISK UTILITIES supports a string search. You can search a disk, any part of
the disk or within a file. The string can be in HEX or ASCII.
The sector editor gives you a full screen editor. The various controls are
easy to remember. Pressing CTRL H and CTRL A, for example, switches the
screen display between HEX and ASCII. CTRL W will write the sector back to
disk. Unlike Advanced Diagnostics, DISK UTILITIES keeps track of the current
sector for writing sectors. You can, however, write to any sector on any
disk.

Another nice feature is the Disk Report. This prints a disk catalog with two
new features. First, the catalog includes each file's sector numbers.
Invaluable if have it before you blow a disk directory. Also, DISK UTILITIES
hides a short file description in the file header and prints it out as part of
the catalog.
This program is a sector editor only. It doesn't have the ability to look
into your 4A's memory that Disk+Aid has nor the extensive documentation and
diagnostic features of Advanced Diagnostics. But it does have all the
features one needs in a disk editor.

There is more, but this should give you an idea of what DISK UTILITIES can do.
Without doubt, it warrants your serious consideration. DISK UTILITIES
IS in our (TIUG UK disk library) library. If you like it, send John the $10 he
asks for. It is well worth the price.
  John's address is:
     John Birdwell
     7052 Springhill Circle
     Eden Praire, MN 55344

Then "Draw-a-bit" came along... here we could finally do truly beautiful
drawings with the built-in bit-map mode of the computer, and save our picture
to disk. But not print to the printer yet. Along came "Print-a-bit" to
companion this program. Both of these programs were fantastic at the time, but
were not overly friendly with as I remember something like 150 different key
strokes to get the program to do things you wanted to do (a bit too much to
remember, but still a boon for our computer).
    Next GRAPHX came along and NOW... here was a truly friendly program that you
could use to draw, save, and print out. Easy to use menus and instructions for
its use. Still one of my favorites because of its ability to give you a grey
and white background to work with, for setting up fonts or other graphics where
you need to keep track of the height and width... and its ability (newer
version) to rotate items on the screen which to my knowledge at this time no
other program will do.
    [MEMBERS NOTE: the club library can supply an XB loading version of Graphx
which loads in just 24 seconds! To obtain a copy send your commercially
purchased master disk and return postage!]
    About the same time TI Artist came along. A truly landmark program for TI
graphics! A standard today which many programs use for interfacing of graphics.
With its selection screen making it easy to use and of course its ability to
save and use instances (a bit of cut and paste) as well as fonts (fantastic in
itself), this program has helped to set many standards for both ease of use and
what is needed in a graphics program. [TI Artist is US$20 plus p&p from
Texaments sjs]. But like many people (wanting everything) it didnt quite do
everything I wanted it to do... like printing single size graphics anywhere on
the page that I wanted it to, as well as giving me the ability to print fliers
in single size graphics. But darn, it was the best and there is always nothing
like looking a gift horse in the mouth <grin>. Guaranteed I would not be
without it in my graphics library! Especially for those fonts and its ability
to transfer Graphx and other formats in and out of its own format!
    Then Joy Paint comes in to try and fill the gap with a bigger screen [stephen
here, no not a 48" tv screen, but a larger picture with only part of it
displayed on the tv at any one time- ok?!], and the ability to enlarge and
reduce segments of your picture [results rarely acceptable to me! sjs]. These
functions were again a leap for TI graphics. Though the screen [=picture! sjs]
width was wider it didnt quite handle the 8 inch width of the [80 column]
paper. An interesting program (with) its ability to interface with Graphx and
TI Artist pictures (allowing you to use the vast library already available for
these two programs!).
    NOW Picasso is on the block [Tenex have a sole selling right on this one,
manufactured by Asgard]! And what a fantastic program it is. Allowing you to
print graphics anywhere you'd like them on the page with a 60 x 42 graphic
characters per screen (it requires 2 screens per full page). Here again it has
the ability to load and use TI Artist pictures (as well as save in the Artist
format)! Also with little preparation TI Writer files can be loaded and used
with it. It has its own font sets which can be edited on the spot with a touch
o a key (which can then be saved if you wish), as well as all the other normal
functions that you would expect of an excellent graphics program. Such as:
draw, lines, circles, fill, move, invert, mirror, use textures, different brush
strokes, and a zoom mode that encompasses the entire screen. But when you come
right down to it, it is the ability to print single size graphics anywhere on
the page that really makes this program a star! [An earlier version is public
domain and is available from your Group disk library-sjs].

    A few utility programs that enhance the use of these programs are the public
doMAIN MAX/RLE... another significant breakthrough for our community! Allowing
you to view, print or convert pictures from other computers as well as our own!
Two other utility programs that are a fantastic help are Graphics Expander and
Artist Enlarger [pardon my disagreement here- sjs]. Both programs allow you to
elarge or reduce TI Artist Instances and Fonts. While Graphics Expander is
completely written in assembly and is super fast (also allowing you to see
what you are working on, on the screen), it has its drawback in that the size
of the picture is limited to what is displayable on the screen. It also allows
conversions to and from CSGD fonts and small graphics. Artist Enlarger on the
other hand handles any size instance but is written in Extended Basic and
thusly slower (very slow) but when considering the time required to do any of
these functions it is comparably faster than we are! And generally I'm a lazy
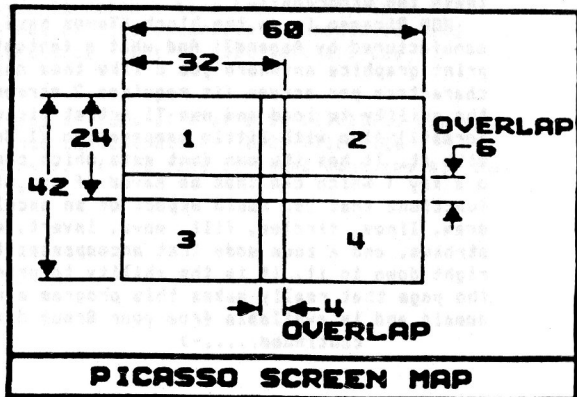person and would much prefer to let the computer do the work!
[Insert by Stephen: New program just about to go into group library is
SQUEEZER from Holland, which reduces a TI ARTIST picture to 50% (linear), and
is incomparably better than reductions made with the US programs!]
    Another source of pictures came about with MacFlix, a new program that
allows you to view, print and save portions of Mac Paint pictures [correction
by Stephen- for PRINT please read that as print a whole picture too!]. Opening
a new source of graphics for us.
    The Tiger (a MacPaint picture) was converted for use here by saving portions
of the screen to TI Artist format [using MacFlix] and then loading and matching
them up in Picasso. This way I could select what portion of the picture that I
wshed to use and where on the page it would be printed. One of the biggest
things here is not to be afraid to experiment! You can have a lot of fun making
p fliers and other things like greetings cards if you only give it a try!
    The Tiger picture that I wished to use was in the MacPaint format, and I
wanted to use it in the Picasso format. It should be noted here that when you
experimenting like this to always use a backup disk! So the first thing to do
was bring it up on the screen with MacFlix. To save an Artist format which is
compatible with Picasso was my initial goal. The first thing needed after
loading the picture was to set the save name (in this case TIGER1_P) and then
go to the picture and select what portion would be saved with that name. I
alway start in the upper left of a drawing, as it usually makes it easier to
remember my starting point. After determining my starting location and that I
can only take totally for my use with Picasso a 60 character width, versus a 72
character width of the MacPaint picture, I then save it to disk by pressing
ENTER.
Of course at this time I get an
Artist screen which is 32
characters wide and 24 characters
high. So it will require four
Artist screens saved to make up
my Picasso picture- see screen
map----->

continued--->

[PICASSO SCREEN MAP diagram showing dimensions: 60 width, 32, 24, 42, quadrants 1, 2, 3, 4, OVERLAP 6, OVERLAP 4]

PICASSO SCREEN MAP

    After the save has been completed... return to the main screen and change
the save name to TIGER2_P abd return again to the picture. Now press"4" on your
console so that when you press the arrow keys the picture moves in increments
of 2 characters at a time. As I returned to the same point as I left, I now
press the right arrow key 14 times, thus moving the screen 28 characters to the
right (be sure and wait for the BEEP between moves, so that you know that the
move has been completed before pressing the key again). Here we moved 28
characters over because when we load it into Picasso it will have a 4 character
overlap (and done correctly it will not require any picture manipulation). Now
press ENTER and save your second picture. To return to your starting point
press the left arrow key 14 times again and you should be back where you
started.
    Now at this time we should have two screens saved to disk (representing the
top half of our picture). Again return to the main screen and change the save
name to TIGER3_P for the next segment. After returning to the Tiger picture at
your starting point... we want to move down 18 characters (as you can see in
the chart there is a 6 character overlap). Do this by pressing the down arrow 9
times. Save your screen and return to make your final save name TIGER4_P. Here
when you return to the picture, press the right arrow key 14 times and you
should have your last section of picture that you need. Save it and leave the
MacFlix program and load Picasso.
    Once in Picasso, clear the screen with the FCTN 4 key. Now press FCTN =,
which will bring you to a menu. On the menu you can use items 2 or 3 (Load a
Graphic, or Overlay a Graphic). After making your selection type the disk drive
and file name... such as DSK2.TIGER1_P and press ENTER. This will load your
first screen. Move to the far right and return to the menu and load picture
two. Now move back to the bottom left cornerand return to the menu to load the
third picture, and finally to the far right bottom to load your last and fourth
screen. If everything has gone to plan you should now have transferred the
picture you want to Picasso.
    It would be a good idea at this time to save your picture! Now of course you
can manipulate the picture any way that you please! Note: if the picture that
you want is longer than the 42 character screen height, then you will have to
use an additional Picasso screen and of course move down on the MacPaint
picture to save additional screens.
    Now something that a lot of people may be concerned about, and that is
transfering a picture from one format to another. Usually there are two ways to
accomplish this. One would be to load the Graphx or Artist picture into MAXRLE
and then press the S key to save it. Here, after you press the S, it is
necessary to press the space bar to select the correct format and then type in
the disk number and file name such as DSK1.FILENAME- if you are saving to
ARTIST format, it is not necessary to include the _P.
    The other method for doing this is to use the Enhancement selection of TI
Artist. Here at the menu select 4. Conversions. You will get a short menu
showing S)ave, L)oad, and V)iew. Say we have an Artist picture that we wish to
convert to a Graphx picture: First press L to load... you will then have to
select TI Artist from a selection list and then type in the name of the file
and the drive number (the _P is not used). After loading the picture you may
view it first to be sure it is the one that you want. Press the space bar to
return to the menu after viewing. Now select the S function and select GRAPHX
and enter the disk number and file name you wish to save to.
    If you would like to reduce or enlarge it you could use Joy Paint. To
transfer into Joy Paint use the Joy Pal disk and the LOAD ANY from the menu. Be
sure to enter the _P here! After making your change, save it again with SAVE
ANY (which brings you back to the Artist format).
continued----->

Using these functions to allow you free access to (and from) different graphic programs can be a lot of fun! If you wanted to rotate an Artist picture convert it to Graphx and then back when it is done.

... In many cases one program does something a little better than the other! If you don't like one thing, why not use both - or all! Like I said it can be fun and with a little practice -you may not be perfect but you CAN have the best of all worlds. Just give it a try. As you can see, the Tiger doesn't sleep!!

DISK LIBRARY REPORT.

Over the last three months, the disk library has been used by 26 members (out of over 90 with disk drives), who have taken a total of 316 disks. The numbers of disks taken in each category were:

Utilities: 138 disks. 66 different titles. 106 disks on offer.
Modules etc: 74 disks. 41 different titles. 66 disks on offer.
Adventures: 25 disks. 19 different titles. 37 disks on offer.
Games: 25 disks. 16 titles. 41 disks on offer.
Music: 24 disks. 20 titles. 30 disks on offer.
Text: 12 disks. 9 different titles. 23 disks on offer.
TI specials: 8 disks. 3 different titles. 5 disks on offer.
Educational: 4 disks. 3 different titles. 9 on offer.
RLE graphics: 3 disks. 3 titles. 26 disks on offer.
Forth: 2 disks. Two titles. 14 on offer.
Amnion (IUG library): 1 disk. One title! 24 on offer.
LOGO: 0 disks. 0 titles. 8 disks on offer.

The most popular title:

Funlweb leads by a long way- 14 copies - and for many users these would be upgrades!

Util 21 with 7 copies was the most recent Util series disk and should have been the most popular Util disk! It contains the latest version of the Archiver utility.

Utilities 16 made 6 copies, largely I suspect for the excellent M-Copy by Mike Dodd, which makes disk use so much easier. Mike tells me no-one has written to him. This one is faireare chaps!

COMIC SHOW Vn 4 made six copies, suggesting a lively graphics interest- still waiting for someone to send me some results!

Five copies each of: 5EDAS-AB1, MCA-1, Neatlist.
And less than five copies for all other titles!

NEW ITEMS in the disk library for your consideration:
J Sebastian Bachs 3 part inventions.
Nutcracker Suite.
Timeline- a text database containing the TI99/4A history.
Morse Generator, which can operate a transmitter via the cassette port.
JET's MS ADVENTURE SERIES formerly sold for US$60!!
An 80 column FUNLWEB editor for use with Megatronic or Dijit cards,or Geneve.

>5EDAS-KLM4 has added MANCALA- which will run now without extra module ram!
Load with XB or EA- some docs added by me. LOVELY program.
.... continued----->

>CATCOM. As the name may imply, this program by Marty Kroll is a companion to his CATLIB which you will need to use it (CATLIB is available from the library). This companion database allows you to add several comment fields to the disk catalogues.

>MACFLIX1. This disk requires the use of the commercial program MACFLIX. It contains three screens of clip-art and one girly pic.

>JOE NOLLAN utility disk containing a good selection of powerful loading and menu routines, not the first but probably the best. Includes FULL character reset when moving from one XB program to another! Nice disk.

>ADTEXT1. Walk-through solutions to the new Infocom adventures: Lurking Horror, Leather Goddesses of Phobos, and Moonmist.

>ADTEXT2. Walk-through solutions to the new Infocom adventures: Cut Throats, Hollywood Hijinx, and Stationfall. Includes partial Stationfall map in the form of two RLE pictures.

>ADTEXT3. Walk-through solutions to the new Infocom adventures: Spellbreaker and Sorceror. Assumes some experience with ENCHANTER.

>QUICK RUN DEMO DISK 1. This is the official demo disk, demonstrating how much faster a program loads when you use the commercial program QUICK RUN, which is not required to use this disk. Five demonstration programs, which you can use!

>QUICK RUN DEMO DISK 2. This is my demo, which is better than those above! Includes an original TI Basic music program, FIDDLER ON THE ROOF, modified to work with ExBas, and a second version, saved using QUICK RUN. Spot the difference!

>UTIL22. 275 sectors used so far. A program to print cassette labels; a sector editor/utility by Guy Boudreault which has some interesting features such as sector move/copy; KWIKFONT by Wayne Stith, which is a machine code character definition program, together with a utility to move Kwikfont data files into a CHARA1 program file; a disk speed tester for Myarc controllers ONLY, and two LOGO utilities: One allows you to dump to PIO a picture of the definitions of tiles and characters (uses 8x8 or 16x16 printer characters);
and- when you load a LOGO procedure, ever wondered what to type to make it go? Now a utility to make your LOGO files self-starting!!! And a machine code utility to use in your XB programs, two LINKs to quickly restore lower case letters and to define upper case letters as the BIG title screen character set. You can also use the separate GPL/DSRLNK routines in your own m/code utilities for XB.

>DEMO DISK. An animated space scene; Speech from several modules at the touch of a key; a LOGO-type program in machine code, written in c99 originally; a program to print an 8x10 Mona Lisa; and programs similar to the MM LINES program, called LINES, TRIANGLES, and RECTANGLES. These programs don't really DO anything, but they are kind of fun anyway!

>FUNLWEB Version 4.13...TWO DISKS... Only slight modifications this time, to make it more usable with HRD and AVPC cards, and a neater printout through SD. If your present version is 4.0 or earlier, get this one!!

>SPECIAL 80 COLUMN FUNLWEB EDITOR FILES to be used with the Mechatronic or Dijit 80 column cards or with the Geneve.

>J C BACH OPUS XVII - six sonatas ON TWO DISKS with a total playing time of 90 minutes, from Harrison Software, with permission. (If you are French, you may know this work as Opus XII, c'est la vie!). Request- Bruce and Lori would like to contact anyone in the UK or France (they speak French) who can supply any information on J C Bach, especially his last three years, and on the political activity in France, the UK and Germany (esp Hamburg) at that time. They are near the Library of Congress so book details are fine! Drop me a line if you can help and I can expand on the request a bit!

>MAZE OF GROB/KAZMER... this is the TI Basic program on disk GAMES 19, modified to run from ExBas, and with the option of keyboard or joystick control. Ray Kazmer has also modified the players character into Woodstock! It's a nice game.

Forthcoming and available by the time this is printed... many more graphics for Macflix, and some excellent programs from Holland including a small but extremely clever TI Artist picture size reduction program which makes the American commercial equivalents look extremely silly indeed!!! Keep in touch, and remember, the update list is sent out by post to anyone who has sent in an SAE, everytime the NEW/DISKS file is zeroised!!!

Library disks are available to all members for a copying fee of one pound per disk, all disks are SSSD unless otherwise listed, and there is a one pound per order extra for packaging, postage etc. That is if YOU send in blank disks! If you prefer, disks can be supplied for an extra one pound each. They're not too expensive now! Try a few! And remember to support Fairware authors- the library will accept sterling donations to pass on in currency, just send the amount and name the author. (OVERSEAS members please note postage costs are higher- please add four pounds for airmail or two pounds for seamail/Europe- for large overseas orders insurance is a good idea and costs an additional pound. Overseas payments by sterling draft or money order drawn on London ONLY please, or your local currency may be sent in notes at your risk- allow for a 5% exchange rate fluctuation when calculating!).

ANNUAL MEET: If you'd like to pick up some library disks at our annual get together, please could you send your order in a week before the show and indicate you want to pick them up there! Then I don't need to spend all day copying disks!

Stephen Shaw

MINI MEMORY MEANDERING MEMORIES...
Back in Issue 6, now alas out of print, we carried a bit of a glut of articles on Mini Memory usage in TI Basic, on Graphics, Speech and Sound. In later issues we put these together into a demo program, and also covered the use of VDP registers...
After such a long break, with a few changes of owners, and possibly more mini memory owners than in 1984, it does not seem a bad idea to repeat a little now... but not all at once. In this issue a brief look at graphics, and if you want more for mini memory Basic usage, perhaps you could drop me a line and vote for one of the other items!!!

Mini Memory adds a few commands to TI Basic, including the ability to read and write directly to VDP ram using CALL PEEKV and CALL POKEV.

The VDP Ram is used to hold your TI Basic program, but also contains the screen contents, and colour and character definitions. There is also room for sprites (add that to the list of things to come!!!).

Here is the program, which will run in TI Basic provided you have the Mini Memory or Editor Assembler module installed. With only slight variation, you could use Extended Basic, but you will need to use the PEEKV/POKEV machine code utility we have already published, and you will need 32k ram to put it in. The extra ram is not required for mini mem or ed/as.

```
100 CALL CLEAR
110 PRINT "        ]"
120 PRINT "       ]]"
130 PRINT "      ]]]"
140 REM ] IS FCTN T
150 CALL PEEKV(1152,A,B,C,D,E,F,G,H)
160 CALL POKEV(1232,A,B,C,D,E,F,G,H)
170 FOR T=1152 TO 1231
180 CALL PEEKV(T,A,B,C,D,E,F,G,H)
190 CALL POKEV(1512,A,B,C,D,E,F,G,H)
200 NEXT T
210 GOTO 170
220 END
```

TRY IT!!!

Now the explanation. The character definitions are stored in vdp ram sequentially, each taking up 8 bytes. Character 48 is stored at addresses 1152 1153 1154 1155 1156 1157 1158 and 1159. Then from 1160 comes the definition for character 49, and after that 50 and so on. (Note to machine code programmers- all numbers used here are decimal!).

If you wish you can replace lines 150 and 160 with these- the effect is exactly the same:
```
150 CALL CHARPAT(48,A$)
160 CALL CHAR(50,A$)
```
As the definition of character 50 begins at memory address 1232.

Lines 100 to 130 place some character 93's on screen, and in the T loop we shall continually redefine this character, whose definition is held starting from vdp address 1512.

In order to achieve a smooth scrolling effect, it has been necessary to have a character defined as a number zero at both ends of the numbers- before 1 and after 9! This is what lines 150 and 160 do.

Within the T loop we are reading the definitions of the numbers, but not as normal, with CALL CHARPAT which looks at 8 byte blocks, but with direct addressing, which enables us to increment by one memory address at a time, for an interesting effect. Changing from number 1 to number 2 takes a 8 cycles through the loop- and as each cycle reads 8 bytes at a time, that means we are actually reading 64 bytes in order to go from number 1 on screen to number 2 on screen. And of course we are also performing a similar number of writes, making a total of 128 memory operations. All things considered the speed isnt too bad!

(There is enough info here for you to work out how to amend the cursor definition using mini mem. Drop me a line if you really are stuck and I'll put it in next time!!!).

Thats all for this issue- let me know what you'd like next!   Stephen Shaw. 1989.
....

■■■

FREE   FREE   FREE   FREE   FREE   FREE   FREE   FREE   FREE   FREE

RAFFLE

Everyone who attends the Annual Meeting of the Group and who arrives before 2 p.m. is entitled to a free raffle ticket!!!

For the unexpanded owner, a first prize selected from:
    TI Extended Basic module with manual
    Konix Navigator Joystick with TI Adaptor
    MICRO PINBALL II games module, an excellent simulation.

For the expanded owner, a first prize selected from:
    TI BASE data base on disk.
    TWO TI ARTIST Companions (Four disks of fonts and pics).
    TI ARTIST graphics program.

Additional or better prizes may be available on the day!!!!

■ When entering the hall, ensure you obtain a raffle ticket, and choose whether you wish a prize for expanded or unexpanded owner! There will be a first prize for each category!!! ■

In order to win a prize you must attend the annual meeting and arrive before 2 p.m.! The draw will take place between 2.30 and 3.30 depending on other events, and the prize must be claimed at that time or else another number may be drawn.

FREE   FREE   FREE   FREE   FREE   FREE   FREE   FREE   FREE   FREE

MYARC'S GENEVE 9640
AN INTRODUCTION BY RICHARD SIERAKOWSKI
(c) R.S.T.S. Feb 89

Most of you that read this article will already be dedicated fans of the TI-99/4A and have remained with this superb computer because, for the price, it had much more to offer than any of its contemporaries. Some of you will no doubt now feel slight pangs of envy when you look at the present `state of the art´ personal computers. There may even be a temptation to abandon the 4A in favour of some other computer that at the most basic level will give an 80 column display, more memory and a faster operating speed. There are major disadvantages in this course of action. You will first have to spend a lot of money on the new machine as your existing TI hardware will almost certainly be incompatible. Then learn a complete new operating system before you can use your new set up to any advantage. That takes up a lot of time, which always seems to run out as you get older. Also, you will have to acquire a whole new software base, at prices many times higher than in the TI market, and make all the new contacts necessary to ensure that you have access to the latest updates and freeware. Changing to a new and different computer system is not the simple or easy solution that it may appear to be. You have spent years in acquiring proficiency on the TI-99/4A. It does not make sense to throw all this knowledge away and go back to being a complete novice on another system be compelled to waste time getting used to it.

However... thanks to the foresight and brilliant developement work by Lou Phillips and his associates at Myarc, it is now possible to have your cake and eat it. You can have vastly improved performance, substantially more memory, a superb graphics capability and still remain in the friendly and familiar TI world. How do you do this? By upgrading to the Myarc Geneve 9640 computer! This clever concept is based on the simple developement principle of TI in that as they improved their integrated circuit processors they made sure that the next generation of chips would be able to run all the previously available software. At its most basic level the Geneve will emulate the 4A right down to the GPL environment and even display the title screen allowing it to be editted. At the other end of the scale it will directly address a maximum of 2 Megabytes of memory, run at a clock speed of 12 Mhz and allow you to install the operating system and language of your choice be it MDOS; Pascal; C; Fortran; Advanced Basic or any of the many other languages that are becoming available.

The Geneve comes on a card that is the same size as the 32K memory expansion card and it plugs into your Periferal Expansion Box which you must have in order to run the set up. It will make full use of your existing RS232 cards, Disk Controller Card (although you may be tempted by the superb new Hard and Floppy Disk Controller from Myarc which will be reviewed later) and the Myarc 512K card can be modified to run with the Geneve. All the existing hardware integrates seamlessly with the Geneve saving a lot of money in the process. Where TI had 32K of old technology chips Myarc have crammed in 512K of dynamic RAM for the CPU, 128K of RAM dedicated solely to the Video Display Processor and 32K (expandable to 64K) of high speed no-wait state static RAM, where the CPU runs all the memory intensive applications. The CPU is TI's 9995 16 bit chip which runs the same instruction set as the 9900 but is much faster and has additional commands. For the vastly improved graphics display the Geneve utilises the Yamaha-Microsoft V9938 VDP chip which will faithfully emulate the 4A VDP chip on the first three levels and then give you four more levels of graphics and text displays. The 9938 has full 80 column display with

hardware text highlighting and flashing facilities. The highest graphics resolution available is 512 by 424 pixels and that will still allow up to 16 colours on the screen from a pallet of 256 colours. Eat your heart out Amiga, Atari, Mackintosh, IBM etc. Not only that, the 9938 has hardware routines built in for line drawing, circle drawing, block move, fill etc. (better known as blitters) and will also, via a 9 pin port on the card, interface to and control a mouse, light pen, or digitising tablet and with the right hardware digitise and manipulate pictures from external video sources. It does not end there as the card also has a fully 4A compatable sound chip and a battery backed real time clock. All in all a wonderful piece of engineering.

The Geneve is supplied with a top quality 102 key IBM style enhanced keyboard which is full size and has all the function keys in a neat row across the top. The arrow keys are separate, to the right of the main QWERTY keyboard and there is a block of keys to the right of the cursor pad for easy numeric entry. There are also additional keys dedicated to paging up and down the screen, screen dump to printer and text editing etc.. This means that you never have to again stretch your fingers into awkward positions to try and do simple editing or similar. The keyboard has got its own processor and type ahead buffer which means no more lost characters as experienced on the 4A when running TI Writer. Also the CPU is no longer tied up and made to run slow by having to do mundane tasks such as scanning the keyboard. The keyboard is connected by a slim and elegant cable to the back of the card - no more having to struggle with the old 4A's elphant's trunk cable. The cause of numerous hangups when the multiway connector gets disturbed. You can actually move the keyboard around while the machine is running and unlike the 4A it will keep on running. You can even sit back in a comfortable chair and have the keyboard on your lap - its as easy as that. There is also a port on the back of the card into which you can plug your TI joysticks and then try Parsec at three times its normal speed!

The Geneve comes with a large manual and bundled with the following software:

MDOS - the disk operating system which allows the use of a command line interpreter to run batch files.

UCSD P-Code system with Pascal 4.21 (can you remember how it cost an arm and a leg on the 4A?). All the other P-Code implementations such as Modula 2, ADA, Fortran, Lisp, etc. can be run under it.

Myarc Advanced Basic - much more powerful implementation derived from TI Power Basic and it will run existing 4A Basic dialects. It has full graphics capability down to individual pixels and colours. 4A Extended Basic was an expensive extra for the TI-99/4A.

Utility Program for the 4A to enable catridges to be copied onto disk in GramKracker compatable format. This allows you to edit the contents of the cartridge to your own satisfaction. Now no more hangups half way through your program caused by poor Cartridge Port connections.

GPL Interpreter - Runs the 4A emulation at about 3 times 99/4A speed. It gives all the facilities of a GramKracker and allows editing of all the GROM and ROM areas. It uses files saved previously with GramKracker or the above Utility Program.

Myarc Disk Manager - extensively enhanced for the Geneve.

There is now considerable third party and freeware support for the Geneve. Most of the top TI 4A software producers are now writing on and for the Geneve and then adapting the programs to run on the 4A where possible. Increasingly in some cases it is just not possible to downgrade the software sufficiently to make it viable on the 4A. The advent of the Geneve and the removal of the limitations imposed by the 4A has rekindled their interest in programming for the TI world and is enabling them to produce the kind of software that as 4A users we have only been able to dream about. Programers are like everybody else, as soon as they get their hands on more power they want to be able to exploit it to the full and will not readily go back to a less powerful system. Having run my Geneve for over 2 years, I now find it very hard to use my 4A for any serious applications. It is an absolute pleasure to be able to get away from windowing and to use 80 columns when writing an article like this.

To end, I will give the results of the preliminary tests that I have run using the benchmarking programs as published by the PCW magazine.

MACHINE + LANGUAGE		BENCHMARK			
	INT MATH	REAL MATH	TRIG LOG	TEXT SCRN	
TI-99/4A TI BASIC	---	17.70	624.0	260.0	
GENEVE (5) TI BASIC	---	10.50	258.0	131.0	
TI-99/4A TI EX-BASIC	---	22.00	362.0	117.0	
GENEVE (5) TI EX-BASIC	---	11.00	152.0	62.0	
TI-99/4A MYARC XBII Vn. 2.12	18.00	23.00	365.0	80.0	
GENEVE (5) MYARC XBII Vn.2.11	9.50	11.50	150.0	71.0	
GENEVE MYARC AXB Vn.1.0	7.60	7.00	124.0	60.0	

As you can see even with the early version of Myarc Advanced Basic there is a considerable increase in speed over the standard 4A. Myarc now have a Basic compiler in the beta test stage of development. This will allow your Basic programs to run at machine code speed and will enable even the most inexperienced programer to unleash the full power of the Geneve. Once I have a bit of spare time I shall endeavour to do the full set of PCW Benchmarks in all the available languages for the Geneve and the TI-99/4A and then publish the results.

If you have read this far I think that it is safe to assume that you are a keen 4A fan and no doubt would welcome the opportunity to have much more fun but with considerably improved power and speed. The bottom line is that the Geneve gives you a 4A that runs 3 times faster, with equivalents of the GramKracker, P-Code Card with UCSD Pascal, a much more powerful Extended Basic, a RAM Disk, a Print Spooler, a professional quality graphics output and a real full size key board that will enable you to brush up on your typing skills. In the Geneve mode you will have a machine that can challenge any other personal computer.

I am very proud to have been appointed the sole distributer for Myarc products in the UK and as such I have an excellent working relationship with Lou Phillips. I am able to supply Myarc's entire range of products to order. I will distribute updates as they become available and can offer a full factory repair service. I have further technical information available on the Geneve and other Myarc products so if you are interested please contact me. I have also become a Site Licensed Software Supplier for several of the major US producers and can now supply their latest software direct from my Master disks. This will mean the latest US software at UK prices and delivery times - contact me for further information on this development.

Richard Sierakowski, R.S.T.S.,
Old School Buildings, Herd Street, MARLBOROUGH, Wiltshire SN8 1DG
Tel. Marlbo.(Std Code 0672) 54975

Prices in £ include VAT
DELIVERY EXTRA

MYARC Products

Geneve 9640 Computer with Enhanced Keyboard and bundled software......	439.00
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REVIEW: JOYSTICK: KONIX NAVIGATOR

14.99 each, inc post and packing from:
Konix Products, Unit 35, Rassau Industrial Estate, Ebbw Vale, Gwent, NP3 5BD.
Access and Visa accepted- telephone orders to 0495 350101

A few issues back I reviewed the Konix Speedking joystick (sold in the USA as the Epyx 500XJ). Konix, despite their name, are a little Welsh company who seem to have the joystick market well sown up- with millions of Speedking joysticks out there, their latest addition just had to be obtained!

(You may have noticed their next joystick, to be released for Christmas next, is so advanced they had to chuck a computer into it! It looks astonishing).

The Navigator Joystick is 99.9% perfect. The only question in my mind is why were all joysticks not made this way eight years ago? It is a real joy to use, and will quickly help you to double your previous high scores!

(That .1% reduction is for the shiny surface of the grip by the fire trigger, the remainder of the unit is textured for a happier hold. It would have been nice to have a textured front face as well).

Like the Speedking the Navigator uses microswitches and a steel shaft, so a long life seems secure!

The Navigator joystick I have seems just a little more "positive" than the "Speedking" I have- a little more pressure is needed- but not a great deal. You may recall I mentioned that the Speedking was for holding in the left hand only-as the fire button was on the right hand side.
The Navigator solves this problem by placing the fire button in the centre and by redesigning the shape of the body.

The Navigator joystick will sit easily between the thumb and first finger, with the thumb on one side and the other fingers on the other side, while the fire trigger falls neatly under the end of the first finger. The joystick can be used for prolonhged periods without fatigue. It does not use up any desk space, as so many joysticks do, and this is a GOOD THING for me 'cos I don't have any desk space to plonk a giant joystick on! The Navigator is held in one hand while the other hand controls the stick.

This joystick has an "autofire" switch. I have seen these advertised and wondered what they do- it appears that they allow you to hold the fire button down, and send a train of fire pulses--- something which we ancient TI99/4A owners really have little use for, as off the top of my head I cannot think of any TI program which requires you to repeatedly press fire- we seem to have autofire built in. Yet again, TI gave us something noone else seems to have thought of! If you do switch the autofire on when useing this joystick with the TI, it has no effect on most games, but on some games with rapid joystick scans, it can get in the way, allowing you only a small number of repeated shots in Parsec for instance (making it impossible to overheat the laser!). In general you would use it with autofire off.
        The joystick has TWO D style 9 pin plugs. Use the BLACK one with your TI99/4A and also use one of the ATARI TO TI joystick converters.
        This is an excellent product, very strongly recommended, and it's Welsh.

TI BASE UPDATE.

TI BASE is now into Version 2.01.
I have written to everyone who purchased TI Base through me giving details of the update procedure.

New items/augmentations include:
Sorting can be on up to 8 nested fields
READ can be used with quoted strings and there is a new
READSTRING.
There is a CONVERT to more easily amend database structures.
MEMORY gives details of memory usage.
EJECT is put in from dBase II.
SNAP is a screen dump command.
Printer output can now be directed to disk.
There is a limited file print command- to print command files.
TRACE to printer has been added.
There is slightly more memory available for your use.
Global conditional changes can be made.
Printer control codes can be incorporated and used in PRINT directives.
SUM command, which can also be conditional/global.

Thus a product which was already superb is even better. The new rather fatter 66 page manual has more examples of usage too. AND the price remains at US$25,

A fuller review of the revised database appears in the November 1988 issue of MICROpendium, and back issues are available to current subscribers. The final grade was A-, the minus coming from Ease of Use, as the database is designed for maximum power and flexibility - options which usually require some sacrifices in user friendliness. The reviewer concluded that "It is difficult if not impossible to measure TI Base against the competition since it doesn't have any competition".

As I am now unlikely to obtain the necessary quantity of orders for quantity discount, the price if you wish to order through me is twenty pounds, inclusive.
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MACFLIX by J Peter Hoddie.
Published by Genial Computerware for US$15 plus shipping.
P O Box 183, Grafton, MA, USA, 01519.

Another graphics standard is born for the TI! How would you like to have a single graphics disk file to print out an A4 size picture in one pass, with a resolution of 700 pixels by 480 pixels (or thereabouts)?
MACFLIX is NOT a drawing program!!! It is a program which allows you to view and print high resolution pictures produced on the Mac using MacPaint, and also ads the ability to transform parts of the Mac picture to TI Artist format.
If you were to split a Mac picture up into bits for TI Artist and then print them using Artist options 1.3.8., you can transform an A4 portrait into (with some sticky tape) a fair sized poster some 33 odd inches long - naturally pixels are larger on this!
What use is it? On its own, not a lot, unless you have access to Mac pictures! Which brings in a query: would you like the disk library to add MAC pictures,

in addition to the RLE pictures? Let me know if interested. The MAC pictures I have at present are quite impressive.
- Correct, you cannot see a full Mac picture on a TI screen in one go! You have to window around the thing until you have the bit you want, then save that screen as a TI Artist pic, OR you can print the whole thing (Epson and Prowriter printer standards only).
- The maximum disk file size that this program can cope with is about 90 to 100 sectors, so some Mac pictures may not fit- the bottom parts of the pictures are lost on larger files.
- Geneve compatible, and can save in both My-Art formats too.

A good and inexpensive program.

QUICK RUN written by Travis Watford (of RLE fame).
ASGARD SOFTWARE. US$10 plus shipping.
P O Box 10306, Rockville, MD, USA, 20850.

Interesting utility this one! It "takes a snap shot" of a running ExBas program, and then you reload it in "running" mode- complete with prescan done, variables filled with values from data statements or external files, and so on.

It depends very much on the original program, but with SOME programs you can save considerable loading time by using this utility. With other programs, the extra loading time caused by the longer disk file and the different format, may result in a slightly longer loading time.

You insert into your XB program a CALL LINK line which will snap the program when it reaches that point (must not be immediately after a CALL SOUND though, and a few other restrictions...).

The instructions tell you to load the machine code part of the utility in immediate mode before you load your program, but in the first program I tried it out on, it was necessary to place the CALL LOAD immediately before the CALL LINK in the program itself, as it contained some non-relocatable machine code, which kept obliterating QUICK RUN if it was loaded as instructed!

A public domain demonstration disk is available- from the Group library- with five demo programs saved with Quick Run. I only have two of these in the original Extended Basic, and these compare as follows:
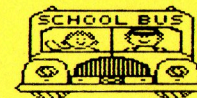VENUS (music by Sam Moore):
Time from RUN "DSK.." to first note:
TI Ex Bas = 32 seconds
Quick Run = 22 seconds
Not a huge saving is it? But it is a saving.

AXEL F(Music).
TI Ex Bas version = 91 seconds.
Quick Run version = 23 seconds.
Not bad eh? The ExBas program had to load data from two external disk files, which the Quick Run program did not need to do.   (to be continued)