



# SoftSide™

6-30\*  
EDITION

YOUR BASIC SOFTWARE MAGAZINE

MAY 1980

\$4.95

**Special Issue-**  
**Star Trek**

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by Dave Bohlke

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# SoftSide™

YOUR BASIC SOFTWARE MAGAZINE VOL.2, NO.8

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*We would like to thank Paramount Pictures Corporation for their help and cooperation in producing this issue, and for providing pictures from the movie to illustrate it. All pictures are Copyright 1979 by Paramount Pictures Corporation. Show your gratitude and go see the movie a half dozen times!*

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Our policies with respect to software purchase are highly individualized, and offer the programmer several options, including one-time publication rights, outright purchase, and royalties on sale of prerecorded cassettes. Program submissions should use Radio Shack Level II Basic, should run in Level II and Disk BASIC, and may not employ coding techniques that cannot be accurately presented in a line listing, such as SYSTEM modules and "super graphics" or other hybrid methods. For more information, please write: **SoftSide**, PO Box 68, Milford, NH 03055.

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# OUTGOING MAIL

## Crows Eat Prunes

Once upon a time a farmer left several trays of prunes in his backyard to dry. Five crows, flying overhead, decided to drop in for dinner. They landed, ate their fill, and flew to the handle of a nearby water pump to enjoy a cigar. After a pleasant hour, the first crow took off, flew fifty yards due South, and dropped out of the air, dead. The second crow then flew fifty yards due north, and also dropped out of the air dead. The third crow flew fifty yards due east, and dropped dead. The fourth crow, worried by now, took the only remaining direction, west, and suffered the same fate. The fifth crow, by now in the seat of terror, decided to fly straight up. He made it fifty yards and dropped dead. Moral: Don't fly off the handle when you're full of prunes.

## Editor Eats Crow

I got carried away in my March editorial and unfairly criticized one of our regular customers, the collector. As a subscriber to SoftSide on cassette from the beginning, he has over one hundred of our programs, legitimately, and keeps backup copies. His 2000 programs included many backup copies, so my hint of piracy was unfair. Incidentally, he reported that he got the sort time down to 11 seconds from 3 days by using the RACET GSF string sort.

## Whatever Happened to VTOS?

While I am confessing my sins, it is appropriate to talk about VTOS 3.1, which we advertised a few

months back. Lance Micklus and Randy Cook are good friends, so when Randy told Lance he had VTOS 3.1 almost ready, Lance suggested that I call and talk to Randy about T.S.E. carrying the product. I did, and Randy said that VTOS was almost ready, that it was sure to be ready by the time the advertisements appeared, and that it would not be a problem coming to terms on a contract. Several months have gone by, and we have yet to see a copy of VTOS 3.1 or a contract. We have stopped our advertising, refunded all orders, and are waiting until VTOS and the manual are readily available before we reconsider carrying the product.

## Editor Flies Off Handle

A very disturbing statistic came out of HardSide recently. As one of the largest single distributors of TRS-80 equipment, we have been keeping statistical records of defects. Fully 8% of all TRS-80 we receive will not even work at all fresh out of the carton. We find those and have them fixed before shipment. Still, another 4% are defective and must be returned by customers. It looks like Tandy gave up quality control for Lent. The problem is so bad that we have decided to give up selling Radio Shack pure units that we had been drop shipping direct to customers. That means HardSide cannot pass on the Radio Shack warranty, but we will double it and offer a six month limited warranty of our own instead.

## SoftSide to Have New Editor

James Garon has been doing a great job since he arrived here as our software editor, and will be promoted to editor of the TRS-80 publications effective with the June issues of SoftSide and PROG-80. James is no stranger to SoftSide reading. His Isolate had proven to be one of our most popular programs ever, and he has been a frequent contributor.

Nearly all of the men in our company are wearing new watches. Joe Breton, our marketing manager, wanted to put a gimmick in our new catalog, so he got a shipment of Casio calculator watches, which HardSide is selling for \$40.95. These are the same watches that sell in the stores for \$75, and which Markline is discounting at \$49.95. The watches were so nifty that the entire first shipment was sold to employees. There is a rumor that the next catalog gimmick will be a 12 ounce computer for \$200. I'm saving my nickels!

## Mom's Mail Order Micros

We have received a number of inquiries about the legitimacy of Mom's Mailorder Micros in Marlboro, NH. We have not been able to verify their legitimacy. The firm is not registered with the State of New Hampshire, according to the office of the Secretary of State.

Upon calling their number, we have gotten only an answering machine. We ask our readers for their experience with the firm.

In the Microcomputing Industry Newsletter Wayne Green, who seems to have some association with the firm, claimed that the only way to offer TRS-80's at Mom's prices was to upgrade used Level I's. (Not true—HardSide offers new computers at about the same price). Mr. Green recommended that as a bargain way to get a computer, so do even better with HardSide!

## Ramware Division Gets Fresh Life

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GWB

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The TRS Computer Club of Central Florida meets every second Sunday at 2 PM at the Florida Federal Savings and Loan Community Room, intersection of State Routes 434 and 436, Altamonte Springs. For further information, call the Secretary at (305) 678-4295, or write to Silom Horwitz, 152 Mill Run Drive, Lake Mary, FL 32746.

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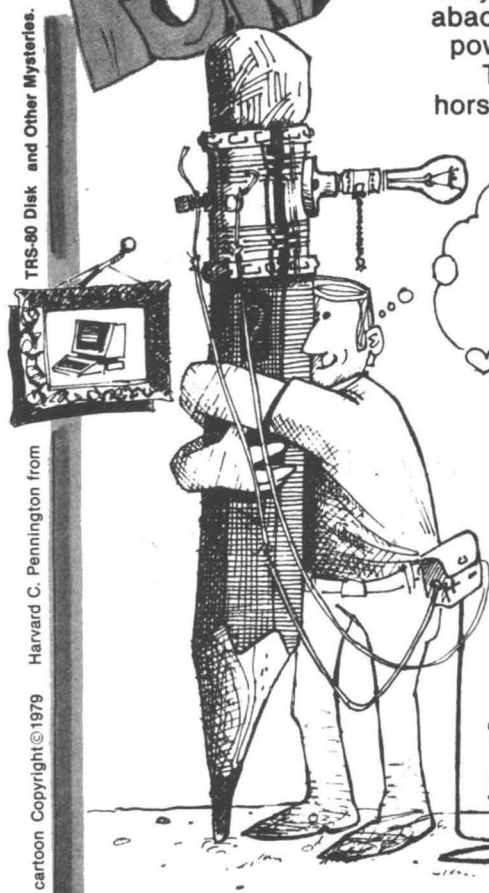
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# LIVEKEYS

by A. Douglas Werbeck

Here is a humble little program a friend asked me to write which allows a TRS-80 owner with lineprinter to have a letter writing machine.

In a nutshell it is a micro word processor. Really **micro!** The friend for whom it was written presently owns a full blown word processing program and doesn't use it because his complaint is "you have to study the instructions for hours just to learn how to use it to make life simpler!!"

I really don't think it will revolutionize the science of word processing but it might be of some help to some folk who would like to use their big investment printer for the occasional short letter.

## INSTRUCTIONS:

1. Type in the above program, then RUN.
2. Type in a line to be printed. Do not use the symbol #, it is reserved.
3. Limit the number of characters you type in the line to correspond to the number of characters your lineprinter is set to place on a single line, e.g., 64, 90, 132, etc.

For example, if your lineprinter is set to print 90 characters per line you would type in (approximating is a good enough) one and a half video lines (64 + 32 characters = 96 characters). If your printer was set to 132 characters per line ;you could type in 2 lines of video (2x64 characters).

4. After typing in the approximate number of characters in your line hit ENTER twice. The keyboard will be dumped onto paper.

5. You can correct a typing error on the video ONLY if you do not type past it. For example, you can correct the extra n in ELLENN only if you stop typing after the extra "N".

Procedure for correction: type the symbol #, then backspace arrow. Proceed as usual.

6. For double spacing between lines on lineprinter hit space bar then ENTER twice.

7. END.

```
10 REM                " LIVEKEYS "
20 :
30 REM  * * COPYRIGHT BY A. DOUGLAS WERBECK 1980 * *
40 :
50 REM    * * POB 787, RUSKIN, FLORIDA 33570 * *
60 :
70 CLS
80 A$ = INKEY$ : IF A$ = "" THEN 80
90 IF A$ = "#" THEN B$ = "" : A$ = "" : GOTO 80
100 LPRINT B$; : PRINT A$;
110 B$ = INKEY$ : IF B$ = "" THEN 110
120 IF B$ = "#" THEN A$ = "" : B$ = "" : GOTO 80
130 LPRINT A$; : PRINT B$; : GOTO 80
```

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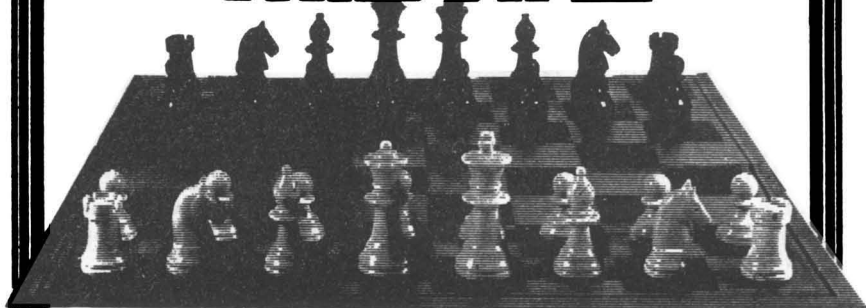
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## THE \$44,000,000 STAR TREK! GAME

by Lance Micklus

Just a few days before Christmas, I was looking around at a book store and found a source book for Star Trek fans. It listed everything from T-shirts to Trek fan clubs. Out of curiosity, I checked the State of Vermont and discovered that we have a fan club right here in Burlington headed up by Lynn Holland.

Later that night, I called Lynn to say hello, and introduced myself. Believe it or not, Lynn and I spent more time talking about computers than Star Trek. Lynn had just finished taking a FORTRAN course and was intrigued by the things I was doing with my TRS-80.

One of the interesting things Lynn pointed out to me was how many careers Star Trek had changed. And I, in fact, was just another example of this. Had it not

been for the sales of Star Trek III, I would probably still be working at Vermont Educational Television as an engineer.

When **SoftSide** asked me to write an article about the **Star Trek** movie, they suggested that I talk with Lee Cole at Paramount Pictures. Lee and I, as it turns out, have a lot in common. My background was in television production and now I'm working with computers. Lee, on the other hand, worked with computers and now has switched to a motion picture production.

Lee originally had worked for Rockwell. When Paramount had begun work on ST-TMP, she was asked to come and work at the studio for just a couple of weeks as a consultant. The couple of weeks turned into 2½ years, and in the process, Paramount hired her full-

time. Lee is an excellent artist, an asset for her work on the picture. Currently, she is assigned to the TV series **The Goodtime Girls and Angle**.

Lee's work with ST-TMP was primarily in the design of the various operating panels, computer terminal stations, and electronic displays. This includes the control panel on the Klingon battle cruiser, the space station and, of course, the bridge of the Enterprise itself.

Since there was no script at the time Lee started to do her work, she had to second guess what director Robert Wise would want. Certainly, he would need displays on the various ship's monitors, so Lee began to talk to people to get some idea of what those displays should be and began acquiring the film.

One of the visuals was actually the shock wave of a laser pellet experiment. Another, provided by The Jet Propulsion Laboratory, was a high resolution color computer animation of the Jupiter fly-by mission. And, in a few cases, filmed animation, i.e., cartoons, were used.

Once the script had been developed, Lee had to find sources for some very specific visuals. One was a brain wave scan of Mr. Spock which was seen toward the end of the picture. It actually was a C.A.T. scan of an autopsy brain, photographed such that it looked like it was being produced in real-time. Ironically, a few months after Lee shot the film, a device that really does this type of thing on living humans was announced.

Another interesting visual was the thermal graph of Ilia. The visual is based on what many

people believe these types of graphs will look like in the future.

Another set of visuals consisted of computer displays that would be almost unreadable, yet their presence makes the appearance of the bridge look genuine. The film crew contacted Jesco von Puttkamer at the Advanced Programs Department of N.A.S.A. for some additional help. Unable to supply all of the graphics Lee requested, Mr. von Puttkamer offered to augment the film available from N.A.S.A. with material he could make up on a small microcomputer he had at home.

And this is the most incredible part of the story — it was a Radio Shack TRS-80, with only 4K of memory, and Level I BASIC. Yes, Radio Shack's bottom of the line, \$500 computer, actually helped to make the Enterprise fly!

Working a few hours each night for a week, von Puttkamer made a total of 40 visuals which produced charts, graphs, or just displayed information. One of the programs was called a Deck Monitor. It monitored each section of each deck and would, for example, tell you that a light bulb was burned out. Another program kept track of the temperature at several hundred different locations on the ship. A third program kept track of consumables such as food, air, and medical supplies. Dr. Mc Coy had a special program that displayed the number of contaminants in the air.

After writing all of the programs, von Puttkamer had each display filmed using a special long exposure 16mm camera loaded with color film. Some of the displays were filmed in von

Puttkamer's living room off of his TRS-80 monitor. Others, were made at a film lab. After the film was developed, the lab added colors to the monochrome images so that they would appear as color displays.

On the Enterprise set, several rear screen projectors were used to get the displays onto the various viewing screens. Some of the displays were looped in the lab so that they repeated over and over again.

Lee said that Jesco's visuals were among the sharpest and clearest they had received. Unfortunately, not all of the TRS-80 graphics are seen in the final release of the picture. There was just more material than could be used. And some of what was used, wound up on the cutting room floor.

The program listing which follows are a few of the Star Trek computer displays that Jesco made for the movie. To make it easier for all of you to keyboard them in, I've converted them all to Level II BASIC, and then MERGE'd the programs together into a single unit. You can either keyboard the whole thing in, or just keyboard each part individually. The additional REMARKS I've added should help you find the break points where one program jumps to go to the next.

The first display makes horizontal flow lines which represent force field readings taken from the outside of the hull of the ship. The display updates itself every few seconds, but leaves the last couple of flow lines on the screen above it for comparison.

The second display in the program is a data frame of one of the ships auxiliary reactors. What makes this display interesting is the fact that a fault develops in the reactor which results in an alert condition. The fault apparently corrects itself and the reading then indicates that all is normal.

The third display in the listing is a flowchart of the life support system. Like the reactor display, the computer detects a fault. It then shows how it is handling the malfunction by trying to re-route some of the systems to compensate.

The fourth display is a bar chart. This shows how much power is being used in various parts of the ship. This display, and the life support flowchart are my favorites.

The last display element in the listing looks rather conventional. It shows some of the navigational stars, their present intensity, and their location. It appears that there was more to this part of the program since the listing appears to be incomplete. If that's true, then I only receive the first part. However, the other parts would appear to just do more of the same. Since we're only interested in appearances, Part I will do just fine.

So, there you have it. Five real and original Star Trek computer displays. I think you'll have a lot of fun with these on your computer. And after you get them all done, up and running; you can head back to your neighborhood theater and watch the movie again to see how many of them you can find.

```

1000 REM #CREATED BY JESCO VON PUTTKAMER FOR "STAR TREK" (1978)#
1010 REM * COPYRIGHT 1978 *
1020 REM * MODIFICATIONS BY LANCE NICKLUS FOR SOFTSIDE MAGAZINE
1030 /
1040 / FORCE FIELD PARAMETERS FROM OUTSIDE THE SHIP'S HULL
1050 / -----
1060 /
1070 CLEAR 100 : CLS
1080 DEFINT A-Z
1090 FOR Y=0 TO 47:SET(0,Y):SET(127,Y):NEXT Y
1100 O=7:S=0:Q=3
1110 A=RND(20):B=RND(20):IF O=0 GOTO 1130
1120 GOTO 1140
1130 W=A:A=B:B=W
1140 C=RND(41):IF C=0 GOTO 1140
1150 D=RND(41):IF D=0 GOTO 1150
1160 IF C>D GOTO 1180
1170 GOTO 1190
1180 W=C:C=D:D=W
1190 E=RND(62):IF E=0 GOTO 1190
1200 F=RND(62):IF F=0 GOTO 1200
1210 IF E>F GOTO 1230
1220 GOTO 1240
1230 W=E:E=F:F=W
1240 G=RND(75):IF G=0 GOTO 1240
1250 H=RND(75):IF H=0 GOTO 1250
1260 IF G>H GOTO 1280
1270 GOTO 1290
1280 W=G:G=H:H=W
1290 I=RND(93):IF I=0 GOTO 1290
1300 J=RND(93):IF J=0 GOTO 1300
1310 IF J>I GOTO 1330
1320 W=I:I=J:J=W
1330 K=RND(105):IF K=0 GOTO 1330
1340 L=RND(105):IF L=0 GOTO 1340
1350 IF K>L GOTO 1370
1360 GOTO 1380
1370 W=K:K=L:L=W
1380 N=RND(127):IF N=0 GOTO 1380
1390 N=RND(127):IF N=0 GOTO 1390

```



```

1400 IF MDNGOTO1420
1410 GOTO1430
1420 W=M:M=N:N=W
1430 V=0:T=1:GOTO1460
1440 Z=INT(2*RND(0))
1450 RETURN
1460 V=V+1:GOSUB1440
1470 V=0
1480 FORX=TTOR:SET(X,Y):NEXTX
1490 IFZ=1GOTO1510
1500 FORY=YTOY-INT(RND(6))STEP-1:GOTO1520
1510 FORY=YTOY+INT(RND(6))
1520 SET(R,Y):NEXTY
1530 FORX=ATOB:SET(X,Y):NEXTX
1540 IFZ=1GOTO1560
1550 FORY=YTO0:GOTO1570
1560 FORY=YTO0STEP-1
1570 SET(B,Y):NEXTY
1580 ON V GOTO 1590,1600,1610,1620,1630,1640,1650
1590 T=B:A=C:B=D:GOTO1460
1600 T=D:A=E:B=F:GOTO1460
1610 T=F:A=G:B=H:GOTO1460
1620 T=H:A=I:B=J:GOTO1460
1630 T=J:A=K:B=L:GOTO1460
1640 T=L:A=M:B=N:GOTO1460
1650 FORX=BT0127:SET(X,0):NEXTX
1660 S=S+1
1670 ON S GOTO 1680,1680,1690
1680 O=O+15:GOTO1110
1690 Q=Q+1:PRINT@1016,Q:SET(127,45):SET(127,46):SET(127,47):FO
RJ=1T0300:NEXTJ
1700 ' <<< JUMP TO NEXT DISPLAY >>>
1710 IF Q=12 THEN 2030
1720 PRINT@1016," ";
1730 PRINT:PRINT:PRINT:PRINT:PRINT
1740 FORY=30T047:SET(0,Y):SET(127,Y):NEXTY:S=2:GOTO1110
2000 '
2010 ' AUXILIARY REACTOR 4
2020 ' _____

```

```

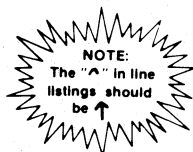
2030 CLEAR 100 : DEFINT A-Z
2040 GOSUB 2100:FORM=1T02000:NEXTM
2050 GOSUB 2790
2060 GOSUB 2100
2070 FORM=1T01000:NEXTM
2080 ' <<< JUMP TO NEXT DISPLAY >>>
2090 GOTO 3030
2100 CLS
2110 GOT02350
2120 FORX=27T047:SET(87,Y):NEXTY:FORX=46T028STEP-3:SET(86,Y):NE
XTY
2130 FORX=88T0126:SET(X,27):SET(X,47):NEXTX
2140 FORX=89T0124STEP5:SET(X,46):NEXTX
2150 Y=36:FORX=88T097STEP3:SET(X,Y):Y=Y-1:NEXTX
2160 Y=32:FORX=98T0102:SET(X,Y):Y=Y-1:NEXTX
2170 FORX=88T093:SET(X,34):NEXTX:B=98:FORX=32T028STEP-2:FORX=88
TOB:SET(X,Y)
2180 NEXTX:IFB=102GOTO2200
2190 B=B+2:NEXTY
2200 SET(103,29):Y=46:FORX=88T0106:SET(X,Y):Y=Y-1:NEXTX
2210 FORX=28T032:SET(107,Y):NEXTY:FORX=108T0109:SET(X,32):NEXTX
2220 FORX=32T046:SET(110,Y):NEXTY:FORX=30T032:FORX=111T0112:SET
(X,Y):NEXTX:NEXTY
2230 FORX=28T046:SET(113,Y):NEXTY:FORX=37T046:SET(114,Y):NEXTY
2240 FORX=38T046:SET(115,Y):NEXTY:FORX=39T043:FORX=116T0117:SET
(X,Y):NEXTX:NEXTY
2250 FORX=39T042:SET(118,Y):NEXTY:FORX=40T042:SET(119,Y):NEXTY
2260 FORX=41T042:SET(120,Y):NEXTY:Y=42:FORX=121T0125:SET(X,Y):Y
=Y+1:NEXTX
2270 A=90:FORX=45T036STEP-1:FORX=AT0110:SET(X,Y):NEXTX:IFA=1000
OT02290
2280 A=A+2:NEXTY
2290 PRINT0699,"B75X";
2300 PRINT0947,"V5L";
2310 PRINT0556,"PURGE SYSTEM STATUS";
2320 PRINT0617,"7";:PRINT0681,"6";:PRINT0745,"5";:PRINT0809,"4"
;:PRINT0873,"3";
2330 PRINT0937,"2";:PRINT1001,"1";

```

```

2340 RETURN
2350 PRINT@0,"DATA FRAME T92 --- AUXILIARY REACTOR 4"
2360 PRINT@129,"SENSOR B2 R4 L9 Z8";
2370 PRINT@257,"P IRF - 2 15 -";
2380 PRINT@385,"O XRAY 5 - 11 1";
2390 PRINT@513,"R VIS - - - 2";
2400 PRINT@641,"T GAM 25 6 - 9";
2410 FORX=1T047:SET(X,33):NEXTX
2420 FORY=3T047:SET(0,Y):NEXTY:FORY=11T033:SET(5,Y):NEXTY:FORY=
5T033:SET(16,Y)
2430 SET(24,Y):SET(32,Y):SET(40,Y):SET(48,Y):NEXTY
2440 FORX=1T047:SET(X,10):NEXTX:FORX=6T047:FORY=16T0285STEP6:SET
(X,Y):NEXTY:NEXTX
2450 FORX=1T079:SET(X,4):NEXTX
2460 PRINT@105,">>>> DATA NOMINAL 00";
2470 FORX=91T0126:SET(X,2):SET(X,6):NEXTX
2480 FORY=3T05:SET(91,Y):SET(120,Y):NEXTY
2490 PRINT@153,"STARDATE 7412 502";
2500 PRINT@769,"COMPUTER TIE-IN CODES...";
2510 PRINT@833,"MODE 1";:FORI=1T0700:NEXTI:FORY=24T051:SET(
X,40):NEXTX
2520 FORY=40T0105STEP-1:SET(52,Y):NEXTY:FORY=53T061:SET(X,10):NE
XTX
2530 PRINT@223,"> BRU-100-0011000111";
2540 PRINT@897,"MODE 2";:FORI=1T0700:NEXTI:FORY=24T054:SET(
X,43):NEXTX
2550 FORY=43T0135STEP-1:SET(55,Y):NEXTY:FORY=55T061:SET(X,13):NE
XTX
2560 PRINT@287,"> KOR-010-1100011011";
2570 PRINT@961,"MODE 3";:FORI=1T0700:NEXTI:FORY=24T057:SET(
X,46):NEXTX
2580 FORY=46T0165STEP-1:SET(58,Y):NEXTY:FORY=58T061:SET(X,16):NE
XTX
2590 PRINT@351,"> LIK-001-0000111101";
2600 PRINT@414,"===== ";
2610 PRINT@244,"TEMP 287+E6";
2620 PRINT@308,"FLOW 8155.3";
2630 PRINT@372,"PRES 760.3";
2640 PRINT@436,"POWR 2521.0";
2650 FORY=8T020:SET(103,Y):NEXTY

```





```

2660 PRINT@478,"PREVALVE SERVO COMPARATOR FAILING";
2670 PRINT@542,"SEQUENCER:";
2680 PRINT@607,"STAND-BY";
2690 PRINT@670,"VENTS: OFF";
2700 PRINT@734,"BAFFLE: ON";
2710 PRINT@798,"CRYO BOIL-";
2720 PRINT@862," OFF: MIN";
2730 PRINT@926,"FUEL LEVEL";
2740 PRINT@990,"RANGE: OFF";
2750 GOSUB2120
2760 FORX=24T026:FORX=81T085:SET(X,Y):NEXTX:NEXTY
2770 FORY=0T047:SET(127,Y):NEXTY
2780 RETURN
2790 FORM=1T010:PRINT@111,"          08";
2800 FORY=3T05:SET(120,Y):SET(127,Y):NEXTY
2810 FORI=1T0250:NEXTI
2820 PRINT@111,"DATA ALERT! 08";
2830 FORY=3T05:SET(120,Y):SET(127,Y):NEXTY
2840 FORI=1T0250:NEXTI:NEXTM
2850 FORJ=1T010
2860 PRINT@478,"          ";
2870 SET(127,21):SET(127,22):SET(127,23)
2880 FORI=1T0250:NEXTI
2890 PRINT@478,"PREVALVE SERVO COMPARATOR FAILING";
2900 SET(127,21):SET(127,22):SET(127,23)
2910 FORI=1T0250:NEXTI
2920 NEXTJ
2930 FORI=1T0750:NEXTI
2940 RETURN
3000 /
3010 / LIFE GRAPHIC
3020 / -----
3030 CLEAR : DEFINT A-Z
3040 CLS
3050 FORX=0T05:SET(X,4):NEXTX:FORX=2T06:SET(6,Y):NEXTY
3060 PRINT@68,"CABIN";
3070 FORX=7T019:SET(X,2):SET(X,6):NEXTX:FORX=3T05:SET(19,Y):NEXTY
3080 FORX=20T057:SET(X,4):NEXTX
3090 PRINT@142,"EMERG. REPRESS";

```

3100 FORY=5T010:SET(26,Y):SET(57,Y):NEXTY:FORX=27T056:SET(X,10)  
 :NEXTX  
 3110 FORY=3T00STEP-1:SET(2,Y):NEXTY:FORX=3T076:SET(X,8):NEXTX:F  
 ORY=1T04:SET(76,Y)  
 3120 NEXTY:PRINT@164,"PUMP";:FORX=70T081:SET(X,5):NEXTX:FORY=6T0  
 9:SET(70,Y):SET(81,Y)  
 3130 NEXTY:FORX=71T080:SET(X,9):NEXTX:FORX=20T0127:SET(X,2):NEX  
 TX:FORX=82T0101  
 3140 SET(X,8):NEXTX:FORY=9T010:SET(101,Y):NEXTY:FORX=82T0121:SE  
 T(X,11):NEXTX  
 3150 PRINT@298,"WATER ELECTROLYSIS";:FORY=12T015:SET(82,Y):SET(  
 121,Y):NEXTY  
 3160 FORX=83T0120:SET(X,15):NEXTX:SET(13,7):FORX=7T020:SET(X,8)  
 :NEXTX  
 3170 PRINT@196,"DEBRIS";:PRINT@261,"TRAP";:FORY=9T015:SET(7,Y):S  
 ET(20,Y):NEXTY  
 3180 PRINT@334,"NORMAL REPRESS. ";:FORX=8T019:SET(X,15):NEXTX:FO  
 RX=20T022  
 3190 PRINT@417,"LIQUID";:PRINT@430,"LIQUID";:PRINT@452,"COMPRES  
 SOR";  
 3200 PRINT@480,"SEPARATOR";:PRINT@493,"SEPARATOR";  
 3210 FORX=20T022:SET(X,6):NEXTX:FORY=7T012:SET(22,Y):NEXTY:FORX  
 =23T042:SET(X,12)  
 3220 NEXTX:SET(42,13):FORX=26T059:SET(X,14):SET(X,18):NEXTX:FOR  
 Y=15T017:SET(26,Y)  
 3230 SET(59,Y):NEXTY  
 3240 FORX=81T072STEP-1:SET(X,13):NEXTX:FORY=14T016:SET(72,Y):NE  
 XTY:SET(101,16)  
 3250 FORX=63T082:SET(X,17):NEXTX:FORX=89T0108:SET(X,17):NEXTX:F  
 ORY=18T023  
 3260 SET(63,Y):SET(82,Y):SET(89,Y):SET(108,Y):NEXTY  
 3270 FORX=60T082:SET(X,24):NEXTX:FORX=89T0108:SET(X,24):NEXTX:F  
 ORX=109T0127  
 3280 SET(X,20):NEXTX  
 3290 FORY=16T019:SET(14,Y):NEXTY:FORX=0T013:SET(X,17):NEXTX:FOR  
 X=6T049:SET(X,20)  
 3300 NEXTX:FORY=21T024:SET(6,Y):SET(29,Y):NEXTY:FORX=7T028:SET(  
 X,24):NEXTX  
 3310 PRINT@643,"CHARCOAL";:PRINT@655,"HEAT";:PRINT@679,"CO2 RED  
 UCTION";

3320 PRINT@719, "EXCH. "; :FORX=25T028:SET(14, Y):NEXTY:FORX=4T023:  
SET(X, 29)  
3330 SET(X, 33):NEXTX:FORX=30T032:SET(4, Y):SET(23, Y):NEXTY:FORX=  
28T040  
3340 SET(X, 29):SET(X, 36):NEXTX:FORX=30T035:SET(28, Y):SET(40, Y):  
NEXTY  
3350 FORX=76T0105:SET(X, 29):SET(X, 33):NEXTX:FORX=30T032:SET(76,  
Y):SET(105, Y)  
3360 NEXTY:SET(72, 25):FORX=72T0123:SET(X, 26):NEXTX:FORX=25T06ST  
EP-1:SET(123, Y)  
3370 NEXTY:FORX=122T082STEP-1:SET(X, 6):NEXTX:SET(101, 25)  
3380 PRINT@836, "WATER"; :PRINT@851, "CO2 REMOVAL"; :PRINT@898, "SEP  
ARATOR";  
3390 PRINT@806, "REGENERATOR"; :PRINT@824, "W/S"; :FORX=74T099:SET(  
X, 35):SET(X, 39)  
3400 PRINT@128, "WI"; :PRINT@384, "FD";  
3410 NEXTX:FORX=36T038:SET(74, Y):SET(99, Y):NEXTY  
3420 FORX=110T0119:SET(X, 35):SET(X, 39):NEXTX:FORX=36T038:SET(11  
0, Y):SET(119, Y)  
3430 NEXTY:FORX=25T037:SET(60, Y):NEXTY:FORX=61T075:SET(X, 31):NEX  
TX  
3440 SET(88, 34):FORX=100T0109:SET(X, 37):NEXTX  
3450 FORX=3T022:SET(X, 38):SET(X, 45):NEXTX:FORX=39T044:SET(3, Y):  
SET(22, Y)  
3460 NEXTY:FORX=38T059:SET(X, 38):SET(X, 42):NEXTX:FORX=38T042:SE  
T(37, Y):SET(60, Y)  
3470 NEXTY:FORX=64T068:SET(X, 40):SET(X, 43):NEXTX:FORX=41T042:SE  
T(64, Y):SET(68, Y)  
3480 NEXTY:FORX=39T025STEP-1:SET(66, Y):NEXTY:SET(32, 37):FORX=32  
T023STEP-1  
3490 SET(X, 38):NEXTX  
3500 FORX=106T0123:SET(X, 31):NEXTX:FORX=32T045:SET(123, Y):NEXTY  
3510 FORX=123T0114STEP-1:SET(X, 45):NEXTX:FORX=44T040STEP-1:SET(  
114, Y):NEXTY  
3520 FORX=113T023STEP-1:SET(X, 45):NEXTX:FORX=23T036:SET(X, 41):N  
EXTX  
3530 FORX=21T037:SET(49, Y):NEXTY:SET(14, 34):FORX=14T027:SET(X, 3  
5):NEXTX  
3540 FORX=0T02:SET(X, 41):NEXTX:FORX=42T047:SET(1, Y):NEXTY:FORX=

```

1T0127
3550 SET(X,47):NEXTX:FORX=47T02STEP-1:SET(127,Y):NEXTY
3560 FORN=1T01000:NEXTN
3570 FORL=1T03
3580 PRINT@77,"                ";:PRINT@141,"
3590 PRINT@285,"                ";:FORO=1T0500:NEXTO
3600 PRINT@142,"EMERG. REPRESS. ";
3610 FORY=5T010:SET(26,Y):SET(57,Y):NEXTY:FORX=26T057:SET(X,10):
SET(X,4):NEXTX
3620 FORO=1T0500:NEXTO:NEXTL:FORQ=1T03
3630 FORY=42T047:RESET(1,Y):NEXTY:FORX=1T0127:RESET(X,47):NEXTX:
FORY=47T02STEP-1
3640 RESET(127,Y):NEXTY:FORX=127T020STEP-1:RESET(X,2):NEXTX:FOR
P=1T0200:NEXTP
3650 FORY=42T047:SET(L,Y):NEXTY:FORX=1T0127:SET(X,47):NEXTX:FORY
=47T02STEP-1
3660 SET(127,Y):NEXTY:FORX=127T020STEP-1:SET(X,2):NEXTX:NEXTQ
3670 FORS=1T05
3680 FORX=65T067:SET(X,41):SET(X,42):NEXTX
3690 FORR=1T0300:NEXTR
3700 FORX=65T067:RESET(X,41):RESET(X,42):NEXTX
3710 FORR=1T0300:NEXTR:NEXTS:FORS=1T05
3720 PRINT@334,"                ";:FORR=1T0400:NEXTR
3730 PRINT@334,"NORMAL REPRESS";:FORR=1T0400:NEXTR
3740 NEXTS
3750 / <<< FALL THROUGH HERE TO NEXT DISPLAY >>>
4000 /
4010 / SHIP'S MAIN POWER USAGE INDICATOR BAR CHART
4020 / _____
4030 CLEAR 50
4040 DEFINT A-Y
4050 CLS:N=7
4060 FORN=63T083LSTEP128:PRINT@N+L,N:N=N-1:NEXTN
4070 FORY=4T040STEP6:SET(5,Y):NEXTY
4080 FORY=3T042:SET(6,Y):NEXTY
4090 FORX=6T0127:SET(X,43):NEXTX
4100 PRINT@965,"A-1 A-2 A-3 B-1 B-2 B-3 C-1 C-2 C-3 D-
1 D-2 D";
4110 PRINT"-3";

```

```

4120 PRINT@10, "SHIP'S MAIN POWER USAGE INDICATORS";
4130 Z=1325.05
4140 FORP=1T04
4150 B=10:PRINT@55, Z;
4160 GOSUB4570
4170 ON P GOTO 4200, 4180, 4180, 4180, 4180
4180 FORY=832T064STEP-64:PRINT@Y+B/2, "  "; :NEXTY
4190 PRINT@125, "";
4200 FORY=43TORSTEP-1:FORX=8T0B+5:SET(X, Y):NEXTX:NEXTY
4210 B=B+10:IFB=130THEN4230
4220 GOTO4160
4230 Z=Z+.01
4240 FORU=1T0200:NEXTU
4250 NEXTP
4260 FORU=1T01000:NEXTU
4270 FORU=837T0695STEP-64:PRINT@U, CHR$(30); :NEXTU
4280 FORQ=1T01
4290 PRINT@389, CHR$(30);
4300 PRINT@453, CHR$(30);
4310 PRINT@517, CHR$(30);
4320 PRINT@581, CHR$(30);
4330 GOSUB4430:FORN=1T02000:NEXTN
4340 NEXTQ
4350 FORU=837T0695STEP-64:PRINT@U, CHR$(30); :NEXTU
4360 / <<< JUMP TO NEXT DISPLAY >>>
4370 GOTO 5030
4380 GOSUB4560:X=X+2:Y=22
4390 FORX=XTOX+1:SET(X, Y):NEXTX:Y=Y+1
4400 IFY=26THEN4420
4410 GOTO4390
4420 GOSUB4560:RETURN
4430 X=10:GOSUB4380:X=X+9
4440 GOSUB4560:X=X+1
4450 FORX=XTOX+8:SET(X, 21):SET(X, 26):NEXTX
4460 GOSUB4560:X=X+9:GOSUB4560:X=X+2
4470 FORX=XTOX+1:SET(X, 22):NEXTX:FORX=XTOX+1:SET(X, 23):NEXTX
4480 FORX=XTOX+1:SET(X, 24):NEXTX:FORX=XTOX+1:SET(X, 23):NEXTX
4490 FORX=XTOX+1:SET(X, 22):NEXTX
4500 GOSUB4560:X=X+9

```

```

4510 GOSUB4560:X=X+9:GOSUB4380:X=X+9
4520 GOSUB4560:FORX=XTOX+9:SET(X,21):SET(X,24):NEXTX
4530 GOSUB4560:X=X+9:GOSUB4560:X=X+1
4540 FORX=XTOX+9:SET(X,26):NEXTX
4550 RETURN
4560 FORY=21TO26:FORX=XTOX+1:SET(X,Y):NEXTX:X=X-2:NEXTY:RETURN
4570 A=RND(42):IFAC=3THEN4570
4580 RETURN
5000 /
5010 / OFFICIAL NAVIGATIONAL STARS
5020 / -----
5030 CLS
5040 CLEAR 100 : DEFINT A-Z
5050 PRINT"STARDATE 7412 0          >>>  STARFLEET CO
MMAND <<<<"
5060 PRINT"      OFFICIAL NAVIGATION ST
AR S"
5070 FORX=0TO63:PRINT"-":NEXTX
5080 PRINTTAB(5);"NAME";TAB(21);"MAGNITUDE";TAB(34);"SID. HOUR
ANGLE";
5090 PRINTTAB(53);"DECLINATION";
5100 FORX=0TO63:PRINT"-":NEXTX
5110 PRINT@320,CHR$(31);
5120 PRINTTAB(0);"ACANAR";TAB(24);"3. 1";TAB(39);"316 DEG. ";TAB(
55);"5. 48";
5130 PRINT" DEG";
5140 PRINTTAB(0);"ACHERNAR";TAB(24);"0. 6";TAB(39);"336";TAB(55)
;"5. 57"
5150 PRINTTAB(0);"ACRUX";TAB(24);"1. 1";TAB(39);"174";TAB(55);"5
. 63"
5160 PRINTTAB(0);"ADHARR";TAB(24);"1. 6";TAB(39);"256";TAB(55);"
5. 29"
5170 PRINTTAB(0);"ALDEBARAN";TAB(24);"1. 1";TAB(39);"291";TAB(55
);"N. 16"
5180 PRINTTAB(0);"ALIOTH";TAB(24);"1. 7";TAB(39);"167";TAB(55);"
N. 56"
5190 PRINTTAB(0);"ALKAID";TAB(24);"1. 9";TAB(39);"153";TAB(55);"
N. 49"
5200 PRINTTAB(0);"AL NA'IR";TAB(24);"2. 2";TAB(40);"28";TAB(55);
"5. 47"

```

```

5210 PRINTTAB(0); "ALNILAM"; TAB(24); "1. 8"; TAB(39); "276"; TAB(55);
"5. 1"
5220 PRINTTAB(0); "ALPHARD"; TAB(24); "2. 2"; TAB(39); "218"; TAB(55);
"5. 9"
5230 PRINT "          ^ 1 1";
5240 FORZ=0T05000:NEXTZ
5250 PRINT@320, CHR$(31);
5260 PRINTTAB(0); "ALPHECCA"; TAB(24); "2. 3"; TAB(39); "127 DEG"; TAB
(55); "N. 2";
5270 PRINT"7 DEG";
5280 PRINTTAB(0); "ALPHERATZ"; TAB(24); "2. 2"; TAB(39); "358"; TAB(55
); "N. 29"
5290 PRINTTAB(0); "ALTAIR"; TAB(24); "0. 9"; TAB(40); "63"; TAB(55); "N
9"
5300 PRINTTAB(0); "ANKAA"; TAB(24); "2. 4"; TAB(39); "354"; TAB(55); "5
42"
5310 PRINTTAB(0); "ANTARES"; TAB(24); "1. 2"; TAB(39); "113"; TAB(55);
"5. 26"
5320 PRINTTAB(0); "ARCTURUS"; TAB(24); "0. 2"; TAB(39); "146"; TAB(55)
; "N. 19"
5330 PRINTTAB(0); "ATRIA"; TAB(24); "1. 9"; TAB(39); "108"; TAB(55); "5
69"
5340 PRINTTAB(0); "AVIOR"; TAB(24); "1. 7"; TAB(39); "234"; TAB(55); "5
59"
5350 PRINTTAB(0); "BELLATRIX"; TAB(24); "1. 7"; TAB(39); "279"; TAB(55
); "N. 6"
5360 PRINTTAB(0); "BETELGEUSE"; TAB(22); "0. 1-0. 2"; TAB(39); "271"; T
AB(55);
5370 PRINT"N. 7"
5380 PRINT "          ^ 2 ^";
5390 FORZ=0T05000:NEXTZ:PRINT@320, CHR$(31);
5400 PRINTTAB(0); "CANOPUS"; TAB(23); "-A. 9"; TAB(39); "264 DEG"; TAB
(55); "S. 5";
5410 PRINT"3 DEG";
5420 PRINTTAB(0); "CAPELLA"; TAB(24); "0. 2"; TAB(39); "281"; TAB(55);
"N. 46"
5430 PRINTTAB(0); "DENEK"; TAB(24); "1. 3"; TAB(40); "50"; TAB(55); "N.
45"

```

5440 PRINTTAB(0); "DENEbola"; TAB(24); "2. 2"; TAB(39); "183"; TAB(55)  
 ; "N. 15"  
 5450 PRINTTAB(0); "DIPHDA"; TAB(24); "2. 2"; TAB(39); "349"; TAB(55); "  
 S. 18"  
 5460 PRINTTAB(0); "DUBHE"; TAB(24); "2. 0"; TAB(39); "194"; TAB(55); "N  
 . 62"  
 5470 PRINTTAB(0); "ELNATH"; TAB(24); "1. 8"; TAB(39); "279"; TAB(55); "  
 N. 29"  
 5480 PRINTTAB(0); "ELTANIN"; TAB(24); "2. 4"; TAB(40); "91"; TAB(55); "  
 N. 51"  
 5490 PRINTTAB(0); "ENIF"; TAB(24); "2. 5"; TAB(40); "34"; TAB(55); "N.  
 10"  
 5500 PRINTTAB(0); "FOMALHAUT"; TAB(24); "1. 3"; TAB(40); "16"; TAB(55)  
 ; "S. 30"  
 5510 PRINT " ^ 3 J";  
 5520 FORZ=0T05000:NEXTZ:PRINT@320,CHR\$(31);  
 5530 PRINTTAB(0); "GACRUX"; TAB(24); "1. 6"; TAB(39); "173 DEG"; TAB(5  
 5); "S. 5";  
 5540 PRINT"7 DEG";  
 5550 PRINTTAB(0); "GIENAH"; TAB(24); "2. 8"; TAB(39); "176"; TAB(55); "  
 S. 17"  
 5560 PRINTTAB(0); "HADAR"; TAB(24); "0. 9"; TAB(39); "149"; TAB(55); "S  
 . 60"  
 5570 PRINTTAB(0); "HANAL"; TAB(24); "2. 2"; TAB(39); "329"; TAB(55); "N  
 . 23"  
 5580 PRINTTAB(0); "KAUS AUSTRALIS"; TAB(24); "2. 0"; TAB(40); "84"; TA  
 B(55);  
 5590 PRINT"S. 34"  
 5600 PRINTTAB(0); "KOCHAB"; TAB(24); "2. 2"; TAB(39); "137"; TAB(55); "  
 N. 74"  
 5610 PRINTTAB(0); "MARKAB"; TAB(24); "2. 6"; TAB(40); "14"; TAB(55); "N  
 . 15"  
 5620 PRINTTAB(0); "MENKAR"; TAB(24); "2. 8"; TAB(39); "315"; TAB(55); "  
 N. 4"  
 5630 PRINTTAB(0); "MENKENT"; TAB(24); "2. 3"; TAB(39); "149"; TAB(55);  
 "S. 36"  
 5640 PRINTTAB(0); "MIAPLACIDUS"; TAB(24); "1. 8"; TAB(39); "222"; TAB(  
 55); "S. 70"  
 5650 PRINT " ^ 4 J";  
 5660 FORZ=0T05000:NEXTZ:GOTO1070





# ADVENTURE

Get the granddaddy of the Adventure Games!

From MicroSoft, the people who wrote BASIC for all the personal computers, comes a version of the original Adventure. NOW, you no longer need a PDP-10 for all the power of the original game!

This game fills an entire diskette. Endless variety and challenge as you seek to rise to the level of Grand Master (until you gain skill, there are whole areas of the cave that you cannot enter.)

**Requires 32K One Disk ONLY \$29.95!**



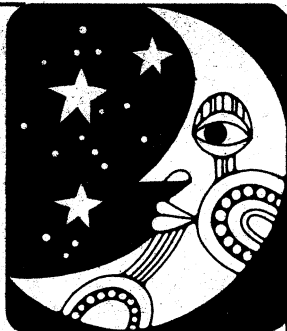
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# AMATEUR ASTRONOMY HANDBOOK

by George Hall

**\$14.95**



Amateur Astronomy Handbook is a Level II, 16K program designed to help anyone from the casual observer of the glorious Night Skies to the more advanced amateur who needs reasonably accurate positional information on the Sun, Moon and Planets.

#### Partial List of Features:

- \* Convert Local to Sidereal time
- \* Convert Right Ascension/Declination to Azimuth/Altitude or Heliocentric Longitude/Latitude
- \* Determine Local times of Sunrise, Sunset, Moonrise, Moonset and Phases.
- \* Plot position of Sun, Moon and visible planets.

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# LOAN AMORTIZATION

by Rick Rogers

**"It pays to Amortize!"**

Professional Loan Amortization Program for Bankers, or those who deal with Banks. Shows your monthly payments and tells you how much of each payment will go for Interest and how much for Principal. The use of a lineprinter is optional.

Whether you make loans or just pay them — Loan Amortization is the program for you.

Level II, 16K \$19.95



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# STAD

## Symbolic Trace and Debug

A powerful monitor for the TRS-80 with special ability in Tracing and Debugging. Single Step through machine language programs or set up to three breakpoints, and look at this display format!

```

AF  BC  DE  HL  IX  IY  AF'  BC'  DE'  HL'  SP  PC
0044 0000 C000 B77C 6433 FFFF 0102 0000 4000 3FC0 41FC 4400
4400  LD  R, 93
  
```

All the power of regular monitors as well. Look at these commands:

A FIRST(0) LAST(FFFF)	ASCII dump
A FIRST 0	formatted ASCII dump
B	start of branch table
B VALA	display in decimal
B VALA VALB(0)	hex arithmetic
C	check system tape
D FIRST(0) LAST(FFFF)	dump hex
E FIRST(0)	edit memory
F FIRST LAST VALUE	find byte
G BRKPTS (3 max.)	set breakpoints, continue
H FIRST LAST VALUE	find word
I PORT	read port
K	keyboard echo
L	load system tape
L SECTOR MEMORY COUNT(1)	load from disk
M FIRST LAST BLOCK	move memory
N	display symbol table
N 0	symbol table to tape
N VALUE	define value for symbol table
N FIRST 0	define start symbol table
O PORT VALUE	write to port
P	initialize memory blocks
P ENTRY	write memory blocks and start
P FIRST LAST	define a memory block
Q FIRST LAST	calculate checksum
R	display / modify registers
S FIRST LAST OPTION(0)	disassembler
T COUNT OPTION(0)	trace instructions
U FIRST COUNT OPTION(0)	unformatted tape I/O
V FIRST LAST BLOCK	verify memory
W SECTOR MEMORY COUNT(1)	write to disk
X FIRST LAST BLOCK	exchange memory
Z FIRST LAST VALUE(0)	zero memory

16K, 32K, and 48K versions on one cassette for \$24.95  
(Use from tape in Level II or as a command file from Disk)

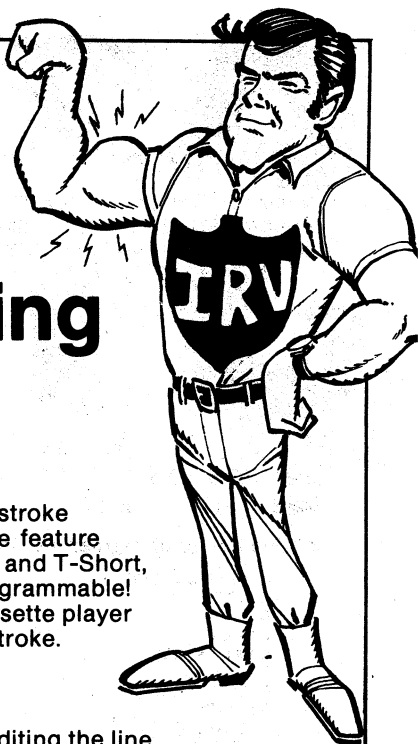


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# Put IRV on your programming staff!

Comes with manual



Input shorthand — one keystroke can enter a whole line! The feature you liked in Level III BASIC and T-Short, now with all keys user programmable! You can even turn your cassette player on or off with a single keystroke.



Relocate a line by simply editing the line number — renumber lines individually!



Video Editor allows cursor oriented editing of your programs. Just move the flashing cursor to the line to be edited and type the corrections, insert, or delete!

**IRV is faster than Level II BASIC!  
More powerful than a speed  
typist! Able to leap ten  
subroutines at a single bound!**

Machine language tape \$24.95

On Disk \$29.95

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# REVIEW OF TYCOON

by Brad Cameron

Tycoon, by David Bohlke, is a 1-to-5 player game which simulates your decisions as the head of a big business corporation.

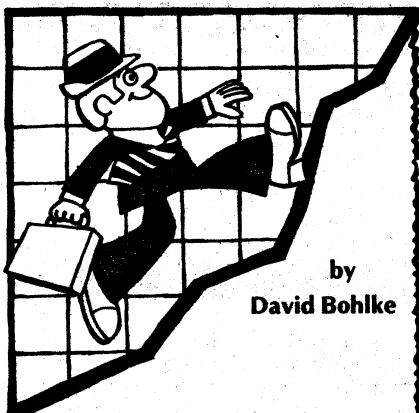
As you work your way up from a laborer to a tycoon, you must make sound decisions depending on your economic forecast (which ranges from poor to excellent). You can purchase up to five factories, and within each, control the amount and pay of your employees, the item production cost, percentage of inventory to release, amount of salesmen to hire, and even how much money to spend on advertising.

The game play is fast and the outcome is predictable only when someone wins, as each year's analysis changes so that one player can have several good years, while another player can have several bad ones. The object

of the game is to pay off your business debt as fast as you can while trying to make ends meet so that you can buy more factories to make more money. This in turn will make you a business TYCOON.

The program listing makes it easy to follow how the game works and how to make the fast-drawn graphs and bar charts. These show each players status in the game, as well as your out-of-debt-profile. Very little luck is involved, although the market analysis is chosen randomly. Buy this—it is the players skillful decisions that may win them the game, as there are many different strategies to use.

The game is popular at our house among two or more people, and it is a game that should not be left out of any collections.



by  
David Bohlke

# TYCOON

Take the helm of a small manufacturing business - set pay standards, advertising budgets, etc. Your progress is well-charted.

This game can accommodate up to four would-be financial wizards... last one to make \$10,000,000 becomes the janitor!

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Level II, 16K

Price, \$7.95

# \$ DOME \$ BOOKEEPING

for small business

by Roger Robitaille, Sr.

Based on the famous Dome Bookkeeping System, this program is designed to serve the small business with few employees. Uses the same chart of accounts as the Dome journal, with instructions on how to customize to your own needs. Presents data year to last week, this week, and year to date. Enter checks and deposits; receive screen or printed reports — account summary, check register, deposits, and profit & loss. *Manual provided.*

<b>Tape version, Level II, 16K (without Dome Journal) . . . . .</b>	<b>\$24.95</b>
<b>(with Dome Journal) . . . . .</b>	<b>\$31.95</b>
<b>Disk version, 32K . . . . . (without Dome Journal) . . . . .</b>	<b>\$29.95</b>
<b>(with Dome Journal) . . . . .</b>	<b>\$36.95</b>

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**TSE**NOTE: ST-80 is a trademark  
of Lance Micklus, Inc.

by Lance Micklus

# The ST-80 family of smart terminal packages

Now you can have the right terminal package for your communication needs! From ST-80 UC — the simple, pre-set, inexpensive terminal program designed for users of THE SOURCE, MICRONET, and FORUM 80 — to the power and sophistication of ST-80 III, The Software Exchange has the package for you.

All four programs include the ability to use an unmodified TRS-80 keyboard to produce RUB, ESC, and other control characters for time sharing, software control of the RS-232-C board, repeat key, bell, software support for the three most common upper/lower case hardware conversions, and line printer output.

## **ST-80 UC** 4K Level II cassette, \$24.95

This universal communicator program is an easy-to-use timesharing program for the beginner. Special features include preset parity, word length, and baud rate (regardless of switch settings on the RS-232-C board) for THE SOURCE, MICRONET, and FORUM 80, automatic testing of the RS-232-C board, and even spooling of prepared messages on tape directly into FORUM 80 using a basic program supplied as a line listing.

## **ST-80** 4K Level II cassette \$49.95

The original smart terminal program for the TRS-80, ST-80 lets you reprogram your RS-232-C board from the keyboard, and run at different baud rates. Does not have auto testing of RS-232-C or tape spooling.

## **ST-80 D** 32K disk program, \$79.95

Special features include connection time clock, option of user-created translation tables for keyboard, gathering and pre-formatting data to be sent directly from disk to host computer, spooling of received files to disk or printer, editing of received files, and auto logon. If you use it with VTOS 3.1, you also get device driven I/O, job logging, and chaining.

## **ST-80 III** 32K disk program, \$150.00

ST-80 D with extra utility programs

# **The Software Exchange**

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Star Trek, the Motion Picture © 1979 Paramount Pictures Corp.



# STAR TREK<sup>®</sup>

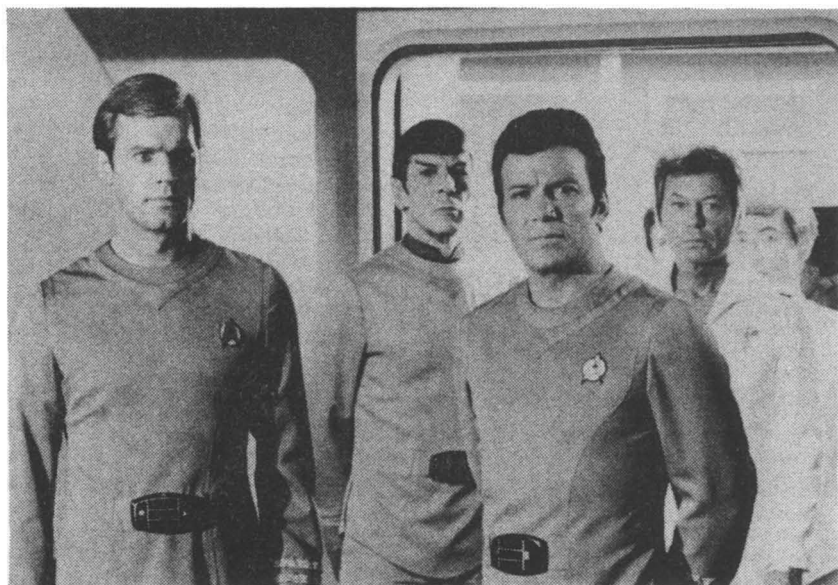
## 1114 by Lance Micklus



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You are the captain of the Starship Enterprise. Your mission is as follows;



Star Trek, the Motion Picture © 1979 Paramount Pictures Corp.

**Star Fleet HQ**  
**Star Date 2000**

**ORDERS: Captain James Kirk**

- 1 Collect data on Sector Omega VI. Sector is divided into 192 quadrants for exploratory purposes (8 x 8 x 3 quadrants)**
- 2 Preliminary reports indicate 5 Class M Planets in Omega VI. Locate, orbit, and gather data on each of them.**
- 3 Intelligence reports 20 Klingon warships in sector. You are to locate and destroy them.**
- 4 You are to complete your mission and report to Starbase in Quadrant 7,7,2 by Star Date 2500.**

**Star Fleet Command**

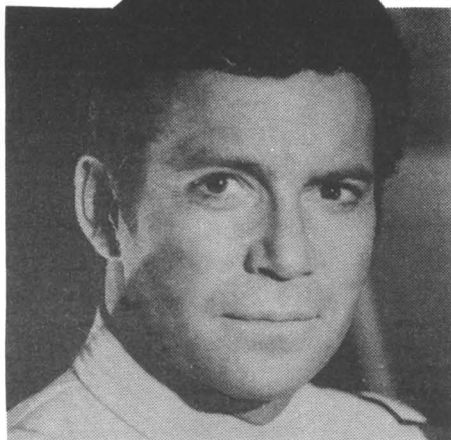
That's the game . . . now the rules.

First, you must never forget the Prime Directive: You should not shoot at anything except Klingons, otherwise you will go to jail.

Also, you want to be careful maneuvering your ship. If you collide with a starbase they will complain to Star Fleet Command. This will result in a loss of points, making it impossible to get a perfect score.

If you want to play the game to lose, try flying into a quadrant where there is a black hole or a class O star. The ship will be destroyed immediately and the game terminated. Another effective method is to ignore your crew and ship's reports, and just keep flying until you run out of energy.

The only honorable way to die is to be destroyed in a Klingon battle. But that's enough on how to play and lose. Now on to . . .



## HOW TO PLAY AND WIN COMMAND SUMMARY

Enterprise and Crew  
Awaiting your orders, Captain

- 0 Status
- 1 Damage Control
- 2 Science Computer
- 3 Ship's Computer
- 4 LR Sensors
- 5 SR Sensors
- 6 Impulse Engines
- 7 Warp Drive
- 8 Phasers
- 9 Photon Torpedoes
- 10 Alert
- 11 Repair

The program will break out of wait loops anytime the (ENTER) key is pressed. This allows experienced players to skip quickly to the next event, rather than wait for the six second wait loop to complete. The SHORT RANGE SENSOR SCAN may also be aborted this way.

In this simulation of the Enterprise, you will work with two computers - the ship's computer and the science computer. Their function, and that of the long range sensors, is of prime importance to the game.

To achieve your first objective, your ship's computer must have information about the number of Klingons, Starbases, stars, and planets in each quadrant of the galaxy. More detailed information is not necessary to achieve object number one, but may be helpful to you.

Each time you operate your long range sensors, the data displayed on the screen is also transferred and stored in the ship's computer.

The ship's computer can also provide you with information. It can scan its data bank to locate any area of the galaxy for which it does not have any basic data, etc.

### Ship's Computer Command Functions:

- 0 Data base scan to locate Klingon warships
- 1 Data base scan to locate star bases
- 2 Data base scan to locate Class F stars
- 3 Data base scan to locate planets
- 4 Data base scan to locate unexplored areas
- 5 Long range sensor scan from data base
- 6 Quadrant detailed display

## SAMPLE QUADRANT DETAILED DISPLAY

Cordinates: 7 7 2  
Klingons: 0    Star Bases: 1  
Stars: 0    Planets: 0  
Astronomical Feature: Star Fleet HQ  
Scientific Interest: None

## LONG RANGE SCAN

4	5	6	
VOID	K 1 B 0 5 2 P 2	VOID	1
K 0 B 0 5 1 P 2	VOID	K 2 B 0 5 1 P 2	2 4
UNKNOWN QUADRANT	UNKNOWN QUADRANT	UNKNOWN QUADRANT	3
.....			
VOID	K 0 B 0 5 3 P 1	VOID	1
VOID	VOID	VOID	2 5
UNKNOWN QUADRANT	UNKNOWN QUADRANT	UNKNOWN QUADRANT	3
.....			
VOID	VOID	VOID	1
VOID	VOID	VOID	2 6
UNKNOWN QUADRANT	UNKNOWN QUADRANT	UNKNOWN QUADRANT	3
.....			
LONG RANGE SENSOR SCAN		QUADRANT 5 5 2	
HIT (ENTER) TO CONTINUE.			

You must now make a choice between using the Phasors or the Photon torpedos. Phasors aim themselves, but sometimes they miss. Also, Phasors use up energy from those big 4,000 gallon gas tanks (what did you think those big things were in back of the ship?). The destructive power of the Phasors decreases with distance. On the other hand, Photon torpedoes destroy anything they hit, and they use no power; but you must aim them. If you miss you might hit a planet, blowing it up and going to jail.

Wait a minute! The Klingons shoot back. Well, this isn't like shooting fish in a barrel. That's why you go to RED alert and get those deflector shields up. At least if they do hit you, the damage is minimized.

You will be notified of any damage to the ship by Damage Control. That is unless they are themselves damaged. If you want the full report, use the Damage Control command. You can also use a turn to speed repairs to the ship by using the Repair command.

**Lt. Uhura here...**

**Damage Control reports the following:**

<b>Damage Control</b>	<b>Operational</b>
<b>Science Computer</b>	<b>Operational</b>
<b>Ship's Computer</b>	<b>Operational</b>
<b>LR Sensors</b>	<b>Operational</b>
<b>SR Sensors</b>	<b>Operational</b>
<b>Impulse Engines</b>	<b>Operational</b>
<b>Warp Drive</b>	<b>Operational</b>
<b>Phasors</b>	<b>Operational</b>
<b>Photon Torpedoes</b>	<b>Operational</b>

ut no matter what you decide to do, there's a lot of action here (and some  
ice little graphics too), so pay attention.

fter you've destroyed all of the Klingons, you will want to go back to condi-  
on GREEN. That way your deflector shields will be at a minimum power to  
ave energy.

ou might have noticed that there is an alert condition which is YELLOW. This  
; a standby battle ready condition that brings the shield power up part way to  
ffer some protection from Klingon fire power, and yet still conserves energy.  
/hy ever use condition YELLOW? Because quadrants near the Pulsar show up  
s noise on the LONG RANGE SENSOR scan.

Whenever you are on YELLOW alert or RED alert, you get a status  
report automatically each turn. Otherwise, you must ask for it.

### **Status Report:**

.....  
**Stardate: 2206.53**

**Energy: 3862**

**Condition: RED**

**Quadrant: 5 5 2**

**Sector: 3 3**

**Photon Torpedoes: 3**

The science computer is the counterpart of the long range sensors. It provides  
both you and the ship's computer with detailed information about the loca  
quadrant. This includes the classification of stars and planets, and the loca  
tion and energy level of Klingons. Again, this is not worth any points ir  
evaluating the success of your mission, but is helpful to you in playing the  
game.

Since long range sensors only scan the immediate adjacent quadrants, you're  
going to have to move the ship. This is the function of the Warp Drive. This  
command lets you move from one quadrant to another, and automatically  
navigates around things like stars and black holes. You must provide the  
destination quadrant and the speed in warp units. The faster you go, the more  
energy you use. The slower you go, the more time (stardates) your trip will  
ake.

You can think of the Enterprise as having a 4,000 gallon gas tank. By using the  
Status command, you can find out how much fuel you have left. You must keep  
your eye on this, lest you run out of fuel in the middle of space and die. To get  
more gas, or fuel, you must dock at a starbase.

To do this, you must first find a starbase by using your long range sensors, the  
ship's computer or a combination of both. But, don't try to dock at the star-  
base in quadrant 7,7,2 or you'll end the game - probably in disgrace. Use your  
Warp Drive to fly to the quadrant where the starbase is located.

### **WARP DRIVE**

**Chekov here...**

**Course (X,Y,Z)? 5,5,2**

**Warp Factor (0-8)? 3\_**

Now you must maneuver the ship within the quadrant. This is the function of the Impulse Engines. You must supply the direction and speed. Use the compass below to give the direction. A unit of speed is approximately equal to one space. To dock, you must try to move the Enterprise into the same space that the starbase occupies. But don't try to move through it, or a collision will result. When that happens, other things will go wrong for you and a perfect score will no longer be possible.

After a successful docking, good things will happen. For one, you'll get a full fuel supply. Also, your stock of torpedos will be set back to three, and most damage to the ship repaired.

But let's say you have plenty of fuel and your long range sensors turn up a quadrant with a planet: go to that quadrant using your warp drive. Now use the science computer to classify the planet(s). If it is an unexplored class M, then you will want to explore it. To do this, simply orbit the planet the same way you would dock to a starbase. Once orbit is achieved, the planet will be classified as an explored class M planet and points scored. When you have orbited all five class M planets, objective number two will have been achieved.

You are now ready for objective number three called "Kill the Klingons". First you've got to find them. If you've been doing much exploring, that won't be hard. They'll show up on the long range sensor scans. You must now get ready for battle.

First, you must put the deflector shields up to full power. Use the Alert command and go to condition RED. Next, use the Warp Drive to enter the quadrant where the Klingons are.

**1 - GREEN**

**2 - YELLOW**

**3 - RED**

**Enter Condition Code? 3..**

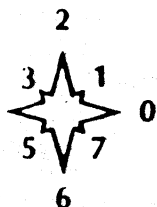
A Pulsar is a giant static maker. The static is so strong near the Pulsar that the Long Range Sensors can not detect what is in the quadrant. Therefore, you must go to the quadrant using your Warp Drive to see if anything is there.

Don't be surprised if you suddenly find some Klingons. They're not dummies. They know you can't see them from any distance, so, they like to lurk in the Pulsar noise, ready for a surprise attack on the Enterprise.

Some players like to explore the noise quadrants in condition YELLOW to conserve energy and yet be ready for a surprise attack. Others prefer to explore these areas in condition RED. You'll have to decide for yourself how you want to handle this situation. But do keep one thing in mind about condition YELLOW; if Klingons should suddenly appear, the ship will automatically switch to condition RED to bring the shields up to full power.

One other thing you will find in the galaxy is a void. That's what the Long Range sensors will display when they scan a quadrant which has nothing in it. Otherwise, it will display the number of Klingons (K), Starbases (B), stars (S) and planets (P). Now I'm going to let you in on a little secret. If you should return to BASIC, and want to continue, you can get back to the command level by typing GOTO 1 (ENTER). This is only to be used if, for some reason, the program should stop unexpectedly. It gives you a way to restart the game. Except for such an emergency, it should not be used. In fact, you should never have to

use it. But just in case, it's there. It's assumed that you will play honestly. So, get going! Load your tape in your tape player and CLOAD. It's time to play STAR TREK III.



6	7	8	
void	void	*Unknown Quad	* 0
K1B0S1P1	void	*Unknown Quad	* 1 5
void	void	*Unknown Quad	* 2
void	void	*Unknown Quad	* 0
K0B1S1P1	void	*Unknown Quad	* 1 6
K0B0S1P1	K0B0S2P2	*Unknown Quad	* 2
void	void	*Unknown Quad	* 0
void	K0B1S2P1	*Unknown Quad	* 1 7
void	Star Fleet HQ	*Unknown Quad	* 2

LONG RANGE SENSOR SCAN QUADRANT 7 6 1

Hit (ENTER) to continue

The sample display, above, shows what a typical Long Range Sensor scan might look like. It was taken when the ship was located at quadrant 7,6,1 which is the quadrant in the middle of the display. There's a Klingon, one star and one planet in quadrant 6,5,1. Do you see the starbase in quadrant 6,6,1? If you do, good. That means you know how to interpret the Long Range Sensor Scan. The right most column is all "Unknown Quadrant" because they are not in the galaxy. In other words, they don't exist.

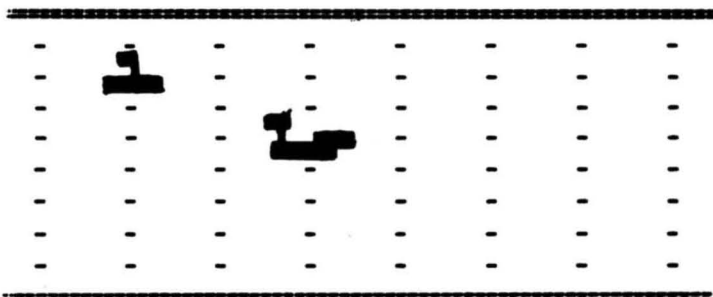
### LOAD AND SAVE GAME

Because it can take up to two hours to play an entire game, a save-game load-game feature has been added. When you are at the command level, type-1. The program will ask whether you are saving the current game, or loading a previously saved game. (Your cassette recorder should be ready prior to using this command.)

### SPECIFICATIONS

**Play Board:** 8 by 3 quadrants  
**Weapons Systems:** Phasers and Photon Torpedoes  
**Power Systems:** Warp and Impulse  
**Computer Systems:** Science and Ship's computer

**Sensors:** Long and Short Range  
**Reports:** Damage Control and Status  
**Play Elements:** 20 Klingon battle cruisers, 100 stars and planets, black holes, pulsars



SHORT RANGE SENSOR SCAN OF QUADRANT 7 7 2  
 HIT (ENTER) TO CONTINUE.

Star Trek III.4 by Lance Micklus - addendum

If you have only 16K of memory then in addition to omitting all REMarks, you will also want to delete the Disk I/O routines in Lines 40000 - 40400.

STARTREK III.4

1 IF C100 THEN 2060

100 RANDOM: CLEAR 100: DEFINT A, E, P, S, M, U, V, Z: DIM A(300): RESTORE: CLS

120 FOR Z=0 TO 10: PRINT@ RND(703), "\*": NEXT Z

140 PRINT@ 704, "STAR TREK(R) III, VERSION 3.4 - BY LANCE MICKLUS"

160 PRINT"(R) TM PARAMOUNT PICTURES CORPORATION"

180 PRINT"COPYRIGHT NOVEMBER 1979 - LANCE MICKLUS, INC."

200 PRINT"BURLINGTON, VT., 05401 - ALL RIGHTS RESERVED"

220 U=25: V=14: I=5: GOSUB 21520

240 U=100: V=25: I=1: GOSUB 21520

260 U=80: V=12: I=4: GOSUB 21520

280 REM

300 REM ORISMOLOGY

320 REM -----

```

340 REM A(0-191)          GALAXY
360 REM A(192-255)      QUADRANT PAGE
380 REM SHIP'S LOCATION:
400 REM A(256) - B      A(259) - X
420 REM A(257) - C      A(260) - Y
440 REM A(258) - D      A(261) - STATUS
460 '
480 REM A(P) DATA UNPACKED:
500 REM A(262) - KLINGON'S      A(265) - PLANETS
520 REM A(263) - STARBASES      A(266) - TYPE
540 REM A(264) - STARS
560 '
580 REM TYPE MODIFIERS:
600 REM 0 - UNFOUND CLASS M      5 - SPACE NOISE
620 REM 1 - NONE                  6 - STAR FLEET HQ
640 REM 2 - BLACK HOLE           7 - G PLANET
660 REM 3 - O STAR               8 - UNEXPLORED M
680 REM 4 - PULSAR              9 - EXPLORED M
700 '
720 REM DAMAGE ARRAY:
740 REM A(267) - DAMAGE CONTROL  A(272) - IMPULSE ENGINES
760 REM A(268) - SCIENCE CMPTR  A(273) - WARP DRIVE
780 REM A(269) - SHIP'S CMPTR   A(268) - PHASERS
800 REM A(270) - LR SENSORS      A(269) - PHOTON TORPEDOES
820 REM A(271) - SR SENSORS      A(276) - # OF TORPEDOES
840 '
860 REM VARIABLES:
880 REM E=ENERGY                  T=STARDATE
900 REM H=WARNING STARDATE       S=SCORE
920 REM
940 REM C1=CONSTANT FOR SIN & COS
960 REM K2=-1 TO MOVE KLINGONS ONLY, 0 TO MOVE AND SHOT
980 REM
1000 REM      SET UP GALAXY
1020 REM      _____
1040 '
*** PUT IN KLINGONS ***
1060 READ B$,J:IF J<999 THEN 1060
1080 P=RND(191)-1:IF A(P)>0 THEN 1080

```



```

1100 READ J:IF J>0 LET A(P)=-J:GOTO 1000
1120 '
*** SET UP PULSAR ***
1140 P=RND(150):N=P:IF A(P)>0 THEN 1140
1160 GOSUB 20100:GOSUB 20500
1180 FOR B=A(256)-1 TO A(256)+1:FOR C=A(257)-1 TO A(257)+1
1200 FOR D=A(258)-1 TO A(258)+1
1220 GOSUB 20100
1240 IF P<-1 LET A(P)=10*FIX(A(P)/10)-5
1260 NEXT D:NEXT C:NEXT B:A(N)=-4
1280 '
*** LOAD PLANETS, STARS, AND OTHER STUFF ***
1300 P=RND(191)-1:IF A(P)>0 THEN 1300
1320 READ A(P):IF A(P)>0 LET A(P)=-A(P):GOTO 1300
1340 FOR N=0 TO 190:IF A(N)=0 THEN A(N)=-1
1360 NEXT N:A(256)=7:A(257)=7:A(258)=2:A(276)=3
1380 '
*** INITIALIZE VARIABLES ***
1400 E=3999:T=2200:H=2470:Q=0:A(191)=1006:S=0:C1=0.785398
1420 A(259)=3:A(260)=3:A(261)=1:GOSUB 5900
1440 '
2000 REM
2020 REM      MAIN LINE ROUTINE
2040 REM      _____
2060 ON ERROR GOTO 0:CLS:RESTORE:PRINTCHR$(23)
2080 PRINT"ENTERPRISE AND CREW":PRINT"AWAITING YOUR ORDERS. CAPT
AIN "
2100 READ B$,J:PRINT TAB(5)J:PRINT TAB(9)B$:IF J<11 THEN 2100
2120 O=99:INPUT"ORDERS";O
2140 IF O<0 THEN 45000
2160 IF O>11 OR INT(O)>0 THEN 2060
2180 IF O=4 THEN 2220
2200 ON O+1 GOSUB 8940,3660,3320,7360,8000:GOTO 2260
2220 ON O-4 GOSUB 22120,8220,5660,6900,6820,2900,3960
2240 '
*** KLINGON'S TURN TO SHOOT ***
2260 GOSUB 20540:GOSUB 20100:IF ABS(A(P))<10000 THEN 2400
2280 GOSUB 6400
2300 IF A(261)=2 LET A(261)=3:GOSUB 3000

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```

2320 IF A(268)=0 AND A(271)=0 LET O=3:GOSUB 3300
2340 IF A(271)=0 GOSUB 22120
2360 GOTO 2460
2380 '
*** SPACE STORM ***
2400 B$="SPACE STORM"
2420 IF RND(100)=1 GOSUB 3140:GOSUB 4120
2440 '
*** SET UP NEXT PLAY ***
2460 IF A(261)>1 GOSUB 8940
2480 T=T+.2:E=E-A(261)*A(261)*10
2500 IF E<0 THEN 22760
2520 J=1:GOSUB 3960
2540 IF T<H THEN 2060
2560 CLS:PRINTCHR$(23):PRINT@ 304,"STAR FLEET COMMAND REQUESTS"
2580 PRINT"ENTERPRISE RETURN TO"
2600 PRINT"STARBASE 7,7,2":H=H+10:GOSUB 20380:GOTO 2060
2620 GOTO 2060
2640 REM
2660 REM      END OF THE GAME - RATE PLAYER
2680 REM      _____
2700 CLS.RESTORE:N=2500-T:IF N<0 THEN S=5+H*10
2720 FOR P=0 TO 191:IF A(P)<0 THEN 2760 ELSE S=5+1
2740 IF A(P)-((FIX(A(P)/10)*10)=9 LET S=5+20
2760 NEXT P
2780 READ B$,Z:IF Z<425 THEN 2780
2800 IF S<Z READ B$,Z:GOTO 2800
2820 PRINT@ 256,"RATING: ";INT(S/4.91)
2840 PRINT:PRINT"ADMIRAL FITZPATRICK HERE...":PRINT
2860 PRINTTAB(5)"CAPTAIN, AFTER REVIEWING YOUR LOG AND DATA TAPE
S,"
2880 PRINT"I AM GOING TO RECOMMEND TO STAR FLEET THAT YOU BE ";B
$;" "
2900 PRINT:PRINT:END
2920 REM
2940 REM      ALERT STATUS
2960 REM      _____
2980 CLS:PRINTCHR$(23)
3000 PRINT@320,"1 - GREEN":PRINT"2 - YELLOW":PRINT"3 - RED"

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```

3820 INPUT"ENTER CONDITION CODE";N
3840 IF N<1 OR N>3 OR INT(N)≠N THEN 3820
3860 A(261)=N:IF N=1 RETURN
3880 RESTORE
3100 READ B$,J:IF J=200○A(261) THEN 3100
3120 '
*** FLASHER ***
3140 A$=INKEY$:CLS:PRINTCHR$(23)
3160 B$=STRING$(30-LEN(B$))/2," "+B$
3180 FOR K=0 TO 4:PRINT@ 512,B$:FOR J=0 TO 200:NEXT J
3200 PRINT@ 512,CHR$(30):FOR J=0 TO 200:NEXT J
3220 IF INKEY$≠CHR$(13) THEN NEXT K:RETURN
3240 FOR K=0 TO 0:NEXT K:RETURN
3260 REM
3280 REM     SCIENCE COMPUTER
3300 REM     _____
3320 CLS:IF A(268)○0 LET I=2:GOTO 3880
3340 IF A(271)○0 LET I=5:GOTO 3880
3360 0=0
3380 FOR P=192 TO 255:IF A(P)=18 OR A(P)=0 THEN 3560
3400 IF 0=3 AND A(P)<25 THEN 3560
3420 CLS:U=62:V=14
3440 FOR Z=0 TO RND(5)+2:PRINT@ RND(512)+63,"*":NEXT Z
3460 GOSUB 22320:GOSUB 21500:GOSUB 20100
3480 PRINT:PRINT"OBJECT AT";STR$(B);STR$(C);" IS A ",B$;" "
3500 IF A(P)<25 THEN 3540
3520 PRINT"READING";A(P)-25;"UNITS OF ENERGY. "
3540 GOSUB 22300
3560 NEXT P
3580 RETURN
3600 REM
3620 REM     DAMAGE CONTROL SECTION
3640 REM     _____
3660 CLS:RESTORE:READ B$,Z
3680 IF A(267)○0 LET I=1:GOTO 3880
3700 PRINT"LT. UHURA HERE. . ."
3720 PRINT"DAMAGE CONTROL REPORTS THE FOLLOWING:":PRINT
3740 FOR Z=267 TO 275:READ B$,J:PRINT TAB(14)B$,
3760 IF Z=275 AND A(276)=0 PRINT"*** INOPERATIVE ***":GOTO 3840

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```

3780 IF A(Z)=0 PRINT"OPERATIONAL".GOTO 3840
3800 IF A(Z)<10 PRINT"NEARLY OPERATIONAL"
3820 IF A(Z)>9 PRINT"** INOPERATIVE **"
3840 NEXT Z.GOTO 20380
3860 '
*** WHAT DOESN'T WORK ***
3880 CLS.PRINT CHR$(23):RESTORE
3900 READ B$,J.IF I<>J THEN 3900
3920 PRINT@ 320,B$;" INOPERATIVE".GOTO 22380
3940 '
*** REPAIR DAMAGE TO THE SHIP ***
3960 FOR N=1 TO J:FOR Z=267 TO 275
3980 IF A(Z)=0 THEN 4000
4000 A(Z)=A(Z)-RND(5):IF A(Z)>0 THEN 4000
4020 A(Z)=0.RESTORE:IF A(267)<0 THEN 4000
4040 READ B$,J.IF J<>Z-266 THEN 4040
4060 CLS:PRINT@ 320,CHR$(23);B$;" OPERATIONAL":GOSUB 22380
4080 NEXT Z:NEXT N.RETURN
4100 '
*** CREATE DAMAGE TO THE SHIP ***
4120 FOR J=1 TO 4-A(261)
4140 Z=266+RND(9):IF A(Z)<0 THEN 4240
4160 A(Z)=RND(25)*J:IF A(267)<0 THEN 4240
4180 CLS:PRINT CHR$(23).RESTORE
4200 READ B$,J:IF J<>Z-266 THEN 4200
4220 PRINT@320,"DAMAGE TO ";B$:GOSUB22380
4240 NEXT J.RETURN
4260 REM
4280 REM     BATTLE DISPLAY
4300 REM     -----
4320 CLS.P=X*8+Y+192.U=30:V=14
4340 GOSUB 21500:GOSUB 22320:Z=338 M=I
4360 PRINT.PRINTTAB(25)"SECTOR:",X,Y
4380 B$=" *":IF Q=1 AND I=5 GOSUB 5380:GOTO 4460
4400 B$="-":IF I=5 THEN GOSUB 5380:GOTO 4440
4420 Z=336:B$=")".GOSUB 5380
4440 B$=" ":GOSUB 5380
4460 L=L*4
4480 IF Q=1 THEN 4580

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4500 IF RND(2)=1 LET J1=J1-X:K1=K1-Y:GOTO 4500
4520 FOR Z=1 TO SQR(((X-J1)^2)+((Y-K1)^2)):L=L*.6:NEXT Z
4540 X=J1:Y=K1:GOTO 4660
4560 '
*** NIGHT MISS METHOD TO COMPUTE HIT ***
4580 GOSUB 22520
4600 X=X+J1:Y=Y+K1
4620 IF X<0 OR X>7 OR Y<0 OR Y>7 LET P=-1:CLS:GOTO 4820
4640 L=L*.6
4660 P=INT(X)+0+INT(Y)+192
4680 IF A(P)=0 THEN 4600
4700 IF Q=2 RETURN
4720 '
*** DISPLAY FIRING ***
4740 CLS:V=15:IF A(P)=18 LET U=20
4760 IF Q<1 AND I=5 AND A(P)<25 LET P=-1:GOTO 4860
4780 IF Q<1 AND I=1 AND A(P)>18 LET P=-1:GOTO 4860
4800 GOSUB 21500
4820 IF Q=2 RETURN
4840 '
*** DISPLAY HIT OR MISS ***
4860 GOSUB 22320:PRINT:PRINT TAB(25)"SECTOR:";INT(X),INT(Y)
4880 B$="+ ":IF M=5 AND Q=1 GOSUB 5460:GOTO 4980
4900 B$="- ":IF M=5 GOSUB 5460:GOTO 4940
4920 B$="(":GOSUB 5460
4940 B$=" ":GOSUB 5460
4960 '
*** COMPUTE DAMAGE ***
4980 Q=0:L=INT(L):IF P=-1 OR I=0 RETURN
5000 GOSUB 21340
5020 IF M=5 AND I<1 THEN GOSUB 5220:GOSUB 22380:GOTO 22820
5040 IF I<5 THEN 5140
5060 GOSUB 3560:E=E-L
5080 IF L-A(261)*75>0 GOSUB 4120:L=L-A(261)*75:GOTO 5000
5100 IF E<0 RETURN
5120 GOTO 22700
5140 IF I<1 THEN 5220
5160 A(P)=A(P)-L:IF A(P)>25 RETURN
5180 GOTO 5220

```

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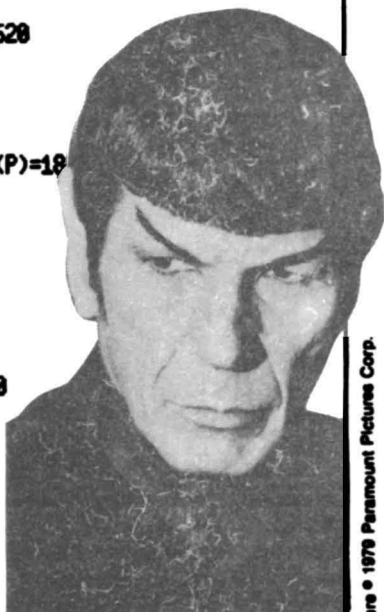
5200 IF L<100 RETURN
5220 PRINT TAB(20) B$; " DESTROYED"
5240 FOR N=0 TO 30
5260 RESET(21+RND(17), 12+RND(5)):SET(21+RND(17), 12+RND(5))
5280 NEXT N
5300 A(P)=0:GOSUB 20540:GOSUB 20100
5320 A(P)=ABS(A(P))-10000:5=5+10
5340 RETURN
5360 '
*** ANIMATED FIRING ROUTINES ***
5380 FOR N=2 TO 300
5400 PRINT@ N, B$; :FOR M=1 TO 3:NEXT M
5420 NEXT N:IF Q=1 PRINT@ 300, " "
5440 RETURN
5460 FOR N=300 TO 330 STEP -1
5480 PRINT@ N, B$; :FOR M=1 TO 3:NEXT M
5500 NEXT N:IF Q=1 PRINT@ 330, " ";
5520 PRINT@ 640, " ";:RETURN
5540 ' ** SHAKE DISPLAY **
5560 FOR M=1 TO INT(L/50):PRINT CHR$(23);:FOR N=1 TO 5:NEXT N
5580 PRINT CHR$(20);:FOR N=1 TO 5:NEXT N:NEXT M:GOTO 5520
5600 REM
5620 REM      WARP DRIVE AND NEW QUADRANT SET UP
5640 REM      _____
5660 CLS:IF A(273)>0 LET I=7:GOTO 3000
5680 GOSUB 20540
5700 PRINT CHR$(23):PRINT@ 320, "CHEKOV HERE. . ."
5720 INPUT"COURSE (X, Y, Z)"; B, C, D:GOSUB 20100
5740 IF P=-1 THEN 5720
5760 INPUT"WARP FACTOR (0-8)"; K:IF K=0 THEN RETURN
5780 IF K<0 OR K>8 OR INT(K)>K THEN 5760
5800 L=SQR(((A(256)-B)^2)+((A(257)-C)^2)+((A(258)-D)^2))
5820 IF E-1000L*K*K*K THEN 5940
5840 CLS:PRINT@ 320, CHR$(23); "SCOTT HERE. . ".PRINT
5860 PRINT"SORRY CAPTAIN. ":PRINT"BUT WE JUST DON'T HAVE"
5880 PRINT"ENOUGH ENERGY "
5900 GOTO 22300
5920 '
*** ADJUST TIME, PLACE, ENERGY, AND SEE IF CATASTROPHY ***

```

```

5940 E=E-L*K*K:T=T+2*L*L/K:GOSUB 20500
5960 J=INT(L*L/K):IF J>0 GOSUB 3960
5980 GOSUB 20540:GOSUB 20100:GOSUB 20200
6000 IF A(266)=0 LET A(266)=8:A(P)=FIX(ABS(A(P))/10)*10+8
6020 IF A(265)>0 AND A(266)=1 LET A(266)=7:GOSUB 20220
6040 B=X.C=Y:D=3:GOSUB 20120
6060 IF A(266)>1 AND A(266)<5 THEN 22620
6080 '
*** BUILD NEW QUADRANT ***
6100 IF A(266)>7 LET A(265)=A(265)-1
6120 FOR N=192 TO 255:A(N)=0:NEXT N:A(P)=19
6140 FOR N=262 TO 265
6160 IF A(N)=0 THEN 6200
6180 IF N=262 LET M=RND(1500)+250
6200 IF N=263 LET M=20
6220 IF N=264 LET M=19
6240 IF N=265 LET M=3
6260 GOSUB 21900:A(N)=A(N)-1:GOTO 6160
6280 NEXT N
6300 IF A(266)>7 LET M=2:GOSUB 21900
6320 R=0:GOTO 22120
6340 REM
6360 REM      KLINGON FIRING SET UP
6380 REM      -----
6400 FOR R=192 TO 255
6420 IF A(R)<25 THEN 6720
6440 X=INT((R-192)/8).Y=R-192-(X*8):X1=X:Y1=Y
6460 IF RND(2)>1 THEN 6500
6480 J1=SGN(A(259)-X).K1=SGN(A(260)-Y)
6500 IF K2 THEN J1=2-RND(3).K1=2-RND(3) ELSE J1=J1+(RND(2)-1):K1
=K1*(RND(2)-1)
6520 IF X+J1=0 AND X+J1<=7 LET X1=X+J1
6540 IF Y+K1=0 AND Y+K1<=7 LET Y1=Y+K1
6560 IF A(X1*8+Y1+192)=0 LET Z=A(X*8+Y+192).A(X*8+Y+192)=0:X=X1:
Y=Y1:A(X*8+Y+192)=Z
6580 IF K2 THEN 6720
6600 J1=A(259)-X.K1=A(260)-Y
6620 X1=X:Y1=Y:J2=J1:K2=K1:Q=2:GOSUB 4500
6640 IF P=-1 THEN 6680

```



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6660 IF A(P)<>18 THEN 6720
6680 X=X1:Y=Y1:J1=A(259):K1=A(260):Q=0:L=RND(A(R))*7)
6700 IF L>100 LET A(R)=A(R)-L:GOSUB 4320
6720 NEXT K%:0:RETURN
6740 REM
6760 REM   FIRE SHIP'S WEAPONS
6780 REM   -----
6800 '
*** TORPEDOES ***
6820 CLS:IF A(275)<>0 OR A(276)=0 LET I=9:GOTO 3880
6840 Q=1:GOSUB 22120
6860 INPUT"TORPEDO DIRECTION (0-8)";I:PRINT TAB(18)" ";
6880 IF I<0 OR I>8 THEN 6860
6900 K%=-1 : GOSUB 6400
6920 J1=COS(I*C1):K1=-SIN(I*C1):GOSUB 20540
6940 A(276)=A(276)-1:Q=1:L=8000:GOTO 4320
6960 '
*** PHASERS ***
6980 CLS:IF A(274)<>0 LET I=8:GOTO 3880
7000 PRINT CHR$(23):PRINT@ 320,"SULU HERE..."
7020 INPUT"ENERGY";O:IF O<=0 RETURN
7040 PRINT"PHASERS LOCKED ON TARGET."
7060 FOR R=0 TO 250:NEXT R
7080 FOR R%=-192 TO 255
7100 IF A(R%)<25 THEN 7280
7120 K%=-1 : GOSUB 6400
7140 X=INT((R%-192)/8):Y=R%-192-X*8
7160 J2=X:K2=Y
7180 J1=X-A(259):K1=Y-A(260):GOSUB 20540
7200 Q=2:GOSUB 4580:Q=0:J1=J2:K1=K2:L=0:GOSUB 20540
7220 IF P=-1 THEN 7260
7240 IF A(P)<25 THEN 7280
7260 IF E-100-O>0 LET E=E-O:GOSUB 4320
7280 NEXT R%:RETURN
7300 REM
7320 REM   SHIP'S COMPUTER
7340 REM   -----
7360 CLS:RESTORE:IF A(269)<>0 LET I=3:GOTO 3880
7380 READ B$,J:IF J<>50 THEN 7380

```



```

7400 PRINT"SHIP'S COMPUTER COMMAND FUNCTIONS:":PRINT
7420 PRINT TAB(4)J-50;" DATA BASE SCAN TO LOCATE ";B$
7440 IF J<54 READ B$,J:GOTO 7420
7460 PRINT TAB(5)"5 LONG RANGE SENSOR SCAN FROM DATA BASE"
7480 PRINT TAB(5)"6 QUADRANT DETAILED DISPLAY"
7500 PRINT:INPUT"ENTER FUNCTION":O
7520 IF O<0 OR O>6 OR INT(O)<>O THEN 7360
7540 IF O<5 THEN 7600
7560 ON O-4 GOTO 7960,7840
7580 /
*** SCAN & LOCATE ***
7600 CLS:RESTORE
7620 READ B$,J:IF J-50<>O THEN 7620
7640 PRINT"ENTERPRISE CURRENTLY LOCATED AT: ";A(256);A(257);A(258
)
7660 PRINT"DATA BASE SCAN FOR ";B$;" ":PRINT
7680 FOR P=0 TO 191
7700 IF O=4 AND A(P)<0 THEN 7780
7720 IF A(P)<0 OR O=4 THEN 7800
7740 GOSUB 20280
7760 IF A(262+O)=0 THEN 7800
7780 GOSUB 20180:PRINT B;C;D,
7800 NEXT P:PRINT:GOTO 20380
7820 /
*** QUADRANT DETAILS ***
7840 INPUT"ENTER QUADRANT (X,Y,Z)";B,C,D:GOSUB 20100
7860 IF P=-1 THEN 7840
7880 GOSUB 20280
7900 IF A(P)<0 PRINT"NO DATA AVAILABLE. ":GOTO 22380
7920 GOTO 20580
7940 /
*** COMPUTER LR SCAN ***
7960 INPUT"ENTER QUADRANT (X,Y,Z)";U,V,W:CLS
7980 PRINT@ 904,"LONG RANGE COMPUTER QUADRANT SCAN OF";U;V;W;
8000 R=1:GOTO 20800
8020 REM
8040 REM LONG RANGE SENSOR SCAN
8060 REM -----
8080 CLS:IF A(270)<>0 LET I=4:GOTO 3880

```

```

8100 U=A(256):V=A(257):W=A(258):R=0
8120 PRINT@899,"LONG RANGE SENSOR SCAN";:PRINT@938,"QUADRANT";U;
V;W;
8140 GOTO 20800
8160 REM
8180 REM      IMPULSE POWER
8200 REM      -----
8220 CLS:IF A(272)<>0 LET I=6:GOTO 3880
8240 Q=1:GOSUB 22120
8260 INPUT"HEADING (0-8)";I:IF A(271)=0 PRINT TAB(18)" ";
8280 IF I<0 OR I>8 THEN 8260
8300 J1=COS(I*C1):K1=-SIN(I*C1):GOSUB 22520
8320 INPUT"SPEED (0-9)";J:IF A(271)=0 PRINT TAB(18)" ";
8340 IF J<0 OR J>9 THEN 8320
8360 IF J=0 RETURN
8380 GOSUB 20540:A(X*8+Y+192)=0
8400 FOR I=1 TO J:X=X+J1:Y=Y+K1
8420 GOSUB 22460:GOSUB 20120
8440 B$="ENERGY BARRIER"
8460 IF P=-1 LET E=RND(E):GOTO 8620
8480 IF B<>A(256) OR C<>A(257) THEN 8680
8500 W=A(INT(X)*8+INT(Y)+192):B$="COLLISION"
8520 IF W<20 THEN 8600
8540 IF J-I>1 LET S=5-100:GOTO 8620
8560 IF A(A(256)*8+A(257)+A(258)*64)=1006 THEN 2700
8580 A(276)=3:E=4000:GOTO 8660
8600 IF W=0 THEN 8680
8620 IF J-I>1 GOSUB 3140:GOSUB 4120:W=0:GOTO 8660
8640 IF W<2 AND W<3 AND W<19 GOSUB 3140:GOSUB 4120
8660 X=X-J1:Y=Y-K1:GOSUB 22460:GOTO 8700
8680 NEXT I
8700 X=INT(X):Y=INT(Y):A(X*8+Y+192)=18
8720 IF B<>A(256) OR C<>A(257) GOSUB 20500:GOTO 5980
8740 GOSUB 20500:Q=1:GOSUB 22120
8760 IF W=2 OR W=3 OR W=19 THEN 8840
8780 IF E=4000 PRINT"DOCKED":PRINT TAB(18)" ";:GOSUB 20400:T=T+1
:J=2:GOTO 3960
8800 GOTO 20400
8820 '

```

```

*** MAKE CLASS M PLANET FOUND ***
8840 IF W=2 GOSUB 20540:GOSUB 20100:A(P)=FIX(ABS(A(P))/10)*10+9
8860 PRINT TAB(16)"ORBIT":PRINT TAB(18)" ";:GOTO 20400
8880 REM
8900 REM     STATUS REPORT
8920 REM     -----
8940 CLS:PRINTCHR$(23)
8960 PRINT@266,"STATUS REPORT:":PRINT TAB(5) STRING$(14,"-")
8980 PRINT TAB(5)"STARDATE: ";T
9000 PRINTTAB(5)"ENERGY: ";E
9020 B$="GREEN":IF A(261)=2 LET B$="YELLOW"
9040 IF A(261)=3 LET B$="RED"
9060 PRINT TAB(5)"CONDITION: ";B$
9080 PRINT TAB(5)"QUADRANT: ";A(256);A(257);A(258)
9100 PRINT TAB(5)"SECTOR: ";A(259);A(260)
9120 PRINT TAB(5)"PHOTON TORPEDOES: ";A(276)
9140 GOTO 20380
20000 /
20020 / .....
20040 / : SUBROUTINES :
20060 / .....
20080 /
*** BCD TO P FORM ***
20100 IF D<0 OR D>2 LET P=-1:RETURN
20120 IF B<0 OR B>7 OR C<0 OR C>7 LET P=-1:RETURN
20140 P=8*B+C+64*D:RETURN
20160 /
*** P TO BCD FORM ***
20180 D=INT(P/64):B=INT((P-D*64)/8):C=P-D*64-B*8:RETURN
20200 /
*** CONVERT A(P) TO DATA ***
20220 A(P)=A(262)*1E4+A(263)*1E3+A(264)*1E2+A(265)*10+A(266)
20240 RETURN
20260 /
*** CONVERT DATA TO A(P) ***
20280 A(266)=ABS(A(P)):K=1E4

```

```

20300 FOR N=0 TO 3
20320 A(262+N)=INT(A(266)/K):A(266)=A(266)-A(262+N)*K:K=K/10
20340 NEXT N:RETURN
20360 '
*** ENTER KEY WAIT ***
20380 PRINT
20400 IF Q=1 LET Q=0:RETURN
20420 PRINT"HIT (ENTER) TO CONTINUE. ";
20440 A$=INKEY$
20460 IF INKEY$<>CHR$(13) THEN 20460 ELSE CLS:RETURN
20480 '
*** BCD SAVE ***
20500 A(256)=B:A(257)=C:A(258)=D:A(259)=X:A(260)=Y:RETURN
20520 '
*** BCD RESTORE ***
20540 B=A(256):C=A(257):D=A(258):X=A(259):Y=A(260):RETURN
20560 '
*** PRINT QUADRANT DATA ***
20580 CLS:PRINT@384, " ", "COORDINATES. "; B; C; D
20600 PRINT " ", "KLINGONS. "; A(262), "STAR BASES. "; A(263)
20620 PRINT " ", "STARS. "; A(264), "PLANETS. "; A(265)
20640 RESTORE:IF A(266)>6 OR A(266)<2 LET B$="NONE".GOTO 20680
20660 READ B$,J:IF J-30<>A(266) THEN 20660
20680 PRINT " ", "ASTRONOMICAL FEATURE. "; B$:RESTORE
20700 IF A(266)<7 LET B$="NONE".GOTO 20740
20720 READ B$,J:IF J-30<>A(266) THEN 20720
20740 PRINT " ", "SCIENTIFIC INTEREST. "; B$:PRINT.PRINT
20760 GOTO 20400
20780 '
*** LONG RANGE SENSOR SCAN ***
20800 PRINT@64, ""
20820 FOR C=V-1 TO V+1:FOR D=W-1 TO W+1:FOR B=U-1 TO U+1
20840 GOSUB 20100
20860 IF P=-1 PRINT " UNKNOWN QUADRANT ";:GOTO 21100
20880 IF R=0 AND ABS(A(P))-(INT(ABS(A(P))/10)*10)<>5 THEN A(P)=A
B$(A(P))
20900 IF R=1 AND A(P)<8 PRINT " NO DATA ",.GOTO 21100
20920 IF R=1 AND A(P)=5 THEN 20960
20940 IF ABS(A(P))<>1 GOSUB 20200:GOTO 20900

```

```

20960 PRINT "      VOID      ";:GOTO 21100
20980 IF A(266)=2 PRINT"  LARGE BLACK HOLE ";:GOTO 21100
21000 IF A(266)=3 PRINT"  CLASS 0 STAR  ";:GOTO 21100
21020 IF A(266)=4 PRINT"  PULSAR      ";:GOTO 21100
21040 IF R=0 AND A(266)=5 PRINT"  SPACE NOISE ";:GOTO 21100
21060 IF A(266)=6 PRINT"  STAR FLEET HQ  ";:GOTO 21100
21080 PRINT"  K";A(262);"B";A(263);"S";A(264);"P";A(265);" ";
21100 NEXT B:PRINT" ";D:NEXT D:PRINT CHR$(26);:NEXT C
21120 PRINT@ 8,U-1:PRINT@ 28,U:PRINT@ 47,U+1;
21140 PRINT@ 253,V-1:PRINT@ 509,V:PRINT@ 765,V+1;
21160 PRINT@ 979,"",.I=191
21180 FOR Z=15360 TO 16192 STEP 64
21200 IF Z=16192 LET I=143
21220 POKE Z,I:POKE Z+19,I:POKE Z+38,I:POKE Z+57,I
21240 NEXT Z
21260 FOR Z=15425 TO 15487
21280 IF PEEK(Z)=32 POKE Z,140:POKE Z+256,140:POKE Z+512,140:POK
E Z+768,140
21300 NEXT Z:GOTO 20400
21320 '
*** LOOK UP TABLE ***
21340 I=0:B$="A TRIBBLE"
21360 IF A(P)=2 LET I=4:B$="CLASS M PLANET"
21380 IF A(P)=3 LET I=4:B$="CLASS G PLANET"
21400 IF A(P)=18 LET I=5:B$="STAR SHIP"
21420 IF A(P)=19 LET I=3:B$="CLASS F STAR"
21440 IF A(P)=20 LET I=2:B$="STAR BASE"
21460 IF A(P)>24 LET I=1:B$="KLINGON WARSHIP"
21480 RETURN
21500 GOSUB 21340
21520 ON I+1 GOTO 21540,21900,21840,21740,21660,21580
21540 RETURN
21560 '
*** ENTERPRISE GRAPHIC ***
21580 FOR Z=U-7 TO U-1:SET(Z,V-1):NEXT Z
21600 FOR Z=U-4 TO U+5:SET(Z,V+1):NEXT Z
21620 FOR Z=U+1 TO U+7:SET(Z,V):NEXT Z:SET(U-3,V):RETURN
21640 '
*** PLANET GRAPHIC ***

```

```

21660 FOR Z=U-3 TO U+3:SET(Z,V-1):SET(Z,V):SET(Z,V+1):NEXT Z
21680 RESET(U-3,V-1):RESET(U+3,V-1):RESET(U-3,V+1):RESET(U+3,V+1)
)
21700 RETURN
21720 '
*** STAR GRAPHIC ***
21740 FOR Z=U-2 TO U+1:SET(Z,V):NEXT Z
21760 FOR Z=V-1 TO V+1 STEP 2
21780 SET(U-2,Z):SET(U+1,Z):SET(U-3,Z):SET(U+2,Z)
21800 NEXT Z:RETURN
21820 '
*** STARBASE GRAPHIC ***
21840 FOR Z=U-5 TO U+5:SET(Z,V+1):NEXT Z
21860 SET(U,V):SET(U-2,V-1):SET(U-1,V-1):SET(U,V-1):RETURN
21880 '
*** KLINGON GRAPHIC ***
21900 FOR Z=U-5 TO U+5:SET(Z,V):NEXT Z
21920 SET(U-5,V-1):SET(U-4,V-1):SET(U+4,V-1):SET(U+5,V-1)
21940 SET(U-1,V+1):SET(U,V+1):SET(U+1,V+1):RETURN
21960 '
*** SECTOR BUILDER ***
21980 B=RND(8)-1:C=RND(8)-1:D=3
22000 FOR U=B-1 TO B+1:FOR V=C-1 TO C+1
22020 IF U<0 OR U>7 OR V<0 OR V>7 THEN 22060
22040 P=8*U+V+192:IF A(P)<0 THEN 21980
22060 NEXT V:NEXT U
22080 GOSUB 20120:A(P)=H:RETURN
22100 '
*** SHORT RANGE SENSOR SCAN ***
22120 CLS:IF A(271)<0 LET I=5:GOTO 3800
22140 A=INKEY$:GOSUB 20540:GOSUB 20100:A(P)=ABS(A(P))
22160 PRINT:FOR C=0 TO 7:FOR B=0 TO 7
22180 P=8*B+C+192:PRINT "  -  ";
22200 IF A(P)<0 LET U=8*16+7:V=3*C+4:GOSUB 21500
22220 NEXT B:IF INKEY$<>CHR$(13) THEN NEXT C:GOSUB 22320 ELSE 22280
22240 PRINT@ 650,"SHORT RANGE SENSOR SCAN OF QUADRANT";
22260 PRINT A(256);A(257);A(258):PRINT TAB(18) " ";:GOTO 20400
22280 Q=0:CLS:PRINT TAB(18) " ";:FOR C=0 TO 0:NEXT C:RETURN

```

```

22300 /
*** VIEWING SCREEN FRAME ***
22320 PRINT@ 0,STRING$(63,"=");:PRINT@ 576,STRING$(63,"=");
22340 RETURN
22360 /
*** WAIT LOOP ***
22380 A$=INKEY$:FOR N=0 TO 700
22400 IF INKEY$<>CHR$(13) THEN NEXT N:RETURN
22420 CLS:FOR N=0 TO 0:NEXT N:RETURN
22440 /
*** BCD ADDER ***
22460 X=B*8+X:B=INT(X/8):X=X-B*8:Y=C*8+Y:C=INT(Y/8):Y=Y-C*8
22480 RETURN
22500 /
*** 1'ER ***
22520 IF ABS(J1)>ABS(K1) LET K1=K1/ABS(J1):J1=J1/ABS(J1):GOTO 22
560
22540 J1=J1/ABS(K1):K1=K1/ABS(K1)
22560 J1=FIX(J1*1000+.5*SGN(J1))/1000
22580 K1=FIX(K1*1000+.5*SGN(K1))/1000:RETURN
22600 /
*** YOU LOST ***
22620 CLS
22640 B$="LARGE BLACK HOLE":IF A(266)=3 LET B$="CLASS 0 STAR"
22660 IF A(266)=4 B$="PULSAR"
22680 B$="AFTER FLYING INTO A "+B$
22700 PRINT@ 320,"ON STARDATE";STR$(T)," ",B$+","
22720 PRINT"THE ENTERPRISE & CREW WERE LOST TO SPACE."
22740 PRINT:PRINT:END
22760 CLS:B$="AFTER DEPLETING ITS ENERGY SUPPLY":GOTO 22700
22780 CLS:B$="WHILE DOING BATTLE AGAINST THE KLINGONS":GOTO 2270
0
22800 /
*** GO TO JAIL FOOL ***
22820 CLS
22840 PRINT@ 448,"DESTRUCTION OF A ";B$;" IS GROUNDS FOR COURT-M
ARTIAL."
22860 PRINT:PRINT"YOU ARE RELIEVED OF YOUR COMMAND."
22880 PRINT:PRINT:END

```

```

30000 REM
30020 REM DATA
30040 REM
30060 DATA "STATUS",0,"DAMAGE CONTROL",1,"SCIENCE COMPUTER",2
30080 DATA "SHIP'S COMPUTER",3,"LR SENSORS",4,"SR SENSORS",5
30100 DATA "IMPULSE ENGINES",6,"WARP DRIVE",7,"PHASERS",8
30120 DATA "PHOTON TORPEDOES",9,"ALERT",10,"REPAIR",11
30140 DATA "KLINGON WARSHIPS",50,"STAR BASES",51
30160 DATA "CLASS F STARS",52,"PLANETS",53
30180 DATA "UNEXPLORED AREAS",54
30200 DATA "GREEN",21,"YELLOW ALERT",22,"RED ALERT",23
30220 DATA "BLACK HOLE",32,"O STAR",33,"PULSAR",34
30240 DATA "SPACE NOISE",35,"STAR FLEET HQ",36,"G PLANET",37
30260 DATA "UNEXPLORED M PLANET",38,"EXPLORED M PLANET",39
30280 DATA "PROMOTED",425,"DECORATED",350,"REASSIGNED",290
30300 DATA "DEMOTED",190,"RESIGNED",-1,"EXECUTED",-32000
30320 /
*** KLINGONS ***
30340 DATA "E",999,30111,31111,30101,20121,20201,20001
30360 DATA 10001,10111,10211,10321,10221,-99
30380 /
*** CLASS M PLANETS ***
30400 DATA 1110,110,110,110,110
30420 /
*** STARBASES ***
30440 DATA 1111,1111,1211,1121,1121
30460 /
*** DANGERS ***
30480 DATA 3,3,2,2
30500 /
*** OTHER STUFF ***
30520 DATA 121,121,211,211,311,311,321,321,221,221
30540 DATA 121,121,211,211,311,311,321,321,221,221,0
40000 REM
40020 REM *** LOAD AND SAVE ROUTINE ***
40040 REM *** DISK VERSION ***
40060 REM
40080 CLS:PRINT@ 640,"",.LINEINPUT"ENTER FILESPEC -> ";A$
40100 IF LEN(A$)=0 THEN 2060

```



```

40120 LINEINPUT"(L)OAD OR (S)AVE A GAME? ";B$
40140 IF LEN(B$)=0 THEN 2060 ELSE B$=LEFT$(B$,1)
40160 IF B$<>"L" AND B$<>"S" GOTO 2060
40180 ON ERROR GOTO 40400:IF B$="L" THEN 40300
40200 OPEN"O",1,A$
40220 PRINT#1,E;H;T;S
40240 FOR N=0 TO 279 STEP 10
40260 PRINT#1,A(N);A(N+1),A(N+2);A(N+3);A(N+4);A(N+5);A(N+6);A(N
+7);A(N+8);A(N+9)
40280 NEXT N:CLOSE:GOTO 2060
40300 OPEN"I",1,A$
40320 INPUT#1,E,H,T,S
40340 FOR N=0 TO 279 STEP 10
40360 INPUT#1,A(N),A(N+1),A(N+2),A(N+3),A(N+4),A(N+5),A(N+6),A(N
+7),A(N+8),A(N+9)
40380 NEXT N:CLOSE:GOTO 2060
40400 CMD"E":CLOSE:GOSUB 22300:RESUME 2060
45000 CLS:IFPEEK(16396)<>201THEN40000
45020 REM *** CLOAD AND CSAVE ROUTINE ***
45040 REM *** TAPE VERSION ***
45050 INPUT"(CL)OAD OR (CS)AVE A GAME ";B$
45060 IFB$="CL"THEN45200
45070 IFB$<>"CS"THEN2000
45100 PRINT"PREPARE RECORDER - THEN (ENTER)"
45110 IFINKEY$<>CHR$(13)THEN45110
45120 PRINT"SAVING GAME...":PRINT#-1,E,H,T,S
45130 FORN=0TO279STEP30
45140 PRINT#-1,A(N),A(N+1),A(N+2),A(N+3),A(N+4),A(N+5),A(N+6),A(
N+7),A(N+8),A(N+9),A(N+10),A(N+11),A(N+12),A(N+13),A(N+14),A(N+1
5),A(N+16),A(N+17),A(N+18),A(N+19),A(N+20),A(N+21),A(N+22),A(N+2
3),A(N+24),A(N+25),A(N+26),A(N+27),A(N+28),A(N+29)
45150 NEXT:GOTO 2000
45200 PRINT"PREPARE CASSETTE...":INPUT#-1,E,H,T,S
45210 FORN=0TO279STEP30
45220 INPUT#-1,A(N),A(N+1),A(N+2),A(N+3),A(N+4),A(N+5),A(N+6),A(
N+7),A(N+8),A(N+9),A(N+10),A(N+11),A(N+12),A(N+13),A(N+14),A(N+1
5),A(N+16),A(N+17),A(N+18),A(N+19),A(N+20),A(N+21),A(N+22),A(N+2
3),A(N+24),A(N+25),A(N+26),A(N+27),A(N+28),A(N+29)
45230 NEXT:GOTO 2000

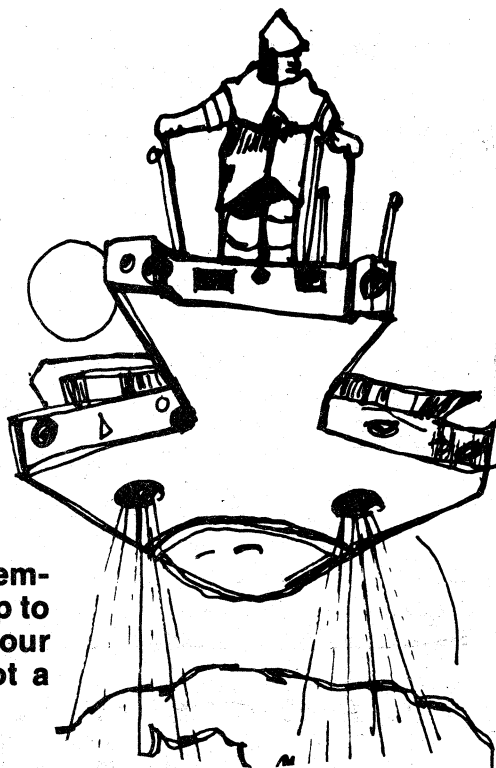
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DEVIDE  
FACTORIAL

GREATER/EQ  
LABEL

INDEX OF INNER PROD  
LOG MAX MEMBER MIN  
NOR NOT NOT EQUAL OR  
QUOTE QUAD RANDOM RANVL  
RESHAPE RESIDUE REVERSE  
SYSTEM SUBTRACT TAKE

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LESS

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ROTATE

ROUND

NEGATE

ROUND

REDUCTION

SHAPE SIGN

# INPUT

A COLUMN OF YOUR LETTERS

Dear Mr. Blank:

I have thoroughly enjoyed "SONIC TORPEDOES". Mr. Case is to be commended for a great idea there. If I may, I would like to recommend a couple of improvements.

The following lines will allow the last torpedo to hit or miss the target before terminating the game:

```
365 IF Q<=1 AND S<=1 THEN 400
370 IF Q = 38S = S-1: GOSUB 220
```

The following changes add an interesting twist to the game—they allow you to steer the torpedo by saying "DIT" to steer left, and

"DAH" to steer right (actually they could use any short and long sound)

```
Add to 130: Z=62
Add to 180: D=0:X=62
181 IFQ>360RINP(255) <=> 255
      THEN190
```

```
182 FORK=1TO4:PRINTCHR$
      (28):IFINP(255)=255THEN
      C=C+1
```

```
183 NEXT
```

```
184 IFC>2THEND=D+2:ELSED=
      D-2
```

```
185 C=0
```

```
Add to 360 after RESET(X,Q):
      X=Z+D:
```

Thank you,  
Al Raosdale

## BEE WARY



(More Magic from Leo Christopherson)

This fast paced real time action game is a contest between a Bee operated by the player and a Spider operated by the computer. The Bee tries to sting the Spider in a vulnerable spot while the Spider tries to jump up and swallow the Bee. Fast paced animation, sound, and real time action. Machine language subroutines, but loads as Level II for easy operation. \$14.95

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# DAY OF THE WEEK

MAY  
1 2 3 4 5 6 7  
8 9 10 11 12 13 14  
15 16 17 18 19 20 21  
22 23 24 25 26 27 28  
29 30 31

## by George Blank

There are many occasions when a day of the week program would be useful. For example, if you know the day of the week for the first day of a month, it is easy to print a calendar. In business programs, it dresses up output to specify the day.

This routine was written to give basic programmers a routine that they could use without needing to give credit or royalties in their own programs.

The Gregorian calendar is used, so Julian dates are incorrect. The Gregorian calendar was adopted on October 15, 1582 in the Roman Catholic countries, and on September 14, 1752 in the British Empire. The day before October 15, 1582 in Spain was October 5, and the day before September 14, 1752 in England was September 3, with a dropping of ten and eleven days respectively, Germany made the transition in 1700, Sweden in 1753, and Russia, ever a backward nation, waited until 1918.

```
10 REM * PUBLIC DOMAIN SUBROUTINE BY GEORGE BLANK *
100 CLS:PRINT:PRINT"DAY OF WEEK FOR GREGORIAN CALENDAR":PRINT
110 INPUT"MONTH (1-12)":M
120 INPUT"DAY (1-31)":D
130 INPUT"YEAR":Y
140 IF Y<1583 THEN PRINT"INVALID DATE (PRIOR TO ADOPTION OF GREGORIAN CALENDAR)" ELSE IF Y<1753 PRINT"(GREGORIAN CALENDAR NOT YET ADOPTED IN BRITAIN)"
150 GOSUB 32000
160 PRINT:GOTO110
31999 REM * * * * * DAY OF WEEK SUB-ROUTINE * * * * *
      * INPUT: M=MONTH D=DAY Y=YEAR OUTPUT: D$ *
      * ALGORITHM - GRUENBERGER, JAFFRAY, AND BEITZ *
      * (REF: COMPUTERWORLD FEB. 11, 1980, PAGE 30) *
32000 D$="SUNMONTUEWEDTHURFRI SAT":M$="JANFEBMARAPR MAYJUNJUL AUGSEPT
OCTNOVDEC":M$=MID$(M$, (M-1)*3+1, 3):IF M<>5 THEN M$=M$+" "
32010 M$=M$+STR$(D)+" "+STR$(Y):M=M-2:IF M<1 THEN M=M+12:Y=Y-1
32020 Y%=Y-INT(Y/100)*100:M%=INT(2.6*M-.19)+D+Y%+INT(Y/400)+INT(Y%/4)-INT(Y/4000)-2*INT(Y/100)
32030 M%=M%-INT(M%/7)*7:D$=MID$(D$, M%*3+1, 3)+" - "+M$
32040 PRINTD$:RETURN
```

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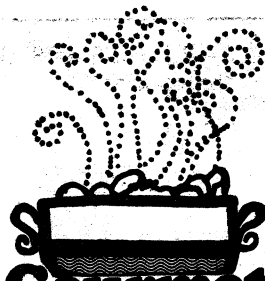
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by Jonathan A. Titus.

This valuable reference book for the hardware enthusiast with an understanding of Assembly language programming includes the schematic, printed circuit board artwork, and instructions for building a TRS-80 breadboard, plus 18 experiments to give a solid understanding of interfacing to the TRS-80. **\$8.95**

plus \$1.00 for shipping and handling



## ENCOUNTER IN THE NEAR THOLIAN SECTOR By Barry L. Adams

You are the Commander of the Federation Starship Enterprise. Open hostilities exist between the Federation of Planets and the Romulan-Klingon Alliance. Recently, Klingon battle cruisers, equipped with Romulan weaponry, have been conducting sorties across the Neutral Zone against Federation outpost colonies along the Tholian and Gothosian Sectors. As a result of these open attacks by Klingon raiding parties, outposts 7 and 8 have been destroyed and Federation starships Valiant and Constellation have been lost.

Your mission is to immediately disembark from Starbase-12 and make for the outpost asteroids where you are to patrol the "Near Tholian" Sector and engage and destroy all Klingon war vessels operating in that area. Failure to successfully complete this mission will all but guarantee the loss of the Federation. Good luck.

### **INSTRUCTIONS:**

Klingon starships are destroyed by depleting their energy. Unlike Federation Starships, such as the Enterprise, which have defined energy shields composed of several energy shells, Klingon vessels have undefined shields; the composition and configuration of which are unknown.

Klingon ships, like the Enterprise are propelled by impulse engines for sublight travel and Warp Drive for Star Travel. Whereas Star Travel is identical, the Klingon ships are far more maneuverable and faster at sublight speeds. This coupled with more powerful weapons, makes the Klingon ships an adversary not to be taken lightly.

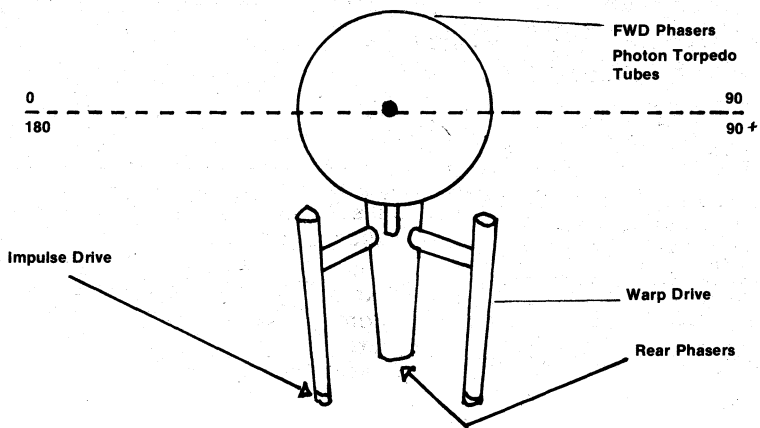


All weapons are energy weapons. Phasers are much more effective at ranges less than  $1E + 06$  meters and less due to the plasma property known as "reflectivity". Reflectivity is a phenomena of additive reflection which results in an increased yield in phaser power. In general terms, when two sources of energy are within a given distance and plasma is directed from one source to the other a potentation difference between the plasma bundle and the source to which it is traveling exists. The difference is additive to the energy level of the plasma bundle. The closer the energy sources — the higher the energy yield. The 500 energy units (EU) required to fire the Enterprise's forward phasers may actually hit the Klingon at an EU level of over 1000.

In addition to forward and rear phasers, the Enterprise is equipped with Photon Torpedoes which are definitive energy bundles. Klingon vessels are equipped with a plasma weapon which appears to have similar characteristics to the photon torpedoes. Unlike plasma as it is configured for phaser use the photon bundles and Klingon plasma bundles exhibit degenerative reflectivity. Under these conditions, unstable harmonics of the energy levels are produced which can reflect back to the source. However, the reflection is 180 degrees out of phase and is therefore degenerative. This phenomena usually only occurs at ranges less than  $5E + 06$ . At ranges of  $5E + 06$  to  $6.8E + 06$  the energy levels of the photon torpedoes or the plasma weapon remains constant. Beyond  $6.8E + 06$  meters the energy bundles decay quickly.

The Enterprise carries a larger crew compliment than does the Klingon ships (43 command officers and 387 ensign grade crew members). Klingon cruisers carry routinely less than 100 crew members and 18 command officers. Because of the larger crew, the Enterprise can make major repairs while in route, while Klingon vessels must be tended. Therefore under battle conditions Klingons can not make repairs.

**STAR TREK**  
**Encounter in the Near Tholian Sector**  
**THE STAR SHIP ENTERPRISE**

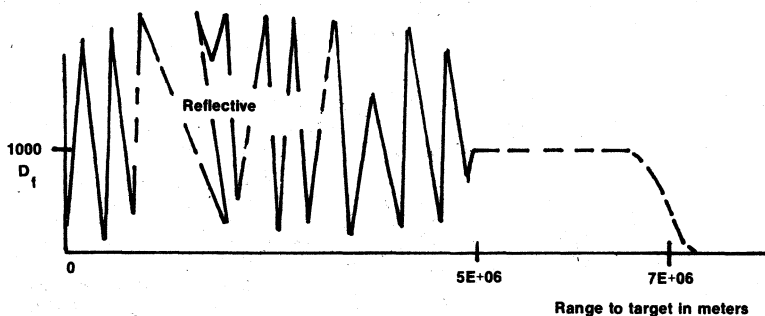


## COMMANDS

**1. Forward Phasers** — consist of twin banks. Cost 500 EU to fire. At range of  $1 \times 10^6$  ( $1E+06$ ) Destructive Force (Df) is equal to 500 EU. At ranges greater than  $1E+07$  the Df decays linearly. At ranges less than  $1E+06$  Df linearly increases due to additive reflectivity. Forward banks can only be fired at targets lying between 0 and 90 degrees in azimuth.

**2. Rear Phasers** — consist of a single bank. Cost 250 EU to fire. Can only be fired at targets lying between 90-plus and 180 degrees in azimuth. Function like Fwd banks regarding destructive force.

**3. Photon Torpedoes** — consist of three tubes mounted forward. Cost 1000 EU to fire. Energy source is plasma-magtron. Reflectivity is detrimentally reflective at ranges less than  $5 \times 10^6$  ( $5E+06$ ). The amount of reflected plasma energy is random.



Can only be fired at targets lying between 0 and 90 degrees in azimuth.

## THE STAR SHIP ENTERPRISE

**4. Close to attack** — requires Impulse engines. Reduces the azimuth to less than 90 degrees and cuts the range in half. Cost 150 EU to operate.

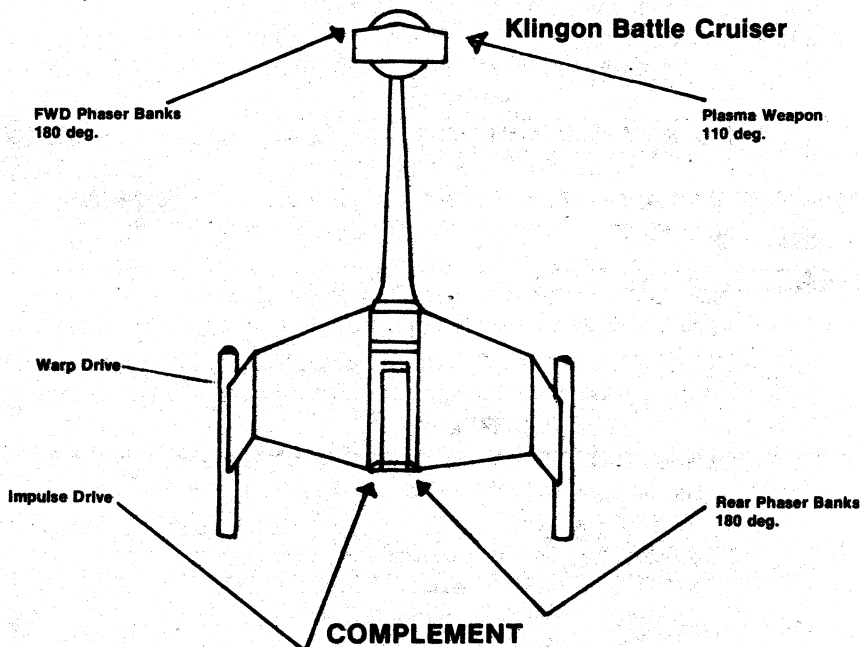
**5. Veer off** — requires Warp drive and/or impulse engines. Maximum speed is obtained when both engine systems are operational. The minimum speed is obtained when only the impulse engines are functional. Cost 350 EU to operate.

**6. All Stop** — a stand-by position. Life support systems only operational. Cost 10 EU. Used to conserve energy.

**7. Transfer energy to Shields** — transfers energy from the reserve banks to the ship's energy shields. Energy transfers are non-reversible. Cost 10 EU to operate. Shields hold a maximum of 5000 EU.

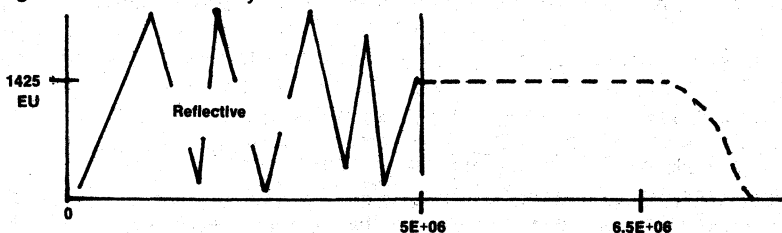
**8. Recharge Dillithium Crystals** — allows the majority of the ship's systems to be temporarily diverted to recharge the central energy source — the dillithium crystals. Cost nothing. However, the ship's energy shields are temporarily reduced to quarter strength during the process.

**9. Repair Systems** — immediately dispatches Spock and Scotty to the damaged system specified where repairs are effected at a cost of 625 EU. The system to be repaired must be specified by entering the Command Number associated with the system. Command Code 5 is used to specify the Warp drive.



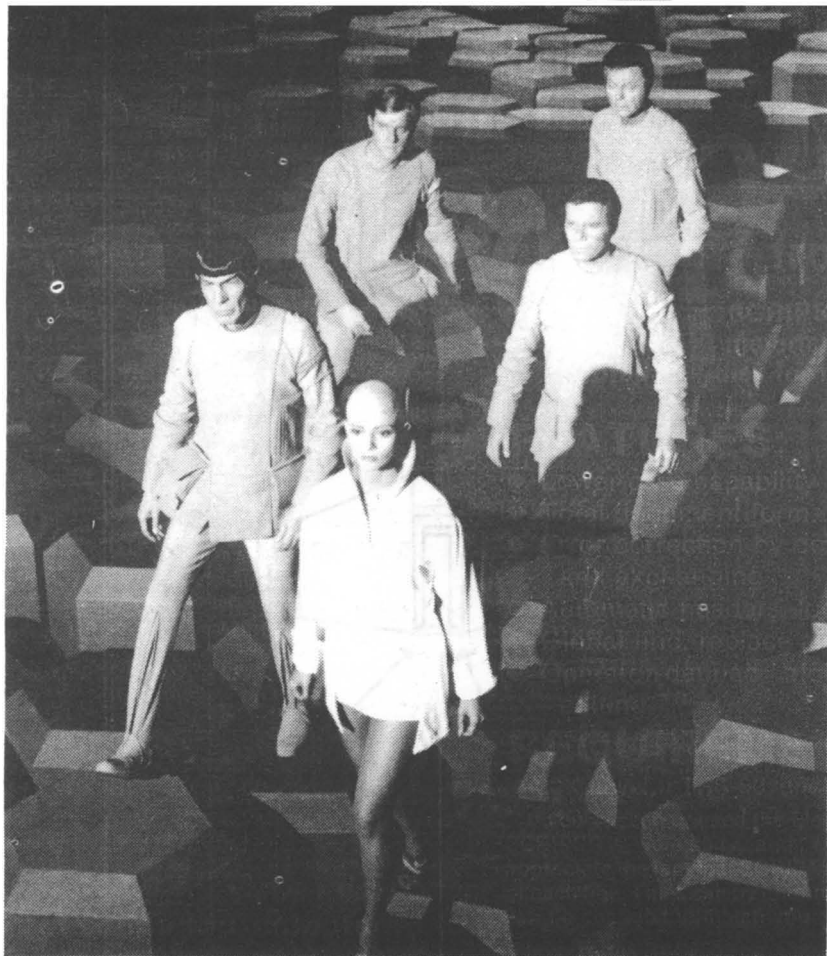
**Phasers** — twin banks mounted forward and aft, proton based. 725 EU at  $1E+06$ -, linear decay at  $1E+06$ -. Additive reflective at  $1E+06$ -. 180 degree azimuth of fire.

**Plasma Weapon** — one mounted forward, 110 Degree azimuth of fire. Energy source — plasma (origin unknown). At ranges less than  $5E+06$  regenerative reflectivity.



**Impulse Drive** — unknown energy source. Sub light speeds only — Are considerably faster than Federation star ships.

**Warp Drive** — Dilithium-based anti-matter type similar to that used by Federation vessels.



0 REM  
1 REM  
2 REM  
3 REM  
4 REM  
5 REM  
6 REM  
7 REM  
8 REM

STARTREK  
ENCOUNTER IN THE  
NEAR THLOIAN SECTOR  
VERSION 2 0

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BARRY L ADAMS  
GREENVILLE , NC 27834

9 REM MAIN PROGRAM LOOP LINES 20 - 565: GRAPHICS ROUTINES BLOCK  
600 & LINES 1450,1770: INTRODUCTION, SETUP AND DATA 10,1500 -  
2050

10 CLEAR600: DIM A(16): DEFINTB-F, H-K, N-Q, S, U-Z: RANDOM: GOTO1500

14 REM DEFLECTOR SHIELDS

15 PRINT: INPUT "SPECIFY AM'T OF ENERGY TO TRANSFER TO SHIELDS"; H:  
IF A(6)+H>5\*U, 15 ELSE IF G=H<0 PRINT "ENGINEERING REPORTS INSUFFI  
CENT ENERGY (<"; G; ">": GOTO15: ELSE G=G-H: A(6)=A(6)+H: Q=10: RETURN

19 REM SHIP SYSTEMS SETUP

20 S=INT(RND(A/U)): X=5: G=RND(A+U)+A\*5: FOR J=1TO5 A(J)=1: NEXT A(6)  
)=RND(U\*5)

25 K=0: FORJ=1TO15: A(J)=1: NEXT A(16)=RND(U+A)+A: GOTO40

30 GOSUB900: X=X-1: IF A(6)<0 OR G<0 OR X<=0, X=5-X: A=1: GOTO45: ELS  
E 25

35 PRINT@209, "OUT OF"; S; "HAVE BEEN DESTROYED": PRINT@529, "THE FED  
ERATION HAS BEEN "; : IF X=5 PRINT "SAVED": GOTO500: ELSE PRINT "LOST"  
: PRINTTAB(28); "IDIOT!": GOTO510

40 R=L+10\*RND(A/U): B=INT(180\*RND(A/L/10)): F=0: I=0: CLS: GOSUB650: F  
OR C=1TO10: PRINT@470, "R E D A L E R T": GOSUB920: CLS: GOSUB930: NE  
XTC

45 K7=K7+1: PRINT@140, "SENSORS REPORT "; X; B\$: "WAR CRUISERS": IF A=  
1.35 ELSE PRINT@216, "APPROACHING"

50 PRINT: PRINT "RANGE"; R; "METERS"; TAB(42); "AZIMUTH"; B\*2; "DEG": IFZ  
>0 A(6)=Z-H: Z=0: H=ABS(H)

55 IF A(6)<1426 PRINT: PRINTTAB(21); "DANGER SHIELDS LOW"

60 PRINT: PRINT "BANKS"; G: TAB(24); "SHIELDS"; A(6); TAB(46); B\$: A(16):  
PRINT: PRINTTAB(26); "COMMAND"

70 C\$=INKEY\$: IFC\$=" " OR VAL(C\$)=0, 70 ELSE C=VAL(C\$): CLS: PRINTA\$  
: IF C<4 PRINT "FIRE ":

75 ON C GOSUB 130, 135, 150, 170, 175, 185, 15, 190, 195: GOTO205

78 REM

79 REM KLINGONS LOGIC ROUTINE

80 W=A(11)+A(12): Y=A(14)+A(15): PRINTB\$: IF S>1 PRINT"#"; K7;

85 IF G=A(16), 90 ELSE IF A(16)<499 OR ( W=0 AND A(13)=0 AND Y=0  
) , 370

90 H=RND(A)+U: IF R>=H+10, 110

95 IF A(13)=1 AND R<L+5 AND B(11), 120

100 IF W=0 AND R<=W/4+L, 115 ELSE IF W=0, 110

```

105 IF A(16)>U AND A(13)=1,125 ELSE IF Y>0 C=5:GOSUB175:GOTO205:
ELSE C=6:GOTO75
110 IF A(14)>0 C=4:GOSUB170:B=0:Q=150:GOTO205:ELSE 105
115 IF W>0 PRINT"FIRING PHASER":Q=700:GOSUB 140:Q=500:C=1:GOTO20
5:ELSE 95
120 IF A(13)=0 OR A(16)<U,100
125 PRINT"FIRING PLASMA WEAPON":C=3:B=55:Q=1425:GOSUB160:Q=U:GOT
O205
130 PRINT"FORWARD PHASERS":IF A(1)=0,100 ELSE Q=700:IF B>90,155
ELSE 140
135 PRINT"REAR PHASERS":IF A(2)=0,100 ELSE Q=350:IF B<90,155
140 IF R>L,H=Q*(L/R):RETURN
145 H=Q+Q*(1-R/L):RETURN
150 PRINT"PHOTON TORPEDO":IF A(3)=0,100 ELSE GOSUB 960:Q=U:IF B<
=90,160
155 H=0:RETURN
160 IF R>5*L AND R<=6.8*L,H=Q:RETURN:ELSE IF R>6.8*L,H=Q*.8*5*L/
R:RETURN:ELSE IF I=0 CLS:FOR C1=1TO10:PRINT@404,"DANGER REFLECTI
VE ENERGY":GOSUB930:CLS:GOSUB940:NEXTC1
165 F=1:H=RN(0)+200:PRINT"RELECTION DATA":GOTO225
170 IF J=0 AND A(4)=0 PRINT"IMPULSE":GOTO180:ELSE PRINT"CLOSING
IN":R=R/2:B=0:Q=150:RETURN
175 IF J=0 AND A(4)=0 AND A(5)=0 PRINT"ENGINE":GOTO180:ELSE PRI
NT"STEERING AWAY":R=R*(1+A(5+I)+.05*A(4+I)):Q=350:RETURN
180 PRINT" SYSTEM INOPERATIVE":GOTO50
185 PRINT"STANDING BY":Q=10:RETURN
190 PRINT"REACTIVATING DILITHIUM CRYSTALS":Q=-INT(1575*((100E3-G
)/100E3)):Z=A(6):A(6)=Z/4:RETURN
195 PRINT:PRINT"SPECIFY SYSTEM TO BE REPAIRED":H$=""
200 H$=INKEY$:IF H$="",200 ELSE A(VAL(H$))=1:Q=650:RETURN
203 REM
204 REM ATTACK ASSESSMENT
205 IF I=0 G=G-Q:IF G<0,385 ELSE 215
210 A(16)=A(16)-Q:IF A(16)<0,385ELSEIFC<3AND A(6)-H<0AND A(6)<600,
K3=1:A(6)=-1:J=0:PRINT"WE ARE RECEIVING A TRANSMISSION FROM THE
",B$,"COMMANDER":PRINT"STANDBY":GOSUB900:GOSUB1930:CLS:PRINT@276
,E$:GOSUB960:GOSUB640:GOSUB930:GOTO390:ELSE215
215 IF C=5 PRINT"CONTACT ";:IF R>1E8PP!N!"LOST":X=X+1:GOTO30:ELS
E PRINT"NOT LOST"

```

```

220 IF I=0 J=10 ELSE J=0
225 IF HDA*2 H=A*2
230 D=RND(H):IFC>3H=0:GOTO400:ELSEPRINTTAB(21):IFJ=0PRINT"DAMAG
E REPORT":PRINTA$:GOTO235:ELSEPRINT"SENSORS REPORT":PRINTB$:IF
A(16)-H>0,235 ELSEIFR<6E5,234ELSEIFK7<SAND(A(11)=0ANDA(12)=0ANDA
(13)=0)ORA(16)<349,233ELSE235
233 PRINT"STANDBY - WE'RE RECEIVING A VISUAL SIGNAL FROM A ";B$:
"VESSEL":GOSUB960:K5=1:GOSUB960:GOSUB1770
234 PRINT@340,K1$:GOSUB960:GOSUB640:GOSUB930:GOTO390
235 PRINT"HIT BY";H:"UNITS OF DESTRUCTIVE ENERGY"
240 A(6+J)=A(6+J)-H:IF A(6+J)<0,385 ELSE IF D<300 PRINT"MINOR DA
MAGE - SHIELDS HOLDING":GOTO400:ELSE IFD<900 OR A(3+J)=0 OR (A(1
+J)=0 AND A(2+J)=0),260 ELSE FOR C1=1TO3:A(C1+J)=0:NEXT:PRINT"WE
APONS' SYSTEM ";
245 IF A(5+J)=1 OR A(4+J)=1 PRINT "AND ";ELSE365
260 IF D<800 OR A(5+J)=0,280 ELSE A(5+J)=0:PRINT"WARP DRIVE":GO
TO365
280 IF D<700,300 ELSE IF A(3+J)=1 A(3+J)=0:IF J=0 PRINT"PHOTON T
ORPEDO TUBES":GOTO 365:ELSE PRINT"PLASMA WEAPON":GOTO365
290 IFRND(3)=1,320
300 IF D<500 OR A(4+J)=0,320 ELSE A(4+J)=0:PRINT"IMPULSE DRIVE":
GOTO365
320 IF D>399 AND A(1+J)=1 A(1+J)=0:PRINT"FORWARD":GOTO360:ELSE
IF A(2+J)=1 A(2+J)=0:PRINT"REAR ";GOTO360:ELSE B3=B*2:IF B3<90
PRINT"FORWARD":ELSE IF B3<180 PRINT"STARBOARD":ELSE IF B3<270 PR
INT"AFT":ELSE PRINT"PORT";
330 PRINT " SHIELDS ";:IF A(6+J)<400 PRINT"DEPLETED" ELSE IF A(6+
J)<2000 PRINT" DISRUPTED" ELSE IF A(6+J)<3000 PRINT" BUCKLING" E
LSE PRINT"LOSING PHASE"
340 D=0:GOTO 400
360 PRINT " PHASERS";
365 PRINT " DAMAGED":GOTO400
370 GOSUB900:PRINT@464,"DANGER ";B$;" SELF-DESTRUCTED":GOSUB910:
GOSUB1450:Q=A(16):GOSUB140:K=1:IF A(6)-HK0 X=X-1
380 C=1:J=0:GOTO225
385 GOSUB910
390 GOSUB1450:CLS:PRINT@468," ";:IF J=0 PRINTA$:X=X+1:ELSE PRIN
TB$:
395 PRINT"DESTROYED":GOTO30

```

```

397 REM
398 REM KLINGON RANGE & POSITION ROUTINE
400 IF F=1 F=0:GOSUB910:IF I=10 H=1425:RETURN:ELSE H=U:RETURN
405 T1= 5*(A(4)+A(14)+.05*(A(5)+A(15))):IF K=1 GOSUB900:GOTO30:E
LSE R=ABS(R+T1*(RND(0)-.5)*L):B=INT(ABS(B-150+20*(RND(0)))):IF B
>180 B=ABS(360-B)
410 IF J=0 I=0:GOTO50:ELSE I=10:J=10:GOTO80
498 REM
499 REM CONGRATULATIONS
500 PRINT@903,"AN EXCELLENT DISPLAY OF TACTICAL ABILITY CAPTAIN"
:PRINTAB(14);"ANOTHER TURN AROUND THE OLD GALAXY ";
505 INPUTF$:IFF$="NO",END ELSE A3=1:GOTO1510
508 REM
509 REM INSULTS
510 IS=RND(10):ON IS GOTO 515,520,525,530,535,540,545,550,555,56
0
515 PRINT@902,"WAS THAT EVER A DISPLAY OF TACTICAL POWERS - YUK!"
:GOTO565
520 PRINT@912,"ANOTHER BRILLIANT ROUND CAPTAIN":GOTO565
525 PRINT@905,"OH, NOW THAT WAS GOOD000000000000000000000000":GOT
0565
530 PRINT@908,"AH, LEADING WITH YOUR CHIN AGAIN I SEE":GOTO565
535 PRINT@900,"STARFLEET COMMAND FROWNS ON THOSE WHO BREAK THEIR
SHIPS":GOTO565
540 PRINT@900,"IN THE IMMORTAL WORDS OF MR SPOCK 'BOY ARE YOU A
TURKEY!':"GOTO565
545 PRINT@909,"HMMM, CAPTAIN CRASH I PRESUME!!!!!!":GOTO565
550 PRINT@902,"A SPECIAL COMMUNIQUE FROM THE FEDERATION - N E R
D!":GOTO565
555 PRINT@902,"ABSOLUTELY BRILLIANT - WITH YOU WHO NEEDS KLING
ONS!":GOTO565
560 PRINT@900,"WONDERFUL, ANOTHER DAZZLING DISPLAY OF TACTICAL B
RILLIANCE"
565 PRINTAB(18);"WANT TO TRY AND SAVE FACE":GOTO505
598 REM
599 REM KLINGON GRAPHICS
600 PRINT@152,K1$;:IFK4=1 RETURN ELSE GOSUB960
620 POKE15711,143:FORT=1T05:NEXT:POKE15711,128:POKE15775,46:GOSU
B970:POKE15775,128:POKE15839,129:GOSUB970:POKE15839,160:GOSUB970

```



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: POKE15839, 128: POKE15903, 148: GOSUB970: POKE15903, 128: POKE15967, 14
9: GOSUB970: POKE15967, 128: POKE16031, 189: GOSUB970: POKE16031, 128
630 POKE16095, 191: GOSUB970: POKE16095, 128: POKE16159, 191: POKE16223
, 131: GOSUB970: POKE16159, 128: POKE16223, 128: POKE16223, 191: POKE1628
7, 191: GOSUB970: POKE16223, 128: POKE16287, 128: GOSUB930: RETURN
640 POKE16351, 191: GOSUB940: POKE16351, 128: POKE16287, 143: GOSUB940:
POKE16287, 128: POKE16223, 141: GOSUB940: POKE16223, 128: POKE16159, 133
: GOSUB940: POKE16159, 128: POKE16095, 132: GOSUB940: POKE16095, 128: POK
E16031, 144: GOSUB940: POKE16031, 128: POKE16031, 130: GOSUB940
645 POKE16031, 128: POKE15903, 46: GOSUB940: POKE15903, 128: POKE15839,
46: GOSUB940: POKE15839, 128: RETURN
650 CLS: B=1: C=128: FORT=1T010: PRINT@RND(1022), " ": NEXT: POKE15839
, 46: GOSUB920
655 POKE15839, 58: GOSUB940: POKE15839, 46: GOSUB940: POKE15903, 46: GOS
UB940: POKE15903, C: POKE16031, 130: GOSUB940: POKE16031, C: POKE16031, 1
44: GOSUB940: POKE16031, C: POKE16095, 132: GOSUB940: POKE16095, C: POKE1
6159, 133: GOSUB940: POKE16159, C
660 POKE16223, 141: GOSUB940: POKE16223, C: POKE16287, 143: GOSUB940: PO
KE16287, C: POKE16351, 191: GOSUB940: POKE16351, C: IFB=1 B=0: GOSUB920:
GOSUB655 ELSE B3=1: GOTO1450
900 FORT=1T01000: NEXT: CLS: RETURN
910 FORT=1T01000: NEXT: RETURN
920 FORT=1T0100: NEXT: RETURN
930 FORT=1T050: NEXT: RETURN
940 FORT=1T010: NEXT: RETURN
950 FORT=1T02: NEXT: RETURN
960 FOR T=1T0500: NEXT: RETURN
970 FORT=1T025: NEXT: RETURN
1448 REM
1449 REM BOOM MAKER GRAPHICS
1450 CLS: PRINT@479, CHR$(140): PRINT@478, STRING$(3, 140): PRINT@477,
STRING$(5, 140): PRINT@476, STRING$(7, 140): PRINT@475, STRING$(9, 140)
: PRINT@470, STRING$(19, 140): PRINT@476, STRING$(7, 191): PRINT: PRINT@
477, "B O O M": GOSUB950: CLS: PRINT@470, STRING$(19, 140)
1455 PRINT@448, STRING$(63, 140): GOSUB950: CLS: IF B3=1 B3=0: RETURN
1460 FORT=1T015: PRINT@400+RND(200), " ": NEXT: FORT=1T0400: PRINT@
400+RND(200), " ": NEXT: CLS: RETURN
1498 REM
1499 REM INTRODUCTION & SETUP

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1500 CLS:PRINT@472,CHR$(23);"SPACE";:GOSUB910:PRINTCHR$(23):PRIN
T@460,"THE FINAL FRONTIER";:GOSUB910
1510 PRINT@31,"":GOSUB950:CLS:PRINTTAB(31);,"":GOSUB950:CLS:PRI
NT@95,"":GOSUB950:CLS:PRINT@95,CHR$(144):GOSUB950:CLS:PRINT@159
,CHR$(129):GOSUB950:CLS:PRINT@159,CHR$(132):GOSUB950:CLS:PRINT@1
59,CHR$(176):GOSUB950:CLS:PRINT@223,CHR$(131):GOSUB950:CLS
1515 PRINT@223,CHR$(140):GOSUB940:CLS:PRINT@222,STRING$(2,176):G
OSUB950:CLS:PRINT@286,STRING$(2,131):GOSUB950:CLS:PRINT@286,STRIN
G$(3,140):GOSUB950:CLS:PRINT@286,STRING$(3,176):GOSUB950:CLS:PR
INT@347,STRING$(5,143):GOSUB950:CLS:PRINT@347,STRING$(11,188)
1520 GOSUB950:CLS:PRINT@346,STRING$(13,176):PRINT@410,STRING$(13
,131):GOSUB950:CLS:PRINT@345,STRING$(15,188):GOSUB950:CLS:PRINT@
408,STRING$(15,191):GOSUB950:CLS:PRINT@468,STRING$(23,191):PRINT
@532,STRING$(23,191):PRINT@596,STRING$(23,191):GOSUB940
1550 CLS:Z=0:K7=0:PRINTCHR$(23);:PRINT@276,"STAR TREK";:PRINT@39
8,"ENCOUNTER IN THE";:PRINT@522,"NEAR THOLIAN SECTOR";:PRINT@646
,"ENTER A STARDATE (XXX)":;INPUTA:A=ABS(A):IFA<1000ORR@9999,A=9
999
1555 CLS:IFA3=1,20
1595 A3=1:FORT=1T0100:PRINT@RD(1023),,"":NEXT:GOSUB910
1600 PRINT@150,"A TREATY OF PEACE BETWEEN";:PRINT@214,"THE KLING
ON EMPIRE AND THE";:PRINT@278,"FEDERATION OF PLANETS HAS";:PRINT
@342,"LASTED SINCE ORGANIAN STAR";:PRINT@406,"DATE 3199.5 HOMEV
ER WITH";:PRINT@470,"THE PASSING OF AVELBORNE";
1610 PRINT@534,"THE KLINGONS HAVE OPENLY";:PRINT@598,"PROVOKED H
OSTILITIES WITH";:PRINT@662,"FEDERATION SHIPPING AND";:PRINT@726
,"HAVE ILLEGALLY CONFISCATED";:PRINT@790,"A VAST AMOUNT OF CARGO
THE";:PRINT@854,"SPECTRE OF WAR AGAIN LOOMS";
1620 PRINT@918,"OVER THE ENTIRE GALAXY";:FORT=1T010000:NEXT
1640 E$=STRING$(5,176)+STRING$(4,188)+STRING$(4,176)+CHR$(144)+C
HR$(32)+STRING$(19,188)+CHR$(156)+STRING$(38,32)+CHR$(130)+CHR$(
139)+CHR$(143)+CHR$(191)+CHR$(188)+CHR$(176)+CHR$(144)+STRING$(4
,32)+CHR$(191)+CHR$(191)+STRING$(52,32)+CHR$(41)+CHR$(175)
1650 E$=E$+STRING$(13,191)+STRING$(4,143):A$="ENTERPRISE":B$="K
LINGON":U=1000:L=U2
1660 K$=CHR$(172)+STRING$(2,188)+STRING$(10,140)+STRING$(7,188)+
STRING$(6,191)+STRING$(2,188)+STRING$(53,32)+CHR$(139)+STRING$(7
,191)+CHR$(189)+CHR$(144)+STRING$(54,32)+CHR$(188)+CHR$(190)+STR
ING$(8,191)+STRING$(3,188)

```

```

1670 K1$=CHR$(160)+CHR$(184)+STRING$(5,143)+CHR$(191)+CHR$(159)+
CHR$(143)+STRING$(4,143)+CHR$(180)+CHR$(144)+STRING$(48,32)+CHR$(
191)+STRING$(6,32)+CHR$(171)+CHR$(129)+STRING$(6,32)+CHR$(191)+
STRING$(54,32)+CHR$(138)+STRING$(2,143)
1750 CLS:FORT=1T0100:PRINT@ND(1023),".":NEXTT:PRINT@0,"SHIP'S
LOG : STARDATE";A+.1:PRINT:PRINT" THE ENTERPRISE IS IN DOCK AT
STARBASE 12 FOR RESUPPLY AND CREW R & R. MR SPOCK AND LT. SULU
ARE SUPERVISING REPAIR OF THE NAVIGATION SENSORS";
1755 PRINT" WHILE LT. UHURA RUNS COMMUNICATION CHECKS WITH THE
STARBASE COMMD UNIT. CHIEF ENGINEER SCOTT AND MR CHEKOV ARE COND
UCTING FIRING TEST OF THE FORWARD PHASER BANKS. ";
1760 PRINT@468,E$:FOR T=1T07000:NEXT
1765 REM ENTERPRISE GRAPHICS
1770 PRINT@468,E$:FORC=1T03:PRINT@467,CHR$(188):FORT=467T0447
STEP-1:PRINT@T,CHR$(95):PRINT@T+1,CHR$(32):NEXTT:GOSUB960:NEXT
C:IFK5=1 K5=0:CLS:RETURN
1780 CLS:FOR X=1T03:PRINTCHR$(23):PRINT@210,"BEEP":GOSUB940:CLS:
GOSUB950:NEXT:GOSUB920:PRINTCHR$(23):PRINT@450,"CAPTAIN , WE'RE
RECEIVING A":PRINTTAB(2);"MESSAGE FROM STARFLEET HQ":PRINTTAB(1)
;"I'LL PIPE IT TO YOUR VIEWER":GOSUB910:GOSUB910
1800 CLS:X=10:GOSUB1810:X=23:GOSUB1810:X=9:GOSUB1810:PRINTA:PRIN
T:X=12:GOSUB1810:PRINT:X=501:GOSUB1810:X=11:GOSUB1810:GOSUB900:G
OTO1820
1810 FORT1=1T0X:READN:PRINTCHR$(N):GOSUB930:NEXTT1:IFX=9,RETURN
ELSEPRINT:RETURN
1820 CLS:PRINTTAB(22);"USS ENTERPRISE":PRINTTAB(19);STRING$(20,4
5):PRINT"CAPTAIN'S LOG";TAB(46);"STARDATE";A+.3:PRINT:PRINT" THE
ENTERPRISE IS NOW ENROUTE TO THOLIAN SPACE TO RELIEVE THE ENBA
TTLED FEDERATION COLONIES. ALL CREW MEMBERS ARE INTENSELY";
1825 PRINT" REVIEWING THE COMPUTER BANKS ON KLINGON WEAPONRY I
N PREPARATION FOR WHAT LIES AHEAD. A GLIMPSE OF THE LAST GARBLED
MESSAGE FROM OUTPOST 7 IS ALL THAT IS NECESSARY TO REMIND US AL
L OF THE VICIOUSNESS OF THE ENEMY. ":PRINT
1830 PRINTTAB(8);"LOG PAGE 2 COMPUTER BANK SCAN OF KLINGON WAR
VESSEL":PRINTTAB(8);"LOG PAGE 3 LAST TRANSMISSION FROM OUTPOST
7":PRINTTAB(8);"LOG PAGE 4 CLOSE LOG";
1835 F$="":F$=INKEY$:F=VAL(F$):IF F=0 OR F>4,1835 ELSE IF F=3,1
900 ELSE IF F=4,20
1840 CLS:PRINTTAB(20);"KLINGON BATTLE CRUISER":PRINTTAB(15);"CTR

```

```

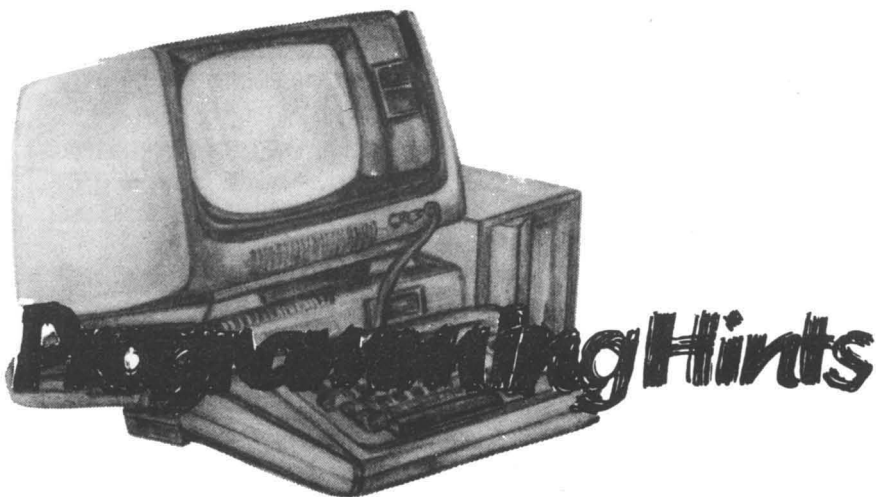
CA ORGANIAN STARDATE 3199.5":PRINTAB(27); "TOP VIEW":PRINT:PRIN
TTAB(29); "/- - - - - TWIN FWD PHASERS":PRINTTAB(10); "BR
IDGE - - - - "; CHR$(94); TAB(31); CHR$(93); " - - - - - ";
1845 PRINT"PLASMA WEAPON":PRINT@770, "PORT ENGINE NACELLE "; CHR$(
91); TAB(29); CHR$(91):PRINTTAB(29); CHR$(33):PRINTTAB(29); "IMPULSE
ENGINES AND":PRINTTAB(29); "SINGLE REAR PHASER";
1850 POKE15708, 143: POKE15709, 159: POKE15710, 133: POKE15773, 149: POK
E15836, 168: POKE15837, 189: POKE15900, 170: POKE15901, 191: POKE15958, 1
80: POKE15959, 176: POKE15960, 176: POKE15961, 184: POKE15962, 190: POKE1
5963, 191: POKE15964, 191: POKE15964, 191: POKE15965, 191: POKE15966, 191
1855 POKE15967, 191: POKE15968, 188: POKE15969, 180: POKE15970, 176: POK
E15971, 176: POKE15972, 184: POKE16022, 159: FORT=16023T016027: POKET, 1
43: NEXT: POKET, 191: POKE16029, 191: POKE16030, 191: FORT=16031T016035:
POKET, 143: NEXT: POKET, 175: POKE16086, 133: POKE16100, 138
1860 FORT=1T03000: NEXT: CLS: K4=1: PRINTTAB(20); "KLINGON BATTLE CRU
ISER":PRINT@130, "BOW VIEW":PRINT@351, CHR$(91):PRINT@410, "BRIDGE"
:PRINT@473, "/" :PRINT@535, "/" :PRINT@597, "/" :PRINT@642, "PORT VIEW"
:GOSUB600: K4=0: PRINT@660, K$: PRINT@724, CHR$(91);
1865 PRINT@774, "FWD PHASER BANKS":PRINT@838, "PLASMA WEAPON":FO
RT=1T03000: NEXT: GOTO1820
1900 CLS:PRINTAB(2); "TRANSMISSION FROM OUTPOST 7 RECORDED ON"
; TAB(46); "STARDATE"; A-12.4:PRINTSTRING$(63, 45):PRINT:GOSUB910:PR
INT"OUTPOST 7 CALLING STARFLEET COMMAND ON PRIORITY CHANNEL 1":G
OSUB910
1905 PRINT"STARFLEET COME IN":GOSUB910:PRINT" STARFLEET DO
YOU HEAR US ?":GOSUB910:PRINT"OUTPOST 7 CALLING STARFLEET CO
MMAND - ACKNOWLEDGE !":GOSUB910:GOSUB910:PRINT"STARFLEET - WE
ARE UNDER HEAVY ATTACK . . . ENEMY UNKNOWN !":GOSUB910:GOSUB91
0
1910 PRINT"OUR TRANSMISSIONS ARE BEING JAMMED . . . (CRACKLE) . .
":GOSUB910:PRINT" . . . LARGE . . . EXPLOSIONS . . . (CRACKLE) . .
WE . . . WAIT !":GOSUB910:GOSUB910:PRINT"WE'RE RECEIVING A SIGN
AL . . . (CRACKLE) . . .":GOSUB910:PRINT" . . . (CRACKLE) . . .
";
1915 GOSUB910:GOSUB910:PRINT" . . . WE CAN SEE SOMETHING ON THE MAI
N SCREEN - STAND BY":GOSUB910:PRINT" . . . ( CRACKLE) . . .":GOSUB91
0:PRINT"MY GOD, THEY ARE KLINGONS !":GOSUB910:PRINT"WE . . . CAN
'T TAKE ANOTHER DIRECT HIT !"
1920 GOSUB910:PRINT"SWITCHING TO MAIN VIEWER ";:GOSUB910:PRINT"

```

```

STARFLEET DO YOU COPY      ?" :GOSUB910:PRINT"      (CR
ACKLE)      " :GOSUB900
1930 CLS:PRINTCHR$(23):PRINT@384,;TAB(10);"EARTHLINGS":PRINTTAB(
2);"PREPARE TO MEET YOUR DOOM":PRINTTAB(1);"BY THE HANDS OF THE
KLINGON":PRINTTAB(12);"EMPIRE":GOSUB910:GOSUB900:GOSUB600:GOSUB6
20:IFK3=1,K3=0:RETURN:ELSE GOSUB1450:GOSUB910
1935 PRINT@460,"      (CRACKLE)      " :GOSUB910:PRINT"      (CRA
CKLE)      " :GOSUB900:PRINT@470,"END OF TRANSMISSION":GOSUB910:G
OTO1820
2000 DATA67,79,77,77,85,78,73,81,85,69,70,82,79,77,32,83,84,65,8
2,70,76,69,69,84,32,67,79,77,77,65,78,68,32,83,84,65,82,63,65,84
,69,32,65,76,69,82,84,32,83,84,65,84,85,83,75,76,73,78,71,79,78,
32,66,65,84,84,76,69,32,67,82,85,73,83,69,82,83,32
2010 DATA72,65,86,69,32,66,69,69,78,32,67,79,78,68,85,67,84,73,7
8,71,32,83,79,82,84,73,69,83,32,65,67,82,79,83,83,32,84,72,69,32
,78,69,85,84,82,65,76,32,90,79,78,69,32,65,71,65,73,78,83,84,32,
70,69,68,69,82,65,84,73,79,78,32,79,85,84,80,79,83,84,32
2020 DATA67,79,76,79,78,73,69,83,32,65,76,79,78,71,32,84,72,69,3
2,84,72,79,32,45,76,73,65,78,32,65,78,68,32,71,79,84,72,79,83,73
,65,78,32,83,69,67,84,79,82,83,46,32,79,85,84,80,79,83,84,83,32,
55,32,65,78,68,32,56,32,72,65,86,69,32,66,69,69,78,32
2030 DATA68,69,83,84,82,79,89,69,68,65,83,32,87,69,76,76,32,65,8
3,32,70,69,68,69,82,65,84,73,79,78,32,83,84,65,82,83,72,73,80,83
,32,86,65,76,73,65,78,84,32,65,78,68,32,67,79,78,83,84,69,76,76,
65,84,73,79,78,46,32,89,79,85,82,32
2035 DATA77,73,83,83,73,79,78,32,73,83,32,84,79,32,73,77,77,69,6
8,73,65,84,76,89,32,76,69,65,86,69,32,83,84,65,82,66,65,83,69,32
,49,50,32,65,78,68,32,77,65,75,69,32,70,79,82,32,84,72,69,32,79,
85,84,32,80,79,83,84,32,65,83,84,82,79,73,68,83,32,65,78,68,32
2040 DATA80,65,84,82,79,76,32,84,72,69,32,78,69,65,82,32,84,72,7
9,76,73,65,78,32,83,69,67,84,79,82,46,32,89,79,85,32,65,82,69,32
,84,79,32,69,78,45,71,65,71,69,32,65,78,68,32,68,69,83,84,82,79,
89,32,84,72,69,32,75,76,73,78,71,79,78,32,82,65,73,68,73,78,71,3
2
2050 DATA80,65,82,84,73,69,83,32,79,80,69,82,65,84,73,78,71,32,7
3,78,32,84,72,65,84,32,32,83,69,67,84,79,82,46,32,70,65,73,76,85
,82,69,32,87,73,76,76,32,77,69,65,78,32,84,72,69,32,76,79,83,84,
32,79,78,32,84,72,69,32,70,69,68,69,82,65,84,73,79,78,46
2060 DATA32,32,71,79,79,68,32,76,85,67,75

```



**A)** For sound input (see **SoftSide**, March 1980, "Sonic Torpedoes") it is neither necessary to CLS nor to PRINTCHR\$(28) to reset the INP value. OUT255,2 does the same thing without disturbing the screen. Simply OUT255,2 after sound has been detected to reset INP.

**B)** To use sound input without pulling the REMOTE plug (the dummy MIC plug must still be out), use a loop with OUT255,55. This both resets the INP value and runs the recorder, though an occasional "BZEET" from the cassette-recorder relay will be heard as a side effect.

**Example 1-A:**

```
10 CLS:FORX=0TO127:SET(X,10*INT(INP(255)/127)):OUT255,2:  
NEXT:GOTO10
```

**Example 1-B:**

```
10 CLS  
20 OUT255,55:IFINP(255)=255THENPRINT"SOUND!!";  
30 GOTO20
```

**Thomas Hanlin III**

With respect to "unNEWed" programs (**SoftSide**, March 1980, Programming Hint #4): such programs may be RUN, LISTed or CSAVED, but **don't** EDIT them! This, for some inexplicable reason, sends the computer off to some mechanical limbo.

**Thomas Hanlin III**

Many fascinating effects may be obtained by POKEing various values into memory location 16396 and pressing BREAK. Some of the more interesting ones are listed below. Warning: some values will make the computer revert to MEMORY SIZE? when BREAK is pressed, so don't fiddle around if you have an important program in memory.

## "BREAK" Chart: POKE16396,X

"X" Value	Result when BREAK pressed
15	Looks like blank space, but shows up and END if entered after a line number and LISTed.
125	"U" when SHIFT BREAK, "T" when BREAK.
157	Graphics characters: one if BREAK, different for SHIFT BREAK. These can be assigned to a string variable and used like Super Graphics (see <b>PROG/80</b> , March 1979, May 1979).
165	BREAK itself is disabled, but SHIFT BREAK works like ordinary BREAK. Very useful to prevent accidental BREAKing while retaining BREAK capability.
233	Like pushing the reset button.

Thomas Hanlin III

### Disable Reset

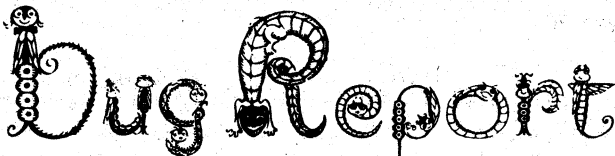
To disable to reset key in back of the keyboard, modify memory locations 4007H and 4008H by putting the value of where you wish the program control to jump to (ADDRESS) in these locations. Put the MSB in 4008H and the LSB in 4007H. NOTE: these values cannot be POKEd in from BASIC but can be set via a USR subroutine.

### Disable the Keyboard

To disable the keyboard for any reason POKE 16405,0. The entire keyboard will be disabled until you POKE 16405,1. NOTE: Be sure to do this under program control, if done in the command mode you **will not be able to re-enable the keyboard.**

Phillip Case  
Springfield, MO 65802

---



---

## PLAY IT AGAIN, SAM

**(February, page 56) lines 1050, 3010, 3040, 3050, 3080**

These lines may be too long for direct entry. Type as far as you can, then go into EDIT and finish them.

---

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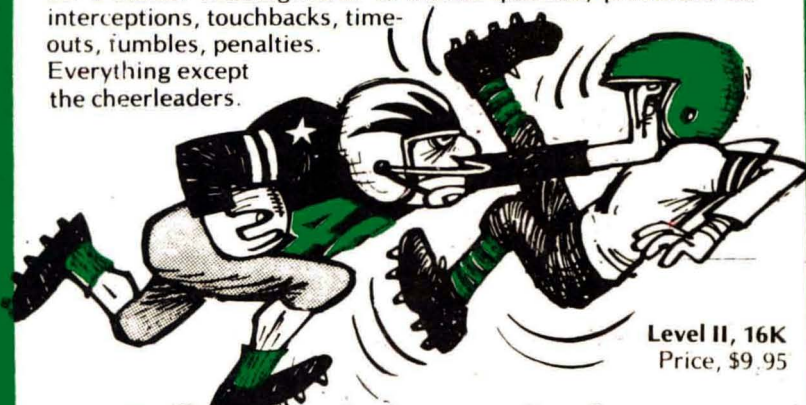
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