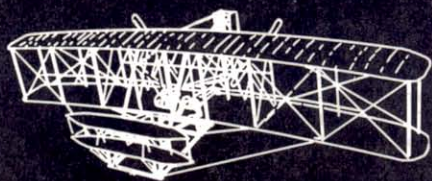




# SoftSide® Selections



**BEE  
WARY**



**FLYING THE  
K-HAWK**



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10 Northern Blvd., Amherst, NH 03031



# SoftSide<sup>TM</sup> Selections

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by Robert Saturn

**Broadway is a simulation for a TRS-80® Model I or III with 16K RAM (32K with disk).**

*Broadway* opens with a flashing marquee. To begin, the player (henceforth called the producer) names the production company. This name appears on the weekly report and on the closing notice at the end of the simulation. The program will accept any string (no commas or double quotes) up to fifteen characters and spaces.

After a basic introduction and some instructions, the producer attempts to raise \$1,000,000 to produce the show. As in the real world, past performance (as shown by a randomly generated "track record") controls the ease with which you can raise the money. The names entered in this section have no bearing on the amount of money raised (that is controlled by a random number in conjunction with the "track record"), but using the names of friends and relatives adds to the fun of the simulation. If you fail to finance the show within eight tries, the simulation ends, but you can try again with a new "track record." In *Broadway*, should the producer acquire more than the requisite \$1,000,000 the method used to lose the excess is as true-to-life as any.

### Pre-Production

With the financial backing in hand, you begin to put the show together. The program asks the producer to hire one of three people for each of ten key jobs. As each person is hired, his respective fee is added to a running total that will be deducted before opening night, and his weekly salary is added to a running total that is deducted from the production company's funds each week. Each choice also assigns a certain number of quality points to another running total. These point values reflect the relative importance of each job. Choosing a high-priced employee tends to result in higher quality, but too large a payroll can bankrupt the producer. An employee at "Level #1" raises the quality point total, a #2 employee leaves it unchanged, and a #3 employee reduces the quality point total.



Next, the producer must choose a theatre. A larger theatre has a larger potential gross (if you can fill it), but also incurs greater expenses. Rent is higher, and the theatre's more complex equipment requires a larger, more expensive crew.

Now the producer must make some decisions about sets, costumes, lighting, and so on. Each of your four designers has submitted three designs in his respective department. Each design differs in quality, and therefore in cost. The one-time fees (for items purchased) and the weekly costs (for items rented) are added to the applicable totals on opening night. The program compiles quality points for technical appearance as you make each selection.

---

## Rehearsals and Opening Night

The rehearsal period is five weeks. The weekly payroll total is deducted for five weeks before opening. The one-time fees are deducted after the rehearsal period is over. At this point, the director has the option of calling for further rehearsals (a random function). Each extra week of rehearsals costs the producer one week's payroll. Here's where a high payroll and high technical expenses, coupled with a few extra weeks of rehearsal, can put the producer out of business. On opening night, you will get a report of the total weekly cost figures. These figures, of course, are minimums. Salary changes and advertising will add to the weekly costs.

The procedure for generating reviews is as follows: Each of the five reviewers has five reviews upon which to draw. They range from great to very poor. Simon, of *New York Magazine*, always gives a bad review (a little humor for those familiar with the New York theatre scene). To determine which of the five reviews to use, the program doubles the quality points earned for personnel, adds the quality points earned for technical appearance, and multiplies the total by a random number ranging from one to ten (this simulates the reviewer's mood). The process repeats for each of the five reviewers. Thus five different people can see the same show, yet write five different reviews, a frequent occurrence on Broadway. As each review appears, the show earns box office points. Better reviews earn more points. More points mean more ticket sales. Advertising also affects box office points (one point for each \$10,000 spent per week), ticket price (high prices keep people away), aging of the show (the longer a show runs, the harder it is to get an audience), and random events that will be explained later.

---

## The Run

After seeing the reviews, the producer has the option of closing the show, and returning what remains of the original \$1,000,000 to the investors. Also, you may exercise this option after getting the report each week. If the show remains open, the producer must decide how much to spend on advertising each week. You can spend any amount, from zero to all the available funds after payroll expenses. The money used for advertising becomes part of the weekly expense only for the week in which it was allocated. Use no dollar signs or commas when you tell the computer how much to spend on advertising.

The current ticket price then appears on the screen, and you can increase or decrease it by any whole dollar amount. At this point, a random event may occur (usually every three or four weeks). Both good events and bad events are possible — and all will affect the box office action in one way or another. The two events dealing with pay raises increase your weekly payroll directly. The other events will increase or decrease your current total of box office points.

## BROADWAY

Then the weekly report appears. The program figures the number of tickets sold for the week, using a formula based on box office points, the original quality points of the show (before the critics influenced the public), a random number (to simulate the public mood), and the seating capacity of the theatre. After multiplying the number of tickets sold by the current ticket price, it displays the gross and deducts the week's expenses, yielding the net profit. Any loss is deducted from previous profits. If the show has had no previous profits, the loss is deducted from what remains of the original \$1,000,000. If the front money is exhausted, the producer is out of business. In addition, every thirteen weeks, you must pay the investors a quarterly payment of 98 percent of the current profits, before you buy advertising or attempt to cover losses.

You may close the show after any weekly report. When the producer closes the show, the program posts the closing notice, pays the salaries for the final two weeks (with the salary bonds posted before opening), and displays the final totals, which show, among other things, the percentage of return to the investors.

Good luck with your show — and break a leg!

## TRS-80 Variables

A\$, B\$: Contains the word "Broadway" surrounded by lights (asterisks).

AD: Advertising budget for the current week.

AI: Amount raised from investors.

B: Used in delay loops.

C: Counter for week number.

CA: Cursor position in input subroutine.

CP: Theatre capacity.

E\$: Variable used when getting input from the user.

F(\*): Initial amount of an expense.

FM: Amount of "front money" left.

H: A number from one to three, input from the user.

I: Determines investor's reaction.

I(\*): Relative values of the different workers or other expenses.

IS: Name of investor.

IT: The quality of the company.

IU: The quality of the set, lights, sound, etc.

IV, IX: The overall quality of the production.

J: Miscellaneous loops.

J\$: Job or expense name.

P: Total weekly expenses.

PR\$: The name of the production company.

PX: Total start-up expenses.

PY: Temporary storage for a fraction of P.

Q\$: A double quotation mark.

R: Player's "track record," the percentage of previous shows that have succeeded.

R1: Critic's rating of the production.

RT: Investor's percent return.

SD: Profit to be paid to investors.

SF: Total amount paid to investors.

SN: New ticket price.

SP: Current ticket price.

ST: Net profit or loss for the current week.

TG: Current week's gross.

TI: Used in timer loops.

TR: Adjustment to investor's reactions based on player's track record.

TS: Number of tickets sold this week.

TX: Theatre's percentage of the gross.

W: Counter for weeks.

W(\*): Weekly cost of a given employee or expense.

WK: Number of weeks the production has been playing.

X, Y: Used to draw a graphic border around the closing notice.

ZA, ZB: Miscellaneous loops.

**THEATER OF THE STARS**  
A CIVIC NON-PROFIT ORGANIZATION  
PRESENTS AMERICAN BALLET THEATRE

**2 OCT BR**  
**31**  
1981

**ORCHESTRA**

**Sat. Eve. at 8:30**  
**\$40.00 SERIES**  
INCL. TAX - NO REFUNDS

**ATLANTA**  
**CIVIC CENTER**  
ATLANTA, GA.

**ADULT STUD**  
**ORCHESTRA \$40.00**  
SATDAY EVE.  
5

Jump to program start.

Subroutine to pause until producer hits Enter.

Subroutine to input a single character from the producer, converting lower case input to upper case.

Subroutine to input a value from one to three.

Marquee.

Define some variables and dimension arrays.

## BROADWAY



## BROADWAY

Input the name for the production company and display a brief introduction.

```

340 CLS:PRINT#256,"THIS PRODUCTION COMPANY WILL BE KNOWN AS ";ST
RING$(10,95):INPUT"PRODUCTIONS";PR#
350 GOSUB190:PRINT#448,"BREAK A LEG & BRING IN A HIT"
360 GOSUB200:PRINT#580,"BUT REMEMBER....."
370 GOSUB200:PRINT#704,"THERE'S A BROKEN HEART";:GOSUB200:PRINT#
770,"(AND BANK ACCOUNT)";:GOSUB200:PRINT#836,"FOR EVERY LIGHT ON
BROADWAY.":GOSUB200
380 CLS:FM=1000000:R=AND(100):TR=R/50:P$="####",#
390 PRINT"FOR THE PURPOSES OF THIS SIMULATION, YOU WILL GET 8 CH
ANCES":PRINT"TO RAISE A TOTAL OF $ 1,000,000 TO FINANCE YOUR SHD
W."
400 PRINT"YOUR TRACK RECORD ON PREVIOUS SHOWS IS";R;CHR$(24);"%
THIS WILL":PRINT"DETERMINE HOW EASY IT IS FOR YOU TO RAISE MONE
Y.":AI=0:C=1

```

Raise capital from investors.

```

410 PRINT:PRINT"INVESTOR #";C
420 I$="":INPUT"WHO WILL YOU ASK (TYPE THE NAME)";I$:CLS:IFI$=""
THENI$="INVESTOR"
430 I=AND(25):TR:IFI<1THENI=1ELSEIFI>24THENI=24
440 PRINTI$;:ONIGOSUB450,460,460,460,470,470,480,480,490,490
,500,500,500,510,510,520,520,520,530,530,540,540,550:GOSUB670:GO
TO660
450 PRINT" SAID. ";Q$;"I'M SORRY, BUT 'NO.'";Q$:I=0:RETURN
460 PRINT" THINKS YOU'RE CRAZY.":PRINT" BUT WILL INVEST";:RETURN
470 PRINT" CAN'T REALLY AFFORD MUCH BUT,":PRINT" WANTS TO HELP W
ITH";:RETURN
480 PRINT" NEEDS A TAX WRITE-OFF AND WILL INVEST":RETURN
490 PRINT", WHO IS STILL WORKING ON THAT FIRST":PRINT" MILLION,
INVESTS";:RETURN
500 PRINT", WHO INVESTS IN ANYTHING, THINKS":PRINT" YOU HAVE A W
INNER AND INVESTS":RETURN
510 PRINT" LOVES TO THROW MONEY AWAY,":PRINT" AND INVESTS";:RETU
RN
520 PRINT", WHO HAS NO TASTE, HAS FAITH IN YOU":PRINT" AND YOUR
SHOW AND INVESTS";:RETURN
530 PRINT" WHO HAS TURNED DOWN EVERY OTHER":PRINT" PRODUCER ON B
ROADWAY SAYS ";Q$;"YES";Q$;" AND INVESTS":RETURN
540 PRINT", A NOTED PATRON OF THE ARTS, INVESTS":RETURN
550 PRINT", WHO IS FABULOUSLY WEALTHY, INVESTS":RETURN
560 PRINT:PRINT"SO FAR YOU HAVE RAISED ";USINGP$;AI
570 IFAI>FMTHENPRINT:PRINT"THAT'S";USINGP$;AI-FM;:PRINT" EXTRA!"
:GOTO620
580 IFAI=FMTHENPRINT:PRINT"THAT'S JUST ENOUGH!":GOTO620
590 C=C+1
600 IFC=9THENFORZA=1TO1500:NEXTZA:GOSUB190:PRINT:PRINT"SORRY, YO
U COULDN'T RAISE THE":PRINT"MONEY.":GOSUB200:PRINT#576,"THAT'S
SHOW BIZ!!!!":PRINT:PRINT"WANT TO TRY AGAIN";:GOSUB130:IFE$="Y"
HEN380ELSEEND

```

```

610 PRINT"YOU STILL NEED ";USINGP$;FM-AI:GOTO410
620 FORB=1TO1300:NEXTB:C=0
630 GOSUB190
640 PRINT@450,"YOU HAVE RAISED THE MONEY"
650 GOSUB200
660 CLS:IFAI<>FMTHENPRINT"YOUR GENERAL MANAGER WILL STEAL THE EX
TRA";USINGF$;(AI-FM);:GOTO600ELSE700
670 IFI<>0THENI1=I1+10000:PRINTUSINGP$;I1:AI=AI+I1
680 RETURN

```

**Determine how much to spend to hire a company.**

```

670 FORB=1TO1600:NEXTB:CLS
700 PRINT"NOW THAT YOU HAVE RAISED THE MONEY, YOU MUST DECIDE HO
W":PRINT"TO SPEND IT. FOR EACH OF THE MAJOR EXPENSES PRESENTED T
O YOU,"
710 PRINT"DECIDE ON HOW MUCH YOU WILL SPEND INITIALLY AND WEEKLY
. DURING":PRINT"THE FIRST FIVE WEEKS (WHILE YOU ARE REHEARSING)
THERE WILL"
720 PRINT"BE NO INCOME, SO MAKE SURE THAT YOUR EXPENSES DO NOT":
PRINT"EXCEED $1,000,000 OR YOU'LL HAVE NOTHING LEFT FOR DELAYED"
:PRINT"OPENINGS, ADVERTISING, ABSORBING A LOSS FOR A WEEK OR TWO
, AND"
730 PRINT"THE FACT THAT A FULL HOUSE EVERY NIGHT WILL ONLY GROSS
BETWEEN"
740 PRINT"$150,000 AND $225,000. YOUR OBJECT, OF COURSE, IS TO S
HOW":PRINT"A PROFIT EACH WEEK. REMEMBER, OUT OF YOUR ";E$;"FRONT
MONEY";O$;" YOU":PRINT"MUST PAY ALL OF YOUR PRE-OPENING EXPENSE
S (E.G. SETS,":PRINT"COSTUMES, ETC.)"
750 PRINT:GOSUB120:CLS:PRINT"FIRST YOU MUST HIRE A COMPANY.":PRI
NT"CERTAIN WEEKLY PAYROLL EXPENSES ARE ASSUMED.":PRINT:PRINT"$ 5
,000 FOR CONTRACT STAGEHANDS":PRINT"$ 3,000 FOR WARDROBE DEPT."
760 PRINT"$ 3,000 FOR CONTRACT MUSICIANS":PRINT"$ 750 FOR PRES
S REPS.":PRINT"$ 6,000 FOR MANAGEMENT STAFF":PRINT"$ 2,500 FOR S
TAGE MANAGEMENT":PRINT"$17,500 FOR NON-STARRING ACTORS":PRINT"--
-----":PRINT"$37,950":P=37950
770 PRINT:PRINT"WE WILL NOW DEAL WITH THE SALARIES THAT CAN BE N
EGOTIATED.":GOSUB120
780 CLS:PRINT"FOR EACH JOB YOU WILL BE GIVEN 3 ALTERNATIVES.":PR
INT"IN GENERAL, THE MORE YOU SPEND, THE HIGHER THE CALIBRE OF"
790 PRINT"PERSON YOU WILL HIRE AND THE BETTER THE RESULTS (MAYBE
)":PRINT"OF COURSE, THE MORE YOU SPEND, THE HIGHER YOUR WEEKLY
PAYROLL":PRINT"WILL BE. SPEND";
800 PRINT" MONEY WHERE YOU THINK IT'S IMPORTANT.":PRINT:GOSUB120
810 FORC=1TO12:CLS:READO$,F(1),W(1),F(2),W(2),F(3),W(3),I(1),I(2
),I(3):PRINT"JOB - ";J$:PRINT:PRINTTAB(8);"INITIAL FEE";TA
B(26);"WEEKLY ROYALTY (OR SALARY)"
820 PRINT:FORJ=1TO3:PRINTCHR$(J+48);TAB(11);F(J);TAB(31);W(J):NE
XTJ
830 PRINT:PRINT"WHICH ";J$;" WILL YOU HIRE (1, 2, OR 3)":GOSUB1
60
840 PX=PX+F(H):P=P+W(H)

```

**BROADWAY**

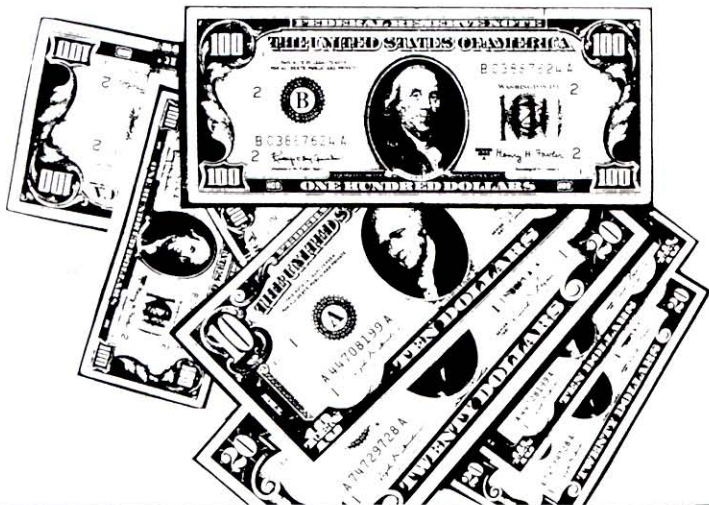


## BROADWAY

```

850 IT=IT+I(H)
860 NEXTC
870 IT=IT/1000
880 IFIT>500THENIT=2ELSEIFIT>200THENIT=1.5ELSEIFIT>70THENIT=1.1E
LSEIFIT<.1THENIT=.5ELSEIFIT<.1THENIT=.75ELSEIT=1
Determine how much to spend on other expenses.
890 CLS:PRINT"YOU NOW HAVE A COMPANY TO WORK WITH.":PRINT"NOW DE
SIDE ON YOUR OTHER EXPENSES.":PRINT:PRINT"THE MOST IMPORTANT IS
THE THEATRE. AGAIN WE HAVE A CHOICE":PRINT"OF THREE. THEY DIFFER
IN CAPACITY AND THEREFORE IN COST."
900 PRINT"ASSUME A TICKET PRICE OF $16 AT THIS TIME.":PRINT:PRIN
T"THEATRE";TAB(9);"CAPACITY";TAB(22);"POSSIBLE WEEKLY GROSS";TAB
(47);"COST (% OF GROSS)"
910 PRINTTAB(49);"+HOUSE PAYROLL:"
920 FORJ=1TO3:PRINTTAB(2);J;TAB(10);1300+J*100;TAB(26);USING"###
#,###";16*400+J*12800;:PRINTTAB(46);USING"##% + ###,###";19+J*3;
1800+J*1000:NEXTJ
930 PRINT:PRINT"WHICH THEATRE (1, 2, OR 3)":GOSUB160
940 CP=1300+H*100:TX=.19+H*.03:PR=18000+H*1000
950 CLS:PRINT"NOW DETERMINE YOUR OTHER PRE-OPENING EXPENSES."
960 FORC=1TO5:READJ$,F(1),W(1),F(2),W(2),F(3),W(3),I(1),I(2),I(3)
970 PRINT:PRINT"EXPENSE - ";J$
980 PRINT:PRINTTAB(15);"INITIAL";TAB(30);"WEEKLY"
990 FORJ=1TO3:PRINTCHR$(J+48);TAB(16);F(J);TAB(31);W(J):NEXTJ
1000 PRINT:PRINT"WHICH DESIGN VERSION WILL YOU USE?":GOSUB160
1010 PX=PX+F(H):PY=PY+W(H)
1020 IU=IU+I(H)
1030 CLS:NEXTC
1040 IFIU>7THENIU=2ELSEIFIU>1THENIU=1.5ELSEIFIU<1THENIU=.8
1050 CLS:PRINT"THE REST OF THE PRE-OPENING EXPENSES ARE AS FOLLO
WS.":PRINT:PRINT"TAKE-IN AND SET-UP OF SHOW";TAB(28);"$ 33,000":
PRINT"PRE-OPENING ADVERTISING";TAB(30);"30,000"

```



```

1060 PRINT"OPENING NIGHT PARTY";TAB(31);"5,000":PRINT"TRAVEL EXP
ENSES";TAB(31);"3,000"
1070 PRINT"TICKET PRINTING";TAB(31);"1,500":PRINT"REHEARSAL SPAC
E";TAB(31);"3,000":PRINT"SALARY BONDS";TAB(30);"10,000":PRINTTAB
(28);"-----":PRINTTAB(28);"$ 85,500":PRINT:GOSUB120:PX=PX+8
5500

```

#### Rehearsals.

```

1080 CLS:PRINT"YOU ARE NOW READY TO BEGIN THE FIVE WEEK REHEARSA
L PERIOD. YOUR":PRINT"PAYROLL EXPENSES WILL BE DEDUCTED AFTER EA
CH WEEK OF"
1090 PRINT"REHEARSALS. AFTER THE LAST WEEK, THE OTHER PRE-OPENIN
G EXPENSES":PRINT"WILL BE DEDUCTED.":PRINT:GOSUB120
1100 GOSUB190:FORW=1TO5:PRINT:PRINT"END OF WEEK";W;"OF REHEARSAL
S"
1110 PRINT:PRINT"EXPENSES THIS WEEK - ";:PRINTUSINGP$;P
1120 FM=FM-P:PRINT:IFFM<0THEN2250
1130 PRINT"LEFT FROM FRONT MONEY";:PRINTUSINGP$;FM:GOSUB200:NEXT
W
1140 FM=FM-PX:IFFM<0THEN2250

```

**More rehearsals needed? When finished, display amount of re-  
maining capital.**

```

1150 CLS:PRINT"NOW THAT REHEARSALS ARE OVER AND YOUR PRE-OPENING
":PRINT"EXPENSES ARE PAID, YOU HAVE";
1160 PRINTUSINGP$;FM;;PRINT" LEFT IN AN":PRINT"EMERGENCY ACCOUNT
.":PRINT:GOSUB120
1170 CLS:R=RND(10):IFR<6THENPRINT"THE DIRECTOR WANTS ANOTHER WEE
K OF REHEARSALS BEFORE OPENING"ELSEGOTO1230
1180 PRINT:GOSUB120
1190 FM=FM-P:IFFM<0THEN2250
1200 PRINT:PRINT"YOU NOW HAVE";
1210 PRINTUSINGP$;FM;;PRINT" LEFT IN EMERGENCY RESERVE."
1220 PRINT:GOSUB120:GOTO1170

```

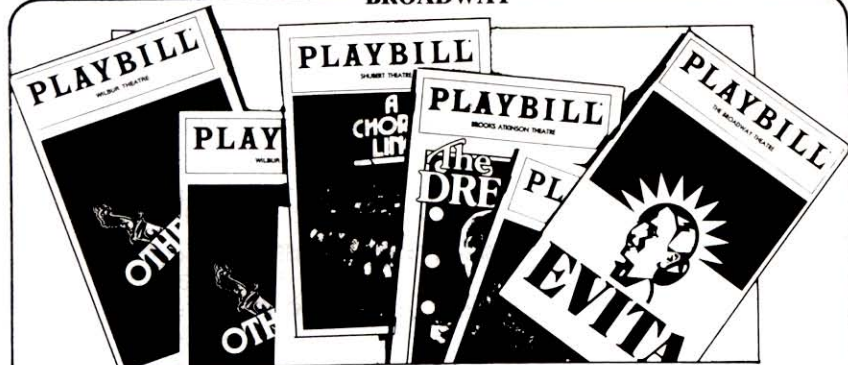
#### Opening night. Generate reviews.

```

1230 FORJ=1TO4:CLS:PRINTCHR$(23):PRINT@268,"I T ' S":PRINT@402,"
D F E N I N G":PRINT@540,"N I G H T":FORB=1TO200:NEXTB:CLS:FORB=
1TO100:NEXTB:NEXTJ:P=P+P/
1240 PRINT"WELL, HERE WE GO. LET'S HAVE A DRINK BEFORE THE REVIE
WS COME IN."
1250 PRINT:PRINT"OH BY THE WAY, YOUR REGULAR WEEKLY EXPENSES (IN
CLUDING"
1260 PRINT"THE WEEKLY TECHNICAL EXPENSES THAT BEGIN TONIGHT) AND
"
1270 PRINT"THE THEATRE RENTAL ARE:"
1280 P=P+PR
1290 PRINTUSINGP$;P;;PRINT" PLUS";TX*100;CHR$(24);"% OF THE GROS
S."
1300 PRINT:GOSUB120
1310 CLS:PRINT"HERE COMES THE PRESS AGENT WITH THE REVIEWS:"

```

## BROADWAY



```

1320 IV=IT#1T+IU
1330 IFIV>STHENIX=2ELSEIFIV>3THENIX=1.5ELSEIFIV>2THENIX=1.25ELSE
IFIV>1THENIX=1.1ELSEIFIV<=1THENIX=1
1340 GOSUB2290:PRINT:PRINT"KERR - THE TIMES -";:DNR1GOSUB1350,13
60,1370,1380,1390:GOTO1400
1350 PRINT""THE WORST THING I EVER SAW"":RETURN
1360 PRINT""WEAK SHOW: POOR ACTING, POOR DIRECTING, POOR,";CHR$(
213);"POOR INVESTORS"":RETURN
1370 PRINT""I LIKED IT - WITH RESERVATIONS"":RETURN
1380 PRINT""A THOROUGHLY ENJOYABLE EVENING"":RETURN
1390 PRINT""A FINE PIECE OF THEATRE"":RETURN
1400 GOSUB2290:PRINT"BARNES - THE POST -";:DNR1GOSUB1410,1420,14
30,1440,1450:GOTO1460
1410 PRINT""A TERRIBLE SHOW"":RETURN
1420 PRINT""I WAS BORED DURING THE 1ST ACT AND GONE";CHR$(217);"
DURING THE 2ND"":RETURN
1430 PRINT""A PLEASANT EVENING"":RETURN
1440 PRINT""MUCH FUN - GO SEE IT."":RETURN
1450 PRINT""A MUST SEE! RUN, DO NOT WALK, TO THIS."":RETURN
1460 GOSUB2290:PRINT"WATT - THE NEWS -";:DNR1GOSUB1470,1480,1490
,1500,1510:GOTO1520
1470 PRINT""THE WORST PLAY IN MY 80 YEARS OF REVIEWING"":RETURN
1480 PRINT""THE LAST PLAY I SAW THAT WAS THIS BAD WAS IN";CHR$(2
12);"1904":RETURN
1490 PRINT""NICE. BROUGHT BACK MEMORIES OF";CHR$(226);"-THE BLAC
K CROOK-":RETURN
1500 PRINT""FUN FOR ALL AGES. BRING YOUR GRANDPARENTS"":RETURN
1510 PRINT""THE BEST THING I'VE SEEN THIS CENTURY"":RETURN
1520 GOSUB2290:PRINT"SHALIT - NBC NEWS -";:DNR1GOSUB1530,1540,15
50,1560,1570:GOTO1580
1530 PRINT""SHOULD NOT BE ALLOWED ANY CLOSER TO NEW YORK";CHR$(2
12);"THAN BOISE, IDAHO."":RETURN
1540 PRINT""I'VE SEEN WORSE, BUT NOT MANY"":RETURN
1550 PRINT""IT WON'T RUN LONGER THAN -DOLLY- BUT MAYBE";CHR$(216
);"LONGER THAN -KELLY-":RETURN

```



```

1560 PRINT""A HOOT"";RETURN
1570 PRINT""IF YOU HURRY YOU CAN GET TICKETS FOR LATE";CHR$(217)
;"NEXT YEAR."";RETURN
1580 GOSUB2290:PRINT"SIMON - NEW YORK MAG -";:DNR160SUB1590,1600
,1610,1620,1630:GOTO1640
1590 PRINT""I HATED IT"";RETURN
1600 PRINT""A TERRIBLE SHOW"";RETURN
1610 PRINT""IT'S THE PITS"";RETURN
1620 PRINT""THE WORST THIS YEAR"";RETURN
1630 PRINT""I COULDN'T STAND IT"";RETURN
1640 GOSUB2320

```

#### Open the show to the public.

```

1650 CLS:PRINT"THE SHOW IS OPENED.":PRINT"AFTER EACH WEEK YOU WI
LL GET A REPORT AS TO HOW"
1660 PRINT"MANY TICKETS ARE SOLD AND HOW MUCH MONEY WAS TAKEN IN
. YOU":PRINT"WILL ALSO BE ASKED HOW MUCH YOU WANT TO SPEND ON AD
VERTISING":PRINT"AND IF YOU WANT TO CHANGE THE TICKET PRICE."
1670 PRINT"REMEMBER, CHEAPER PRICES = HIGHER VOLUME.":PRINT:GOSU
B120:WK=0
1680 PRINT:PRINT"YOU HAVE";USINGF4;FM;:PRINT" LEFT IN FRONT MONE
Y ACCOUNT"

```

#### Change advertising budgets and ticket prices.

```

1690 GOSUB2340
1700 GOSUB2350

```

#### Increment week number. Every few weeks decrease the popularity of the production.

```

1710 WK=WK+1:GOSUB190
1720 IFWK/3=INT(WK/3)THENP9=P9-2
1730 IFWK/10=INT(WK/10)THENP9=P9-2
1740 IFWK/18=INT(WK/18)THENP9=P9-2
1750 IFWK/13=INT(WK/13)THENGOSUB2410
1760 P9=P9+AD/10000

```

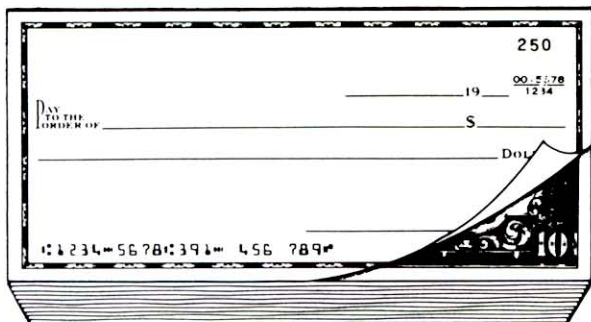
#### Check for random events.

```

1770 R=RND(10):IFR>6THENR=RND(12):PRINT:DNRGOSUB1750,1800,1810,1
820,1830,1840,1850,1860,1870,1880,1890,1900:GOTO1910
1780 GOTO1920
1790 PRINT"STAR GETS SICK - MUST BE":PRINT"REPLACED":P9=P9-2:RET
URN
1800 PRINT"UNIONS GET PAY HIKE":P=INT(P*1.02):RETURN
1810 PRINT"STAR'S CONTRACT ENDS-WANTS MORE MONEYS":P=INT(P*1.03):
RETURN
1820 PRINT"SHOW WINS THREE TONYS":P9=P9+2:RETURN
1830 PRINT"FREE PUBLICITY DUE TO GOOD PRESSAGENT":P9=P9+1:RETURN
1840 PRINT"SHOW WINS CRITIC CIRCLE AWARD":P9=P9+1:RETURN
1850 PRINT"HEAVY SNOW FOR FIVE WEEKS":P9=P9-1:RETURN
1860 PRINT"NEWSPAPER STRIKE IN IT'S 2ND":PRINT"MONTH":P9=P9-1:RE
TURN

```

## BROADWAY



```

1870 PRINT "T.V. REPORTS ON HIGH CRIME IN":PRINT "THE BROADWAY ARE
A":P9=P9-1:RETURN
1880 PRINT "CITY REPORTS CONVENTION":PRINT "BUSINESS UP":P9=P9+1:R
ETURN
1890 PRINT "GOOD WORD OF MOUTH ON THE SHOW":P9=P9+1:RETURN
1900 PRINT "BAD WORD OF MOUTH ON THE SHOW":P9=P9-1:RETURN
1910 FORB=1 TO 2000:NEXTB

```

**Present weekly report.**

```

1920 CLS:PRINTP$;" PRODUCTIONS":TAB(31);"WEEKLY REPORT":PRINT"W
EEK":WK:TAB(30);WK*8;"PERFORMANCES":PRINT:PRINT "THEATRE CAPACITY
":TAB(28);CP
1930 PRINT "TICKET PRICE:":TAB(24);USINGP$;SP
1940 PRINT "MAXIMUM GROSS PER WEEK:":TAB(24);USINGP$;SP*CP*8:PB=P
9:IFPB<0THENPB=0
1950 TS=((IX*PB)/60)*CP*8:IFTS>CP*8THENTS=CP*8
1960 PRINT:PRINT "TICKETS SOLD THIS WEEK:":TAB(28);INT(TS)
1970 TG=TS*SP:PRINT "GROSS THIS WEEK:":TAB(24);USINGP$;TG
1980 P5=P+TG*TX+AD:PRINT "EXPENSES THIS WEEK:":TAB(24);USINGP$;P5
1990 PRINT:ST=TG-P5:PRINT "NET ";:IFST<0THENPRINT "LOSS";ELSEPRINT
"PROFIT";
2000 PRINT " THIS WEEK:":TAB(35);USINGP$;ABS(ST)
2010 SD=SD+ST
2020 IFSD<0THENFM=FM+SD:SD=0
2030 PRINT "NET PROFIT TO BE PAID TO INVESTORS:":TAB(35);USINGP$;
SD
2040 PRINT "LEFT FROM FRONT MONEY:":TAB(35);USINGP$;FM
2050 IFFM<0THEN2250
2060 GOSUB2320
2070 GOT01690

```

**Data for the different positions within the company.**

```

2080 DATA "DIRECTOR",15000,500,7500,250,2500,100,10,1,.25
2090 DATA "MALE STAR",0,20000,0,10000,0,2500,10,1,.5
2100 DATA "FEMALE STAR",0,16000,0,8000,0,2000,7,1,.75
2110 DATA "SET DESIGNER",10000,300,5000,200,1500,50,3,1,.85

```

```

2120 DATA"COSTUME DESIGNER",10000,300,5000,200,1500,50,2,1,.9
2130 DATA"LIGHTING DESIGNER",8000,300,4000,200,1000,50,1.5,1,.8
2140 DATA"SOUND DESIGNER",4000,200,2000,100,750,25,2,1,.75
2150 DATA"CHOREOGRAPHER",10000,300,6000,150,2000,75,3,1,.7
2160 DATA"COMPOSER",20000,800,10000,400,5000,150,8,1,.7
2170 DATA"LYRICIST",15000,600,7500,300,3000,150,7,1,.8
2180 DATA"BOOK AUTHOR",15000,600,7500,300,3000,150,7,1,.8
2190 DATA"ARRANGER",8000,600,5000,400,1500,100,4,1,.85
2200 DATA"SETS",150000,200,75000,100,50000,75,2,1,.75
2210 DATA"LIGHTS",3000,750,1500,500,1000,200,2,1,.75
2220 DATA"COSTUMES",100000,2000,50000,1000,15000,250,2,1,.75
2230 DATA"SOUND",3000,1000,1500,500,1000,200,2,1,.75
2240 DATA"PROPS",40000,1000,20000,500,5000,150,1.75,1,.9

```

**Message displayed when producer overspends the budget.**

```

2250 CLS:PRINT@192,"YOU HAVE SPENT MORE MONEY THAN YOU HAVE.":PR
INT:PRINT"THE STATE ATTORNEY GENERAL'S OFFICE WILL CONTACT YOU B
Y THE":PRINT
2260 PRINT"FIRST OF THE MONTH. THEY ASK THAT BEFORE THEN YOU TAK
E THE TIME":PRINT:PRINT"TO SEE ";Q$;"THE PRODUCERS";Q$;" WITH ZE
RO MOSTEL TO SEE WHERE YOU WENT":PRINT:PRINT"WRONG."
2270 PRINT:PRINT:PRINT"IS SHOW-BIZ STILL IN YOUR BLOOD";:GOSUB13
0:IFE$="Y"THENRUN
2280 CLS:END

```

**Subroutine to compute a critic's rating for the production.**

```

2290 R=RND(10):R1=R*IV:R1=INT(R1/9)
2300 IFR1<1THENR1=1ELSEIFR1>5THENR1=5
2310 P9=P9+R1:FORTI=1T0800:NEXTTI:RETURN

```

**Subroutine to check if the producer wishes to close the show.**

```

2320 PRINT:PRINT"DO YOU WANT TO CLOSE THE SHOW";:GOSUB130
2330 IFE$="Y"THEN2420ELSERETURN

```

**Subroutine to input the new advertising budget.**

```

2340 PRINT:INPUT"HOW MUCH DO YOU WANT TO SPENT ON ADVERTISING TH
IS WEEK (DO NOT USE DOLLAR SIGN OR COMMAS)":AD:IFAD<0THEN2340EL
SERETURN

```

**Subroutine to change ticket price.**

```

2350 PRINT"THE CURRENT TICKET PRICE IS";USINGP$;SF:PRINT"DO YOU
WANT TO CHANGE THE TICKET PRICE";:GOSUB130
2360 IFE$="N"THENRETURN
2370 INPUT"TO WHAT PRICE";SN
2380 IFSN=SPTHENPRINT"THAT'S THE CURRENT TICKET PRICE":GOTO2350
2390 P9=P9-(SN-SF)*2
2400 SF=SN:RETURN

```

**Distribute profits to investors.**

```

2410 SE=SD1.9:SD=SD-SE:SF=SF+SE:PRINT:PRINT"90% OF PROFITS DISTR
IBUTED TO":PRINT"INVESTORS":FORB=1T01500:NEXTB:RETURN

```

**Post closing notice.**

```

2420 CLS:F0R X=0T0127:SET(X,0):SET(X,47):NEXTX
2430 F0R Y=0T047:SET(0,Y):SET(127,Y):NEXTY

```

## BROADWAY

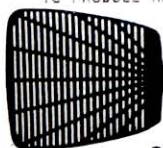


## BROADWAY

```

2440 PRINT@86,PR$;" PRODUCTIONS INC.";
2450 PRINT@196,"C L O S I N G   N O T I C E";
2460 PRINT@324,"IT IS WITH GREAT REGRET THAT WE POST THIS NOTICE
.";
2470 PRINT@388,"WE WANT TO THANK ALL OF YOU FOR ALL OF YOUR HARD
.";
2480 PRINT@452,"WORK. PLEASE BE ADVISED THAT THIS PRODUCTION WIL
L.";
2490 PRINT@516,"CLOSE TWO WEEKS FROM TONIGHT. AGAIN THANK YOU.";
2500 PRINT@670,"SINCERELY YOURS.";
2510 PRINT@734,PR$;" PRODUCTIONS";
2520 PRINT@836,"P.S. YOUR FINAL TOTALS TO FOLLOW";
2530 FORTI=1T07000:NEXTTI
Display final totals.
2540 CLS:PRINT"FINAL TOTALS":PRINT:PRINT"YOUR SHOW RAN FOR";WK;
"WEK";:IFWK<>1THENPRINT"S";
2550 PRINT" BEFORE CLOSING.":PRINT"THAT'S";WK*8;"PERFORMANCES.":
PRINT"OUT OF YOUR ORIGINAL $1,000,000 YOU HAD";
2560 PRINTUSINGP$;FM::PRINT" LEFT WHICH   HAS BEEN GIVEN BACK T
O YOUR INVESTORS."
2570 PRINT"TOTAL AMOUNT PAID TO INVESTORS":PRINTUSINGP$;SD+SF+FM
2580 RT=(SD+SF+FM-1000000)/10000
2590 PRINT"THAT MAKES A ";RT;CHR$(24);"% RETURN ON THEIR INVESTM
ENT."
2600 PRINT"(A 0% RETURN IS THE BREAK-EVEN POINT FOR YOUR INVESTO
RS.":PRINT"A NEGATIVE RETURN IS A LOSS)":PRINT:PRINT"DO YOU WANT
TO PRODUCE ANOTHER SHOW":GOSUB130:IFE$="Y"THENRUNELSEEND

```



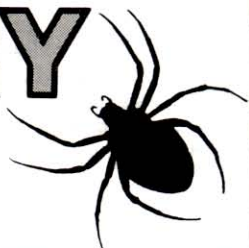
# SWAT TABLE

For TRS-80® BROADWAY

LINES	SWAT CODE	LENGTH	LINES	SWAT CODE	LENGTH
100 - 210	CI	271	1230 - 1330	JO	555
220 - 330	BI	348	1340 - 1430	SA	509
340 - 400	HU	591	1440 - 1520	SK	513
410 - 490	PR	530	1530 - 1630	XV	507
500 - 580	IC	532	1640 - 1740	UI	505
590 - 700	QV	550	1750 - 1860	RR	544
710 - 740	ZU	603	1870 - 1960	IJ	534
750 - 780	BH	546	1970 - 2080	JF	405
790 - 880	XF	577	2090 - 2180	HP	537
890 - 930	RC	521	2190 - 2260	GR	591
940 - 1050	SK	557	2270 - 2380	TZ	516
1060 - 1100	SF	504	2390 - 2490	ZV	514
1110 - 1220	FV	490	2500 - 2590	FP	510
			2600 - 2600	HF	156



# BEE WARY



by Leo Christopherson

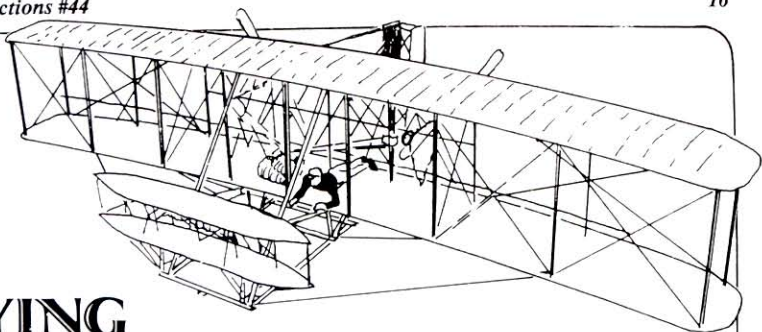
**Bee Wary is a whimsical, arcade-style game for a TRS-80® Model I or III with 32K RAM. It is included as the bonus program on the Issue 44 DV.**

Surprise! *Bee Wary* has no aliens, no lasers and no bombs! Instead, this fanciful, animated game features a bee and a spider. The spider tries to leap up and snatch the bee, which defends itself with its deadly stinger. You play the part of the bee in this natural battle to the death.

You fly about the screen, pressing the four arrow keys to control your movements. Your objective is to sting the spider and win the game. You can fly at three heights above the spider. The spider can't reach you when you fly at the highest level, but all that hovering will eventually tire you, and you'll drop into the spider's waiting jaws. You can sting the spider only by hovering at the middle level and pressing the space bar. The spider has only two spots vulnerable to your sting; and, through the course of the game, you must attempt to locate these spots. It's pretty tough to penetrate and actually sting the spider, so, to keep from becoming supper, be wary!

In *Bee Wary*, sound effects accompany the lively animation, so be sure to connect the AUX connector to an amplifier.

**DV BONUS**



## FLYING THE K-HAWK

by Al Ragsdale

**K-Hawk is a fast, simple and realistic simulation of flying a light airplane. It requires less than 1K RAM and runs in Level II or Disk BASIC on the TRS-80® Model I or III.**

When *K-Hawk* is running, you'll see a simple representation of the plane's position. As you move the plane in space, a graphic indication of its movements appears on a scope display. At the bottom, information from the instruments constantly updates you on airspeed, altitude and so on:

SPD	Airspeed in knots (nautical miles per hour)
PWR	Percentage of engine thrust
HDG	Compass heading, presented both as a digital readout and as compass directions: north, east, south, west
BRG	Compass direction from the aircraft to the beginning of the runway
ALT	Altitude above the ground in feet
ROC	Altitude rate or rate of climb in feet per second

The horizon indicator, which corresponds to the pilot's forward view, consists of three pixels representing the horizon, and a fourth pixel pointing up. An asterisk represents the airport (corresponding to a downward view from the aircraft) when you are far away. For takeoff and landing, you will see a forward view of the runway.

*K-Hawk* is controlled by the arrow keys and the numeric keys. The UP and DOWN arrow keys pitch the nose up and down, and the LEFT and RIGHT arrow keys bank or roll the wings left and right. The "<" and ">" keys correspond to rudders, and are used to make small heading changes. The numeric keys change the engine thrust to 11% times the number. Nine gives maximum thrust (99%) and zero gives no thrust. The program can be modified easily to fly with a joystick as well.

Pitch and roll (attitude) are shown on the horizon indicator relative to an aircraft symbol. Notice that the horizon moves opposite the aircraft. This sometimes causes problems for experienced pilots! Banking to the left causes the left pixel to rise, and the right pixel to fall. To get back to wings-level, always roll *toward* the up pointer, or roll bug.

Pitch is affected by power and bank angle. If you reduce power the nose drops. If you continue to hold the nose up with reduced power, eventually the angle of attack (the angle at which the airstream strikes the wing) becomes too



high for the air to flow smoothly around the wing. This results in a stall, and the nose falls abruptly. To recover, add power (hit "9") and pull up slowly. Stalling near the ground is extremely dangerous, since some altitude is always lost in recovery.

You can stop the program at any point by hitting "SHIFT" and "@" simultaneously. Hitting any key will continue the program.

## **Takeoff**

*K-Hawk* starts with the aircraft at the beginning of the runway, pointed north, with the engine idling (notice that the runway points north and never ends). To begin the takeoff, throttle up to maximum (hit "9"). If your system is equipped for sound, you will hear a change in the engine sound. The PWR indication will go to "99" and your SPD will start to increase. When the SPD reaches 60, pitch UP. The *K-Hawk* will rotate upward (the horizon moves downward) and lift off from the runway. You can see the liftoff in the forward view, and watch the instruments as the altitude increases.

The best speed for climbing out is about 80 knots, although at a steeper angle, you will climb as slowly as 70 knots. Adjust pitch to maintain the desired climb speed. Generally pitching up slows you down (just like a car climbing a hill).

## **Level Off**

As you approach the desired altitude you should pitch DOWN, so the wings are level with the horizon. The speed will start to increase, and the rate of climb (ROC) will decrease. When ROC is zero, you are flying at a constant altitude. However, like a real airplane, maintaining a constant altitude in the *K-Hawk* is virtually impossible. Instead, you will find yourself constantly drifting up or down slowly. The best idea is to stay within 100 feet of a given altitude by making a small correction only when you are more than 50 feet off. Both pitch and power are important in maintaining altitude. At high speeds you may be pitched slightly downward to maintain level flight. At low speeds you may have to pitch up several degrees to maintain altitude.

## **Turns**

Similar to a car, an airplane turns more quickly at slower speeds, so less bank is required. In the *K-Hawk* the bank changes by twelve degrees for each pass through the program when a turn command is present. The rate of turn can be seen in the HDG change. For most turns, about 24° of bank is best. During the landing approach, 12° banks give better control. If you continue to increase your bank angle, the aircraft begins to lose altitude, because the wings no longer are lifting the aircraft. You can compensate for this effect by pitching upward as you bank. Both pitch and roll commands can be made simultaneously.

In many flight procedures, turning to a desired HDG (heading) is necessary. To do this, remember that "Right Increases, Left Decreases" your heading. Your instructor will get "RILED" if you don't remember! As you approach the desired heading, start to roll back to level by "stepping on the roll bug." With practice you can learn to stop within a few degrees of any desired heading.

For finer heading control (which is necessary for landing), use *K-Hawk's* rudders. Pressing the ">" key (right rudder) increases your heading by 2°. Pressing "<" decreases it by 2°. (For the pilots in the audience — the rudders are not necessary when turning by banking the wings. The equations assume a

## K-HAWK

coordinated turn. But you do have to pitch to maintain altitude).

If you read the horizon backwards, a turn indicator is provided in the center of the HDG display. A dot means your wings are level, and your heading is constant. A ">" means you are turning to the right, your heading is increasing, and the compass is moving in that direction. A "<" means you are turning to the left and your heading is decreasing.

### Navigation

The Bearing (BRG) is the compass direction from the K-Hawk to the beginning of the runway. If you get lost, turn so the HDG is approximately the same as the BRG and fly until you can see the airport. Compass directions (HDG and BRG) are given in degrees, where zero or 360 is north, 90 is east, 180 is south, and 270 is west. The K-Hawk has both a compass and a numerical readout of heading. The runway runs northward, which makes flying landing patterns along exact compass directions easy.

In Figure 2 the K-Hawk is flying northeast (HDG = 45) with the airport off the right wingtip. This corresponds to a BRG of 135 degrees or southeast (Figure 3). The asterisk shows the beginning of the runway at the right of the aircraft. If you turn to a heading of 135 instantly, the asterisk will move to the top of the screen, indicating the K-Hawk is flying straight toward the airport. The airport symbol is scaled at about one mile per inch, so if the K-Hawk flies too far away from the airport the asterisk will disappear, and the only means of finding it again is to follow the BRG indicator.

### Landing

Once you are near the airport you should level off at about 800 feet and slow down to about 80 knots, which takes about 66% power (hit "6"). Fly directly over the airport at 800 feet, and turn west. Fly west for about one mile, and then turn south. You are now on the Downwind Leg. Continue at 800 feet and 80 knots until the airport is at least a mile behind you. Then reduce power to 33% and slow to 70 knots. Turn left (toward the runway) to a heading of east, and descend at about -5 fps ROC. This is the Base Leg. When the runway is approximately off your wingtip turn left to north. This is the Final Approach. The airport symbol should be at the top of the screen and the BRG should be close to north. You should maintain 70 knots SPD and about -5 fps ROC until the runway symbol appears. If it does not, level off at 300 feet and hold that altitude while turning so HDG is equal to BRG.

When the runway is in sight use the rudders to turn so the runway centerline is directly under the aircraft wheels. You may have to "kick the rudders" to keep lined up as you approach the runway. At about 50 feet altitude begin the Landing Flare by reducing the power to zero and slowly pulling the nose up so the nose is at least level but the ROC is still negative. The K-Hawk will settle to the runway. Although K-Hawk doesn't have a crash check, you should touch down on the runway with wings level, the nose off the ground, and with a descent rate (ROC) less than ten.

If you want to do a Touch-and-Go simply throttle up (hit "9") and repeat the normal takeoff procedure. If you want to stop — the K-Hawk doesn't have brakes! After all, you can only do so much in 1K of memory, but you can stop and RUN the program again.

### Aerobatics

The K-Hawk is designed to simulate a typical light airplane realistically. I drew on my experience as a pilot to approximate the performance of my



favorite aircraft — the Grumman American Cheetah — in this simulation. By changing the values of the constants, you could simulate any aircraft from the Wright Flyer to the X-15. The Cheetah is not designed for aerobatics — it lacks sufficient power to do a loop, and would stall if you attempted it. The K-Hawk will do the same.

However, the K-Hawk can do complete rolls and fly inverted. If any Cheetah pilots are out there — don't try it! The Cheetah's engine will stop if you fly upside down, and the wing is not designed for inverted flight. Besides that, if you stall in the middle of a roll, you'll spin!

But for those brave (?) souls who are not content with realistic aircraft limits, here's how to do rolls in the K-Hawk. Begin by climbing to about 2000 feet with the nose high and full power. Reduce power to about 50% as you initiate rolling left and pitching down simultaneously. Keep pushing left and down until the "roll bug" is at the bottom of the display. You are now upside down.

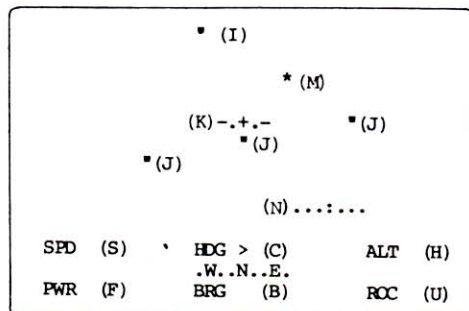
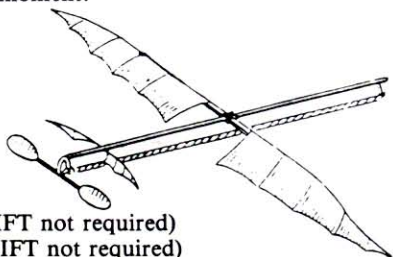
To fly inverted, stop the roll here, go to full power, and continue to pitch down (which is up now) until the ROC goes positive. You can climb or dive from this position — but remember that up and down are reversed. To complete a roll, continue rolling left, but begin to pitch up when the bank is about 90°. Stop when the wings are level. If you execute the maneuver properly, you'll finish without losing more than 200 feet of altitude. But that takes a lot of practice and several crashes.

## Deadstick Landings

Another exercise for the advanced student is to fly the landing approach with PWR off, starting from at least 2000 feet high near the airport. You must keep the nose down to maintain a glide speed of at least 60 knots, and then do the landing flare at the last possible moment.

## K-Hawk Controls

- ↑ Increases A by 1 deg
- ↓ Decreases A by 1 deg
- Increases R by 12 deg
- ← Decreases R by 12 deg
- > Increases C by 2 deg (SHIFT not required)
- < Decreases C by 2 deg (SHIFT not required)
- 0-9 Power Setting (11% times Number)



- I Roll Bug
- J Horizon Indicator
- K Aircraft Symbol
- M Airport Symbol
- N Runway Symbol
- S Airspeed
- F Power (% of Max)
- C Compass Heading
- B Bearing
- H Altitude
- U Rate of Climb
- > Means a Right Turn

FIGURE 1. K-HAWK CRT DISPLAY (During a Climbing Right Turn)



## K-HAWK

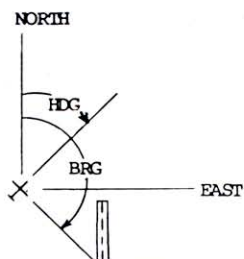
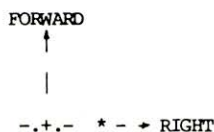


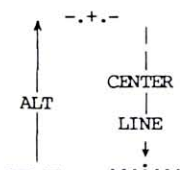
FIGURE 2. HEADING &amp; BEARING

(Figures 2 and 3 are referred to in the "Navigation" section.)



(DOWNWARD VIEW)

Corresponds to Figure 2  
Airport is Off Right Wingtip  
FIGURE 3. AIRPORT SYMBOL



(FORWARD VIEW)  
(Right Rudder is needed)

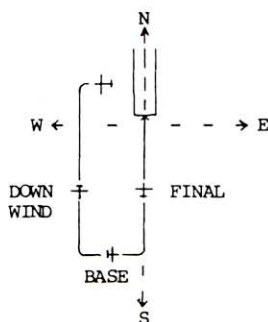


FIGURE 6. LANDING PATTERN

FIGURE 5. RUNWAY SYMBOL

## K-HAWK PILOT'S CHECKLIST

## CONTROLS



↑ = UP

↓ = DOWN

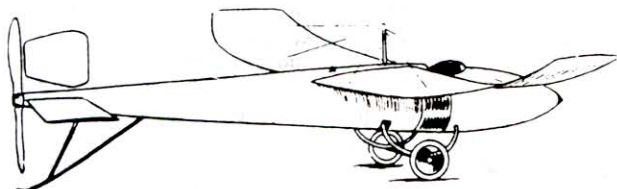
→ = RIGHT

← = LEFT

&gt; = RIGHT RUDDER

&lt; = LEFT RUDDER

0 to 9 = THROTTLE (\*11%)



## PILOT'S MANUAL

### TAKEOFF

FULL POWER (HIT 9) AND PITCH UP WHEN SPEED = 60 KTS  
BEST RATE OF CLIMB SPEED = 80  
BEST ANGLE OF CLIMB SPEED = 70  
STALL SPEED = 50 (WINGS LEVEL)

### LEVEL OFF

ADJUST POWER AND ANGLE OF ATTACK (UP/DOWN) TO MAINTAIN ROC = 0

### URNS

ROLL RATE IS 12° PER ITERATION — STANDARD TURN RATE IS 12°  
RIGHT INCREASES, LEFT DECREASES HEADING ("R I L D")  
STEP ON THE ROLL BUG TO LEVEL WINGS  
RUDDER GIVES 2° HEADING CHANGE

### NAVIGATION

NORTH = 360 OR 0 EAST = 90 SOUTH = 180 WEST = 270  
LOST PROCEDURE — TURN SO HDG = BRG UNTIL YOU SEE THE AIRPORT

### LANDING

LEVEL OFF AT 800 FT ALTITUDE AND 80 KNOTS (POWER = 66%)  
FLY DIRECTLY OVER AIRPORT AND TURN WEST  
FLY WEST FOR ABOUT 1 MILE (1 INCH ON THE SCREEN = 1 MILE)

- DOWNWIND LEG

TURN SOUTH UNTIL AT LEAST ONE MILE SOUTH OF AIRPORT  
SET POWER = 33% AND SLOW TO 70 KNOTS

- BASE

TURN LEFT TO HEADING OF EAST — DESCEND AT ABOUT - 5 FPS

- FINAL APPROACH

WHEN BRG IS ALMOST NORTH TURN TO NORTH  
MAINTAIN AT LEAST 300 FT ALTITUDE UNTIL RUNWAY IS IN SIGHT

IF LOST TURN SO HEADING = BEARING

MAKE GENTLE TURNS UNTIL WHEELS ARE OVER RUNWAY CENTERLINE

USE RUDDERS TO MAINTAIN ALIGNMENT (KEEP WHEELS OVER CENTERLINE)

MAINTAIN SPEED GREATER THAN 60 KTS AND SINK RATE LESS THAN 10 FPS

- FLARE

AT 50 FT ALTITUDE — REDUCE POWER TO ZERO AND PITCH UP SLOWLY

- GO AROUND

SET POWER = 99% AND PITCH UP

K-HAWK

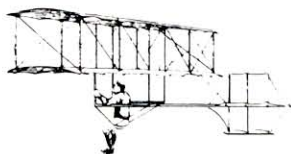
## K-HAWK

## K-Hawk Variables List

A: Angle of attack, in degrees.  
 B: Bearing to airport, degrees.  
 C: Compass heading, degrees.  
 C\$: Compass symbol.  
 D: Airport location forward of aircraft.  
 E: Airport location right of aircraft.  
 F: Engine thrust, percent of maximum.  
 G: Not used.  
 H: Altitude, feet.  
 I: Horizon indicator pixel locations.  
 J: Horizon indicator pixel locations.  
 K: Keyboard command code and miscellaneous counter.  
 L: Index for horizon indicator pixels.  
 M: Airport symbol location.

N: Runway symbol location.  
 O: 180 (Constant).  
 O1: 12 (Constant).  
 P: Not used.  
 Q: Dynamic pressure, lb/ft<sup>2</sup>.  
 R: Roll angle, degrees.  
 S: Indicated airspeed, knots.  
 T: Sound effects timer.  
 TS: Turn indicator symbol.  
 U: Altitude rate, fps.  
 V: True airspeed, fps.  
 W: Runway alignment parameter.  
 X: Airplane north coordinate, feet.  
 Y: Airplane east coordinate, feet.  
 Z: Degrees per radian constant.  
 Z1: Scale factor and smoothing factor.  
 ZC: Cosine of roll angle.  
 ZG: Sine of flight path angle.  
 ZS: Sine of roll angle.  
 ZX: Cosine of heading angle.  
 ZY: Sine of heading angle.

```
SS SS SS SS SS SS SS SS SS SS SS
SS
SS      TRS-80 BASIC      SS
SS      'K-HAWK'         SS
SS      Author: Al Ragsdale SS
SS      Copyright © 1983  SS
SS      SoftSide Publications, Inc SS
SS
SS SS SS SS SS SS SS SS SS SS SS
```



If you don't wish to type this program, it is available on issue #44 SoftSide CV and DV.

The following line sets up the constants. Notice that all variables except those beginning with X, Y, and Z are integers — This speeds up the program execution considerably

```
1 CLS:DEFINT A-W:DI=1(3),J(3):Z=57.3:Z1=.6:O=180:O1=12:C$=".W..N.
.E..S..W..N..E.":ONERRORTO2
```

The RESUME NEXT statement avoids having to check to determine if an attempt is made to set a pixel off the screen.

```
2 RESUMENEXT
```

Line 50 generates the engine sound and stall warning sounds, then erases and redraws the runway symbol or airport symbol. The switch occurs at 448 feet if you are pointed at the runway.

```
50 FORK=1TOT:OUT255,1:OUT255,0:NEXT:PRINTM," ";PRINTN,CHR$(19
9):LETW=Y/64+16*ZY:IFABS(W)<2BANDH<448LETN=348+64*INT((H+53)/64
)-W:PRINTN,".....";ELSEM=351+64*INT(D/3072)-E/1024:PRINTM,"#
";
```



The following lines decode the arrow keys and change roll angle and/or angle of attack if commanded. If the angle of attack exceeds 12 degrees, it is set to zero to simulate a stall.

```
100 K=PEEK(14400)/8:IFK>7R=R+D1:K=K-BELSEIFK>3F=R-D1:K=K-4
110 IFK=2A=A-1ELSEIFK=1A=A+1:IFA>0ILETA=0
```

Line 120 forces the wings to become level on the ground and reverses the left/right directions when inverted.

```
120 IFH=0R=0ELSEIFABS(R)>0LETR=R-2*0*SGN(R)
```

Line 130 calculates the sine and cosine of the roll and sets the stall warning at 12 degrees angle of attack.

```
130 ZS=SIN(R/Z):ZC=COS(R/Z):IFA=0:LETT=Z
```

ASCII codes are used by line 140 to detect rudder commands or to change the throttle (power) setting.

```
140 K=ASC(INKEY$):IFK=44C=C-2ELSEIFK=46C=C+2ELSEIFK=47IFK<58T=K-48:F=11#T
```

Line 150 draws the roll bug, horizon, and the aircraft symbol.

```
150 RESET(J,I):I=16-16*ZC:J=63-32*ZS:SET(J,I):FORK=1TO3:RESET(J(K),I(K)):L=K-2:J(K)=63+L*32*ZC:I(K)=16+(A*ZC+ZS*Z)/2-L*16*ZS:SET(J(K),I(K)):NEXT:PRINT@343,"-+. -"
```

Line 200 calculates the aerodynamic lift parameters, altitude, and altitude rate as well as checking for a touchdown, and lowering the nose below 50 knots by setting the angle of attack to zero.

```
200 S=Z*V:Q=V*V/833:ZS=Z*ZS+8*(Q*ZC*(A+4)/128-1)/V:U=V*ZS:H=H+U:IFH<0H=0:U=0:ZS=0:IFB<50A=0
```

Line 210 calculates the aerodynamic drag and velocity, turn rate, and heading in modulo 360.

```
210 V=V+(6*F-2048*ZS-Q*(13+(A+4)[2/13]))/64:C=C+32*Z*ZS/V:IFABS(C-0)>0LETC=C-2*0*SGN(C)
```

Line 220 integrates the position vector, location of the airport relative to the airplane, and the bearing to the beginning of the runway. It also sets up the turn indicator to show level, left, or right.

```
220 ZX=COS(C/Z):ZY=SIN(C/Z):X=X+V*ZX:Y=Y+V*ZY:D=ZX*X+ZY*Y:E=ZX*Y-ZY*X:B=0-Z*ATN(X/Y)/0/2*SGN(Y):T$="":IFR>0T$=">"ELSEIFR<0T$="<"
```

Line 300 draws the instrument panel.

```
300 PRINT@832,"SPD ";S;TAB(27);"HGS ";T$;C;TAB(54);"ALT ";H;PRINT@923,MID$(C$(C+45)/30,9);:PRINT@960,"PWR ";F;TAB(27);"BRG ";B;TAB(54);"ROC ";U;:GOTO50
```



LINES	SWAT CODE	LENGTH
1 - 150	TI	594
200 - 300	HG	415

K-HAWK

# SoftSide<sup>TM</sup>

## ADVENTURE SERIES



### Issue 44 Adventure: Mad House

Unjustly committed to an insane asylum, you must wend your way past guards and the real inmates, with their vivid delusions. Escape will be no problem for you — or will it?

## SoftSide Adventure Series ~~CV~~ ~~DV~~

What would you say to a program that asks, "What do you want to do?" Well, you might say, "GET APPLE" or "KILL SPIDER", because that's how the *SoftSide Adventure Series* works.

Each issue, the latest Adventure takes you to another world of fantasy, puzzles and thrills. Your first task is often simple survival — and even that basic feat can be daunting until you figure out the *right* way to do it. You'll have to be ingenious and persevering, and your rewards will be great.

To "win" a fantasy/adventure game, you must solve the author's devious puzzles, and overcome the obstacles that confront you — whether they be dragons, desperadoes — or grade-point averages. Death, should it come, is transitory — just re-run the program to live again!

Experienced adventurers make detailed maps of each world as an aid to effecting a solution, but you can omit this exercise if your memory is exceptional. Express your wishes with one- or two-word commands, like "LOOK", "DROP SCALPEL", or "GET FROG". Use "I" to get an inventory of your possessions. The introduction to each Adventure explains this more fully.

To start up the Adventure, just run the program called "INTRO", "INTRO/BAS", or "INTRO.BAS" on your disk, or select the Adventure from the DV menu. On cassette, the INTRO program is the one just before the Adventure.

**The Adventure runs in any TRS-80 with at least 16K RAM (32K disk).**

**Here are the encrypted hints for *High School*, the Adventure in Issue 43.**

The first three hints are of a general nature, and you should use them first. The three hints listed for each class will tell you the specific activities that you must accomplish there to get an "A" in the course. Don't use the last few hints unless you are totally stumped.

**A couple general hints:**

ORHGVM XZIVUFOOB GL BLFI  
VOWVIH.  
BLF XZM YVORVEV ZOO GSV  
TIZUURGR BLF IVZW.

**Trouble with a locked door:** BLF  
XZM FHV VRGSVI Z PVB LI Z  
SZNNVI GL LKVM GSV OLXP-  
PVW WLLI.

**History class:**

1. IVXRGV KIVZNYOV.
2. WIZD NZK.
3. DIRGV GVINKZKVI (DRGS  
KZKVI ZMW LI KVMXRO).

**Typing class:**

1. OVZIM PVBYLIW.
2. GBKV KZKVI (DRGS KZKVI).
3. GBKV OVGGVI (DRGSKZKVI).

**English class:**

1. IVXRGV NZXYVGS — BLF  
NFHG SVEV URIHG.
2. IVZW VCLWFH — BLF NFHG  
SZEVRG URIHG.
3. DIRGV HGLIB DRGS KZKVI  
ZMW KVM.

**Algebra class:**

1. HLDEV VJFZGRLMH.
2. UZXGLI GIRMLNRZOH.
3. OVZIM WVURMRGRLMH.

**Geometry class:**

1. OVZIM GSVLIVN.
2. NZPV KILLU DRGS KZKVI  
ZMW KVM LI KVMXRO.
3. OVZIM WVURMRGRLMH.

**Computer lab:**

1. WIXD UOLDXSZIG.
2. OLZW Z KILTIZN UILN BLFI  
XZHHVGGV.
3. HZEV Z KILTIZN LM BLFI  
XZHHVGGV.

**Gym class:**

1. KOZB ELOOVBYZOO.
2. KOZB YZHPVGYZOO.
3. KOZB YZWNRMGLM.

**French class:**

1. OVZIM ELXZYFOZIB.
2. IVXRGV WRZOLTFV.
3. WL SLNVDLIP DRGS KZKVI  
ZMW KVM LI KVMXRO.

**Band class:**

1. XLFMG GRNV.
2. KOZB BLFI UOFGV.
3. IVZW BLFI NFHRX.

**Biology lab:**

1. WRHHVXG UILT.
2. WRHHVXG DLIN.
3. WL BLFI SLNVDLIP DRGS  
KZKVI ZMW KVM LI KVMXRO.

**Use these hints only if you are desperate:**

FHV GSV XLNNZMW ORHG  
EVIYH GL HVV ZOO GSV  
KLHHRYOV EVIYH GSV ZWEV-  
MGFIV FMWVIHGZMWH.

**To graduate:** KZHH HRC  
XOZHHVH; KZB BLFI ORYIZIB  
URMV; KZB BLFI TIZWFZGRLM  
UVV; DVZI BLFI XZK ZMW  
TLDM; TL GL GSV  
ZFWRGLIRFN.

**How to use your money:**

YFB KZKVI DRGS XLRMH  
XSXP LI NLMVB.  
KZB URMV DRGS XLRMH  
XSXP LI NLMVB.  
KZB UVV DRGS XSXP LI  
NLMVB LMOB.



## Notes



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## Notes



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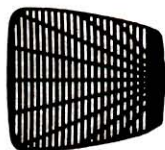
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Signature

## General Information

These are the standard procedures for the programs published in **SoftSide Selections**. Sometimes, a particular program does not lend itself to these procedures. Always read the specific instructions accompanying a program. They will instruct you if there are any variances from the following procedures. Also, back issues of **SoftSide** may differ in some details.



## SWAT TABLE

At the conclusion of each program listing in **SoftSide Selections**, we include a **SWAT (Strategic Weapon Against Typos) Table**. **SWAT** for the TRS-80 appeared in **SoftSide** Issue #30. If you missed Issue #30, we'll send you a free reprint of **SWAT**. Send a self-addressed, stamped envelope to:

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Please be sure to tell us that you have a TRS-80 computer.

---

### Magnetic Media

Disks are available in Model I or Model III format. They contain the DOSPLUS operating system. A cover program runs automatically when you boot the disk. Back issues earlier than May 1981 are available only in Model I format. If you have a two-drive Model III, you can convert such disks with the CONVERT utility.

Tapes CLOAD in the normal manner on Model I's, and at low speed (500 baud) on Model III's. The first program is a cover/menu program; side two of the tape is a duplicate of side one.

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### Line Listings

The line listings in this booklet are in standard 64-column format, and they appear exactly as they should on your screen when you type LIST.

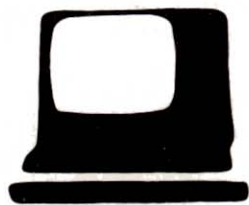
---

### System Requirements

The necessary memory and other equipment you need to run a program are listed in the introductory paragraph of the article for each program. (Also see the **SoftSide Adventure Series** elsewhere in this booklet.)



## Notes



# SoftSide<sup>®</sup> Selections

Here's **SoftSide Selections**, the handy, pull out booklet with program listings for your TRS-80 Model I or III computer. This issue, **SoftSide Selections** for the TRS-80 features:

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