By: Steve Walters
     556 Langfield
     Northville, MI 48167

Bally Basic programs, especially games, are nicer for the user if a title and operating instructions appear on the screen to start the operation. This lets the tape be loaded and used by a new player without having to refer to a paper instruction sheet. However, there is often a frustrating trade-off between the program instructions we would like to display, and the memory capacity we finally need for a good operating program.

The procedure described below will allow you to display a title at the beginning of the tape load, and up to nine lines of title and/or instructions at the end of the tape load, without using any memory space. The specified input command (e.g., :INPUT 2) is used to control this process.

Loading the program. When the operating program is ready to store permanently onto tape, set NT=1 (type in NT=1 and press GO). Then enter the following:

> :PRINT; TV=0; TV=1; PRINT; PRINT "PROGRAM TITLE"; PRINT "BY PROGRAM AUTHOR";
> PRINT; LIST; PRINT; PRINT "STANDBY-"; PRINT; PRINT ":RETURN; :INPUT 2"

Do not press GO at this point. With the above entered, start the tape recorder on record, and when the leader has gone by press GO. You will see ?? which are the TV numbers for the input number command, followed by the title and author, then the normal program listing, then STANDBY-, and then :RETURN; :INPUT 2. As soon as this last statement appears on the screen, turn the tape recorder off without entering anything else, and leave the tape cartridge at the position at which it was turned off.

The following should be noted in using the above procedure:

(a) the TV instruction shown is an example, since TV=0; TV=1 sets up an input code which will input only on the instruction :INPUT 1 (see ARCADIAN page 102). Use whatever TV code you want for your program input instruction.

(b) put whatever information you want in the PROGRAM TITLE and PROGRAM AUTHOR lines, within the limit of the buffer space. If the keypad entry locks out on you before you have entered the above material, then you have put too many characters in these two lines.

(c) the last instruction :RETURN; :INPUT 2 closes the IO port and then waits to re-open it when it finds the proper TV input code. The above sample uses 2 as an example. If more than one program is included on a tape, both of the input codes for each program should be unique values, used only once on the tape.

Loading the message. A separate program is now used to load the message onto the tape which you want to appear after the program load but before the program operation begins, such as the title and playing instructions. Press RESET to clear out the operating program, and then enter the following:

```
 10 CLEAR
 20 TV=0; TV=2                          (this should correspond to the value in the last
 30 PRINT; PRINT                             statement of the program load sequence)
 40 PRINT ".PROGRAM TITLE"
 50 PRINT ".PROGRAM AUTHOR"            (each line of message should contain no more than
 60 PRINT ".********************"           23 characters/spaces after the period)
 70 PRINT ".INSTRUCTIONS"
 80 PRINT ".INSTRUCTIONS"
 90 PRINT ".INSTRUCTIONS"
100 PRINT ".INSTRUCTIONS"
110 PRINT ".INSTRUCTIONS"
120 PRINT ".TO START PUSH KEY 1"                     (see note a)
130 PRINT ":RETURN; NT=0; BC=133; K=KP; GOTO 1       (see note b)
```

All message lines (Line 40 thru Line 110) must be used to fill the screen and scroll
unwanted material out of sight. If you do not need all the lines, or want
spaces between parts of the instructions, write PRINT only in that line.

When the message loading program is ready to record onto the tape, enter :PRINT; RUN
without pressing GO. Then start the tape on record and press GO. As soon as the
material in Line 130 appears on the screen, turn the tape recorder off without
entering anything more.

The tape is now ready to input and display the message.

(a) Line 120 is based on the key-press in Line 130 being used to start the main
    program operation. This requires no memory space. However, I usually prefer
    to have the hand controller operate everything if possible, which requires
    a line in the operating program, as follows:

         (1) change Line 120 in the above message program to

             120 PRINT ".TO START PULL TRIGGER" and eliminate K=KP in Line 130.

         (2) add this line to the operating program:

             1 BOX 0,-32,159,7,2; IF TR(1)#1 GOTO 1

             The BOX instruction is not necessary, but it blanks out the material
             which was printed by Line 130 in the message program, for a nice
             screen display. Line 1 in the program simply loops on itself while
             the player is reading the message, until he pulls the trigger.
             A CLEAR instruction will probably be needed at the next operating
             line.

(b) Line 130 contains some items as examples. If you need NT set at a specific
    value, or a color set, a value set (e.g., A=200) or other item once at the
    beginning of the operating program, it can be done as part of Line 130 without
    using program memory space. Be careful about the length of Line 130, since
    it will cause the message to scroll out of sight if it is too long. You could
    use two lines for this if needed.