## NEW FEATURES

SOME NEW FEATURES HAVE BEEN ADDED TO THE TAPE VERSION OF MUL-T-SCREEN. FIRST THE "ENTER" PROGRAM NOW RECOGNIZES 64K COMPUTERS AND WILL LOAD MUL-T-SCREEN ON TOP OF ROM. THIS WILL ALLOW FOR THE FULL 224 CHARACTER SET AND WILL SAVE MEMORY SPACE. ALSO YOU CAN IF YOU WISH USE THE FULL 224 CHARACTER SET FOR OTHER COMPUTERS. TO DO SO PRESS "Y" WHEN ASKED IN THE "ENTER" PROGRAM. NOTE THAT THE MEMORY LOCATIONS ON PAGES 14 AND 15 IN THE INSTRUCTION BOOKLET WILL CHANGE UNDER BOTH OF THESE CONDITIONS. FOR FULL DETAILS CHECK THE "INFO" PROGRAM WHICH CONTAINS MORE INFORMTION ABOUT CHANGES.

ANOTHER IMPORTANT ADDITON TO MUL-T-SCREEN IS A CHARACTER GENERATOR. IT'S OPERATION IS EXPLAINED BELOW. THERE IS ALSO A SHORT GRAPHICS PROGRAM "SAMPLE-4" THAT SHOWS HOW MUL-T-SCREEN CAN BE USED FOR GRAPHICS. THIS PROGRAM REQUIRES EXTENDED BASIC AND IF YOU HAVE 16K, CHECK THE "INFO" PROGRAM OR THE PARAGRAPH ON THE NEXT PAGE FOR SPECIAL LOADING INSTRUCTIONS.

## CHARACTER GENERATOR & EDITOR

BEFORE RUNNING THE CHARACTER GENERATOR, YOUR COMPUTER MUST BE IN THE MUL-T-SCREEN MODE. FIRST CLOAD"ENTER". THEN RUN THE PROGRAM. TO USE THE GENERATOR YOU MUST HAVE AT LEAST 32K EXTENDED BASIC. FOR 32K PRESS "Y" TO LOAD THE ENTIRE CHARACTER SET. NOTE THAT FILES SAVED IN THE 32K AND 64K MODES ARE NOT INTERCHANGEABLE. THE EDITOR DOES HOWEVER PROVIDE AN OFFSET SO YOU CAN TRANSFER THESE FILES. THIS WILL BE DISCUSSED LATER. AFTER YOU HAVE ENTERED MUL-T-SCREEN CLOAD"C". ONCE THE PROGRAM IS LOADED, TYPE "RUN" AND PRESS "ENTER". YOU WILL BE IN THE CHARACTER GENERATOR PROGRAM.

### INPUT CHARACTER

YOU WILL FIRST BE ASKED FOR THE CHARACTER YOU WISH TO GENERATE OR EDIT. THERE IS A FEW WAYS IN WHICH YOU CAN DO THAT. IF YOU PRESS "A" YOU CAN ENTER THE ASCII CODE OF THE CHARACTER. IF YOU PRESS "K" YOU CAN ENTER A CHARACTER OFF THE KEYBOARD. IF YOU HAVE ALREADY GENERATED A CHARACTER YOU CAN GO TO THE NEXT HIGHER OR LOWER CHARACTER BY USING THE UP/DOWN ARROWS. AFTER A CHARACTER HAS BEEN SELECTED YOU WILL SEE THE CHARACTER YOU ARE WORKING ON, ON THE BOTTOM OF THE SCREEN ALONG WITH IT'S PRESENT APPEARANCE. THEN YOU WILL ENTER THE EDIT MODE.

### EDIT MODE

ONCE IN THE EDIT MODE KEEP IN MIND THAT THIS PROGRAM HAS BEEN WRITTEN IN BASIC AND WILL TAKE A FEW SECONDS TO GENERATE EACH CHARACTER. DO NOT INPUT ANY COMMANDS UNTIL YOU SEE THE CURSOR FLASHING. IN A FEW SECONDS YOU WILL SEE ON THE RIGHT SIDE OF THE SCREEN A LARGE VERSION OF THE CHARACTER YOU ARE WORKING ON. BELOW THE CHARACTER A RECTANGULAR BOX SHOWS THE STATE OF THE PIXEL THAT IS FLASHING.
TO MOVE THE CURSOR USE THE ARROWS ON YOUR KEYBOARD.
TO SET A PIXEL PRESS "S".
PRESSING "D" WILL ALLOW YOU TO SET EVERY PIXEL YOU PASS OVER. IF YOU HAVE A LOT OF DRAWING THIS CAN SAVE YOU A LOT OF TIME SINCE YOU WILL NOT HAVE TO PRESS "S" TO SET EVERY PIXEL.
PRESSING THE "SPACEBAR" WILL RESET THE PIXEL AND TURN OFF THE DRAW COMMAND.
PRESSING "CLEAR" WILL ERASE THE CHANGES YOU HAVE MADE AND REDRAW THE ORIGINAL CHARACTER. THIS WILL REQUIRE A FEW SECONDS.
PRESSIN "C" WILL CLEAR ALL PIXELS SO YOU CAN START WORKING FROM A CLEAN SURFACE.
PRESSING "ENTER" RECORDS THE NEWLY GENERATED CHARACTER.
IF YOU ARE FINISHED WITH A CHARACTER AND WISH TO GO TO ANOTHER PRESS "N".
IF YOU HAVE A CHARACTER THAT IS SIMIALAR TO THE ONE YOU WANT TO GENERATE YOU CAN PRESS "K" TO COPY THAT CHARACTER. AFTER DOING SO YOU WILL BE ASKED FOR THE ASCII CODE OF THE CHARACTER YOU WISH TO COPY. AFTER ENTERING A NUMBER THE CHARACTER WILL BE REPLACED AND YOU CAN CONTINUE TO MAKE ADJUSTMENTS TO THE CHARACTER.
PRESSING "I" WILL PUT YOU IN THE INPUT/OUTPUT MENU.

## INPUT/OUTPUT MENU

IF YOU WISH TO LOAD A FILE THAT YOU WANT TO MODIFY PRESS "L". IF THERE HAS BEEN NO INPUT OF A FILENAME, YOU WILL BE ASKED FOR ONE. AFTER YOU HAVE NAMED THE FILE YOU WILL HAVE TO PRESS "L" AGAIN. YOU WILL GET THE "SURE?" PROMPT. ENTER "Y" IF YOU ARE BUT REMEMBER THAT THE CHARACTER SET PREVIOUSLY IN MEMORY WILL BE DESTROYED. ALSO BE SURE THAT THE FILE YOU ARE LOADING WAS CREATED AT THE SAME MEMORY LOCATION THAT MUL-T-SCREEN NOW OCCUPIES. OTHERWISE YOU WILL NEED TO SPECIFY AN OFFSET. THIS WILL BE DISCUSSED LATER.

IF YOU WISH TO SAVE A CHARACTER SET PRESS "S". AGAIN IF THERE IS NO FILENAME YOU WILL BE ASKED TO ENTER ONE. THEN YOU CAN PRESS "S" AGAIN TO SAVE IT. AGAIN YOU WILL BE ASKED IF YOU ARE SURE?. MAKE SURE YOUR TAPE RECORDER IS READY TO RECORD THE CHARACTER SET.

PRESS "F" TO INPUT OR CHANGE A FILENAME.

PRESS "R" TO RETURN TO THE EDITOR.

YOU CAN SPECIFY THE CHARACTER SET THAT YOU WANT TO SAVE. UNLESS YOU CHANGE THIS ONLY THE GRAPHIC SET WILL BE SAVED. PRESS "1" TO SAVE JUST THE GRAPHIC CHARACTERS". PRESS "3" TO SAVE THE TEXT CHARACTERS. OR PRESS "2" TO SAVE ALL THE CHARACTERS.

IF THE FILE YOU WANT TO LOAD WAS NOT IN THE SAME MEMORY AS MUL-T-SCREEN MOW OCCUPIES YOU WILL REQUIRE AN OFFSET TO LOAD THE FILE.

- IF MUL-T-SCREEN IS NOW ON TOP OF 64K ROM, AND THE FILE WAS CREATED ON A 32K COMPUTER OR A 64K BUT MUL-T-SCREEN WAS NOT ON TOP OF ROM INPUT AN OFFSET OF 32512. IF YOU HAVE JUST UPGRADED TO 64K AND WISH TO RELOCATE ALL OF YOUR FILES USE THE SAME OFFSET. AFTER ENTERING THE OFFSET ENTER THE FILENAME. THEN LOAD IT, CHANGE TAPES, AND SAVE IT. THE NEW TAPE NOW HAS A 64K VERSION OF THE SAME CHARACTER FILE. IF YOU HAVE MORE FILES CHANGE THE FILENAME AND AGAIN LOAD IT AND SAVE IT FOR AS MANY FILES AS YOU WANT TO CHANGE.

- IF A FILE CREATED IN THE 64K MODE NEEDS TO BE BROUGHT DOWN TO THE 32K SIZE MEMORY USE AN OFFSET OF 33024. NORMALLY YOU WILL NOT NEED THIS UNLESS YOU HAVE A 64K COMPUTER AND YOU WANT TO COPY A FILE FOR A FRIEND WHO HAS ONLY 32K.

TO LOAD A CHARACTER SET YOU DO NOT HAVE TO USE THE CHARACTER GENERATING PROGRAM. SIMPLY LOAD THE MACHINE CODE FILE DIRECTLY.

eg. CLOADM"FILENAME"  or CLOADM"FILENAME",OFFSET

IF AN OFFSET IS REQUIRED USE THE SAME ONES MENTIONED EARLIER.

## SAMPLE-4 PROGRAM

THE SAMPLE-4 PROGRAM IS A SIMPLE SPACE GAME THAT SHOWS HOW EASILY GRAPHICS CAN BE USED WITH MUL-T-SCREEN. TO RUN THE PROGRAM YOU REQUIRE EXTENDED BASIC AND ONE JOYSTICK. FIRST FIRE UP MUL-T-SCREEN. FOR 16K & 32K COMPUTERS PRESS "Y" WHEN ASKED IN THE "ENTER" PROGRAM TO LOAD MUL-T-SCREEN WITH THE FULL CHARACTER SET. IF YOU HAVE A 16K COMPUTER CLEAR200,10980 TO ALLOW THE NECESSARY ROOM FOR THE BASIC PROGRAM. AFTER YOUR COMPUTER IS IN MUL-T-SCREEN SIMPLY CLOAD"SAMPLE-4". AFTER THE PROGRAM IS LOADED YOU CAN RUN IT. THE OBJECT OF THE GAME IS TO SHOOT DOWN AS MANY ENEMY SHIPS AS POSSIBLE. THE FASTER YOU SHOOT THEM DOWN THE MORE POINTS YOU GET. IF YOU SHOOT AND MISS ONE YOU ARE PENALIZED 10 POINTS. IF ONE MANAGES TO REACH THE BOTTOM OF THE SCREEN YOU ARE PENALIZED 100 POINTS. THE GAME IS OVER AS SOON AS THE TIME RUNS OUT. ALTHOUGH THIS IS A SIMPLE GAME IT SHOWS HOW MUL-T-SCREEN CAN BE USED TO IMPROVE THE SPEED OF GRAPHICS AND ALLOW YOU TO EASILY MIX GRAPHICS AND TEXT ON ONE SCREEN. IF YOU LIST THE PROGRAM YOU WILL NOTICE THAT IT CONTAINS EXTENSIVE REMARKS THAT WILL HELP YOU UNDERSTAND IT'S OPERATION. NOTE THAT THE VIDEO START PAGE HAS BEEN ALTERED IN ORDER TO MOVE THE ENEMY SHIP 1/2 LINE AT A TIME. BECAUSE OF THIS IF YOU BREAK THE PROGRAM BEFORE IT IS FINISHED YOU MIGHT END UP WITH THE COMPUTER HANGING UP ON YOU. ALSO IF THE LEVEL OF PLAY IS TOO DIFFICULT FOR YOU, YOU CAN SLOW DOWN THE PROGRAM BY PRESSING "SPACEBAR" AS MANY TIMES AS YOU WISH TO OBTAIN THE SPEED YOU WISH.