APPENDIX D - CHANGING ASEAM3.0 SOURCE CODE

D.1   Introduction

This Appendix contains information on changing the source code of ASEAM3.0.   The source code of ASEAM3.0 is written in BASIC, therefore, you will need to know how to program in this language to make meaningful changes to the existing code. Since ASEAM3.0 will not run in the BASIC interpreted mode, you will need to know how to "compile" the changed source code in order to make "executable" program files. The steps in compiling are discussed in Section D.3 below.

D.2   Warnings

Changing the source code of ASEAM3.0 is relatively easy if you understand BASIC programming and compiling. The following "warnings", however, should be considered:

1.   You will need the Microsoft Quickbasic Compiler Version 4.5. If you are using any other compiler, you will have to compile ALL of the BASIC source code of ASEAM3.0 with your compiler - you cannot mix executable ASEAM3.0 code generated with different compilers.

2.   It will be very difficult, if not impossible, for the authors to support your version of ASEAM3.0.

3.   ALWAYS save the original version of any source code on a separate disk before changing any program. If your changed version does not work properly, you will at least have the original working program code to rely on.

4.   Since the source code is an ASCII file, you may use any of several means to change the program code: BASIC, text editors (e.g., EDLIN on your DOS diskette), or word processors. When using word processors to change the code, however, please note the following:

       a.   Many program and data files in ASEAM3.0 have lines extending beyond the normal 80 column right margins for word processors. You may have to set your right margins to 254 before retrieving the file, otherwise some word processors may automatically reformat the file.

       b.   Always retrieve and save the source code as a DOS Text File, or in standard ASCII format.

              BEWARE - Many word processors have their own format for saving text and data files - complete with margin settings, page control keys, etc. It is ABSOLUTELY NECESSARY that all editing done on ASEAM3.0 source code files be saved in an ASCII or DOS TEXT file format. The compiler may will abort if you fail to do this since the file may contain statements or codes not recognized by the compiler.

       You may check to see if the file was saved in the proper format by "typing" the file (e.g., `type as3menu.bas' (CR)). If non-ASCII characters (symbols - not numbers or characters) are displayed on your screen, you have NOT saved the file in the proper

format!

5.   There are special "parameters" or codes that must be entered when compiling ASEAM3.0 source code to indicate the existence of error checking, event trapping (use of function keys for program control), etc. If you fail to use these codes, the compiler will issue error messages. The batch file `BATCHCOM.BAT' contains a listing of all the ASEAM3.0 BASIC source code file names and compiler parameters.

In brief, three different compiler parameters are used in ASEAM3.0:

/E - denotes error trapping
/W - denotes event trapping or function key use
/S - optimizes string space on several of the larger ASEAM3.0 programs.

If a program file needs more than one compiler parameter, you must indicate all of the parameters required (e.g., `/E/W/S').

Outlined below are the BASIC source code filenames and the compiler parameters you must use with each.

Source Code Filename	Compiler Parameters
===========	===============
AS3MENU	/E/W/S
AS3LDINP	/E/W
AS3SYINP	/E/W/S
AS3PLINP	/E/W
AS3LDREP	/E/S
AS3SYREP	/E
AS3PLREP	/E
AS3WDREP	/E
AS3ECOIN	/E/W
AS3WDINP	/E/W
AS3QKIND	/E/W/S
AS3PROCR	
AS3PROCL	/E
AS3LOADC	/E/W/S
AS3COMLS	
AS3PROCS	/E
AS3UNITC	/E/W/S
AS3CENTR	/E/W/S
AS3COMSP	
AS3PROCP	/E/W
AS3PLANT	/E/W/S
AS3REPRT	/E
AS3ECON	

D.3   Steps in Compiling

The following steps should be used as a guide for making changes in the ASEAM3.0 source code and for compiling your changes. Note that the compiling steps discussed below assume you are using the Microsoft Quickbasic Compiler (Version 4.5). If you are using a

different compiler, you will need to consult the manual for the compiler. All ASEAM3.0 source code files have the BASIC extension `.BAS'. These are the only programs you should change.

1.   Make a backup copy of the source code program you wish to change.

2.   Make programming changes to the original source code. See the warnings (#4) in Section D.2 above if you are using a word processor. If you are using BASIC to make changes, be sure to save the file in an ASCII format (e.g., SAVE "AS3MENU.BAS",A). You MUST use the same filename as the original to store your changes since ASEAM3.0 only recognizes these particular filenames.

3.   Insure that the subdirectory storing your BASIC compiler is the default directory.

4.   Type `BC' followed by CR. This will load in the compiler and you will be asked to supply information about the program to be compiled.

5.   The first compiler prompt will ask for the program filename and any special parameters associated with the file. You need to type in the path and filename of the program to be compiled, a space, and all the compiler parameters for the file (see Warning message #5, above, for the compiler parameters). For example, to compile the program AS3MENU, stored in directory ASEAM3 on drive 'C', enter the following:

>   `C:\ASEAM3\AS3MENU /E/W/S' followed by CR (DO NOT TYPE THE SINGLE QUOTATION MARKS)

>   To compile programs without any special parameters (e.g., AS3COMLS), type

>   `C:\ASEAM3\AS3COMLS' followed by CR

6.   Several more compiler prompts will appear, but you can ignore these and the compiler will supply the appropriate default values. To use the default values, just enter CR for the remaining prompts.

7.   After the last compiler prompt, the compilation starts with the creation of an object module (the first step in compiling). The object code will be stored with the same filename, but with the extension `.OBJ'. Note that this step may take several minutes, depending on the program size and speed of your computer.

8.   During the compilation, any errors will be printed on the screen. Errors are classified as either `severe' or `warning'. If `severe' errors are found, you must go back to step 3 above and correct the errors before proceeding with step 9.  Steps 2 through 8 must be repeated until you have no `severe' errors.

9.   The second and final step in compiling is linking. Type `LINK' followed by CR. This will load in the link program and you will be asked to supply information about the program to be linked.

10.   The first linker prompt will ask for the object module (filename) to be linked and you need to type in the path and the filename of the program just compiled - without any parameters. For example, type the following:

>   `C:\ASEAM3\AS3MENU' followed by CR

11.	Several more linker prompts will appear, but you can ignore these and the linker will supply the appropriate default values. To use the default values, just enter CR for the remaining linker prompts.

12.	After the last prompt, the linking process starts which will create the executable code. The executable code will be stored with the same filename as the source and object code, but with the extension `.EXE'. This step also may take several minutes, depending on the program size.

13.	The compiling of your changed source code is now complete.