

## Cellular Simulation Programs

### 1 Introduction

In the download folder there are a number of files which can be viewed of the cellular layout simulation. One needs to run the programs from a Microsoft dos window in the directory where the programs are located. Be sure to open the dos window and then move it to the directory where your files are located.

There are a total of eight simulations of the layout. Please refer to the textbook in Chapter 8 for background information on the cellular layout.

### 2 Program Files

The following are the demos:

- ❶ Alternative Layout 1 with one operator:  
Type **CSIMAN VAR** at the *C* :> prompt.
- ❷ Alternative Layout 2 with one operator:  
Type **CSIMAN VAR2** at the *C* :> prompt.
- ❸ Alternative Layout 3 with one operator:  
Type **CSIMAN VAR3** at the *C* :> prompt.
- ❹ Alternative Layout 1 with two operators:  
Type **CSIMAN TWO** at the *C* :> prompt.
- ❺ Alternative Layout 2 with two operators:  
Type **CSIMAN TWO2** at the *C* :> prompt.
- ❻ Alternative Layout 3 with two operators:  
Type **CSIMAN TWO3** at the *C* :> prompt.
- ❼ Alternative Layout 1 with one operator and breakdowns:  
Type **CSIMAN BKDOWN** at the *C* :> prompt.
- ❽ Water Spider simulation:  
Type **CSIMAN SPIDER** at the *C* :> prompt.

### 3 Running the Programs

The program runs from the dos window but it will take over the general windows screen of the monitor during the run. Always hit escape to interrupt the program. There is an QUIT button on the right hand side of the menu. To return to the regular windows mode, type EXIT.

The outputs on the simulation screen should be pretty much self-explanatory. Certain of the outputs also appear in the tables of Chapter 8 of the textbook where the cellular simulation is presented.

To reach steady state before running the simulation, go to **TIME ADV** on the menu and select **SKIP AHEAD**. Type at least 1000 as the skip ahead time. After that select **RUN**. To speed up or slow down the simulation, proceed as described above. In the breakdown model, the breakdowns occur at 3700, 12400, and 18500 time units, so you may want to skip ahead to just before that time.

Some detailed hints/notes:

- ❶ Hit escape to interrupt the program.
- ❷ There are roughly 25,000 seconds in the single shift.
- ❸ Run the program to a desired time unit, then change the **SCALE** factor to move faster.
- ❹ After successfully running the program, the simulation will create a text output file which can be viewed with *notepad* or another word processing program.