## System Error Handling

Very few errors which occur in the FACTS business software can be solved by the user. While under normal operation, situations can occur which will cause your data to become corrupted. These include premature shutdown of the system or an incorrect response to a system error message. In most cases these situations are the direct result of user error.

All system errors which occur while you are in the FACTS package will be reported by a standard error handling routine which always displays a message of the following form:

**ERROR 0 OCCURRED AT LINE 0510 PROGRAM ARF910,**

**CR-RETRY, D-DISPLAY, !!-ABORT**

**ATTEMPTING TO ACCESS RECORD LOCKED BY ANOTHER USER IN FILE.**

The actual error number ('0' in this case), the line number ('0510' in this case), the program designation ('ARF910' in this case, and the possible cause ('ATTEMPTING TO ACCESS RECORD LOCKED BY ANOTHER USER IN FILE' in this case) will change depending on where you are in the system.

All error messages give the user the option to abort. This option is present because some errors will correct themselves and some can be temporarily ignored and handled at a later time. The abort option has been provided so that processing at a given terminal need not be halted when a non-critical error is encountered. If an error occurs, use the list of program types listed below as a guideline in relation to the abort option.

1) **Inquiry programs.** In all cases, inquiries may safely be aborted if an error occurs. However, these errors invariably point to the presence of corrupt data and should be brought to the attention of the technical support provider as soon as possible.

2) **Print programs.** Print programs may also be aborted; however, there may be some further ramifications. For example, if AP or PR checks are printing and the Check Print program is aborted, the entire check run may have to be reprinted and several check forms may be lost. In another example, an aborted Work Order Print will mean that the work order in question will have to be manually selected for reprinting. The system is designed to handle these eventualities, but they can be an inconvenience.

3) **Report programs.** Reports fall into two categories: those that have an optional update and those that don't. For example, an inventory Stock Status Report does not have an update; it only prints data. On the other hand, the Sales Analysis Salesperson Commission Report has an optional update which allows the removal of paid commission documents.

a. If a report does not have an optional update, it is safe to abort. Again, you will want to try and figure out the cause of the error. It may be the case that a record has been deleted inappropriately (a customer record, for example) causing an error (i.e., the record must be re-entered), or it may be that data is corrupt. Again, contact the technical support provider to help with this diagnosis.

b. If a report has an optional update, but is **not** in the update phase (the screen displays **READING: and PRINTING** as opposed to **READING: and UPDATING** or **READING and REMOVING**) it can be aborted.

c. If the report is in the update phase DO NOT ABORT. Call your technical support provider. DO NOT SHUT DOWN the computer until the situation is resolved.

4) **Register programs.** A register is a report with an update which writes to and removes data from many different files. An example is the Daily Sales Register in the Sales Orders module. Among other things, this program creates your open receivable documents, updates inventory sales data, and prepares documents to be posted to sales analysis. The integrity of the data in these files and others involved is critical to the functioning of the system. Therefore, **DO NOT ABORT.** Call the technical support provider. **DO NOT SHUT DOWN** the computer until the situation is resolved. Because many files are involved in the update, aborting a register can cause far more damage to data integrity than aborting a report update. **NEVER** abort a register when it is updating! (Remember - shutting down a computer when such an error condition exists is the same as aborting the program. - Leave the computer on overnight or over the weekend if you have to.)

5) **Update programs.** Updates are similar to the update portion of a register. Typically, updates are involved in end of period processing. For example, the Inventory Control End-of-Period Update program, ICU890, will reset current period activity figures, lead times, and a host of other related data. Potentially, like registers, these programs update a large number of files. NEVER abort an update or SHUT DOWN the computer until the problem is resolved. Call the technical support provider.

6) **File Maintenance programs.** If using the file maintenance as an inquiry, it is safe to abort a file maintenance. If entering or changing data, either the data being entered is lost and needs to be re-entered, or users should consult their system manager because sort files may have to be rebuilt. If data has been corrupted, the user should contact the technical support provider.

7) **Entry programs.** Entry programs, like registers, are exceedingly complex and update large numbers of files. For example, ORDER ENTRY in the Sales Orders module accesses and modifies Accounts Receivable information, Inventory Control information, and its own order file information. NEVER abort an entry program or SHUTDOWN the computer when an error message is displayed in an entry program. Call the technical support provider.

### Error Recovery

There are two ways to recover from an error: Resolution and Abortion. The options associated with aborting a program are discussed in the previous section. The end user or system manager can usually resolve the following errors.

**ERROR 0:** This error will mean one of two things. Either someone has gained exclusive access of the record (has the record locked, i.e., displayed on another terminal), or someone has the entire file the user is attempting to access locked. Records will be locked if someone has accessed them in a file maintenance. Therefore, if a user is trying to place an order for a given customer, and someone is looking at the customer's record in the customer master file, the Order Entry program will report an error 0. A retry (press CR) is always appropriate in this case. A retry will allow the user to proceed. If the error persists, one should locate the user who is accessing the same information which is required and get them to release the record. If an entire file is locked it usually means that someone is in the process of updating. Again, if a user tries to go into the Order Entry program and gets an error 0, someone may be closing out the Inventory Control

module for the period. To do this, they had to lock the inventory item file and this file is required to place orders.

**ERROR 5.** This error, called a peripheral data transmission error, means that the hardware (terminal) is not communicating with the computer. In almost all cases a retry will resolve the problem. Otherwise the user must contact the technical support provider.

**ERROR 11.** In many cases this error can be rectified by a system manager. He/she will have to determine if it is safe to abort the program, then rebuild appropriate sort files. If the error persists, the system manager has one more option. He/she may be able to determine that a specific piece of information has been deleted from the system inappropriately. Simply re-entering the data would then rectify the problem. Failing at this stage to rectify the problem requires that your technical support provider be contacted.

## Error Messages

**0 File/Record/Device busy or inaccessible.**

**1 End-of-Record.** Most often occurs when attempting to WRITE a record longer than defined length, READ more fields than the record contains, or PRINT more characters than the defined line length (for a printer terminal).

**3 Disk Read Error.** This error indicates a hardware problem with the disk being read.

**5 Peripheral Data Transmission Error.** A hardware communication problem has occurred. Retry.

**11 Missing or Duplicate Key.** This error occurs when an attempt is made to access a record of a direct file using a KEY whose value is not equal to the key defined for any record of the file.

To correct: If the KEY value for the direct file was READ from a sort file, the sort file may need to be rebuilt.

**12 Missing or Duplicate File Name.** File being accessed not defined on disk.

**14 Improper File or Device Usage.** Most common cause is an attempt to OPEN a channel which is already OPEN for another file or device.

**16 Full Disk Dictionary.** Operating system or basic language has key configuration parameters set too low.

**18 Illegal Control Operation.** Performing an operation that is restricted either by the BASIC language or the operating system.

**20 Statement Syntax.** Caused by improper syntax. Consult your Business Basic Manual.

**27 Return Without Gosub.** Caused by transfer of program control to a subroutine by a means other than a GOSUB.

**28 Next Without For.** Caused when a program encounters a NEXT statement without an associated FOR statement indicative of faulty loop logic.

**40 Numeric Value Overflow.** Most frequently caused by division by zero. Sometimes used to indicate a problem in the program during processing (e.g., missing header record). In this case an error 40 is created by the statement: X=1/0;REM" message about problem.

**43 Invalid Format Mask Size.** Caused by an attempt to print a number through a mask that is too small or does not have enough digits to the left of the decimal.

To correct: Evaluate the number to be masked. If it is correct, simply enlarge the mask. (Note: changing mask size may change print position.)

**46 Invalid String Size.** This error results when an attempt to access a record in a direct file with a KEY= value greater in size than the defined key size.

To correct, change key size via system utilities.

**47 Substring Reference Out of Range.** This error occurs when an attempt is made to reference a string variable using subscript notation which is not within the range of the length of that variable.

# Nonsystem Errors

### Missing

While the FACTS system has been designed to prevent users from removing data inappropriately, there are still times when a user can accomplish this. In places where data may be required, yet the possibility exists that it has been deleted, a message telling users what data is missing will appear and they will be directed to add the data at another terminal. Having done this, processing may be resumed by entering CR.

### Full File

From time to time the number of records in a particular file will grow to fill the disk space reserved for that file. When this occurs, the user will receive the message **FILE** file name **IS FULL CR WHEN EXPANDED.** The user must go to another terminal and via the system utilities, increase the maximum number of records. With this having been done, processing may be resumed by entering CR at the original terminal.

The system manager usually has the responsibility of monitoring file and disk usage. The FACTS system includes an inquiry which shows the current usage of all FACTS files on the system. Periodic checking of file usage enables the system administrator to anticipate full file conditions and expand files as necessary before the actual condition cited above arises.

### Unable To Lock File

Occasionally it is necessary for the system to lock certain files or records to prevent other users from overwriting changes in progress. As discussed above, if an error 0 occurs in an attempted access of a file, the file MAY BE locked by another user at another terminal. By the same reasoning, a file cannot be locked while a record in that file is being accessed by someone else. If the message **Cannot Lock File...** appears the user must find the user(s) who are accessing the requested file and have them return to a menu screen or work in another program that does not use the file needed.