



CHAPTER 5

MODIFYING A FILE DEFINITION

MODIFYING A FILE DEFINITION

An INTAC file consists of three elements: the file definition, indexes, and data records. See Chapter 2. During the life-time of a system (especially when you are still in the creation process), you will probably want to make changes. Such changes may affect one, two, or all three of the elements of a file. INTAC has two facilities for making changes to the file definition and indexes: MODIFY and REBUILD . See Chapter 6 for REBUILD.

Use of one facility and/or the other depends upon the nature of your changes. A chart in this chapter shows the steps necessary for various kinds of changes. When you leave the MODIFY facility, INTAC displays an instructional message if your changes require the use of the REBUILD facility.

After completing the change process in MODIFY and/or REBUILD, you may need to change or regenerate existing command files for INQUIRE and definition files for GE reports and for TR . This chapter includes a table showing when you need to regenerate such files.

MODIFY SESSION EXAMPLE

The following is a complete MODIFY session for a simple change:

```
COMMAND? MO
MODIFY AN INTAC FILE
NAME OF FILE? ASSET
MOD CMD? HEADING LEASE.D.PYMT LEASE/PAYMENT
MOD CMD?
COMMAND?
```

CHAPTER ORGANIZATION

This chapter includes the following topics:

PROCEDURES FOR CHANGES

A table of steps to follow for various kinds of changes

THE MODIFY DIALOGUE

A brief description of the MODIFY dialogue

SUMMARY OF MODIFY COMMANDS

Brief definitions of all commands

GENERAL COMMENTS

Some rules for a MODIFY session

MODIFY COMMAND DESCRIPTIONS

Alphabetical descriptions

CHANGES REQUIRING REBUILD

Operation of MODIFY and procedures for changes that require the use of the REBUILD facility (with and without prior use of MODIFY)

CHANGES AFFECTING

INQ, GE, TR FILES

A table of changes in MODIFY that require new INQUIRE command files, GE and TR definition files

PROCEDURES FOR CHANGES

The following table shows the steps you will follow for typical kinds of changes. These procedures are explained throughout this chapter.

KIND OF CHANGE	MODIFY COMMAND	STEP 1	STEP 2
1. Changes that affect only the file definition: item names, security levels, print formats, headings, defaults, edit parameters	ADD, CHANGE, DEFAULT, DELETE, FORMAT, Edit Parameters (TABLE, MINIMUM, MAXIMUM, FILE), INQUIRE, NAME, MODE	MODIFY	
2. Changes that affect structure of data or indexes. Data: You change the structure of data when you alter item length, or add or delete an item. In addition, other commands may require file restructuring if the changes exhaust the edit parameters space allocated at creation. Indexes: when you add or delete an index or change the item in an index.	INDEX, ITEM, LENGTH	MODIFY	REBUILD COPY
3. Changes to MAXIMUM NUMBER OF RECORDS, BLOCKING FACTOR, INDEX LOADING PERCENT		REBUILD TOTAL	

MO

THE MODIFY DIALOGUE

Enter the MODIFY facility by typing the MO command at the INTAC COMMAND? prompt:

COMMAND? MO

The following questions are asked by the MO facility.

NAME OF FILE?

Enter the name of the INTAC file whose definition you wish to modify. An extension of .INT is assumed if none is given.

MOD CMD?

Select a command from the following summary of MODIFY commands. After each command has been executed, you will be prompted to enter another command from the table. Enter STOP or carriage return when you have finished.

The next two questions are asked when changes affect the structure of data and/or indexes.

NUMBER OF EXTRA INDEX BLOCKS <0>?

Enter the number of extra blocks to be created at the end of the index. Unless you are adding many records to the file in one place, you may respond to this question with a carriage return. (See Chapter 3, CR Facility)

INDEX LOADING PERCENT <67>?

This question is only asked if your changes add the first index to the file. Enter a number from 25 to 100 indicating the percentage of each index block to be filled when the file is rebuilt. You may usually respond to this question with a carriage return. (See Chapter 3, CR Facility.)

Below is a MODIFY Session for a change affecting the structure of data. Note that INTAC gives instructions for rebuilding the file:

COMMAND? MO

MODIFY AN INTAC FILE

NAME OF FILE? ASSET

MOD CMD? HEADING PURCHASE.ORD.NO PURCHASE/ORDER

MOD CMD? LENGTH DESCRIPTION 25

*This command affects
data structure*

MOD CMD?

NUMBER OF EXTRA INDEX BLOCKS <0>?

OLD ASSET.INT RENAMED TO ASSET.MO
PLEASE EXECUTE INTAC'S REBUILD COMMAND
USING THE 'CO' OPTION TO COPY THE RECORDS
FROM ASSET.MO TO ASSET.INT

SUMMARY OF MODIFY COMMANDS

You may make multiple changes to a file definition during one MODIFY session. These commands may be entered in any order.

FORMAT	DESIRED ACTION
ADD item level	Change the ADD security level.
CHANGE item level	Change the CHANGE security level.
DEFAULT item [value]	Change default value.
DELETE level	Change the DELETE security level.
DUPLICATES index# Y/N	Change DUPLICATES ALLOWED FLAG.
FILE item [filename]	Set or change the EXTERNAL FILE REFERENCE.
FORMAT item value	Change print format.
HEADING item [newheading]	Change column headings.
HELP	Display a list of commands.
INDEX index# [item item ...]	Add, change, or delete index.
INQUIRE item level	Change INQUIRE security level.
ITEM item [name type length] E [print format]	Insert or delete item.
LENGTH item length	Change item length.
LIST	List items.
MAXIMUM item [value]	Set or change maximum value.
MINIMUM item [value]	Set or change minimum value.
MODE value	Change file open mode.
NAME oldname newname	Change ITEM NAME.
STOP	End the MODIFY command and return to INTAC command level.
TABLE item entry# [value]	Change table entry.

Currently, the ADD, CHANGE, DELETE, and the INQUIRE security levels are implemented in the EDIT and INQUIRE facilities of INTAC. Security level features may be used with user-written routines in GE and TR.

MO

GENERAL COMMENTS

- You may make several changes to a file definition during one MODIFY session. However, if you are adding or deleting items, you should keep track of what you have done by using the LIST command periodically, because these changes cause items to be renumbered.
- Commands may be abbreviated to the first three letters.
- Where an item must be specified, you may give the item name or the item number. If the itemname has spaces in it, they must be replaced by periods.
- Information enclosed in brackets is optional. If you omit the information, the specified parameter will be deleted from the file definition. If you include the information, it will become part of the file definition, replacing any value that may currently exist.

EXAMPLES:

MOD CMD? ITEM DIVISION

(The data item DIVISION will be removed from the file.)

MOD CMD? ITEM MANAGER DIVISION S 15

(The data item DIVISION is inserted before item MANAGER)

- Further explanation of file definition elements can be found in Chapter 3, CR.
- Changes made by MODIFY may affect previously created INQUIRE command files, GE and TR DEF files and generated programs. See the chart at the end of this chapter, page 5-15.

MODIFY COMMAND DESCRIPTIONS

ADD item level

Changes the ADD SECURITY LEVEL for the item to the level specified. The security level is a number from 0 to 99. If the ADD SECURITY LEVEL is not zero, the INTAC EDIT facility will not prompt for the value of an item. A default value must exist.

EXAMPLES:

```
MOD CMD? ADD DEPT.NO 2
MOD CMD? ADD 5 0
```

MO

CHANGE item level

Changes the CHANGE SECURITY LEVEL for the item to the level specified. The security level is a number from 0 to 99. If the CHANGE SECURITY LEVEL is not zero, the INTAC EDIT facility will not allow you to change the value of an item.

EXAMPLE: MOD CMD? CHANGE DEPT.NO 65

DEFAULT item [value]

Sets the DEFAULT VALUE for the item to the value specified. To enter a blank default for strings, enter a blank in quotes. Use a blank default if you want the item to be optional (non-required). To remove a default, (making the item required), enter only the word DEFAULT and the item name or number.

EXAMPLES:

```
MOD CMD? DEFAULT LIFE 5           (adds default)
MOD CMD? DEFAULT DESCRIPTION " "  (makes optional)
MOD CMD? DEFAULT MANAGER          (removes default)
```

DELETE level

Sets the CHANGE SECURITY LEVEL of the DELETE FLAG to the level specified. The level is a number from 0 to 99. If the value is not zero, the INTAC EDIT facility will not allow you to delete any records.

EXAMPLE: MOD CMD? DELETE 1

DUPLICATES index# Y/N

Changes the DUPLICATES ALLOWED FLAG for the index number specified to Y(es) or N(o). When a file is created using the INTAC CR command, the first or primary index specifies no duplicates. Both CREATE and MODIFY allow duplicates in secondary indexes. The primary index may be changed with MODIFY to allow duplicates; however, the user should be aware of what this does to file structure. (The index will no longer necessarily identify a unique record.)

If the DUPLICATES ALLOWED FLAG is changed from YES to NO, then a message instructs you to use the REBUILD TOTAL facility to eliminate existing duplicate index values.

EXAMPLE:

```
NAME OF FILE? ASSET
MOD CMD? DUPLICATES 2 N
```

```
USE INTAC'S REBUILD COMMAND WITH THE 'TO' OPTION
TO ELIMINATE EXISTING DUPLICATES
```

```
MOD CMD?
```

FILE item [filename(n)]

Sets the EXTERNAL FILE REFERENCE for the item to the filename specified. In the format, filename is the name of the external file, and n is the index number of the corresponding item in the external file. An extension of .INT for the filename and INDEX1 are assumed if none are given. (For explanation of EXTERNAL FILE REFERENCE, see Chapter 3, page 3-8 CR Facility)

```
EXAMPLE: MOD CMD? FILE VENDOR(1)
```

FORMAT item xx.y

Sets the PRINT FORMAT for the item to the format specified. The print format is used for numeric and date items. In the numeric format, xx is the width of the printed field including commas, decimal points, and signs and y is the number of decimal positions. For dates, the value of the print format may be 8 or 10. See Chapter 3, CR Facility.

```
EXAMPLE: MOD CMD? FORMAT ORIG.COST 11.2
```

HEADING item [value]

Sets the COLUMN HEADINGS for the item to the heading(s) specified. Separate multiple-line headings with a slash (/). See Chapter 3, CR Facility.

EXAMPLES:

```
MOD CMD? HEADING DEPT.NO DEPT/NO
MOD CMD? HEADING 5 ASSET/CODE
```

HELP

Displays a list of MODIFY commands.

INDEX index# [item1 item2 ...]

The INDEX command adds, changes or deletes indexes. To add an index, specify an index number that does not already exist. To change the item(s) indexed, give new item name(s) or number(s). To delete an index, do not specify an item name or number. Up to six items may be included in the index; however, the total length of these items may not exceed 120 characters.

EXAMPLE: MOD CMD>? INDEX 1 3 2

MO

INQUIRE item level

Changes the INQUIRE SECURITY LEVEL for the item to the level specified. The security level is a number from 0 to 99. If the INQUIRE SECURITY LEVEL is not zero, you are not allowed to show the value of the item using the INQUIRE facility or to show its values using the SH command in the EDIT facility.

EXAMPLE: MOD CMD? INQUIRE 3 0

ITEM item [name type length] E [print format]

This command inserts or deletes items. If the item already exists and no other parameters are entered, the item is deleted. If the item number exists and other parameters are entered, the new item is inserted before the existing item with that number. In both of these cases, all subsequent items are renumbered. (CAUTION: This renumbering should be taken into account when you are making several changes to the file. It may be clearer to use item names instead of numbers in other commands.) To add a new item at the end, use E for the item number. The item is inserted before the DATE LAST EDIT item. For character string items, the last parameter is the length of the string. For numeric and date items, the last parameter is the print format. All other parameters (such as DEFAULT,HEADING, etc.) must be added using other MODIFY commands.

EXAMPLES:

```
MOD CMD? ITEM E NEW.ITEM S 10      (adds item at end)
MOD CMD? ITEM 5 COST.PER R 6.2     (adds item before existing item 5)
MOD CMD? ITEM 4                    (deletes item 4)
```

Note that when you add items INTAC will increase the minimum blocking factor as necessary. This adjustment will reflect the minimum allowable factor, not necessarily the most efficient one. See Chapter 3, page 3-12, CR.

LENGTH item length

Changes the length of the item. This command is valid only for character string data items.

EXAMPLE: MOD CMD? LENGTH ASSET .TYPE 6

LIST

This command provides a list of item numbers and item names in the INTAC file. Use LIST to verify item numbers after items have been added or deleted using the ITEM command or to identify the item names or numbers to use in other MODIFY commands.

EXAMPLE: MOD CMD? LIST

MAXIMUM item [value]

Sets the MAXIMUM VALUE for the item to the value specified.

EXAMPLE: MOD CMD? MAXIMUM ORIG.COST 30000.00

MINIMUM item [value]

Sets the MINIMUM VALUE for the item to the value specified.

EXAMPLE: MOD CMD? MINIMUM PUR.MONTH 1

MODE value

Changes the FILE OPEN MODE to the value specified. The FILE OPEN MODE may be one of the following:

- 0 Only one user may access the file at any one time.
- 1 Multiple users may access the file simultaneously.

EXAMPLE: MOD CMD? MODE 1

NAME old.name new.name

Changes an ITEM NAME from old.name to new.name in the file definition. New.name should not be an INTAC reserved word (see Appendix D).

EXAMPLE: MOD CMD? NAME LEASE LEASE.D.PYMT

STOP

Ends the MODIFY command and returns you to the INTAC command level. (A carriage return at the MOD CMD? prompt is the same as the STOP command.)

TABLE item entry# [value]

Adds, changes, or deletes the TABLE ENTRY indicated. The value may be followed by a colon and a comment. The length of the value and comment may not exceed 32 characters.

EXAMPLE: MOD CMD? TABLE ASSET.TYPE 3 F:FURNITURE

MO

CHANGES REQUIRING REBUILD

Some MODIFY commands affect the file structure and require that the file be rebuilt using the REBUILD facility. The commands are INDEX, ITEM, LENGTH. Some other commands may require the file to be restructured if the changes exhaust the edit parameter space allocated at creation. (INTAC displays a message when you leave the MODIFY facility if your changes require a REBUILD procedure.)

CHANGES AFFECTING DATA

An INTAC file contains both the file definition and the records. When you change the structure of a file using the MODIFY facility, INTAC creates a new file containing a complete new file definition. After you have completed your modifications, the next step is to use the REBUILD COPY facility to move the data into the file containing the new file definition.

1. Use MODIFY to make the desired changes. Your changes are actually made as you work. (However, if you interrupt your session by using a Control C, none of your changes will be saved.) When you leave the MODIFY facility, the old file is saved under the name filename.MO. The data records are still in that file. The new file (with the new file definition) is filename.INT. A message is displayed instructing you to REBUILD the file.

COMMAND? MO

MODIFY AN INTAC FILE

NAME OF FILE? ASSET

MOD CMD? HEADING PURCHASE .ORD. NO PURCHASE/ORDER

MOD CMD? LENGTH DESCRIPTION 25

MOD CMD? STOP

NUMBER OF EXTRA INDEX BLOCKS <0>?

OLD ASSET .INT RENAMED TO ASSET .MO

PLEASE EXECUTE INTAC'S REBUILD COMMAND

USING THE 'CO' OPTION TO COPY THE RECORDS

FROM ASSET .MO TO ASSET .INT

2. Use the REBUILD COPY facility. You will be asked the following questions:

INPUT INTAC FILE?

Respond with the filename.MO (note extension is MO).

OUTPUT INTAC FILE?

Respond with the filename.INT (extension is INT).

COPY BY RECORD (0), ITEM NAMES (1), OR NUMBERS (2) <0>?

Your response to this question depends upon the kind of change you have made. RECORD (0) can be used if you have merely changed edit parameters; ITEM

NAMES should be used if you have changed item length, or added or deleted items; NUMBERS may be used if you have changed an item name. (If you choose an inappropriate response, INTAC will signal you with a message so that you can change your response.) See Chapter 6 REBUILD for more detail.

OTHER CHANGES

NUMBER OF RECORDS, BLOCKING FACTOR, INDEX LOADING PERCENT

If the change does not involve reformatting the data records or the indexes, then the REBUILD command can be used directly to restructure the file. Changing the maximum number of records, the blocking factor, or the index loading percent are examples of this type of file change. See the REBUILD command.

CHANGING ITEM TYPE

Item type is the only element of an item definition that cannot be changed directly using the MODIFY facility. To change the type, delete the item with the MODIFY command ITEM itemname and no other parameters. Then redefine the item with a second ITEM command (including as a parameter the desired type). Use additional MODIFY commands (FORMAT, HEADING, edit parameters) to add these elements.

THE DUPLICATES ALLOWED FLAG

If you change the DUPLICATES ALLOWED FLAG from YES to NO, you must also use the REBUILD TOTAL facility to eliminate existing duplicate index values.

CHANGES AFFECTING INQ, GE, AND TR FILES

After making changes in MODIFY, you sometimes need to adjust files created for the report facilities INQUIRE and GE or for the data operations facility TR . Some changes always require such adjustments; other changes affect these files only if changed data items are used in the files.

The INQUIRE files are command files created by the SAVE command , with .INQ as an extension. Adjust such an .INQ file by entering IN and giving the name of the file as the source of commands. Then reenter the commands affected by the change. Give the SAVE command with the same filename.

GE and TR files include the definition files and the generated BASIC programs. Use a systems editor to make changes in the files and then enter the GE or TR facility to regenerate the BASIC programs.

```
with system commands:
  GE: GE:
  TR: TR:
  (A B C D)
  (A B C D)
  (A B C D)
```

CHART OF CHANGES

In the following chart, the word "always" means that you must change and regenerate the files even if the changed element is not used in the IN, GE, or TR files. The phrase "when used" means that the files must be adjusted and regenerated only if the changed element is used in the files. (A blank indicates that no adjustment is necessary.)

MODIFY COMMAND	INQUIRE CMD FILE	GE DEF	TR DEF
INQUIRE	when used		
FORMAT		when used	when used (if using item in SHOW command)
HEADING		when used	
FILE			must be in FILE section
ITEM	always if using item no.	always	always
LENGTH		when used	always
INDEX		always	always
NAME	when used	when used	when used

The following MODIFY Commands do not require adjustments: ADD, CHANGE, DELETE, DEFAULT, DUPLICATES, MAXIMUM, MINIMUM, MODE. It is not necessary to adjust files after changes to the maximum number of records, the blocking factor, or the index loading percent.

MO