Capacity Analysis System
User Manual

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Capacity Analysis System

Contents

Capacity Analysis Features

LI,598 List and Indented Routing

This screen allows the user to key in a work order number, or assembly part number and quantity of a top level assembly. All of the levels of the bill of material are blown through and the routing records for each assembly are summarized. The user may view the total work center requirements, or view the operation detail of each component to be produced. As a bonus, the user may choose to perform a multi-level component availability check and list the work center requirements for short components only.

RE,598 Multiple Assembly Indented Routing

This command contains the same features as the LI,598, but will allow the user to input several top level assemblies and quantities. The command will create a consolidated view of you total capacity requirements and short component capacity requirements.

UT,592 Routing Audit Trail

This utility will find all of the adds, changes, and deletions to your routings. The utility compares the current routings to a condensed snapshot of the routings taken by the utility from the previous evenings run. Differences in the routings are generated on an audit trail report. The differences may also be written to the audit trail history database. A list command LI,592 allows users to view chronologically, the changes to the routing file for a part number.

RE,596 Tracking File to Routing Comparison Report

This utility allows you to compare your actual labor hours setup to that listed in the tracking file.
The routing sequences are listed side by side and highlights differences in hours, or operations that were added or deleted.

UT,595 Routing Comparison Utility

This utility allows you to compare two different sets of routing records. This may be the same assembly part or two different assembly part numbers. The routing records may exist in the same or different manufacturing or engineering data bases. The routing bases. The routing records are listed side by side and highlights the operations that have been added and deleted, or changes made in the hours and other routing fields.

MA,585 Maintain Routing Notes

This command is a Vplus screen that allows the user to maintain unlimited lines of text associated with an assembly and operation. The screen has the option of supressing notes from the shop paper for 'internal notes' purposes.

RE,361 Print Shop paper

Replacement work order print for RE,351 which includes the

routing notes.

New Features of Release 4.0

Tracking file to Routing Comparison

A new report program RE,596 has been added to the product. This new report will allow you to compare the actual hours on one or more work orders, to the standard hours in the routing record. It will also provide a side by side listing to capture any routing steps that were added or deleted. Assists with pinpointing the source of methods change variance and establishing new routing rates for the coming year.

New Features of Release 3.0

Routing Audit Trail Utility

A new audit trail utility program UT,592 has been added to the list of other routing utilities in the product. The program will find all of the adds, changes, and deletions to your routings. The utility compares the current routings to a condensed snapshot of the routings taken by the utility from the previous evenings run. Differences in the routings are generated on an audit trail report and optionally written to a new dataset in the RTFDB. A second new command, LI,592 has been included which will allow a user to enter a part number and view any of the changes to the routing file found by the audit trail utility.

New Features of Release 2.0

Costed Routing Display

The work center totals and grand totals on the LI,598 and RE,598 programs now list the work center rate and

extended labor cost of the assembly(s) listed.

Inclusion of Assembly Labor Hours in LI,598 and RE,598

The operations of the assembly part number that the user entered are now included in the display and calculation of the indented routing screens.

File input option for RE,598 Capacity Analysis Report

The RE,598 Capacity Analysis Report will now read records from a flat ascii file. This will eliminate the need for the user to key in several assembly part numbers and quantities. Refer to the file input considerations of RE,598 for further information.

LI,592 List Routing Audit Trail

This command is used to list records created by the UT,592 routing audit trail utility. You must be 'keeping audit trail history' when you run UT,592 to use this command. The LI,592 will provide the user with a way to view the chronological routing changes made to a part.

Prompts

Displays output options.
OPTION (0)?

ASSEMBLY PART NUMBER?
Enter a valid part number.

A list of all routing changes made to the assembly entered will be listed in chronological order.

Files Accessed

IM Item master file
RTAAUD Routing Audit trail file

Screen Format

Headings

Part number
Description of part number
Primary code of part number

For each routing step displayed

Adds and deletions to routing sequences will be listed once. Changes to routing sequences will be listed twice. The first lines will display the previous values, and the second set of lines will display the new values. A notation < OLD VALUES or < NEW VALUES will appear to the right of the line. The difference field will help display what the change to the routing sequence is.

Line one
Sequence number

Operation number
Work Center
Tool number
Set up hours
Run Hours - This will be the either the standard hours, elapsed hours, machine hours, proposed labor hours, or proposed machine hours in that priority. For example, if a routing sequence was added or deleted, the standard hours will be displayed. If a sequence was changed, and the standard hours remained the same, but the elapsed hours changed, then the elapsed hours will be displayed
Transit hours
Effective date

Line two
Operation Description
Repetitive count point
Repetitive device number
Obsolete date

Difference - This field indicates the difference between todays routing file, versus yesterdays snapshot of the routing file.

ADD> this routing sequence was added.

<DEL this routing sequence was deleted

<CHG> a difference between one of the fields in the routing records were found. If more than one difference was found, only one change message will print in the priority listed below

- H/U - hours per unit flag
- WC - work center change
- NUM - operation number change
- TOL - tool number
- SU - set up hours
- HRS - labor hours
- TRN - transit hours
- SSU - elapsed set up hours
- SHR - elapsed run hours
- MSU - machine set up hours
- MHR - machine run hours
- PSU - proposed set up hours
- PHR - proposed run hours

Date the add, change or deletion was made.

LI,598 Multi-Level Routing List

This command is used to create a multi-level routing list on an existing or potential work order. The routing list is available in a summary (one line per work center), or a detail format which lists each subassembly moving through the work center.

In addition, the user may choose to list the indentend bill of material associated with the work order or potential work order. The user has the option of viewing all components or only short components of the indented bill of material. For short components, the command will list up to 9 open work orders or purchase orders scheduled. Open purchase orders for short components will list the vendor name and number. Open work orders that have been kitted, will list the operation status of the work order.

Prompts

```
Displays output options.
OPTION (3)?
```

```
LISTING OPTION:
1.  LIST INDENTED ROUTING ONLY
2.  LIST INDENTED ROUTING ONLY AND CALCULATE SHORTAGES
3.  LIST INDENTED ROUTING AND INDENTED BILL
4.  LIST INDENTED ROUTING AND INDENTED BILL WITH SHORT COMPONENTS ONLY
OPTION(1)?
```

If you select option number 1, only the indented routing list screen will be displayed. If you select option 2, the indented routing list will be printed, but the calculations to perform a multi-level component availability are performed, so that you can see the hours requirements on short components. If you select option 3 the indented routing list will be generated after printing the complete indented bill of material. If you select option 4 the indented routing list will be generated after printing the short components within the indented bill of material. If you do not need to see the short components, then it is recommended that you run option 1, because the component availability options may be time consuming.

```
ROUTING DETAIL OPTION:
1.  WORK CENTER SUMMARY TOTALS ONLY
2.  COMPONENT AND WORK CENTER DETAIL
OPTION(1)?
```

This prompt will allow you to select between a routing list summary (option 1), or list the detail of each subassembly going through each work center (option 2).

WORK ORDER NUMBER (ENTER 'N' FOR ASSEMBLY PART NUMBER PROMPT) ?

If you are creating an indented routing list on an existing work order, enter the work order number. The assembly part number, and quantity from the work order will be used to create the indented routing list.

If you are creating an indented routing list on a potential work order, enter an 'N'. The following prompts will appear:

ASSEMBLY PART NUMBER?
Enter the part number of the assembly whose components you wish to do an availability check upon.

QUANTITY?
Enter the quantity of the assembly desired.
COMPONENTS EFFECTIVE DATE?
Enter the date of the bill of material to use.

A message will appear for each level that is being processed. At the conclusion, an indented bill of material will appear for the assembly, listing all components.

Returns to WORK ORDER NUMBER?

Files Accessed

ASSEMB Assembly master file
IM Item master file
INVFIL Inventory Location file
ODF Order Demand file
OWOF Open Work Order file
POFIL Purchase Order Detail file
PSF Product structure file
WOSHT Work Order Allocation File
TRFIL Work Order Tracking File
VNDMAS Vendor Master File

Screen Format

Top of each page
Assembly part number
Assembly part number's description (DESC - IM)
Quantity on hand of assembly part number (QOH - IM)
Work Order number - if no work order number was entered, 'NONE' will be displayed.
Open work order quantity or quantity entered
Work order due date (WOPCD - OWOF) or Component effectivity date

Indented bill of material for each component displayed
Component part number of assembly (COMNO - PSF or SHTPN - WOSHT)

Source Code of component (SCODE - IM)
Unit of Measure of component (UOM - IM)
Quantity for one - for a work order availability check this will be the SHTQPA(Release 8) or WOQ/SHTISS+SHTQTY (ASK Release 6 or 7). If this is for a potential work order this will be the quantity per assembly times the yield.
Quantity Required - open work order quantity or quantity entered times the quantity for one
Sales order demand - (132 mode only) - the total ODF requirements (ODQTY minus ODSHP) thru the cutoff date
Pulled - the quantity available of this component. Calculated as quantity required minus quantity short.
Short - the number of components that are unavailable

Supply Information

Vendor number (VC - VNDMAS) for open purchase orders
Vendor name (VNDNAM- VNDMAS) for open purchase orders

Quantity due in - the quantity of the next scheduled receipt of a purchase order (POQSD+POQI - POFIL) or work order (WOQ-WOCQ-WOQS - OWOF) for this part.
Document type - if a supply is found for the short component, this will designate the type of supply found:
PO for an open purchase order
RI if parts are in receiving/inspection
WO if a scheduled work order exists
WP if a scheduled work order exists, kit list printed
FP if a firm planned work order exists
KT if a kitted work order exists
KP if a kitted work order exists, kit list printed
IN if an in-progress work order exists
PC if a partially completed work order exists

Date due in - the date of the next scheduled receipt.

For open work orders on short components that have been kitted:
Sequence number (TRSEQ - TRFIL)
Operation number (TRNUM - TRFIL)
Work Center (TRWC - TRFIL)
Quantity In the Operation (TRQTY - TRFIL)
Quantity Completed at the Operation (TRCAQTY - TRFIL)
Quantity Issued (TRCAQTY - TRFIL)

Second line of Indented bill for each component

Description of the component
Buyer code of the component (if 132 column) (BCODE - IM)
Lead time of the component (if 132 column) (FLT+ULT*qty)
Document number - The purchase order or work order number of the next scheduled receipt.

Indented Routing Summary

Work center number
Total set up hours accumulated through the work center
Total run hours accumulated through work center

Indented Routing Detail Report
Level - level the subassembly appears within the indented bill
Part number
Part description
Operation sequence number
Operation number
Quantity Required (from exploded bill)
Set-up Hours
Run Hours

Shortage Calculations

The quantity short within the LI,598 command is calculated as follows. The on hand inventory is derived from the quantity on hand of each component. A cutoff date is determined from the start date of the work order number entered, or in the case of a potential work order, the effectivity date entered. The sum of the work order requirements and the sales order requirements through the cutoff date is accumulated. The total requirements are deducted from on hand inventory which calculates an 'available inventory'. If the quantity required in the indented bill exceeds the available inventory, then this component is short.

MA,580 Maintain Routing Notes

The MA,580 is a block mode screen which will allow you to enter unlimited lines of text associated with a sequence number of a routing record. The notes are listed below each sequence in the Routing section of the shop paper command RE,361. You may also use 'heading' and 'trailing' notes, and supress certain notes for internal purposes.

You must have created the RTFDB.MDATABxx data base prior to using this command.

Prompts

The MA,580 screen is a VPLUS screen and utilizes the 'tab' key to move from field to field. Use F4 (accept) to process a newly entered part number or to use the scroll box. Use F2 (backward) or F3 (forward) to move in your memo pad thirteen lines at a time.

ACTION
Enter one of the following actions:
 L = list
 A = add (no memo pad entries are on file for this part)
 C = change (change or append new entries about this part)
 D = delete
 CO or O = copy

PART NUMBER:
Enter the part number. If you are doing any action other than an add, press the 'F4' key (accept) to display the existing data for this part.

SCROLL:
If you have more than fourteen lines of memo pad text associated with this part, enter a positive number in the scroll field to advance forward in the memo pad. For example, by entering 10 you will be advanced ten lines forward in the memo pad. Conversely, by entering -10 you will be advanced ten lines backward in the memo pad.

If you always want to go to the end of your memo pad to make additional notations, enter a 'C' for action, your part number, enter '999' in the scroll field and press 'F4'. You will be taken to the end of the parts memo pad.

EDIT
C = copy a line of text
D = delete a line of text
I = insert a blank line into your memo pad

OPERATION SEQUENCE NUMBER
This field is used to enter the text is to be associated with on the routing file. If you wish to create 'heading' notes that will print on the shop paper prior to any operations, enter a sequence number (ie. 1) that is less than the first sequence number on the routing.

PRINT
This is an optional field that you can use to supress notes on the shop paper. Enter an "N" in this field and the note will not be printed. The purpose of this is to allow you to keep internal notes on the routing record.

ROUTING NOTE TEXT
Enter an unlimited number of 60 character lines associated with this sequence number.

When you have completed your maintenance, press the F1 key to update the data base.

To exit, press F8 (more), and then F7 (exit).

Files Accessed

MEMOFIL	Routing memo pad file (updated)
IM	Item master file

RE,361 Print Shop Paper with Routing Notes

The Prompts and format of the RE,361 command are identical to that of the RE,351 command. The only exception is that the routing notes are interleaved in the Routing section of the Shop paper. Refer to the Manman documentation of RE,351 for any questions regarding the prompts within this command.

RE,598 Capacity Analysis Report

This command is used to combine the routings of more than one assembly part number. A large summary bill is created and the combined shop floor requirements for several final assemblies and subassemblies is created.
The routing list isavailable in a summary (one line per work center), or a detail format which lists each subassembly moving through the work center.

In addition, the user may choose to list the summary bill of material associated with the work order or potential work order. The user has the option of viewing all components or only short components of the indented bill of material. For short components, the command will list up to 9 open work orders or purchase orders scheduled. Open purchase orders for short components will list the vendor name and number. Open work orders that have been kitted, will list the operation status of the work order.

Prompts

Displays output options.
OPTION (3)?

LISTING OPTION:
1. LIST INDENTED ROUTING ONLY
2. LIST INDENTED ROUTING ONLY AND CALCULATE SHORTAGES
3. LIST INDENTED ROUTING AND INDENTED BILL
4. LIST INDENTED ROUTING AND INDENTED BILL WITH SHORT COMPONENTS ONLY
OPTION(1)?

If you select option number 1, only the indented routing list screen will be displayed. If you select option 2, the indented routing list will be printed, but the calculations to perform a multi-level component availability are performed, so that you can see the hours requirements on short components. If you select option 3 the indented routing list will be generated after printing the complete indented bill of material. If you select option 4 the indented routing list will be generated after printing the short components within the indented bill of material.
If you do not need to see the short components, then it is recommended that you run option 1, because the component availability options may be time consuming.

ROUTING DETAIL OPTION:
1. WORK CENTER SUMMARY TOTALS ONLY
2. COMPONENT AND WORK CENTER DETAIL
OPTION(1)?

This prompt will allow you to select between a routing list summary (option 1), or list the detail of each subassembly going through

each work center (option 2).

ASSEMBLY PART NUMBER?
Enter the part number of the assembly whose components you wish to do an availability check upon. If you wish to read in a series of part numbers and quantities enter a ^ (shift-6). Refer to the file input considerations below.

QUANTITY?
Enter the quantity of the assembly desired.

COMPONENTS EFFECTIVE DATE?
Enter the date of the bill of material to use.

ASSEMBLY PART NUMBER ('E' TO CONTINUE)?
Enter the next assembly part number

A message will appear for each level that is being processed. At the conclusion, an indented bill of material will appear for the assembly, listing all components.

Returns to ASSEMBLY PART NUMBER?

File Input Considerations

In lieu of a user entering several assembly part numbers and quantities, the RE,598 allows input from a sequential file. The file name is RE598FIL which should be placed in the home group of the user running the program. The file is an 80 character file. The part number is contained in positions 1 to 18 and the quantity is in positions 19 thru 27. The program will initiate reading the data from a file if you enter a ^ (shift-6) to the assembly part number prompt.

An example of the file characteristics would be:

```
:BUILD RE598FIL;REC=-80,20,F,ASCII;DISC=1000
```

The data would appear as follows:

```
:PRINT RE598FIL
851034            00000100
851035            00000200
```

Files Accessed

ASSEMB Assembly master file
IM Item master file
INVFIL Inventory Location file

ODF Order Demand file
OWOF Open Work Order file
POFIL Purchase Order Detail file
PSF Product structure file
WOSHT Work Order Allocation File
TRFIL Work Order Tracking File
VNDMAS Vendor Master File

Screen Format

Top of each page
Assembly part number
Assembly part number's description (DESC - IM)
Quantity on hand of assembly part number (QOH - IM)
Work Order number - if no work order number was entered, 'NONE' will be displayed.
Open work order quantity or quantity entered
Work order due date (WOPCD - OWOF) or Component effectivity date

Indented bill of material for each component displayed
Component part number of assembly (COMNO - PSF or SHTPN - WOSHT)
Source Code of component (SCODE - IM)
Unit of Measure of component (UOM - IM)
Quantity for one - for a work order availability check this will be the SHTQPA(Release 8) or WOQ/SHTISS+SHTQTY (ASK Release 6 or 7). If this is for a potential work order this will be the quantity per assembly times the yield.
Quantity Required - open work order quantity or quantity entered times the quantity for one
Sales order demand - (132 mode only) - the total ODF requirements (ODQTY minus ODSHP) thru the cutoff date
Pulled - the quantity available of this component. Calculated as quantity required minus quantity short.
Short - the number of components that are unavailable
Supply Information
Vendor number (VC - VNDMAS) for open purchase orders
Vendor name (VNDNAM- VNDMAS) for open purchase orders

Quantity due in - the quantity of the next scheduled receipt of a purchase order (POQSD+POQI - POFIL) or work order (WOQ-WOCQ-WOQS - OWOF) for this part.
Document type - if a supply is found for the short component, this will designate the type of supply found:
PO for an open purchase order
RI if parts are in receiving/inspection
WO if a scheduled work order exists
WP if a scheduled work order exists, kit list printed
FP if a firm planned work order exists
KT if a kitted work order exists
KP if a kitted work order exists, kit list printed
IN if an in-progress work order exists
PC if a partially completed work order exists

Date due in - the date of the next scheduled receipt.

For open work orders on short components that have been kitted:
Sequence number (TRSEQ - TRFIL)
Operation number (TRNUM - TRFIL)
Work Center (TRWC - TRFIL)
Quantity In the Operation (TRQTY - TRFIL)
Quantity Completed at the Operation (TRCAQTY - TRFIL)
Quantity Issued (TRCAQTY - TRFIL)

Second line of Indented bill for each component
Description of the component
Buyer code of the component (if 132 column) (BCODE - IM)
Lead time of the component (if 132 column) (FLT+ULT*qty)
Document number - The purchase order or work order number of the next scheduled receipt.

Indented Routing Summary
Work center number
Total set up hours accumulated through the work center
Total run hours accumulated through work center

Indented Routing Detail Report
Level - level the subassembly appears within the indented bill
Part number
Part description
Operation sequence number
Operation number
Quantity Required (from exploded bill)
Set-up Hours
Run Hours

Shortage Calculations

The quantity short within the LI,598 command is calculated as follows. The on hand inventory is derived from the quantity on hand of each component. A cutoff date is determined from the start date of the work order number entered, or in the case of a potential work order, the effectivity date entered. The sum of the work order requirements and the sales order requirements through the cutoff date is accumulated. The total requirements are deducted from on hand inventory which calculates an 'available inventory'. If the quantity required in the indented bill exceeds the available inventory, then this component is short.

UT,592 Routing Audit Trail Utility

This command is used to generate an audit trail of changes made to routing file. The utility allows a report to be generated, and optionally, the changes to be kept in a data base for retrieval by LI,592.

Prompts

```
RUN OPTION?
1.  BUILD ROUTING SNAPSHOT FILE
2.  EXECUTE ROUTING AUDIT TRAIL AND CREATE NEW ROUTING SNAPSHOT FILE
OPTION(2)? 2
```

If you are running UT,592 for the first time, select option 1. This will create a snapshot (condensed copy) of your existing product structure file to be used in subsequent runs of UT,592.

Select option 2 to generate an audit trail of bill of material adds/changes/deletions made since the last run of UT,592

If you select Option 2, the following prompts appear:

Displays output options.
OPTION (0)?

DO YOU WANT TO KEEP AUDIT TRAIL HISTORY (N/Y)?
If you want to generate a bill of material audit trail report, respond 'N'. If you wish to keep bill of material changes in the data base for use with LI,592, respond 'Y'.

```
GENERATE AN AUDIT TRAIL ON:
1.  ALL EXISTING ROUTINGS
2.  ALL EXISTING ROUTINGS AND NEWLY ADDED ROUTINGS
3.  DELETED ROUTINGS ONLY
OPTION(1)?
```

Selecting option 1 (default) will create an audit trail of existing routings (routings that existed in the last run of this utility).

Option 2 will create an audit trail on all routing maintenance performed.

Option 3 will capture deleted routings only.

The number of routing records selected is displayed.
The number of routing snapshot records selected is displayed.

The number of adds/changes/deletes to routings is displayed.
The number of adds/changes/deletes to each routing sequence (entry) is displayed.

The Utility will then take a new snapshot of the product structure file for the next run of UT,592.

Files Accessed

IM Item master file
RTFIL Routing file

RTAAUD Routing Audit trail file
RTSFIL Routing Snapshot file

Screen Format

Top line

part number
Description of part number (DESC - IM)
Primary code of part number

For each routing step displayed
Line one
- Sequence number
- Operation number
- Work Center
- Tool number
- Set up hours
- Run Hours - This will be the either the standard hours, elapsed hours, machine hours, proposed labor hours, or proposed machine hours in that priority. For example, if a routing sequence was added or deleted, the standard hours will be displayed. If a sequence was changed, and the standard hours remained the same, but the elapsed hours changed, then the elapsed hours will be displayed
- Transit hours
- Effective date

Line two
- Operation Description
- Repetitive count point
- Repetitive device number
- Obsolete date

Difference - This field indicates the difference between todays routing file, versus yesterdays snapshot of the routing file.

ADD> this routing sequence was added.

<DEL this routing sequence was deleted

<CHG> a difference between one of the fields in the routing records were found. If more than one difference was found, only one change message will print in the priority listed below

- H/U - hours per unit flag
- WC - work center change
- NUM - operation number change
- TOL - tool number
- SU - set up hours
- HRS - labor hours
- TRN - transit hours
- SSU - elapsed set up hours
- SHR - elapsed run hours
- MSU - machine set up hours
- MHR - machine run hours
- PSU - proposed set up hours
- PHR - proposed run hours

RE,596 Tracking File to Routing Comparison Report

This command is used to compare the standard routing of an assembly part number to the actual hours on work order. It will also provide a side by side listing to capture any routing steps that were added or deleted. The report is designed to pinpoint the source of methods change variance and to establishing new routing rates for the coming year.

Prompts

Displays output options.
OPTION (3)?

ENTER COMPARISON/SORT OPTION:
1) BY SEQUENCE NUMBER
2) BY OPERATION NUMBER
3) BY WORK CENTER
OPTION(1)?

The comparison option determines how the program will determine how routing steps have been added, changed or deleted. The recommended sort sequence is by sequence number. If you would care to view the routing records sorted by operation number, then enter a '2' for the sort sequence. To view the routing records sorted by work center number, enter a '3'.

REPORT OPTION:
1) WORK ORDERS BY DATE - LIST ALL SEQUENCES
2) WORK ORDERS BY DATE - LIST DIFFERENCES ONLY
3) ENTER A SELECTED WORK ORDER
OPTION(2)?
If you wish to review the differences between a single work order and its associated routings, enter option 3. Options 1 and 2 are designed for analyzing a series of work orders for a date range. Option 1, will list all of the sequences of the routing, and Option 2, will list only differences between the routing and the work order tracking file.

If you entered option 1 or 2, then the following 2 prompts appear:

STARTING WORK ORDER START DATE?
ENDING WORK ORDER START DATE?

Enter a range of start dates to select the work orders to compare.

If you entered option 3, the following prompt appears:

WORK ORDER NUMBER?
Enter the work order number to compare to its standard routing.

The routing records for the assembly part number is listed on the left hand side of the report. The tracking file entries associated with the work order are listed on the right side of the report.

Any changes found between the two are highlighted in the 'DIF' column.

A description of the messages in the DIF column are described in the screen format section.

Files Accessed

IM Item master file
OWOF Work order file
RTFIL Routing file
TRFIL Work Order Tracking File
WCFIL Work center file
WOTR Work Order Tracking Description file

Screen Format

Top of each page

First assembly part number
Effectivity date of assembly's routing record based on WO start date
Work Order Number
Work Order start date
Description of first assembly part number (DESC - IM)
Primary code of first assembly part number
Work Order Quantity Completed
Work Order Quantity Scrapped.

For each routing step displayed - 132 column view
Line one
- Sequence number
- Operation number
- Work Center
- Tool number
- Set up hours
- Standard Run Hours
- Transit hours
- Effective date

Line two
- Operation Description
- Repetitive count point
- Repetitive device number

Obsolete date

Difference - This field indicates whether a component has been added, changed, or deleted between the two lists of components.

ADD> the routing step displayed was added to the work order. This routing step did not appear on the standard routing.

<DEL the routing step displayed was deleted from the work order. This routing step is in the standard routing, but did not appear in the work order tracking file.

<CHG> a difference between one of the fields in the routing and work order tracking file was found. If more than one difference was found, only one change message will print in the priority listed below:

WC - work center change
NUM - operation number change
TOL - tool number
SU - set up hours
HRS - labor hours

UT,595 Routing Comparison Utility

This command is used to compare two different sets of routing records. The routing records for one assembly part number may be compared against the routing records for a different assembly part number or routing records for the same assembly part number may be compared at different effectivity dates primary codes, or in different data bases.

Prompts

Displays output options.
OPTION (3)?

COMPARE ROUTINGS IN DIFFERENT DATA BASES(N)?

If the two routing records you will be comparing are not in different data base numbers, press return. If you would like to compare routing records from two different data bases, enter 'Y'. If you enter 'Y' the following prompts appear:

ENTER THE ORIGIN OF THE DATA BASES:
1. MANUFACTURING DB TO MANUFACTURING DB
2. ENGINEERING DB TO ENGINEERING DB
3. MANUFACTURING DB TO ENGINEERING DB
4. ENGINEERING DB TO MANUFACTURING DB
OPTION(1)?

If you will be comparing routing records between two manufacturing data bases, enter 1. If you will be comparing bills between two engineer data bases, enter 2. To compare a routing record between manufacturing and engineer, enter 3 or 4.

FIRST DATA BASE NUMBER(xx) ?

SECOND DATA BASE NUMBER(xx) ?

Enter the data base number the first assembly resides in, and the data base number the second assembly resides in. The default is the data base number you are currently in.

ENTER COMPARISON/SORT OPTION:
1) BY SEQUENCE NUMBER
2) BY OPERATION NUMBER
3) BY WORK CENTER
OPTION(1)?
The comparison option determines how the program will determine how routing steps have been added, changed or deleted. The recommended sort sequence is by sequence number. If you would care to view the routing records sorted by operation number, then enter a '2' for the sort sequence. To view the routing

records sorted by work center number, enter a '3'.

ENTER LISTING OPTION:
1) LIST ALL SEQUENCES - VIEW STANDARD HOURS
2) LIST ALL SEQUENCES - VIEW ELAPSED HOURS
3) LIST ALL SEQUENCES - VIEW MACHINE HOURS
4) LIST ALL SEQUENCES - VIEW PROPOSED LABOR HOURS
5) LIST ALL SEQUENCES - VIEW PROPOSED MACHINE HOURS
6) LIST DIFFERENCES ONLY - VIEW STANDARD HOURS
7) LIST DIFFERENCES ONLY - VIEW ELAPSED HOURS
8) LIST DIFFERENCES ONLY - VIEW MACHINE HOURS
9) LIST DIFFERENCES ONLY - VIEW PROPOSED LABOR HOURS
10) LIST DIFFERENCES ONLY - VIEW PROPOSED MACHINE HOURS
OPTION(1)?
The listing option allows you to select whether you want to view all of the routing records you are comparing or simply any differences found. Although the utility will find and display differences in any of the hours fields, there is only one set of hours fields displayed on the report.
is totaled as well as any cost difference between the two.

FIRST ROUTING PART NUMBER?
Enter the part number of the first assembly you wish to compare. If you are comparing an assembly at different effectivity dates, this is assumed to be the 'old' version of the assembly.

PRIMARY CODE (1)?
Enter the primary code of the routing record. The default is always a '1'.

DATE?
If you use effectivity and obsolete dates within your routing records, you may enter an effective date here. The default is to use todays date.

SECOND ASSEMBLY PART NUMBER?
Enter the part number of the second assembly you wish to compare with the first. Pressing C/R defaults to the first assembly part number.

PRIMARY CODE (1)?
Enter the primary code of the routing record. The default is always a '1'.

DATE?
If you use effectivity and obsolete dates within your routing records, you may enter an effective date here. The default is to use todays date.

Each of the routing records from both assembly part numbers are displayed side by side. Any changes found between the two sets of routing records are highlighted in the 'DIF' column. A description of the messages in the DIF column are described in the screen format section.

Files Accessed

IM Item master file
RTFIL Routing file
WCFIL Work center file

Screen Format

Top of each page

First assembly part number
Effectivity date of first assembly's routing record
Second assembly part number
Effectivity date of second assembly's routing record
Description of first assembly part number (DESC - IM)
Primary code of first assembly part number
Description of second assembly part number (DESC - IM)
Primary code of second assembly part number

For each routing step displayed - 80 column view
Line one
- Sequence number
- Operation number
- Work Center
- Set up hours
- Run Hours - This will be the either the standard hours, elapsed hours, machine hours, proposed labor hours, or proposed machine hours depending on the response the the 'listing option'.

Line two
- Operation Description
- Tool number
- Transit Hours

For each routing step displayed - 132 column view
Line one
- Sequence number
- Operation number
- Work Center
- Tool number
- Set up hours

Run Hours - This will be the either the standard hours, elapsed hours, machine hours, proposed labor hours, or proposed machine hours depending on the response the the 'listing option'.
Transit hours
Effective date

Line two
Operation Description
Repetitive count point
Repetitive device number
Obsolete date

Difference - This field indicates whether a component has been added, changed, or deleted between the two lists of components.

ADD> the routing sequence appears in the second assembly part number but not the first, therefore this routing step was added.

<DEL the component appears in the first assembly part number but not the second, therefore this component was deleted.

<CHG> a difference between one of the fields in the routing records were found. If more than one difference was found, only one change message will print in the priority listed below

- H/U - hours per unit flag
- WC - work center change
- NUM - operation number change
- TOL - tool number
- SU - set up hours
- HRS - labor hours
- TRN - transit hours
- SSU - elapsed set up hours
- SHR - elapsed run hours
- MSU - machine set up hours
- MHR - machine run hours
- PSU - proposed set up hours
- PHR - proposed run hours

```
COMMAND (TEST,MG,60)? L,592                                          *


List Routing File Audit Trail  (v1.01)


ENTER DESIRED OUTPUT OPTION:
  0. LINE PRINTER
  1. TERMINAL, 132 COLUMNS
  2. ENTER LOGICAL DEVICE/DISC FILE, 132 COLUMNS
  3. TERMINAL
OPTION (3)? 3

PART NUMBER? 851043-06         *

851043-06          1043 LVR, ASTRO 40 PLN         M

PRIMARY CODE(1)?

     1 RECORDS SELECTED

FRI, NOV 24, 2000,  2:34 PM     ROUTING FILE AUDIT TRAIL              PAGE:  1
                                ========================
851043-06          1043 LVR, ASTRO 40 PLN         PC:   1

SEQ NO                          D   SET           TRAN   EFF/   D
/ OPER  OPER  WORK    TOOL   C E   UP      RUN    -SIT   OBS    I
DESCRIP  NO   CENT   NUMBER  P V  HOURS   HOURS   HOURS  DATE   F     DATE
------- ----  ----   ------  - -  -----   -----   -----  ----   -   --------
300    300    C2                          28.0000U      00/00/00 WC   11/24/00
    RIVT. VENT TO DOME                                  99/99/99 < OLD VALUES
300    300    02                          28.0000U      00/00/00
    RIVT. VENT TO DOME                                  99/99/99 < NEW VALUES


PART NUMBER? E                 *
```

```
*****************************************************************************
*                                                                           *
*    Example of detail format of the Indented Routing List LI,598.  All     *
*    levels of the final assembly are blown through and the total capacity  *
*    requirements are calculated.  The hours for the 'short' components     *
*    only are displayed as well.                                            *
*                                                                           *
*****************************************************************************


COMMAND (TEST,MG,60)? L,598                                          *


Multi-Level Routing List    (v1.02)


ENTER DESIRED OUTPUT OPTION:
 -2. VIEW PROMPTS, NO ACTION
 -1. STREAM JOB FILE
  0. LINE PRINTER
  1. TERMINAL, 132 COLUMNS
  2. ENTER LOGICAL DEVICE/DISC FILE, 132 COLUMNS
  3. TERMINAL
OPTION (3)? 1

LISTING OPTION:
1.  LIST INDENTED ROUTING ONLY
2.  LIST INDENTED ROUTING ONLY AND CALCULATE SHORTAGES
3.  LIST INDENTED ROUTING AND INDENTED BILL
4.  LIST INDENTED ROUTING AND INDENTED BILL WITH SHORT COMPONENTS ONLY
OPTION(1)? 2

ROUTING DETAIL OPTION:
1.  WORK CENTER SUMMARY TOTALS ONLY
2.  COMPONENT AND WORK CENTER DETAIL
OPTION(1)? 2

IF A WORK ORDER EXISTS FOR A SUBASSEMBLY:
1. CONTINUE TO USE THE PART'S PRIMARY ROUTING
2. USE THE WORK ORDER'S TRACKING FILE ENTRIES
OPTION(1)? 1


WORK ORDER NUMBER (ENTER 'N' FOR ASSEMBLY PART NUMBER PROMPT? N         *

ASSEMBLY PART NUMBER? 851034            *

QUANTITY? 100

COMPONENTS EFFECTIVE DATE?         *

PROCESSING  18 RECORDS, LEVEL  0
PROCESSING  23 RECORDS, LEVEL  1
PROCESSING  18 RECORDS, LEVEL  2
PROCESSING  15 RECORDS, LEVEL  3
PROCESSING   7 RECORDS, LEVEL  4
PROCESSING   1 RECORDS, LEVEL  5
```

MULTI-LEVEL ROUTING LIST

PART NUMBER: 851034 ASTROTURN LOUVER BROWN QOH: 10072.000
WORK ORDER : NONE WO STATUS: QUANTITY: 100.000 DUE DATE: 06/02/00

L V	PART NUMBER	DESCRIPTION	OPER SEQ	OPER NUM	OPERATION DESCRIP	QUANTITY REQUIRED	SET-UP HOURS	RUN HOURS	QTY SHORT	SET-UP SHORT	RUN SHORT
WORK CENTER: 02		70 TON NIAGARA PRESS									
3	855394	TURBINE BASE BRN	200	200	PIERCE	100	.00	.38	100	.00	.38
3	855394	TURBINE BASE BRN	200	200	PIERCE	100	.00	.38	100	.00	.38
3	855395	CROWN PLATE BRN	210	210	FORM 1	100	.00	.34	0	.00	.00
TOTAL FOR WORK CENTER: 02							.00	1.11		.00	.77
WORK CENTER: 03		110 TON BROWN & BOGG									
5	855397	3 IN COLLAR BLANK BRN	100	100	SHEAR 1	100	1.50	.10	100	1.50	.10
4	855396	4.5 IN COLLAR BLANK BRN	100	100	SHEAR 1	100	.00	.11	100	.00	.11
3	855397	3 IN COLLAR BLANK BRN	100	100	SHEAR 1	100	1.50	.10	100	1.50	.10
3	855398	TURBINE FINS BRN	210	210	FORM 1	2400	.00	.84	0	.00	.00
TOTAL FOR WORK CENTER: 03							3.00	1.15		3.00	.31
WORK CENTER: 05		30 TON BLOW PRESS									
1	852120-12	666 N/AF HI DOME ROOF FLS	260	260	STAMP	100	.00	3.43	0	.00	.00
TOTAL FOR WORK CENTER: 05							.00	3.43		.00	.00
WORK CENTER: 07		15TON ROUS #1A PRESS									
3	855379	.050 ANGLES TURBINE	370	370	SHEAR FORM	100	.00	.06	100	.00	.06
TOTAL FOR WORK CENTER: 07							.00	.06		.00	.06
WORK CENTER: 10		ELECTRIC SHEAR									
3	854820	3 IN COLLAR ROLL BRN	320	320	ROLL	100	.00	.31	0	.00	.00
3	855379	.050 ANGLES TURBINE	100	100	SHEAR 1	100	.00	.20	100	.00	.20
3	855394	TURBINE BASE BRN	100	100	SHEAR 1	100	.00	.25	100	.00	.25
3	855394	TURBINE BASE BRN	100	100	SHEAR 1	100	.00	.25	100	.00	.25
3	856053	9X38 3/8 BRN	100	100	SHEAR 1	100	.00	.33	0	.00	.00
2	854802	4.5 IN COLLAR ROLL BRN	320	320	ROLL	100	.00	.31	100	.00	.31
TOTAL FOR WORK CENTER: 10							.00	1.66		.00	1.02
WORK CENTER: 13		90 TON BLISS PRESS									
4	854814	3 IN COLLAR PIERCE BRN	360	360	PIERCE FORM	100	.00	.23	0	.00	.00
3	854796	4.5 IN COLLAR PIERCE BRN	360	360	PIERCE/FORM	100	.00	.28	0	.00	.00
2	854814	3 IN COLLAR PIERCE BRN	360	360	PIERCE FORM	100	.00	.23	50	.00	.12
TOTAL FOR WORK CENTER: 13							.00	.74		.00	.12
WORK CENTER: 24		RIVET MACHINE									
2	854778	M TO U BRKT ASS	300	300	RIVET M TO U BRKT.	100	.00	.59	100	.00	.59
1	854808	RIVET COLLAR 4 1/2 BRN	310	310	RIVT BRKT. TO COLLAR	100	.00	1.11	100	.00	1.11
TOTAL FOR WORK CENTER: 24							.00	1.70		.00	1.70
WORK CENTER: 26		RIVET MACHINE									
3	854772	BRKTS TO SUPPORT RING	300	300	RIVET BRKT. TO RING	100	.00	.67	0	.00	.00
2	854826	RIVET 3" COLLAR BRN	300	300	RIVET COLLAR	100	.00	.45	0	.00	.00
1	854808	RIVET COLLAR 4 1/2 BRN	300	300	RIVET COLLAR	100	.00	.45	100	.00	.45
TOTAL FOR WORK CENTER: 26							.00	1.58		.00	.45
GRAND TOTAL:							3.00	10.90		3.00	4.40

```
MG,MA,580                    MAINTAIN ROUTING NOTES
06/02/00                                              Action: CHANGE________  ________
--------------------------------------------------------------------------------
Part Number: 851028-12          ____________________
Memo Text Lines   1 -   8 of   8                          Scroll:                ___   ___    ___

Edit Oper Seq Prnt                Routing Note Text
---- -------- ---- ------------------------------------------------------------
     140           LAY PARTS WITH PRISMS DOWN DURING FABRICATION____ _________  __  ____________________________________________________________
     140           DO NOT DESTATICIZE PARTS UNTIL FINISHED_____ _________  __  ____________________________________________________________
     230           USE CARBOARD SEPERATOR BETWEEN STACKS____ _________  __  ____________________________________________________________
     900           INSERT COUNTING TABS FOR EVERY 25TH PART____ _________  __  ____________________________________________________________
     900           PACK USING 1 24" X 48" SKID ON TWO 24 X 48 PADS____ _________  __  ____________________________________________________________
                   64 SQUARE FEET OF VISQUEEN____ _________  __  ____________________________________________________________
                   USE 21 3" CORNER BOARDS____ _________  __  ____________________________________________________________
                   PARTS MUST BE PACKED WITH 2 DESICCANT BAGS PER SKID____ _________  __  ____________________________________________________
                   >____ _________  __  ____________________________________________________________
                   >____ _________  __  ____________________________________________________________
                   >____ _________  __  ____________________________________________________________
                   >____ _________  __  ____________________________________________________________
                   >____ _________  __  ____________________________________________________________
                   >____ _________  __  ____________________________________________________________
                     (Edit: D=Delete, I=Insert, C=Copy)
```

```
COMMAND (TEST,MG,60)? RE,598                                          *


Multiple Assembly Indented Routing List       (V1.02)

ENTER DESIRED OUTPUT OPTION:
  0. LINE PRINTER
  1. TERMINAL, 132 COLUMNS
  2. ENTER LOGICAL DEVICE/DISC FILE, 132 COLUMNS
OPTION (0)? 1

LISTING OPTION:
1.  LIST INDENTED ROUTING ONLY
2.  LIST INDENTED ROUTING ONLY AND CALCULATE SHORTAGES
3.  LIST INDENTED ROUTING AND INDENTED BILL
4.  LIST INDENTED ROUTING AND INDENTED BILL WITH SHORT COMPONENTS ONLY
OPTION(1)? 1

ROUTING DETAIL OPTION:
1.  WORK CENTER SUMMARY TOTALS ONLY
2.  COMPONENT AND WORK CENTER DETAIL
OPTION(1)? 2

IF A WORK ORDER EXISTS FOR A SUBASSEMBLY:
1. CONTINUE TO USE THE PART'S PRIMARY ROUTING
2. USE THE WORK ORDER'S TRACKING FILE ENTRIES
OPTION(1)?

ASSEMBLY PART NUMBER? 851034           *

QUANTITY? 100

ASSEMBLY PART NUMBER ('E' TO CONTINUE)? 851035           *

QUANTITY? E

ASSEMBLY PART NUMBER ('E' TO CONTINUE)? 851035           *

QUANTITY? 200

ASSEMBLY PART NUMBER ('E' TO CONTINUE)? E                *

PROCESSING    28 COMPONENTS
PROCESSING    32 COMPONENTS
PROCESSING    26 COMPONENTS
PROCESSING    18 COMPONENTS
PROCESSING     9 COMPONENTS


MAXIMUM THAT CAN BE MADE (FIRST LEVEL):        .00
MAXIMUM THAT CAN BE MADE (ALL LEVELS) :        .00

THIS REPORT IS FOR THE FOLLOWING ASSEMBLIES:

851034                  100.00
851035                  200.00
```

L V	PART NUMBER	DESCRIPTION	OPER SEQ	OPER NUM	OPERATION DESCRIP	QUANTITY REQUIRED	SET-UP HOURS	RUN HOURS	QTY SHORT	SET-UP SHORT	RUN SHORT
WORK CENTER: 02											
1	855331	TURBINE BASE PLN	200	200	PIERCE	200	.00	.77	0	.00	.00
1	855332	CROWN PLATE PLN	210	210	FORM 1	400	.00	1.38	0	.00	.00
1	855394	TURBINE BASE BRN	200	200	PIERCE	200	.00	.77	0	.00	.00
1	855395	CROWN PLATE BRN	210	210	FORM 1	100	.00	.34	0	.00	.00
TOTAL FOR WORK CENTER: 02							.00	3.26		.00	.00
WORK CENTER: 03											
1	855333	4.5 IN COLLAR BLANK PLN	100	100	SHEAR 1	200	.00	.22	0	.00	.00
1	855335	TURBINE FINS PLN	210	210	FORM 1	4800	.00	1.67	0	.00	.00
1	855396	4.5 IN COLLAR BLANK BRN	100	100	SHEAR 1	100	.00	.11	0	.00	.00
1	855397	3 IN COLLAR BLANK BRN	100	100	SHEAR 1	200	1.50	.20	0	.00	.00
1	855398	TURBINE FINS BRN	210	210	FORM 1	2400	.00	.84	0	.00	.00
TOTAL FOR WORK CENTER: 03							1.50	3.04		.00	.00
WORK CENTER: 07											
1	855379	.050 ANGLES TURBINE	370	370	SHEAR FORM	500	.00	.32	0	.00	.00
TOTAL FOR WORK CENTER: 07							.00	.32		.00	.00
WORK CENTER: 10											
1	854802	4.5 IN COLLAR ROLL BRN	320	320	ROLL	100	.00	.31	0	.00	.00
1	854820	3 IN COLLAR ROLL BRN	320	320	ROLL	100	.00	.31	0	.00	.00
1	854868	4.5 IN COLLAR ROLL PLN	320	320	ROLL	200	.00	.63	0	.00	.00
1	854886	3 IN COLLAR ROLL PLN	320	320	ROLL	200	.00	.63	0	.00	.00
1	855331	TURBINE BASE PLN	100	100							

```
COMMAND (TEST,MG,60)? RE,361                                          *
Print Shop Paper                  (v1.01)

ENTER DESIRED OUTPUT OPTION:
  0. LINE PRINTER
  1. TERMINAL, 132 COLUMNS
  2. ENTER LOGICAL DEVICE/DISC FILE, 132 COLUMNS
OPTION (0)? 1

INPUT LOCATION/LOT FOR ALL PARTS FROM INVENTORY LOCATION? A         *

ENTER DESIRED ROUTING HOUR OPTION:
  1.  STANDARD HOURS.
  2.  SCHEDULING HOURS.
OPTION (1)? 1

ENTER DESIRED SORT OPTION:
  1.  SORT BY PART NUMBER.
  2.  SORT BY PRIME INVENTORY LOCATION.
OPTION? 1


WORK ORDER? 2603      *

RE,351,1.MDATAB60  TEST COMPANY INC.            DIST:BYRNS   .BYRNS   .TEST
FRI, JUN  2, 2000, 10:54 AM      MANUFACTURING ORDER              PAGE NO:    1
                                 ===================
                                                     WORK ORDER NO: 2603
                                                    WORK ORDER REV:
  PART NUMBER: 851028-12            IM REV:      1028 LVR AV 11 X 5 5/8

  PLANNER: 04

  ORDER QUANTITY:     100.00   START DATE: 11/29/00   PRMSD CMPL DATE: 12/01/00

================================BILL OF MATERIAL================================

  COMPONENT PART NO    DESCRIPTION                      SEQ   UM  SC  QTY REQD
  ------------------   ------------------------------  -----  --  -- -----------
 *12114                SVC 12-11 X 5 5/8                900  EA  B      100.000
 *853927               11X5-5/8 BLANK                   140  EA  M     1200.000
 *853949               11X5-5/8 SCREEN                  900  EA  M     1200.000

==================================ROUTING=====================================

 SEQ NO  OPER  OPER DESCRIPTION      TOOL NO   W/C NO  S/U HRS  UNIT/HR  TTL HRS
 ------ ------ -------------------- ---------- ------  -------  -------  -------
    140 OP140  LOUVER               8          05         .000     33.3     3.00
               LAY PARTS WITH PRISMS DOWN DURING FABRICATION
               DO NOT DESTATICIZE PARTS UNTIL FINISHED
    150 OP150  NCH. & PRC.          9          02         .000     44.0     2.27
    230 OP230  FOLD                 14         02         .000     35.0     2.86
               USE CARBOARD SEPERATOR BETWEEN STACKS
    280 OP280  FLATTEN              15         02         .000     28.0     3.57
    900 OP900  ASS./PK.                        35         .000     43.0     2.33
               INSERT COUNTING TABS FOR EVERY 25TH PART
               PACK USING 1 24" X 48" SKID ON TWO 24 X 48 PADS
               64 SQUARE FEET OF VISQUEEN
               USE 21 3" CORNER BOARDS
               PARTS MUST BE PACKED WITH 2 DESICCANT BAGS PER SKID
```

```
COMMAND (TEST,MG,60)? U,592                                    *


Routing File Audit Trail Utility  (v1.01)


RUN OPTION?
 1. BUILD ROUTING SNAPSHOT FILE
 2. EXECUTE ROUTING AUDIT TRAIL AND CREATE NEW ROUTING SNAPSHOT FILE
OPTION(2)? 99



ENTER DESIRED OUTPUT OPTION:
  0. LINE PRINTER
  1. TERMINAL, 132 COLUMNS
  2. ENTER LOGICAL DEVICE/DISC FILE, 132 COLUMNS
OPTION (0)? 1


DO YOU WANT TO KEEP AUDIT TRAIL HISTORY (N/Y)? N *


GENERATE AN AUDIT TRAIL ON:
 1. ALL EXISTING ROUTINGS
 2. ALL EXISTING ROUTINGS AND NEWLY ADDED ROUTINGS
 3. DELETED ROUTINGS ONLY
OPTION(1)? 1


  3206 RTFIL RECORDS SELECTED    2:26 PM
  3205 SNAPSHOT RECORDS SELECTED    2:26 PM


UT,592  .MDATAB60  TEST COMPANY INC.                                   REQUESTOR: BYRNS   .BYRNS   .TEST

FRI, NOV 24, 2000,  2:26 PM                    ROUTING FILE AUDIT TRAIL                          PAGE:  1
                                               ========================
SEQ NO                          D   SET          TRAN   EFF/   D   SEQ NO                        D  SET          TRAN   EFF/
/ OPER  OPER  WORK    TOOL   C E   UP     RUN    -SIT   OBS    I   / OPER  OPER  WORK    TOOL   C E  UP     RUN    -SIT   OBS
DESCRIP  NO   CENT   NUMBER  P V  HOURS  HOURS  HOURS  DATE   F   DESCRIP  NO   CENT   NUMBER  P V HOURS  HOURS  HOURS  DATE
------- ----  ----   ------  - -  -----  -----  -----  ----   -   ------- ----  ----   ------  - - -----  -----  -----  ----

851043-06         1043 LVR, ASTRO 40 PLN         PC:   1
300    300    C2                       28.0000U      00/00/00<WC >300    300    02                     28.0000U      00/00/00
RIVT. VENT TO DOME                                   99/99/99     RIVT. VENT TO DOME                                 99/99/99

853968            FRONT 33WS                     PC:   1
110    100    C1      NXT                 .0000U      00/00/00<DEL
INDENT AND CRIMP                                     99/99/99

1234567           TEST PART                      PC:   1
                                                             ADD>25     20     01      NXT MACH           .0000U      00/00/00
                                                                 CRIMP                                              99/99/99
1234567           TEST PART                      PC:   1
                                                             ADD>45     30     C1      PAINT ROO          .0000U      00/00/00
                                                                 PAINT                                              99/99/99
NUMBER OF ROUTINGS WITH ADDITIONS =    1
NUMBER OF ROUTINGS CHANGED =    1
NUMBER OF ROUTINGS WITH DELETIONS =    1
NUMBER OF SEQUENCES ADDED =     2
NUMBER OF SEQUENCES CHANGED =     1
NUMBER OF SEQUENCES DELETED =     1
ROUTING SNAPSHOT COMPLETE    2:26 PM

COMMAND (TEST,MG,60)? E                                        *
```

```
*****************************************************************************
*                                                                           *
*    Example of the 80 column view of the Routing Comparison Utility.       *
*    A 132 column view is also available which lists addtional fields.      *
*                                                                           *
*****************************************************************************



COMMAND (TEST,MG,60)? U,595                                          *


Routing Comparison Utility (v1.01)


ENTER DESIRED OUTPUT OPTION:
  0. LINE PRINTER
  1. TERMINAL, 132 COLUMNS
  2. ENTER LOGICAL DEVICE/DISC FILE, 132 COLUMNS
  3. TERMINAL
OPTION (3)? 3

COMPARE ROUTINGS IN DIFFERENT DATABASES(N)?   *

ENTER COMPARISON/SORT OPTION:
 1. BY SEQUENCE NUMBER
 2. BY OPERATION NUMBER
 3. BY WORK CENTER
OPTION(1)? 1

LISTING OPTION:
 1. LIST ALL SEQUENCES    - VIEW STANDARD HOURS
 2. LIST ALL SEQUENCES    - VIEW ELAPSED HOURS
 3. LIST ALL SEQUENCES    - VIEW MACHINE HOURS
 4. LIST ALL SEQUENCES    - VIEW PROPOSED LABOR HOURS
 5. LIST ALL SEQUENCES    - VIEW PROPOSED MACHINE HOURS
 6. LIST DIFFERENCES ONLY - VIEW STANDARD HOURS
 7. LIST DIFFERENCES ONLY - VIEW ELAPSED HOURS
 8. LIST DIFFERENCES ONLY - VIEW MACHINE HOURS
 9. LIST DIFFERENCES ONLY - VIEW PROPOSED LABOR HOURS
10. LIST DIFFERENCES ONLY - VIEW PROPOSED MACHINE HOURS
OPTION(1)? 1


FIRST ROUTING PART NUMBER? 851028-12         *

  1028 LVR AV 11 X 5 5/8           (CT)    SOURCE: M     REV:
PRIMARY CODE (1)?
DATE?         *


SECOND ROUTING PART NUMBER? 851029-12         *

  1029 LVR AV 16 X 5 5/8           (CT)    SOURCE: M     REV:
PRIMARY CODE (1)?
DATE?         *
```

ROUTING COMPARISON

851028-12 AS OF:06/02/00 1028 LVR AV 11 X 5 5/8 PC: 1						851029-12 AS OF:06/02/00 1029 LVR AV 16 X 5 5/8 PC: 1					
SEQ NO/ OP DESC	OPER NO	WORK CENT	SET UP HRS/TOOL	RUN/TRAN HOURS	DIF	SEQ NO/ OP DESC	OPER NO	WORK CENT	SET UP HRS/TOOL	RUN/TRAN HOURS	
140 LOUVER	OP140	05	8	33.3300U<SHR>		140 LOUVER	OP140	05	8	29.5400U	
150 NCH. & PRC.	OP150	02	9	44.0000U	OK	150 NCH. & PRC.	OP150	02	9	44.0000U	
230 FOLD	OP230	02	14	35.0000U<TOL>		230 FOLD	OP230	02	10	35.0000U	
280 FLATTEN	OP280	02	15	28.0000U<TOL>		280 FLATTEN	OP280	02	11	28.0000U	
900 ASS./PK.	OP900	35		43.0000U<DES>		900 ASS./PACK	OP900	35		43.0000U	