

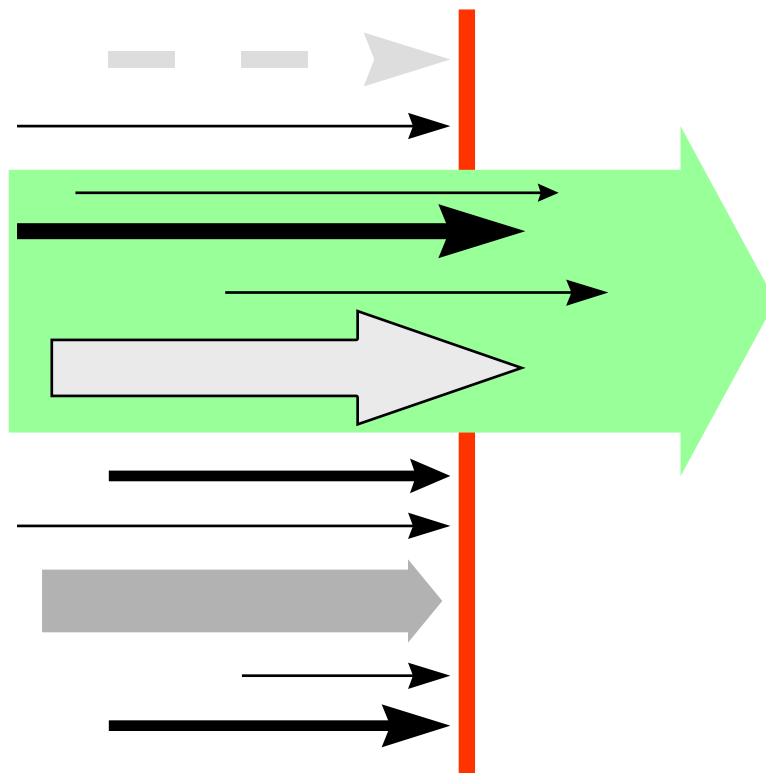
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Total Equipment Productivity

T.E.P Application (version 2.0)

User Guide

Display Device Group



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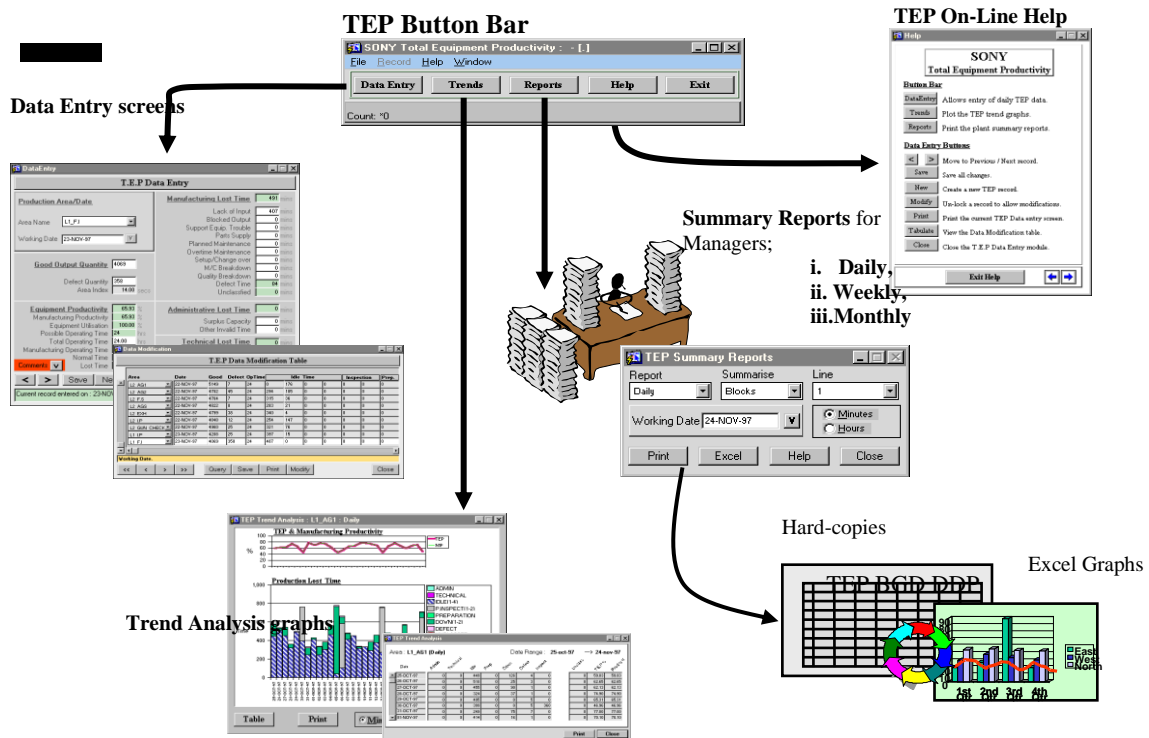
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The TEP Application is a suite of modules which facilitate the following;

1. Capture of daily data which is used to monitor the performance of machinery.
2. Production of trend analysis charts which can highlight errors in data entry and unacceptably high values in lost time.
3. Generation of management reports.

Only authorised users may access the TEP Application facilities.

TEP Login

To be able to use the TEP Application you must have been given a TEP username and password. Your TEP Administrator will provide you with a Username & Password.

On executing the TEP Application you will be presented with the TEP Login screen.



Each time you run TEP you must supply your username & password.

The TEP Administrator will also set Data Entry privileges for data entry staff. These privileges will allow you to enter and modify TEP data for your areas of responsibility.

TEP Button Bar

After logging on to TEP you will be presented with the TEP Button Bar. Use these buttons to select and execute the required TEP modules.



- Data Entry** Runs the Data Entry module. This module is used for entering and modifying TEP records.
- Trends** Calls the TEP Trend Analysis module. This module generates an accumulated bar graph for Lost Times for a given area on a daily, weekly or monthly basis. At the same time it generates a graph showing TEP and Manufacturing Productivity for a given area.
- Reports** Executes the Summary Reports module. This module gives the facility for generating Summary and Detail reports which are primarily used by management.
- Help** Call the on-line Help screens. Use these screens as your first call of help. The help screens give basic information and some examples about how to utilise the TEP Application.

Menu Items

- Login** Allows you to login as a different user without having to exit TEP.
- Exit** Exit the TEP Application.
- Help** Displays the Help screens.
- About** Shows the TEP Application version details.
- DisplayError** Use this option to get further information on a error condition.
- Debug** Inactive. (Used for development only)

The Button Bar also contains the **System message area**. System errors and status information will be displayed here.

TEP Data Entry

The Data Entry screen is the point of data entry into the TEP database. This screen is used for entering new TEP records.

T.R.F. Data Entry

Production Area/Date: Area: Date:

Manufacturing Last Date:

Good Detail Inventory:

Order Release:

Equipment Productivity:

Administrative Last Date:

Production Methodology:

Special Circumstances:

Technical Last Date:

Comments:

Status:

Buttons: New Save View History Print Tabular Close

The WHITE fields are user entered and the SHADED are fixed or calculated. Area name is entered via a pop-list. The list will show only those areas for which you are responsible.

Available Menu options.

Record

Save	Commit any changes made to the database.
Modify	Unlock a record to allow modifications.
New	Creates a new T.E.P record.
Clear	Reset all fields to their default values.
Delete	Delete the current record.
First	Move to the first record in the current set.
Last	Move to the last record in the current set.
ReQuery	Update record set by re-fetching from the database.

Use ReQuery to see changes to the TEP database made by other TEP users, since you last logged in.

Field Descriptions

Manufacturing Lost Time

Idle time 1 / Lack of Input

Input quantity losses due to previous equipment trouble.

Idle time 2 / Blocked Output

Equipment stopped due to following equipment trouble.

Idle time 3 / Support Equipment Trouble

Equipment loss due to other/off-line equipment trouble.

Idle time 4 / Parts Supply

Losses due to raw material supply or quality trouble.

Periodic Inspection 1 / Planned Maintenance

Losses due to maintenance planned during rated operating time.

Periodic Inspection 2 / Overtime Maintenance

Losses due to additional maintenance during excess operating time, e.g. overtime, weekends, holidays.

Downtime 1 / Machine Breakdown

Losses due to equipment trouble.

Downtime 2 / Quality Breakdown

Equipment losses recovering from quality problems due to equipment.

Defect Time

Time used manufacturing defects
(number of defects * index).

Unclassified / Unknown

Time loss by unknown reasons, highlighted by calculating :-
(total operating time - normal time - sum of all loss time).

Setup / Change Over

Startup/Shutdown and Changeover.

Administrative Lost Time

Surplus Capacity

Equipment is idle, because demand or production plan quality does not match full capacity during rated operating time.

Other Invalid Time / Management

Losses not related to manufacturing e.g. meetings, stock takes, breaks which stop equipment.

Technical Lost Time

Debug



Time lost testing or debugging equipment or software to design modification, new equipment or new model instructions.

R&D Design / Engineering Tests

Equipment time used for test running.

Repair

Time lost repairing equipment.

On entry into the Data Entry screen you will be given several days worth of back records. You can view this set of records using the   next / previous record buttons.

If you want to see records for days further back than the few days given, press TABULATE to bring up the Data Modification Table. Here you can see all the records in the TEP database. (See the Data Modification section of this document.)

Entering a NEW record

1. Press the NEW button to create a new blank record. All data fields will be set to their defaults. Area name will be the same as the name in the last record viewed. Working Date defaults to yesterdays date.
2. Enter your TEP data values into the relevant fields. Each field **MUST** contain a value, a field cannot be left empty.
3. Double-check your data values by looking at the results given by the calculated fields. NB: UNCLASSIFIED cannot be less than zero.
4. Enter any comments by clicking on the comments button.
5. After all data values have been entered, press SAVE.

Repeat the above sequence for each new record.

Note: If you press NEW by mistake and create an unwanted record, remove the unwanted record by selecting DELETE from the button bar menu. If the unwanted record is not removed it will be used in summary calculations, giving incorrect results. Therefore ensure that **NO** unwanted records are saved into the TEP database.

Possible error

Unable to Insert. A TEP record for this Area & Date already exists.

This error appears when a record for the specified area and working date already exists in the TEP database. This could mean that someone else has entered the record or an unwanted record has been created. To overcome this error, use the NEXT / PREVIOUS buttons to locate the previous existence of the record. If the record contains unwanted data values, delete this record and press SAVE to accept your new record. If the values are correct delete the newly entered record.

Modify an existing TEP record

All the records in the Data Entry Screen are initially locked. If you want to modify a record ;

1. Press MODIFY to unlock the record.
2. Make any desired changes.
3. Press SAVE to commit the changes.

You can also use the Data Modification Table for making modifications.

1. Press TABULATE on the Data Entry Screen.
2. Move to the desired record.
3. Press MODIFY to unlock the record.
4. Make your changes.
5. Press SAVE.

Note : The Data Modification table and the Data Entry Screen are synchronised. Any changes made will be reflected in both windows.

Printing the Data Entry Screen

Press the PRINT button on the Data Entry Screen to get a screen shot of the Data Entry window.

Data Modification Table

The purpose of the Data Modification Table is to allow modifications to back records which do not appear in the initial set shown in the Data Entry Screen. This means you can use the D.M.T to view and modify all records held in the TEP database. The D.M.T shows several records at a time making it easier to scan through a set of records and it gives a facility to apply constraints on the record set you wish to retrieve from the database.



Querying the TEP Database

A definition of a Database Query

Making a request for the retrieval of a set of records which satisfy a given constraint.

1. Press QUERY to enter query mode.
The table is cleared and waiting for a constraint to be defined.
2. Enter required constraints. (See examples)
3. Press QUERY again, to execute the query.

Query examples

1. Return all TEP records for the area L1_AG2.

1. Press QUERY to enter into query mode.
2. In the AREA field select *L1_AG2* from the pop-list.
3. Press QUERY again, to execute the query.

2. Return all records for working date 28-Jan-97.

1. Enter query mode.
 2. In the DATE field type *28-JAN-97*.
 3. Execute the query.
- NB: All dates must be entered in the format DD-MON-YY.

3. Retrieve the TEP record for the area L2_AG1 entered for 28-Jan-97.

1. Press QUERY button.
 2. Select *L2_AG1* from the AREA pop-list.
 3. In the DATE field enter *28-JAN-97*.
 4. Execute the query.
- NB: This will return a single record.

4. Return records for area L1_AGS with working dates between 1-Jan-97 and 28-Jan-97 inclusive.

1. Enter query mode.
2. Select area *L1_AGS*.
3. In the DATE field type;
>= '1-jan-97' AND WORKING_DATE <= '28-jan-97'
4. Execute the query.

NB: When specifying a range of dates, the date must be enclosed in single quotes. Also ensure the key word WORKING_DATE has the underscore.

5. Retrieve all records where the DEFECT quantity exceeds 300.

1. Press the QUERY button.
2. Enter *>300* into the DEFECT field.
3. Execute query.

A query can consist of any combination of field constraints. The above examples show a small selection of possible constraints which can be applied to the TEP records.

NOTE : It is advised that you do not EXECUTE a query without specifying a constraint. A query without any constraints will retrieve ALL the TEP records in the database. As the total number of TEP records is quite big, the time taken to retrieve all the records could be relatively very long.

Once you have retrieved the required set of TEP records you can;

1. Modify the records.
2. Delete records.
3. Print off a report showing the retrieved TEP records.
4. Check any calculated values using the Data Entry screen.

Available Menu options

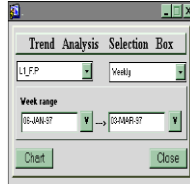
Record

Save	Commit any changes made to the database.
Modify	Unlock a record to allow modifications.
New	Creates a new T.E.P record.
Clear	Reset all fields to their default values.
Delete	Delete the current record.
First	Move to the first record in the current set.
Last	Move to the last record in the current set.
ReQuery	Update record set by re-fetching from the database.
CancelQuery	Cancel Query Mode.

Use ReQuery to see changes to the TEP database made by other TEP users, since you last logged in.

Trend Analysis

The Trend Analysis module allows you to plot TEP, Manufacturing Productivity and Lost Times on a Daily, Weekly and Monthly basis, so that trends become visible for a given period of time for a given area. The graphs can also highlight erroneous data values and unacceptably high values for certain Lost times.



Plotting a Trend Analysis Chart

1. From the area pop-list, select the area you wish to analyse.
2. Select the basis of the analysis, Daily, Weekly or Monthly.
3. Specify the period of analysis.
4. Press CHART to generate the graphs.

NB: The first time you press CHART, the displaying of the chart will take around 30 seconds. This is due to the fact that the system has to LOAD UP the Graphics Server which displays the actual chart. An ORACLE GRAPHICS BATCH icon will appear once the server has been loaded. Further calls to CHART will respond much quicker.

The chart shows an accumulative bar graph of Lost Times and a line graph showing TEP and Manufacturing Productivity.



- Pressing the PRINT button will print the window containing the graphs.
- To view the data values represented by the graphs, press the TABLE button.

Date	TEP	Manufacturing Productivity	Production Lost Time
11/1/97	100.00	100.00	0.00
11/2/97	100.00	100.00	0.00
11/3/97	100.00	100.00	0.00
11/4/97	100.00	100.00	0.00
11/5/97	100.00	100.00	0.00
11/6/97	100.00	100.00	0.00
11/7/97	100.00	100.00	0.00
11/8/97	100.00	100.00	0.00
11/9/97	100.00	100.00	0.00
11/10/97	100.00	100.00	0.00

Pressing PRINT here will generate a report showing the Trend Analysis data values given in the above table.

TEP Summary Reports

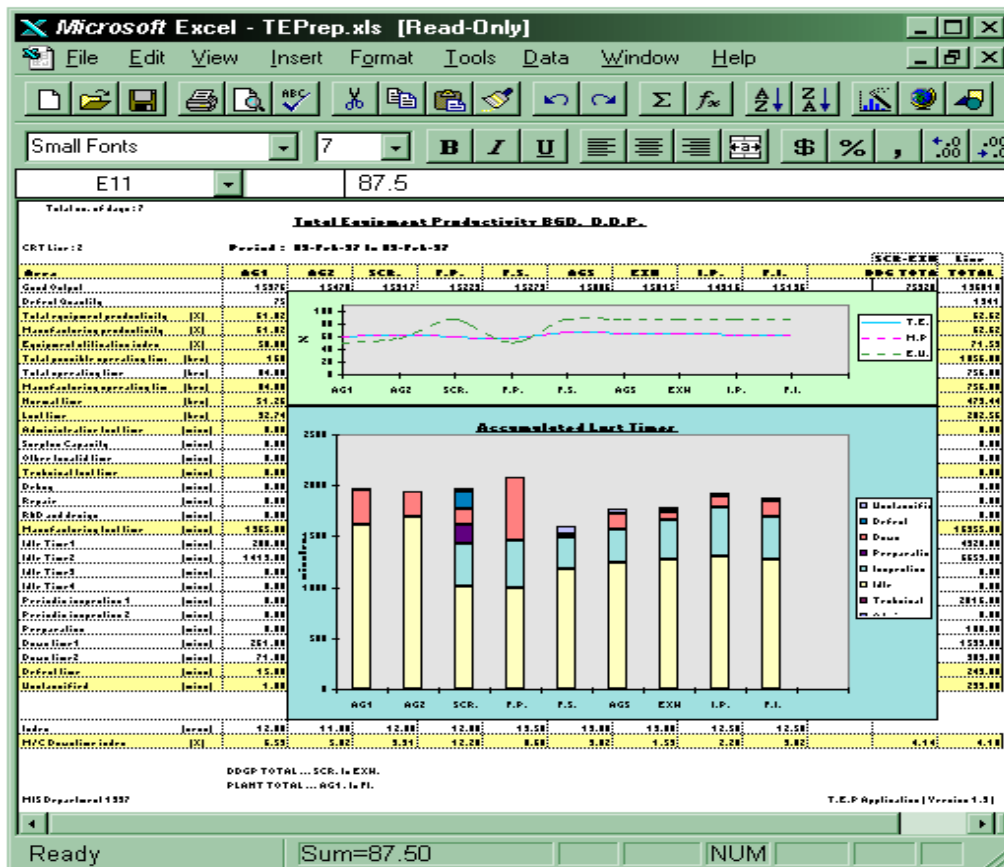
The TEP Reports Module provides a facility for the generation of TEP summary reports for upper and lower management.

For upper management a Block Summary Report is provided which has SUB and GRAND totals for a given CRT Line.

For department managers an Area Summary Report is provided.

Summary reports can be generated for a single day, a single week or a single month.

The Reports Module also gives you the ability to pass the contents of a report to Microsoft Excel. Once the data is in Excel you can manipulate it as desired for creating required graphs and charts. Making a change in the Excel spreadsheet does not effect the data held in the TEP database.



Generating a TEP Summary Report

1. Select the basis of the report, Daily, Weekly or Monthly.
2. Choose the summarisation type, Block or Area.
 - If you choose BLOCK you will be given a set of production lines.
 - If you choose AREA you will be given a list blocks which are regarded as departments / management areas.
3. Select the desired Line / Block.
4. Specify a date.
5. Press PRINT to print the report to Screen or Printer.
6. Press EXCEL to pass the report contents to MS Excel.

NB: The first time you press PRINT, the displaying of the report will take around 30 seconds. This is due to the fact that the system has to LOAD UP the Reports Server which displays the actual report. An ORACLE Reports icon will appear once the server has been loaded. Further calls to PRINT will respond much quicker.

When you preview the report on the screen and then press PRINT from within the previewer, you will get the following warning.

Report was not run with DESTYPE=PREVIEW. Screen font.....

Ignore it and press continue.

The report will be printed using your default printer unless you change the destination of the printout when presented with the print dialogue box.

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