

Chapter 5

Program Design

From the data mentioned in chapter three and four, we can design a program which contains five parts:

1. Master File part
2. Preventive Maintenance part (P.M.)
3. Job Allocation Plan part
4. Reporting and Monitoring part
5. Inventory Control part

Each part will be described in details as topics follow:

5.1 Master File

This part is to input initial data for processing in the second, third, and fourth part. Details of this part are shown as table and figures as follows:

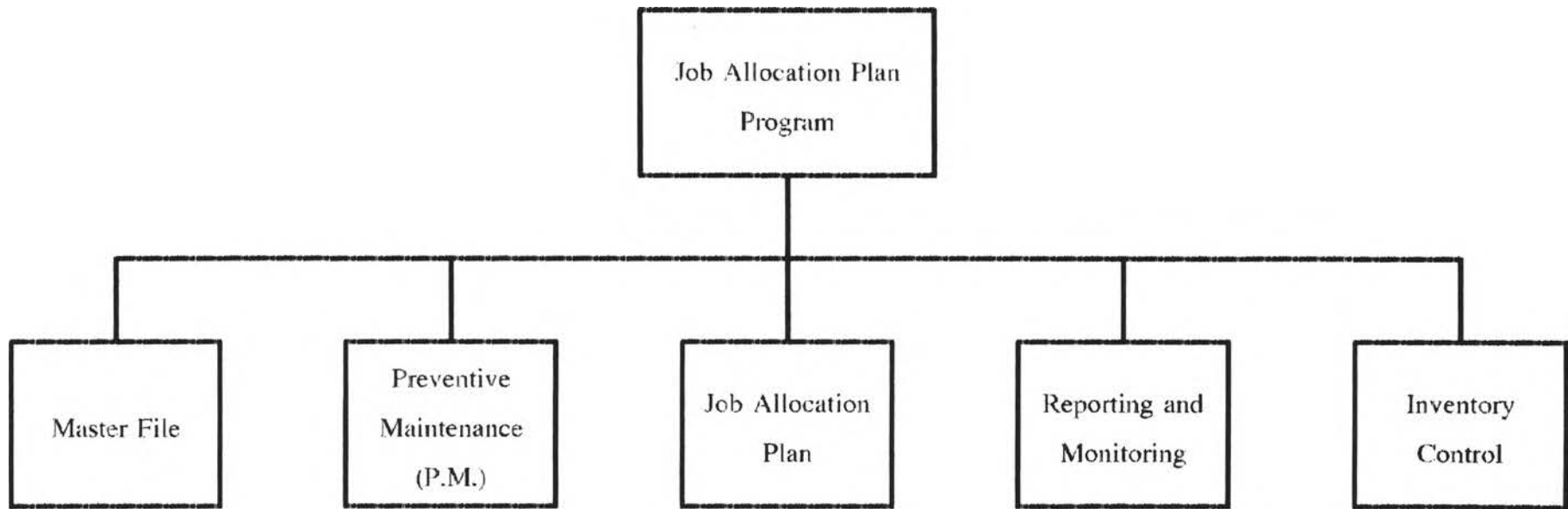


Figure 5-1 : Job Allocation Plan Program Chart

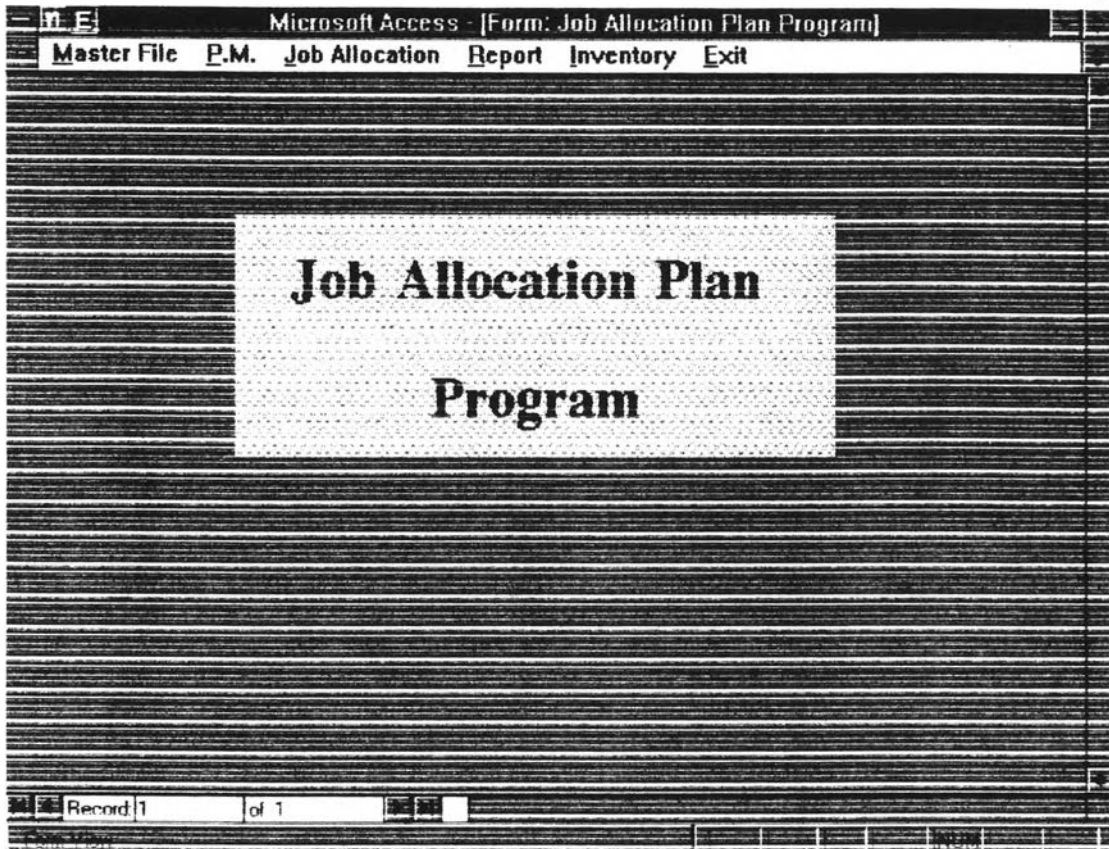


Figure 5-2 : Main window of Job Allocation Plan Program

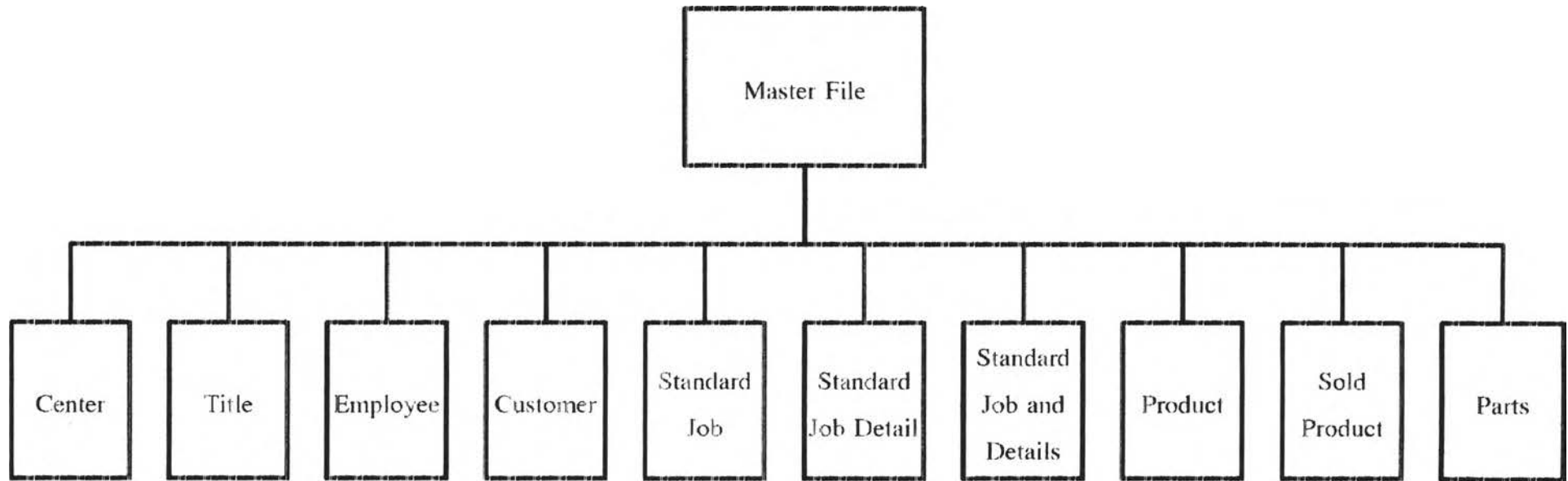


Figure 5-3 : Master File Chart

Table 5-1 : Details in Master file Menu

No.	Sub Menu	Data	Remark
1	Center	1. Center Code	
		2. Center Name	
		3. Number of bays	
2	Title	1. Title Code	
		2. Title Name	
		3. Quantity	Total quantity of this title
3	Employee	1. Employee Code	
		2. Salutation	Mr..Mrs..Ms.
		3. Employee Name	
		4. Employee Surname	
		5. Title	Title of this employee
		6. Center	Center this employee works for
4	Customer	1. Customer Code	
		2. Customer Name	
		3. Province	
		4. Attention	
		5. Telephone Number	
5	Standard Job	1. Standard Job Code	
		2. Standard Job Name	
		3. Job Pattern	Installation.P.M.
		4. Bay (Y/N)	Has to be operated in bay or not
		5. Welders	Number of welders required
		6. Mechanics	Number of mechanics required
		7. Electricians	Number of electricians required
		8. Days	Total expected time to operate this job
6	Standard Job Details	1. Standard Job Code	
		2. Standard Job Name	
		3. Interval Number	
		4. Title	Title required for this interval

Table 5-1 : Details in Master file Menu (Continued)

No.	Sub Menu	Data	Remark
6	Standard Job Details	5. Quantity	Number of employees of above title required
		6. Days	Expected time used for this interval
7	Standard Job and details	List of each standard job and details	
8	Product	1. Product Name	
		2. Product Name	
		3. Number of P.M.	Number of P.M. that will be operated to this job
9	Sold Product	1. Product Name	
		2. Customer Name	Name of customer who bought this product
		3. Serial Number	Serial Number of this product
		4. Installation Pattern	Installation pattern operated to this product
		5. First P.M. Date	Expected first P.M. date
10	Parts	1. Part Number	
		2. Part Name	
		3. Cost	Cost per unit
		4. Tax (%)	Tax charged to this part
		5. Plus (%)	Mark up to define price
		6. Unit Price	Price per unit
		7. On Hand	Total on hand quantity at that day
		8. '97 Demand Forecasting	

Microsoft Access - [Center]

Master File P.M. Job Allocation Inventory Report Exit

Center List

ID	Center Name	Acct Type	Acct Category
01	SV1	2	0
02	SV2	3	0
03	SV3	3	0
04	SV4	3	0
05	SV5	10	0
06	SV6	0	0
07	SV7	100	0
11	SV8	20	40
97	SV9	10	0

Add Edit Delete OK Cancel

Record: 1 of 10

Form View

Figure 5-4 : Service Center list screen

Code	Title Name	Quantity
01	Engineer	2
02	Managing Director	1
03	Administration	6
04	Store	5
05	Driver	4
06	Housemaid	2
07	Welder	11
08	Painter	1
09	Miller	2

Record 1 of 24

Figure 5-5 : Title list screen

Microsoft Access [Employee]

Master File P.M. Job Allocation Report Inventory Exit

Employee List

EmpID	Salutation	Name	Department	EmpID	Salary	Position
B001	Mr.	Surapan Toey-hom	Managing Director	999	SV1	
B002	Mrs.	Warin Pimhun	Administration	999	SV1	
B005	Mr.	Chamuen Pongsawang	Mechanic	200	SV2	
B006	Mr.	Cherdruk Srisuk	Mechanic	200	SV2	
B008	Mr.	Udom Daengdee	Store	999	SV1	
B010	Mr.	Sawat Taenglunrong	Mechanic	150	SV3	
B012	Mr.	Suchai Sornatp	Driver	999	SV1	
B015	Ms.	Wimol Roonri	Housemaid	999	SV1	
B016	Mr.	Saman Srisuk	Welder	150	SV1	

Add Edit Delete OK Cancel

Record 1 of 80

Figure 5-6 : Employee list screen

Microsoft Access - [Customer]

Master File P.M. Job Allocation Inventory Report Exit

Customer List

ID	Customer Name	Province	Attention	Telephone Number
01	ABC company	Bangkok	Somchai	254-7891
02	XYZ Company	Chiangmai	Somsak	274-893
03	aaa Company	Yala	Somari	456-789
04	BBB Company	Satun	Somboon	365-744
05	fdfgdgg	gkkkl	ghhgh	256-7896
06	l123	gf123	fgfg	987-4562
07	hghgh	ghih	hgh	123-7569
08	gf123	hhfhd	hfdgg	561-8960

Ann Edit Delete OK Cancel

Record 1 of 8

Form View

Figure 5-7 : Customer list screen

Standard and Non-standard job pattern

At present time, all jobs operated by this company are not yet be defined exact employee and time used per job. However, from discussion with engineering manager, five installation patterns operated at service center can be broken into operation steps and defined employee and time used in each step. After that, existing installation patterns were re-defined to more systematically by assign employee to work in time slots. Each time slot is operated by a set of employees (one or two persons) and takes a half day duration.(4 hours in morning or afternoon). Summary of existing and re-defined installation patterns are shown in figure A-1 to A-11 in appendix section.

Preventive maintenance pattern can not be defined to be standard pattern because most of P.M. jobs are operated at customer place. It can not definitely define transportation time. Nevertheless, this pattern can be specified details of operator such as change hydraulic oil filter, change hydraulic oil, etc. So, this pattern can be only defined Job code and Job description. In case that preventive maintenance is operated at service center, the program is designed to determine operating time as same as installation pattern.

Break down maintenance pattern can not be classified to be standard pattern because, though service manual specifies number of employee and time used, it can not control time used as service manual specify.

Finally, all three main patterns can be summarized as table below:

Table 5-2 : Summary of Job patterns

Pattern	Type	Job code	Job Des.	Emp. used	Time used
Installation at service center	Std.	Yes	Yes	Yes	Yes
Preventive Maintenance	Non-std.	Yes	Yes	No	No
Break down Maintenance	Non-std.	No	No	No	No

Remark : Installation at customer place is rarely operated

Microsoft Access - [tblStandardJob]

Master File P.M. Job Allocation Inventory Report Exit

Standard Job List

Code	Standard Job Name	Pattern	Yes	No	Yes	No	Yes	No	Rate
01	Install with short subframe	Installation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	2	0	0	3.5
02	Install with long subframe	Installation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	2	0	0	3.5
03	Change hydraulic oil	P.M.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	0	0	0.5
04	Change oil filter	P.M.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	0	0	0.5
05	Install with subframe already available	Installation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	2	0	0	3
06	Install at rear side of truck	Installation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	2	0	0	3.5
07	Install to tractor head	Installation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	2	0	0	4
08	Grease up	P.M.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	1	0	0	0.5
09	Check electric system	P.M.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	1	0	0.5

Add Edit Delete OK Cancel

Record 1 of 12

Figure 5-8 : Standard Job list screen

Microsoft Access [tblStandardJobDetail]

Master File P.M. Job Allocation Inventory Report Exit

Standard Job Details List

Code	Description	Amount	Unit	Allocation	Rate
00	Install with short subframe	1	Welder	2	2
01	Install with short subframe	2	Mechanic	2	0.5
01	Install with short subframe	3	Mechanic	1	1
02	Install with long subframe	1	Welder	2	2
02	Install with long subframe	2	Mechanic	2	0.5
02	Install with long subframe	3	Mechanic	1	1
03	Change hydraulic oil	1	Mechanic	1	1
04	Change oil filter	1	Electrician	1	1
05	Install with subframe already available	1	Welder	1	0.5

Add Edit Delete OK Cancel

Record: 1 of 22

Figure 5-9 Standard Job Details list screen

Microsoft Access - [Standard Job and Details]

Master File P.M. Job Allocation Inventory Report Exit

Standard Job

Install with short subframe Installation Yes 2 2 0 3.5

Standard Job Details

Job No.	Job Description	Rate	No. of Days	Days
01	Weider	1	2	2
01	Mechanic	2	2	0.5
01	Mechanic	3	1	1

Record: 1 of 3

First Record Previous Record Next Record Go to Last Close

Record: 1 of 12

Form View

Figure 5-10 : Standard Job and Details list screen

Microsoft Access - [tblProduct]

Master File P.M. Job Allocation Inventory Report Exit

Product List

Product Code	Product Name	No. of P.M.
01	Crane 045-1	3
02	Crane 045-2	3
03	LSV1200	4
04	LSV1250	4
05	LSV1300	4
06	gfhhh	7
07	h123	8
08	fd	8

Add Edit Delete OK Cancel

Record 1 of 10

Form View

Figure 5-11 : Product list screen

Microsoft Access - [tblSoldProduct]

Master File P.M. Job Allocation Inventory Report Exit

Sold Product List

Product Code	Customer Name	Serial No.	Installation Pattern	First P.M. Date
Crane 045-1	ABC company	111122	Install with subframe already available	06/08/1997
Crane 045-2	ABC company	123	Install with long subframe	05/05/1969
LSV1200	XYZ Company	456	Change hydraulic oil	06/06/1987
LSV1250	123	9999	Change oil filter	07/06/1996
LSV1250	1d1gdgg	8888	Install to tractor head	05/09/1997
LSV1300	ABC company	8788	Install with short subframe	02/05/1997
LSV1300	XYZ Company	7777	Install with short subframe	03/09/1997
Crane 88-1	XYZ Company	111123	Install with short subframe	12/02/1997

Add Edit Delete OK Cancel

Record: 1 of 8

Figure 5-12 : Sold Product list screen

Microsoft Access [tblParts]

Master File P.M. Job Allocation Inventory Report Exit

Parts List

Part No.	Part Name	Qty	Unit	Price	Total Price	Part No.	Part Name	Qty	Unit	Price	Total Price
001	Hydraulic oil filter	100	7	30	139	6255	100				
002	O-ring	50	7	30	69	29070	2000				
003	Boom leg	10000	7	30	13910	14944	450				
004	Nut	10	7	20	12	42661	5000				
005	Screw	5	7	50	8	1985	11210				
006	Moving rod	1000	7	21	1294	6214	100				
007	Impulse Controller	500	7	36	727	13416	500				
008	Cover c	50	7	25	66	801	5054				

Record 1 of 102

Figure 5-13 : Parts list screen

5.2 Preventive Maintenance (P.M.)

Preventive Maintenance (P.M.) is a planned activity. It can be known in advance. This function can be defined date to take first action based on the data from the sales company. All products are expected to operate preventive maintenance three or four times within one year warranty period. So, these data can be brought to determine planned schedule of sold products. The schedule will show date to operate the first, the second, the third and/or the fourth preventive maintenance. In actual situation, the acted preventive maintenance may be operated sooner or later than the schedule. The program, therefore, is separated into three parts. The first part is P.M. History. It shows details of customer name, product name, serial number of the product, number of planned preventive maintenance of the product, acted preventive maintenance number, actual service date, and description of acted preventive maintenance description. It collects data of all acted preventive maintenance. The operator can make use of the data of acted preventive maintenance from this part. The second part is Pass P.M. - No Action. It shows details of customer name, product name, serial number of the product, number of planned preventive maintenance, planned preventive maintenance number, planned preventive maintenance date. The purpose of this part is to warn the operator that there is overdue preventive maintenance. When the operator check this part, he will be known the priority of preventive maintenance that should be taken action. Also, this part is designed for the operator to record preventive maintenance that has already acted. He can record the preventive maintenance description and actual service date at the bottom of the screen. The last part is Next P.M. Action. It shows details of customer name, product name, serial number of the product, number of planned preventive maintenance, the next preventive maintenance number, and the next preventive maintenance date. The last two details are calculated from the previous preventive maintenance action. The purpose of this part is similar to the

second part. But it shows the next preventive maintenance that are planned to operate in the future. When the operator check data from this part. he will be warned to prepare the priority of preventive maintenance to be taken action in the nearest planned date. If any next preventive maintenance has already operated. the operator can also record data of preventive maintenance detail and actual service date at the bottom of the screen.

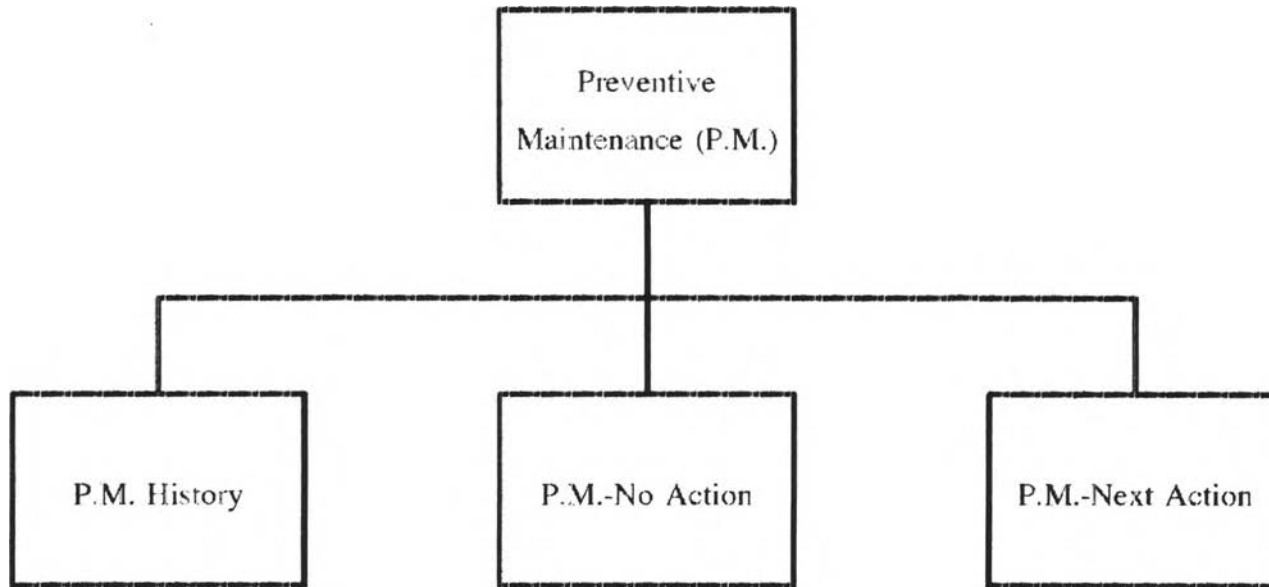


Figure 5-14 : Preventive Maintenance Chart

Microsoft Access - [PMHis]

Master File P.M. Job Allocation Inventory Report Exit

P.M. History

1123	LSV1250	9999	4	1	07/06/1996	Change hydraulic oil
1123	LSV1250	9999	4	2	06/09/1996	Grease up
1123	LSV1250	9999	4	3	06/12/1996	Check electric system
XYZ Company	Crane 088-1	111123	3	1	12/02/1997	Change hydraulic oil
1123	LSV1250	9999	4	4	10/03/1997	Change oil filter
ABC Company	Crane 045-2	123	3	1	06/06/1997	Change hydraulic oil
XYZ Company	Crane 088-1	111123	3	2	13/06/1997	Change oil filter
fdgdgg	LSV1250	8888	4	1	04/09/1997	Grease up

Print

Record: 1 of 8

Figure 5-15 : P.M. History list screen

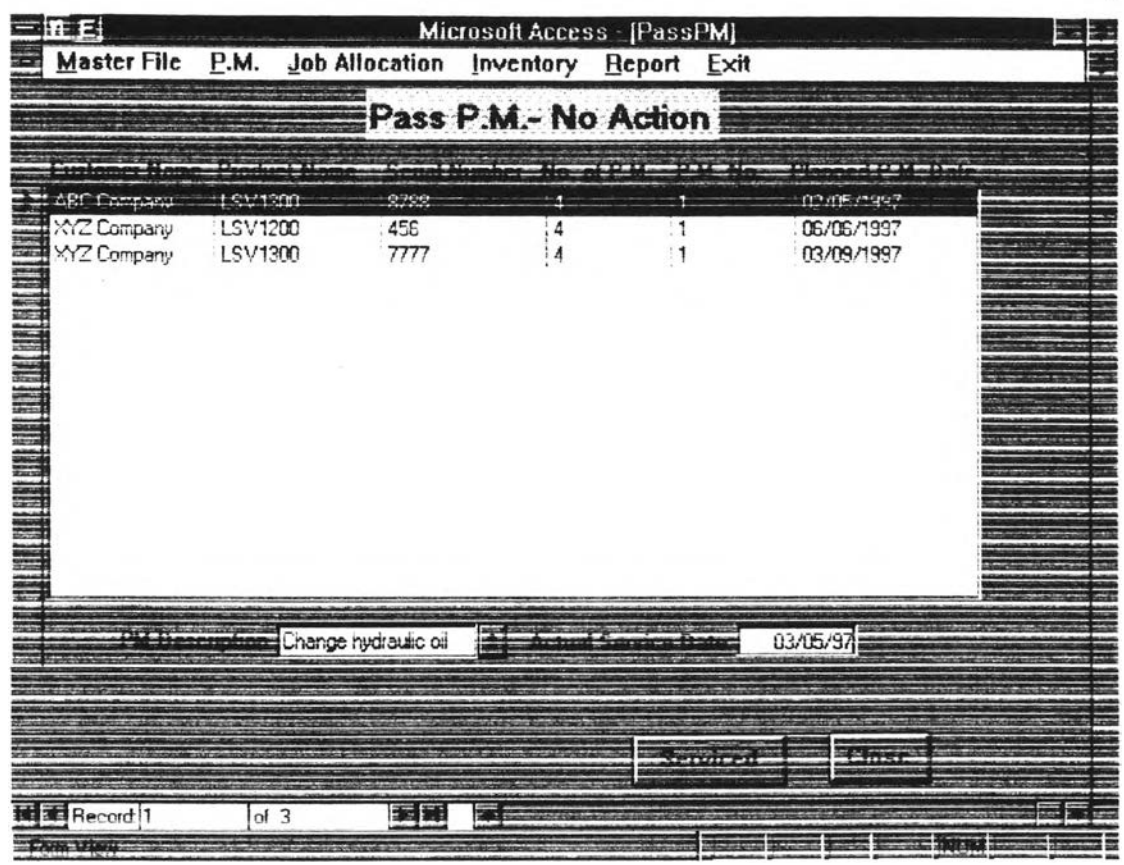


Figure 5-16 : P.M. - No Action list screen

Microsoft Access [NextPm]

Master File P.M. Job Allocation Inventory Report Exit

P.M. - Next Action

Company	Crane	Job No.	Days	Days	Date
aaa Company	Crane 045-1	111122	3	2	12/10/1997
XYZ Company	Crane 088-1	111123	3	3	12/10/1997
fdgdgg	LSV1250	8888	4	2	04/12/1997

P.M. Description: Change oil filter Actual Service Date: 04/10/1997

Record 1 of 4

Figure 5-17 : P.M. -Next Action list screen

5.3 Job Allocation Plan

Job Allocation Plan part is designed to allocate incoming jobs of multiple service centers. Data of customers and their requirements are input for the program to assign job to the available service center. The assignment is based on the availability of required facilities such as employee and bay. The program will check **Status** of facilities. If the status of the facilities is available, the job is assigned to the service center that customer required. If the status of required facilities is not available, the program will suggest other choices and time to service of available service centers. Some status have to be recorded together with **Remark** to give more information to users. Like facilities, job is also defined status to all stages of its operation. Three main stages are used to divided job operation. They are Reserve, Processing, and Finish. During processing stage, **Job Progress** in term of percentage is another parameter used to indicate job operation. The following tables will explain the status of facilities and job.

Table 5-3 : Employee status

Status	Meaning
Operating	Operating
Pending	Can not operate the current problem job and can work other job
Reserved	Reserved to operate reserved job
Free	No job to operate at that time

Table 5-4 : Bay status

Status	Meaning
Operating	Being operated
Reserved	Reserved to operate reserved job
Free	No job to operate at that time

Table 5-5 : Job status

Stage	Status	Meaning
Reserve	Can't service	Can not service because the product is not sold by the company
	Cancel	Customer cancel because he can not accept the proposed choice or there is no available service center.
	Reserve	Reserve facility to operate in the near future.
	Wait	Customer is not ready to receive service at appointed time.
	Queue	Service center is not ready to service at appointed time
Processing	Operating	Job can be operated without any problem
	Pending	Job can not be operated with some remark.
Finish	Closed	Job is closed with 100 % of completeness
	Cancel	Job is closed with less than 100% of progress.

Table 5-6 : Remark list

Remark	Meaning
No welder	Welder is not available at that time.
No mechanic	Mechanic is not available at that time.
No electrician	Electrician is not available at that time.
No spare parts	Spare parts is not available at that time.
Outsourcing	Some components are fixed by sub contractor.
No response	No response from the customer.
No remark	No remark to record

When customers' data and their requirement has been already changed into job input data, the next is to edit job progress and its status. Status of job, employee, bay are shown in form of **Gantt chart** for investigation. Start and finish time together with different colors to show different status are used to present

characteristic of the data. The reason to use this form is that it is easy to investigation.

Most jobs consume spare parts. The program is designed to have a screen to record spare parts used by each job. Finally, if user wants to check details of each job, the program provides a screen to present the required data.

Four screens are designed to serve this part of the model. **They are Job control, Job Schedule, Employee Schedule, Bay Schedule, Parts Used, and Job Summary.** The first screen functions to receive the data of open job, update job, and close job. The operator can input customer data in **Data Box**, choose center from **Edit Box**, and input expected start date in **Date Box** when he open job. If the required service center is available, the program will accept this data. On the other hand, if the required center is not available, the program will propose other choices. When the operator wants to update job status and progress or wants to close job, he can search the data from the **Search Box** and edit data in the **Edit Box**. (For more information, see user manual in appendix section)

The second, the third, and the fourth is designed to present data in the form of Gantt chart. The operator can scope time interval from the **From-To Box**, scope center from the **Center** combo box. Then Gantt chart will show details of data in the scope criterias in different colors and lengths of bar chart. Also, the data located below Gantt chart will give more information of selected data.

The fourth screen is designed to record spare parts consumed by each job. The user can know the available on hand items and quantity in his service center. He can issue spare parts from data in the list and can know the price and total price of spare parts consumed by each job.

The last screen shows details of each job. It can be opened to show data of job any time the user want. Cost data are also in this screen. They are labor cost which is calculated by multiple number of operating hours with wage per hour of

all employees who operate this job. Parts cost is calculated from total price of spare parts consumed by this job. Other cost is calculated from the cost which can not be categorized to the two previous costs. Total cost of three types of cost is shown in the last line. It is useful for administration officer when he want to close job..

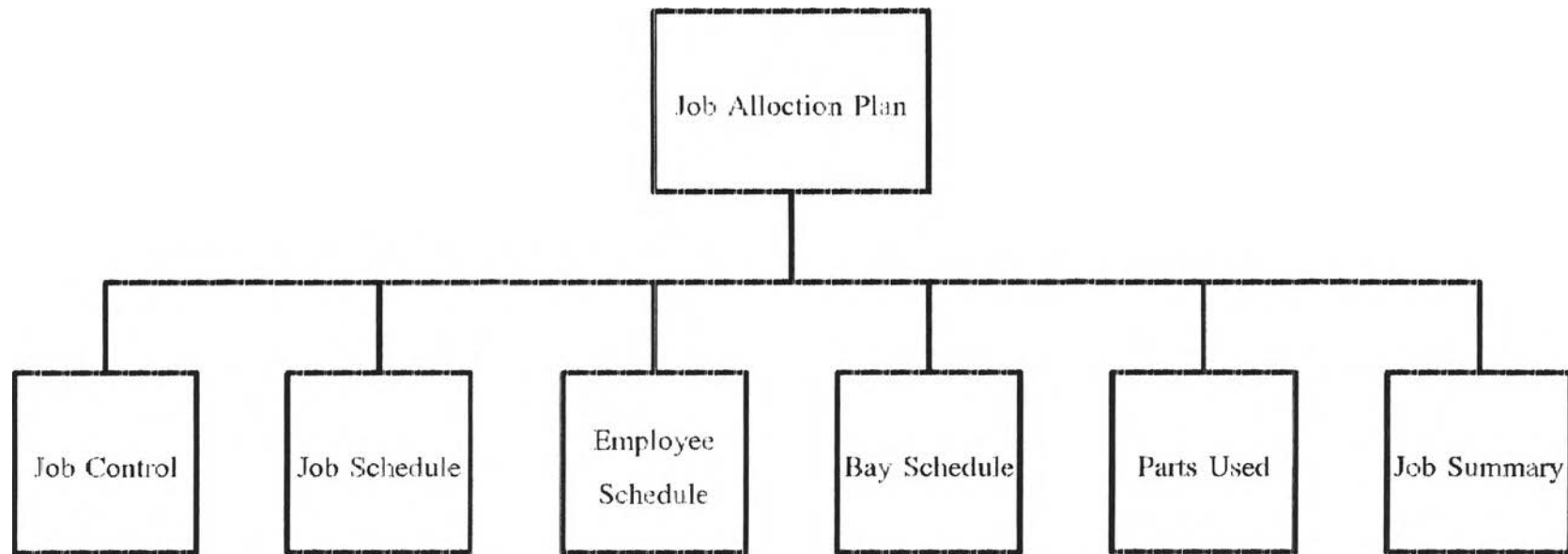


Figure 5-18 : Job Allocation Plan Chart

Microsoft Access [Job Control]

Master File P.M. Job Allocation Inventory Report Exit

Search Box

Job Control Company: ABC Company Product: Crane 045.2

123

Data Box Edit Box

Company	ABC Company	Product	Crane 045.2	Job No.	10
Installation	Installation	123	City	Surat-thani	
Installation	Install with short subframe		Job Status	Closed	
		City	Chiangmai	Remark	No Remark
Expected Time Used	3.5	Exp. Expired Date	11/08/1997	Progress	100
Exp. No. of Jobs	2	No. of Machines	2	Time to Complete	n
			Time Elapsed	28	

Date Box

Start	08/08/1997	Stop	07/08/1997	Time to Start	10/08/1997	Comp. 10/08/1997
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New Assign Edit Save Cancel Print

Record 1 of 14

Figure 5-19 : Job Control screen

Microsoft Access - [Form: Bay Schedule]

Master File P.M. Job Allocation Inventory Report Exit

Bay Schedule

From: 05/09/1997 To: 05/10/1997 Course: Sai 4 th

		September																			October					
		S	M	T	W	T	F	S	S	S	S	S	S	S	S	S	S	S	S	S	S	1	2	3	4	5
3	P																									
	A																									
4	P																									
	A																									
5	P																									

Bay No: 05 Enrolled Date: 15/08/1997 Enrolled Until: 25/08/1997

Job No: 20 Actual Start: Actual End:

Save Close

Record 8 of 14

Form View

Figure 5-22 : Bay Schedule screen

Microsoft Access - [Form: Parts Used]

Master File P.M. Job Allocation Inventory Report Exit

Parts Used

Case: Sai 4 th

Part No.	Part Name	Part Price	Quantity
001	Hydraulic oil filter	55.00	139
002	O-ring	2,200.00	69
005	Screw	0.00	8
006	Moving rod	0.00	1294
003	Boom leg	0.00	13910
004	Nut	0.00	12
008	Cover-c	0.00	66

Job No: 12 Quantity: 5 Price: 695 Date: 1/10

Part No.	Part Name	Quantity	Part Price	Total
002	O-ring	20	69	1380
001	Hydraulic oil filter	5	139	695

Total: 2075 Date:

Print Cancel Close

Record 1 of 1

Figure 5-23 : Parts Used screen

Microsoft Access [Form: Job Summary]

Master File P.M. Job Allocation Inventory Report Exit

Job Summary

Search Job No. []

Job No. [] Customer Name [] Product [] Qty []

Job Pattern [] Contract []

Account Start Date [] Estimated Start Date [] Account End Date [] Estimated End Date []

Status [] Project [] Phase [] Name []

Calculated	[]	Cost
Fixed Cost	[]	Cost
Bill of Materials	[]	Cost
Total Cost	[]	Cost

[Print] [OK] [Print] [Cancel] [Close]

Record 1 of 1

Figure 5-24 : Job Summary screen

5.4 Reporting and Monitoring

This part of the model will show output of the processing of part number 5.3 and 5.4. So, the program in this part can be categorized into two main groups. They are report for the data in time interval and report for the data at one point of time. The first group the user has to input the starting time (**From**) and ending time (**To**) in the program. Then the program will show result of the operation in that interval. Reports in this group are **Job Normal Report**, **Job Exception Report**, **Job Order Pattern Report**, **Employee Capacity Report**, **Bay Capacity Report**. The second group shows data of each job at one moment. Reports in this group are **Employee Report**, **Bay Report**, **Parts Used Report**, **Job Summary Report**. Each report will be discussed in the following details

Job Normal Report shows list of jobs operated by each service center in the focus interval. Job listed in this report is operated without any problem. So, job listed in this report will have the status of **Reserved**, **Operating**, and **Closed**. Details of each record in this report are Job Number, Customer name, Job Pattern, Expected start date, Expected finish date, Actual start date, Actual finish date, Job progress, Status. User has to input focused time interval. Then, the program will show list of job of mentioned status. If the user wants to print this report out into hard copy, He can click **Print** button to get the list of job shown on the monitor.

Job Exception Report is only different from the first report in the status of job. The status are Can't Service, Wait, Queue, and Pending. This report is designed for management to pay special attention because jobs shown in this report have got some problems.

Job Order Pattern Report is designed to show proportion of all job patterns in the focused interval. Details of record shown in this report are center name, Number of installation jobs, Number of Preventive Maintenance jobs,

Number of Fix jobs. This purpose of this report is to be the data for adjusting job pattern taken by each center balanced with the facility.

Employee Report is designed to show the operation of employee of each service center at current time. User can select to investigate employee of each or all status such as Reserved, Operating, Pending, Free. Details of each record are Employee Name, Title, Expected start date, Expected finish date, Actual start date, Actual finish date, Job Number that the employee was assigned to, Job status, Job progress, and Status of this employee.

Bay Report is similar to Employee Report. It show the operation of bay of each service center at current time. User can select to investigate bay of each or all status of Reserved, Operating, Free. Details of each record are Bay number, Expected start, Expected finish, Actual start, Actual finish, Job number that the bay was assigned to, Job status, Job progress, Bay status.

Employee Capacity Report shows the percentage of employee operation of each service center in the focused interval. The operation of employees is divided by their status. Details of each record are Employee name, Employee surname, Employee Title, Number of reserved days and percentage, Number of pending days and percentage, Number of operating days and percentage, Total working day.

Bay Capacity Report shows the percentage of bay operation of each service center in the focused interval. The operation of bay is divided by its status. Details of each record are Bay Number, Number of free days and percentage, Number of reserved days and percentage, Number of operating days and percentage, Total working days

Parts Used Report shows list of spare parts consumed by each job. User can choose job number from Job No. combo box. List of the parts will be shown. If the user want to get hard copy of this report. He can click **Print** button, the program will print out the required hard copy report.

Job Summary Report shows the same data appeared in Job Summary screen of Job Allocation Plan menu. User can search for Job Number and the details of job summary will be appeared. If the user wants to print hard copy report by clicking **Print** button.

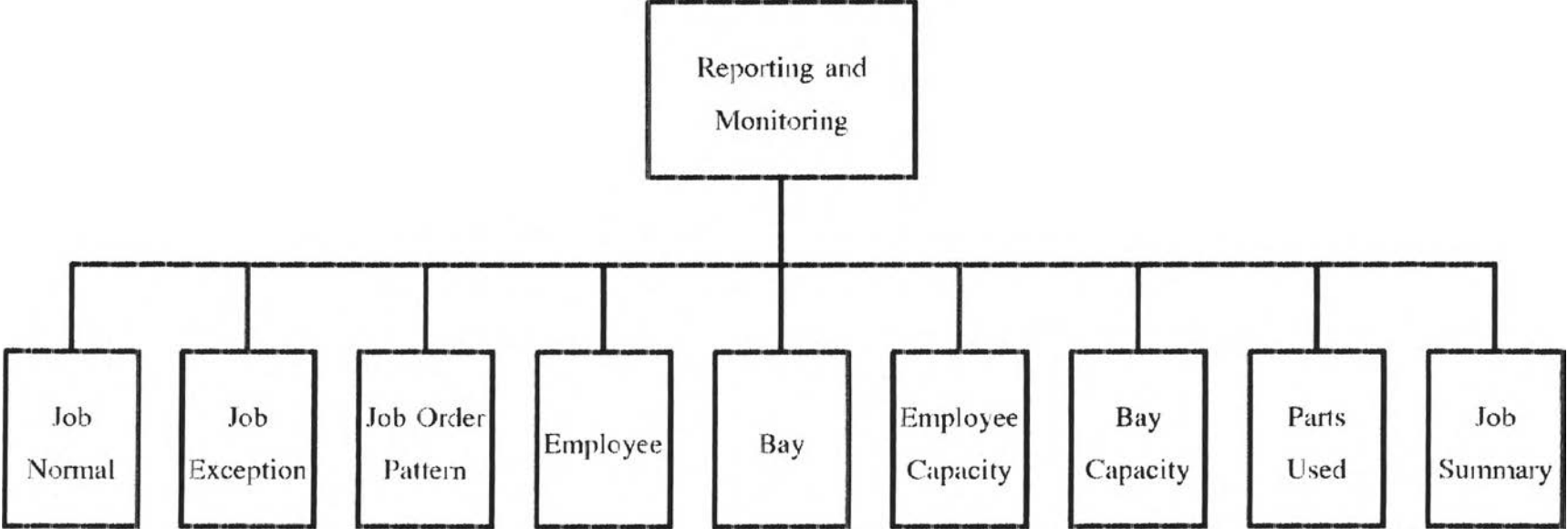


Figure 5-25 : Reporting and Monitoring Chart

Microsoft Access - [Job Exception Report]

Master File P.M. Job Allocation Inventory Report Exit

Job Exception

From:

To:

Print Preview Find Refresh

Job No.	Location	Pattern	Est. Code	Est. Code	Process Code	Process Code	Process	Status

Print Preview Close

Record 1 of 5

Form View

Figure 5-27 : Job Exception Report screen

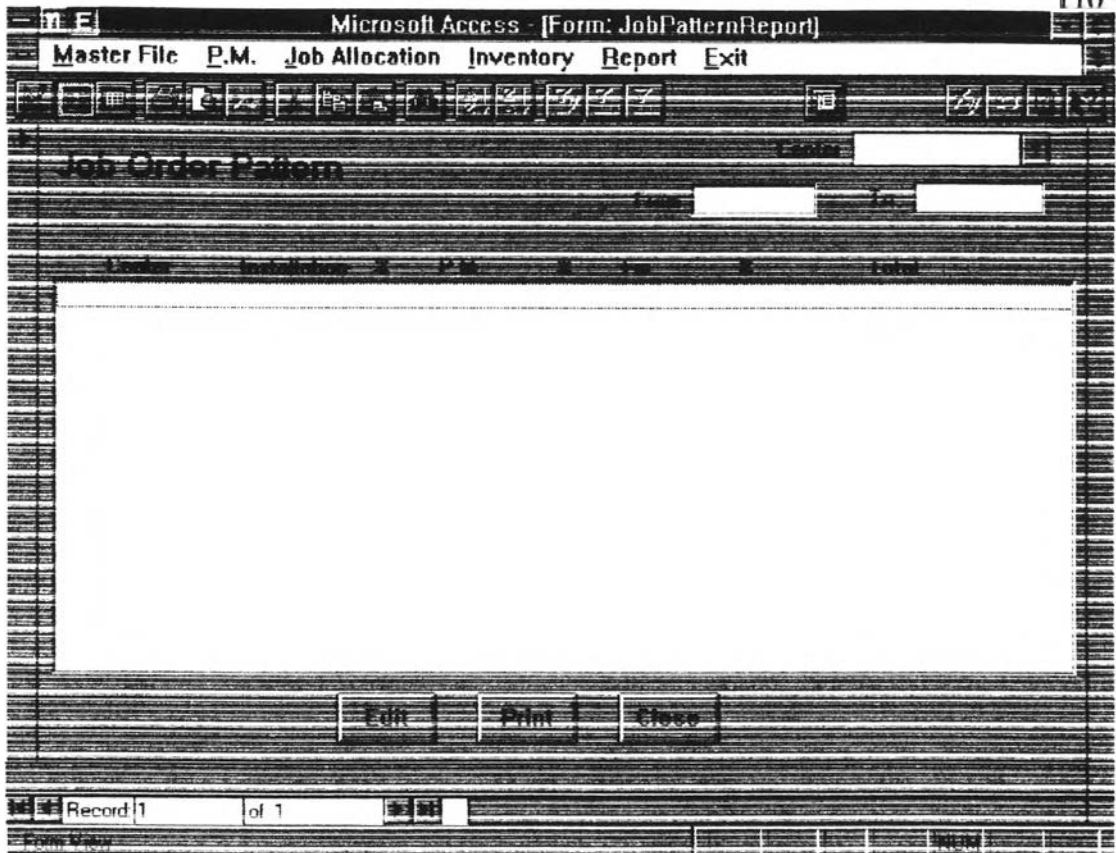


Figure 5-28 : Job Order Pattern Report screen

Microsoft Access [Employee Report]

Master File P.M. Job Allocation Report Inventory Exit

Employee: []

Reservation
 Allocation
 Planning
 Pay

Home	File	View	Format	Tools	Window	Help	Print	Print Setup	Print Preview	Print
[Empty Table Area]										

Job Title Class

Record 1 of 1

Figure 5-29 : Employee Report screen

Microsoft Access [Form: EmployeeCapacityReport]

Master File P.M. Job Allocation Inventory Report Exit

Employee Capacity

Name	Surname	Title	Received & From	Ranking	Uploading	Total
------	---------	-------	-----------------	---------	-----------	-------

Edit Print Close

Record 1 of 1

Form View

Figure 5-31 : Employee Capacity Report screen

Microsoft Access - [Form: BayCapacityReport]

Master File P.M. Job Allocation Inventory Report Exit

Bay - Capacity

From: [] To: []

Exit Print Close

Record: 1 of 1

Figure 5-32 : Bay Capacity Report screen



Figure 5-33 : Parts Used Report Screen

Microsoft Access [Form: Job Summary]

Master File P.M. Job Allocation Report Inventory Exit

Job Summary Station: 14

Job No: 14 Job Name: aea Company Crane: 045-1 Job: 111122

Job Status: Fix Out Status: SV2

Expected Start Date: 22/08/1997 Expected Finish Date: 25/08/1997

Queue: Queue Progress: 0 Demand: No Bay

Labor Cost	0	Rate
Part Cost	1246	Rate
Other Cost	0	Rate
Material	1246	Rate

Print OK Detail Cancel Close

Record 4 of 8

Figure 5-34 : Job Summary Report screen

5.5 Inventory Control

This part is designed based on three main activities. They are issue and sell spare parts from store of each service center, transfer spare parts from head office to each service center, and re-order imported spare parts from supplier.

The first activity can be re-categorized into two activities. They are to issue spare parts from store to use in job operation and to sell spare parts to direct customers. For issue spare parts activity to use in job operation, it is contained in job allocation plan part. The other activity, spare parts sales to direct customers, is mentioned in this part. The program of this part is designed for the operator of all service centers to record every transaction they sell spare part to customer. First, they choose their center name from center combo box and click the spare parts they want to sell from the list. Then, they input sold quantity and click OK. The program will automatically calculate and show total price charged to the customer. (For more details, see user manual in appendix section)

The second activity is further separated into two cases. The first is Fair Share case. This case occurred when total requirement of all service center in any week is greater than on hand quantity at head office. The program will automatically calculate the suitable transferred quantity distributed to each service center and show them in the bottom list. When these spare parts have already been transferred, the operator at head office can record the transaction by only clicking Transfer button. The second case is Normal case. This case occurs when total requirement of all service centers are less than on hand quantity at head office. The operator at head office can record the transaction by clicking a part number from the list and choose the center name from center combo box. Then, he has to input transferred quantity in transferred quantity field and click Transfer button. (For more details, see user manual in appendix section)

The last activity is designed based on two steps. The first step is to show the spare parts that has on hand quantity at head office lower than its re-order point in Parts should be re-orderd list. When the operator check the list, he will be warned to take action to re-order those spare parts. After these spare have already re-ordered with suggested re-order quantity, the operator can record the transaction by clicking Re-Order button. The re-ordered parts are moved to appear in Parts on Delivery list. The program will record re-ordered quantity and re-orddered date of that spare parts. The second step is to record transaction when the re-ordered spare parts have delivered to the store of head office. The operator can record the transaction by clicking that spare parts from the Parts on Delivery list and clicking Receive button. The program will record received quantity and received date of that spare parts. (For more details, see user manual in appendix section.)

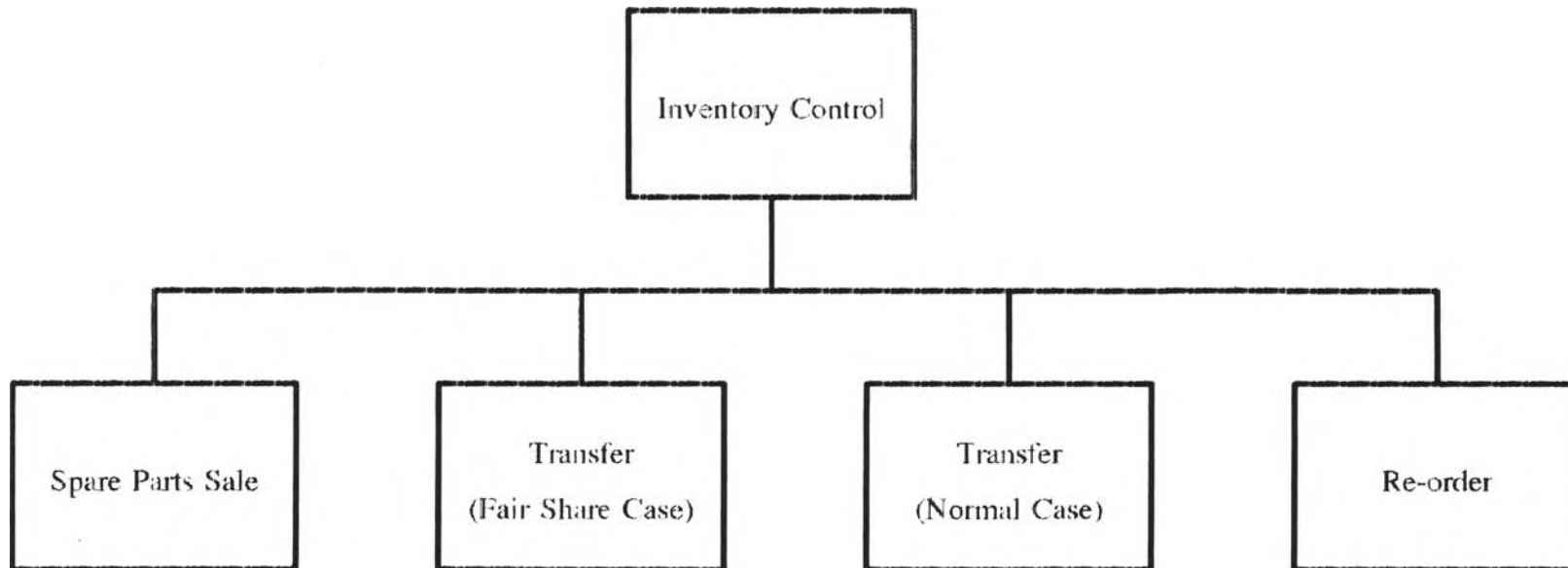


Figure 5-95: Inventory Control Chart

Microsoft Access [Issue_Sell]

Master File P.M. Job Allocation Inventory Report Exit

Spare Parts Sales

Parts List

Part No	Part Name	Quantity	Unit Price	Price
001	Hydraulic oil filter	130.00	139	
002	O-ring	10.00	69	
003	Boom leg	9.00	13910	
004	Nut	220.00	12	
005	Screw	0.00	9	
006	Moving rod	0.00	1294	
007	Impulse Controller	0.00	727	
008	Cover-c	1.00	66	

Customer: Sukhumwit

Record box

Quantity	Price	Total Price
10.00	1,390.00	1,450.00

NEW OK CANCEL

Record 1 of 1

Figure 5-36: Spare Parts Sales screen

Microsoft Access - [Form: Transfer]

Master File P.M. Job Allocation Inventory Report Ext

Transfer (Fair Share Case)

Parts List

Part No	Part Name	Part	Balance	Quantity
001	Hydraulic oil filter	SV1	100.00	100.00
001	Hydraulic oil filter	SV2	64.00	100.00
001	Hydraulic oil filter	SV3	95.00	100.00
001	Hydraulic oil filter	SV4	6.00	10.00
001	Hydraulic oil filter	SV5	0.00	0.00
001	Hydraulic oil filter	Head Office	30.00	12.00
002	O-ring	SV1	10.00	9.64
002	O-ring	SV2	2,200.00	7.50
002	O-ring	SV3	8.00	1.55

Parts should be transferred

Part No	Part Name	Transfer To	Transfer Qty	Transfer Date
001	Hydraulic oil filter	SV2	27	10/09/1997
001	Hydraulic oil filter	SV4	3	10/09/1997
003	Boom leg	SV1	19	10/09/1997
003	Boom leg	SV3	1	10/09/1997

Record: 1 of 232

Form View

Figure 5-37 : Transfer (Fair Share Case) screen

Microsoft Access - [Form: Transfer Normal]

Master File P.M. Job Allocation Inventory Report Exit

Transfer (Normal Case)

Parts List

Part No	Part Name	Transfer to	Transfer Qty
001	Hydraulic oil filter	SV1	100.00
001	Hydraulic oil filter	SV2	64.00
001	Hydraulic oil filter	SV3	95.00
001	Hydraulic oil filter	SV4	6.00
001	Hydraulic oil filter	SV5	0.00
001	Hydraulic oil filter	Head Office	30.00
002	O-ring	SV1	10.00
002	O-ring	SV2	2,200.00
002	O-ring	SV3	0.00

Parts will be transferred

Part No	Part Name	Transfer to	Transfer Qty
001	Hydraulic oil filter	SV1	36

NEW Transfer Cancel

Record: 1 of 232

Figure 5-38 : Transfer (Normal Case) screen

Microsoft Access - [Form: Re-Order]

Master File P.M. Job Allocation Report Inventory Exit

Re-Order Enter Date: 17/09/1997

Parts List					
Part No.	Part Name	On Hand	Reorder Pt.	Current Stock	Usage Rate
001	Hydraulic oil filter	5980	642	364	12.00
002	O-ring	26824	960	558	17.33
003	Boom leg	42436	556	362	8.36
004	Nut	20	631	376	11.00
005	Screw	1980	97	65	1.36

Parts should be re ordered

Part No.	Part Name	On Hand	Re-Order Pt.	Current Date	Demand

Parts on Delivery

Part No.	Part Name	Reorder Quantity	Re-Order Date	Current Date
004	Nut	32863	05/09/1997	17/09/1997

Form: Re-Order

Figure 5-39 : Re-order screen