

Chapter 3

General Study on the Company

3.1 General Aspects

Installation, commissioning and after sale services are the very important issues for the equipment and machinery business. In this thesis, a service company which is affiliated to a machinery trading firm is studied. The trading company in this study is mainly dealing with material handling equipments which include truck-mounted crane and electrical forklift truck; and warehouse equipments which include dock leveler, and industrial door.

After the sales contract has been finalized, the activities in the service company start. This service company has five service centers in operations and one head office in the same province as service center No. 1 which cover the area as follows:

1. Head Office-General management located on Sukhumwit Road, Bangkok.
2. Service Center No. 1 (SV1)-Service with full facility for Northern and Central zone.
3. Service Center No. 2 (SV2)-Service with full facility for North-Eastern and Eastern zone.
4. Service Center No. 3 (SV3)-Service with full facility for Western and Southern zone.
5. Service Center No. 4 (SV4)-Service with limited facility for 6 provinces of Southern zone.
6. Dealer-Service with limited facility for Northern zone.

The current organization of this service company is as follows:

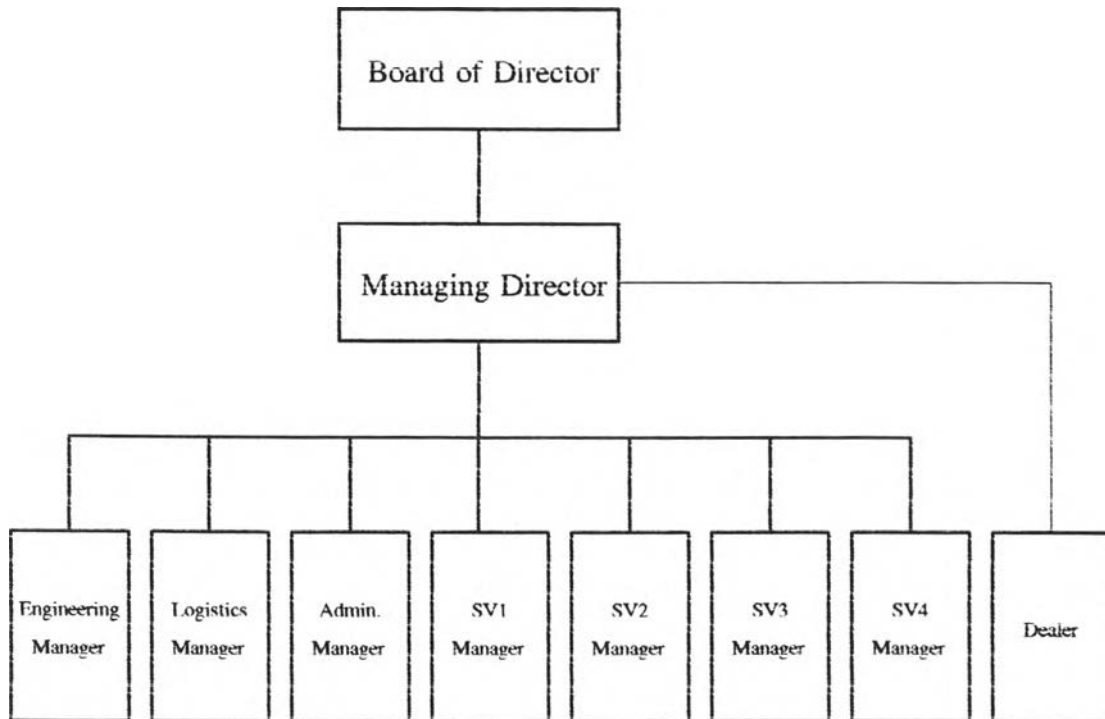


Figure 3-1 : Organization of the company

Normal functions for this service company are

1. Installation of truck-mounted crane on truck at service center.
2. Installation and commissioning of other equipments at customer place.
3. Preparing pre-delivery inspection and start up.
4. Providing preventive maintenance.
5. Providing break-down maintenance.

This company was established in 1996. In the past it was just a department in a sales and services company. Later when the sales volume has rapidly increased, the service activity had also been increased in the same direction. Therefore, management decided to separate service department to be an independent company. Service orders received by this company come from two sources. The first comes from sales department for equipment-installation, pre-delivery

inspection and preventive maintenance activity. The second comes directly from customers for break down maintenance and spare parts sales. However, the service activities provided to each product line require different facilities. They can be classified into two main groups as follows:

3.1.1 Truck-mounted crane and its accessories

This product line must be **installed** to the truck before starting usage. Normally, the products are installed at service center. At present time, they are installed at Service Center No. 2 (SV2) and Service Center No. 3 (SV3). The installation process takes 3-4 days and use 2 welders or 1-2 mechanics. In addition, **Pre-Delivery Inspection (P.D.I.)** is also included in the last step of installation procedure.

When the products are sold to customers, they will be serviced within one-year warranty period under free of charge contract. This is **Preventive Maintenance (P.M.)** functions. Normally, the function is operated at customer place and by only one mechanic. The mechanic will change hydraulic oil filter, change hydraulic oil, and check hydraulic pressure system. The job will take around three hours but it will take much time in transportation to go to customer place.

Break-down maintenance is the last function. Mostly, it is occurred after one year period of usage. This function can not be defined exact time and operators used in the process. It depends on the damage of each case. However, this function is operated at service center and customer place in the nearly same proportion.

Truck-mounted crane and its accessories - Functions Summary

Details	Install at service center	Install at customer place	Pre-delivery Inspection	Preventive Maintenance	Break-down Maintenance
Frequency	90%	10%	All	All	All
Job details	Follow installation manual		Included in installation work	- Change hyd. oil filter - Change hyd. oil - Check hyd. pressure system	Follow service manual
Time used	3-4 days		Included in installation work	3 hrs. but take much time in transportation	Up to each case
Operater required	2 welders 2 mechanics	2 welders 1 mechanic	Included in installation work	1 mechanic	Up to each case
Place	SV2 (Bangna) SV3 (Nakornpathom)	Customer place	Service center	Customer place 80% Service center 20%	Customer place 50% Service center 50%

Table 3-1 : Summary of functions operated to truck-mounted crane and its accessories

3.1.2 Electrical forklift

This product line must be set up before starting usage. Normally, it is operated at Service Center No. 1 (SV1). Two electricians will work together to fill acid fluid, check hydraulic oil, and tighten bolt and nut. They will work around 2-4 hours. After that, the forklift truck will take one overnight to set up acid fluid.

Before the product is delivered to customers, it is finally inspected. The inspector will check weight lifting capability, forward-backward movement.

Like truck-mounted crane, this product is warranted under free of charge contract within one- year period. This activity takes place at customer place. One electrician will go to customer place to clean forklift, do grease up, check hydraulic oil and check electrical system. He will work around three hours but takes long time in transportation.

When the product is broken after the first year of usage, the break down maintenance will recover the damage. This function will differ in each case in terms of service steps, time and number of electrician used. Normally, this function takes place at customer place.

Electrical forklift - Functions Summary

Details	Install at service center (Sukhumwit)	Install at customer place	Pre-delivery Inspection	Preventive Maintenance	Break-down Maintenance
Frequency	90%	10%	All	All	All
Job details	<ul style="list-style-type: none"> - Acid filling - Check hydraulic oil - Tighten bolt/nut 	<ul style="list-style-type: none"> - Acid filling(from SV.1) - Check hydraulic oil - Tighten bolt/nut 	<ul style="list-style-type: none"> - Weight lifting check - Movement check (forward-backward) 	<ul style="list-style-type: none"> - General cleaning - Grease up - Hydraulic oil check - Electric system check 	Follow service manual
Time used	2-3 hrs. plus 1 night (acid filling)	3-4 hrs.	Included in installation work	1-3 hrs. but take much time in transportation	Up to each case
Operater required	2 persons (1-tighten bolt, 1-forklift driver)	2-4 electricians	Included in installation work	1 electrician	Up to each case
Place	Service center	Customer place	Service center	Customer place	Customer place 90% Service center 10%

Table 3-2 : Summary of functions oprated to electrical forklift

3.2 Organization Chart

As this company has established for around one year, most of the commands are created by managing director(M.D.) and then transmitted to department managers. Department managers control their subordinates per MD's order. The current organization chart is shown in figure 3.1. Another organization chart is of each service center. It is shown below.

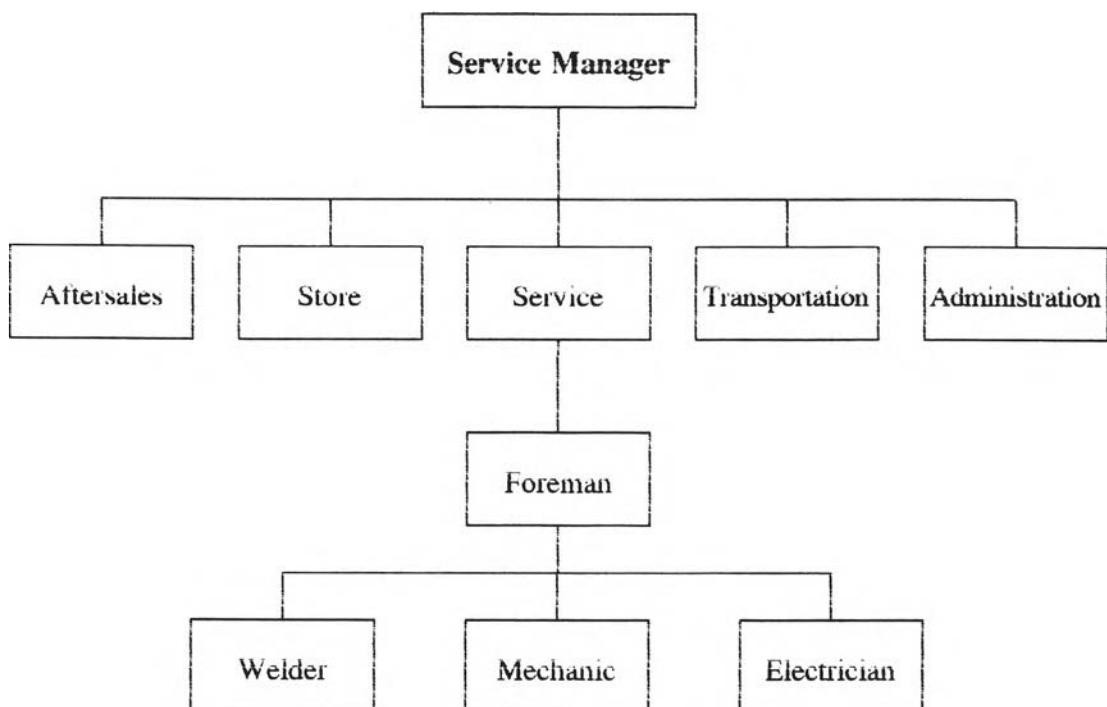


Figure 3-2: Organization chart of service center

3.3 Operation Procedures

The concerned procedure of this company are mainly classified in seven procedures. They are illustrated as follows:



3.3.1 Installation

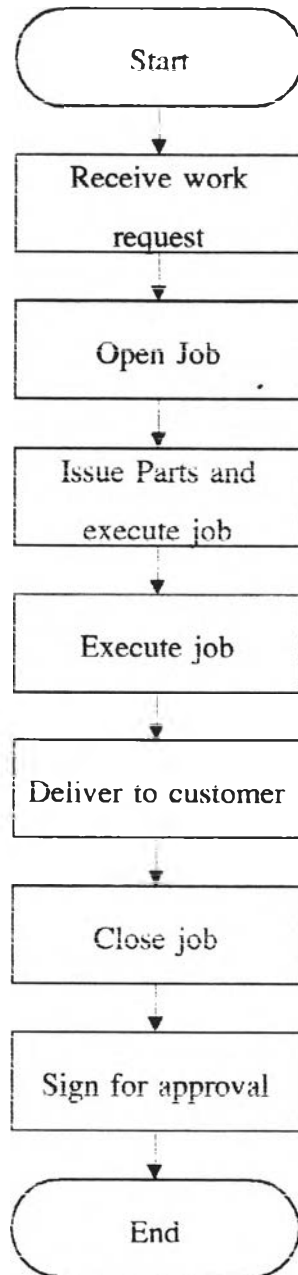


Figure 3-3 : Installation procedure

This procedure the company receives work request from Sales company. Then, Administration department will open job order and passes the job to the service section. Foremans will issue parts from store and send them to assigned operators. The operators will execute job per to work request. When the operation of operators is finished, transportation department will deliver the finished job to customer. After that Admin. dept. will close job and submit to service manager for approval sign.

3.3.2 Preventive Maintenance (P.M.)

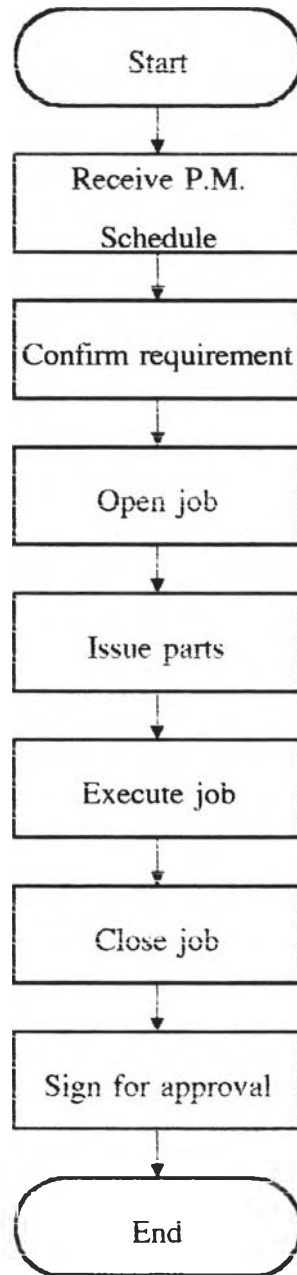


Figure 3-4 : Preventive Maintenance procedure

The company receives P.M. schedule from sales company. When the time to operate P.M. is arrived, aftersales department will make an appointment to service customer. If the customer is ready to service, aftersales will inform admin. dept. to open job and passes it to service section. Foremans will issue parts from store and send them to assigned operators. The operators will execute job at customer place or service center. When the operation of operators is finished, Admin. dept. will close job and submit to service manager for approval sign.

3.3.3 Break down maintenance

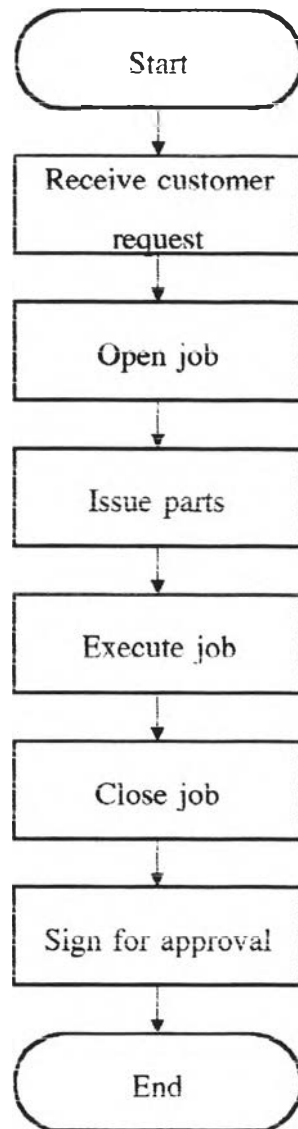


Figure 3-5 : Break down maintenance procedure

Aftersales dept. receives requirement from direct customer or form sales company. They inform admin. dept. to open job and passes it to service section. Foremans will issue parts from store and send them to assigned operators. The operators will execute job at customer place or service center. When the operation of operators is finished. Admin. dept. will close job and submit to service manager for approval sign.

3.3.4 Issue parts from store

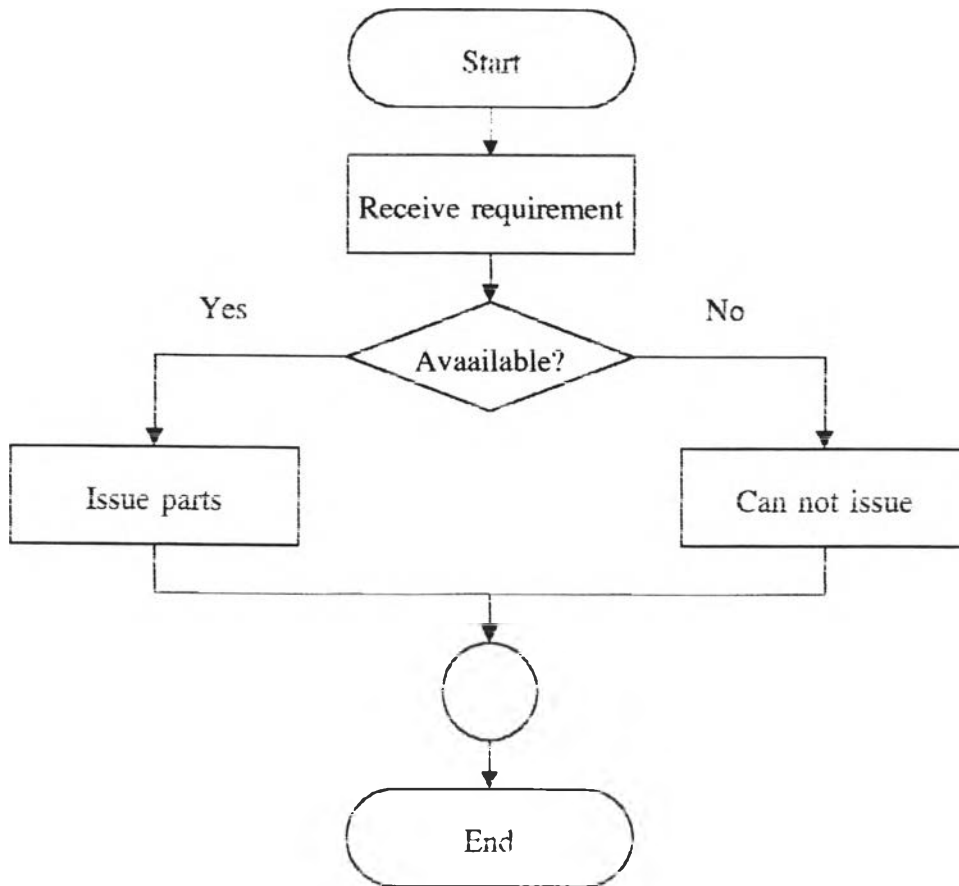


Figure 3-6 : Issue parts procedure

Store receives requirement from foremans or direct customer. They will check whether on hand inventory of required items are available. If available, they will distribute to response that requirement. If not, issue procedure is not be happened.

3.3.5 Transfer parts

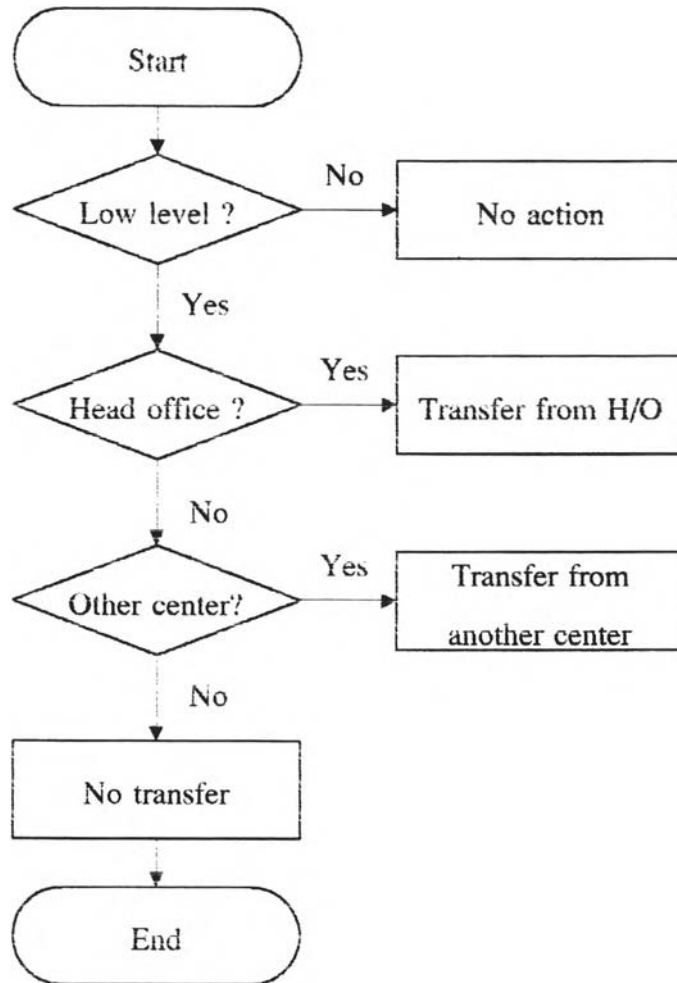


Figure 3-7 : Inventory transfer procedure

When inventory level of each service center is lower than the suitable level or shortage. Store staff will request to transfer from head office. If the quantity at head office is available, the required item is transferred from head office to that service center. If not, that service center will check other service centers. If other service centers have the required items, inventory will be transferred from available service center to the first service center.

3.3.6 Re-order imported parts

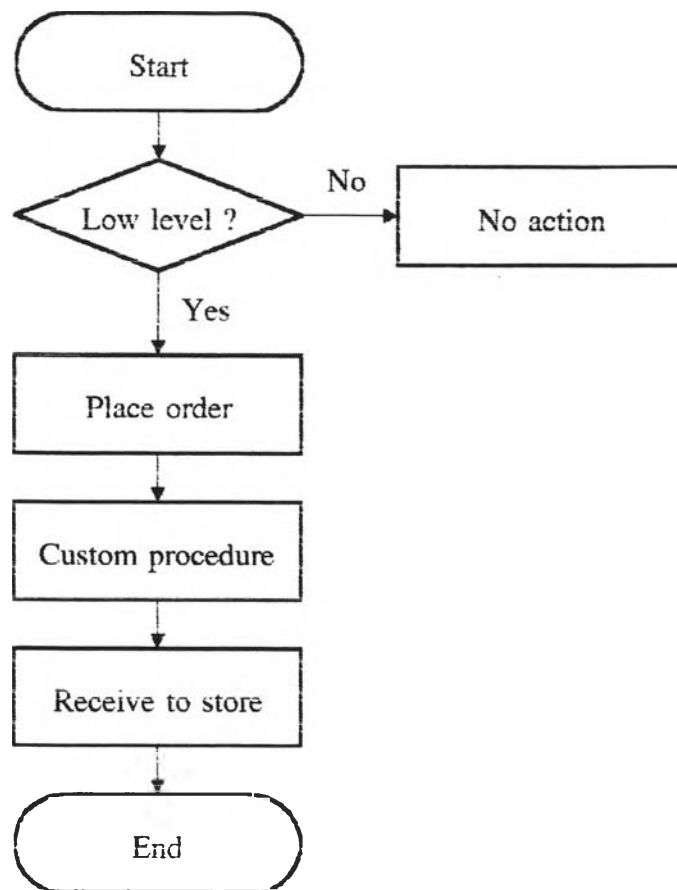


Figure 3-8 : Re-order inventory procedure

Managing Director checks the on hand quantity from monthly report together with his experience whether what items should be re-order. Then, he will request logistics manager to place order for the low-level items with the quantity estimated by his experience. After lead time duration, the required items arrive Thailand. Admin. dept. will operate custom procedure. The required inventory will be delivered to the company. Store will check the inventory and recorded to store.

3.3.7 Order local parts

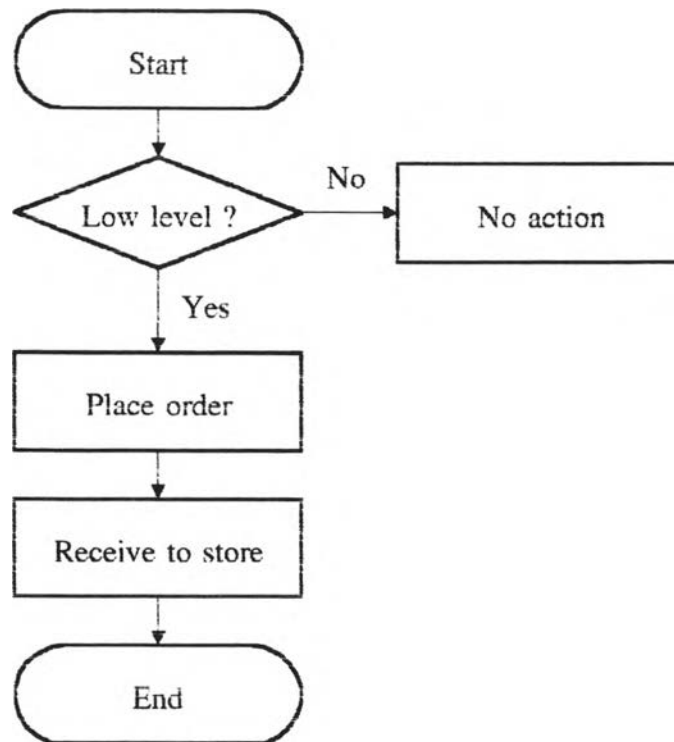


Figure 3-9 : Order local parts procedure

Store of each service center check whether the on hand quantity is lower than suitable level. If so, they will order from suppliers in the neighboring areas. The parts will arrive service center not later than five days. Store staff will check the inventory and recorded to store.

3.4 Facility Summary

Items	SV1	SV2	SV3
	Sukhumwit	Bangna	Sai 4th.
No. of bay(s)	2	3	3
No. of welders	3	3	4
No. of mechanics	--	7	12
No. of milling machines	2	--	--
No. of painter	1	--	--
No. of electrician	6	--	--
Factory tool	1	1	1
Mechanics tools	3	4	5
No. of welders per installation	2		
Max. installation	2	2	2

Table 3-3 : Facility summary of this company

Facilities of this company has always changed. So, the quantity of each items can not be recorded exactly. However, the above table shows facilities status at May, 1997.

3.5 Problem area

To serve customer demand across the country, the existing service centers are assigned to respond to customer service demand in their areas. However, in case of customer demand exceeding a certain over that service center capacity, the procedure to allocate job to the other available service center is to contact from time to time. Sometimes, the customer may suffer from waiting to get service at the nearest service center or from traveling too far to get service at the other available

service center. Moreover, when the customers received service from the service center, they frequently wait for a long time to get their product back to their normal operation. This is because the company can not plan or control service schedule systematically. The consequence is that they can not monitor service activity such as preventive maintenance in the warranty period. The management, therefore, do not have a good reporting system to plan for future direction for the company.

Job Record

Period : July- Dec. 1996

Items	Service Center		
	SV1	SV2	SV3
Total Jobs	473	373	225
No. of installation jobs	17	37	45
No. of B/D maint. and P.M. jobs	282	317	173
No. of P.D.I. jobs	142	---	---
No. of jobs canceled	32	19	7

Remark : B/D = Break down maintenance, P.M.= Preventive Maintenance.

P.D.I.= Pre delivery inspection.

Table 3-4 : Job record taken by each service center

The data in the above table show that SV1 took jobs more than the other two service centers. The operating time of all three service centers is also longer than it should be: especially of SV1. This is because this company lacks of suitable management to allocate job from SV1 to the other available service centers and/or lacks of spare parts when they are required.

From monthly report issued at the end of 1996, the number of inventory of this company is 3,922 items valued more than 40 million baht. Only 1,457 items have moved in 1996. The rest have no movement.

The inventory is controlled at head office main stock. It controls only imported parts. Local parts are controlled by each service center. Lead times of imported parts are around three weeks and of local parts are around one weeks.

The inventory is considered to re-order by Managing Director's decision. He consider from monthly report and his experience. If on hand inventor level are lower than the level it should be. he will decide to re-order at the suitable quantity. This quantity is also estimated by his experience. The inventory is frequently too high or too low. If it is too high, cost of carrying is also too high and inventory of some items may change to no movement parts. If it is too low, the shortage problem is likely to be occurred.

Another inventory problem is lack of suitable inventory level of each service center. When there is requirement from each service center. the inventory is transferred from head office main stock to service center in the quantity that they required. If head office has enough on hand quantity. this request will have no problem. But when on hand level of head office is not enough. The shortage problem is occurred. That service center must request other service centers to transfer this required quantity. Normally, the service center tends to stock inventory at high level to prevent shortage problem.