MATCOM

TRANSPORT MANAGEMENT

material for management training in agricultural co-operatives

TRAINER'S MANUAL

international labour office, geneva

MATCOM
Material and techniques for cooperatives management training

The MATCOM Project was launched in 1978 by the International Labour Office, with the financial support of Sweden. In its third phase (1984-1986) MATCOM is financed by Denmark, Finland and Norway.

In collaboration with cooperative organizations and training institutes in all regions of the world, MATCOM designs and produces material for the training of managers of cooperatives and assists in the preparation of adapted versions for use in various countries. MATCOM also provides support for improving the methodology of cooperative training and for the training of trainers.

Preface

This training package is one of a number of training packages designed by the ILO - MATCOM Project to assist people who plan or carry out training for the managerial staff of agricultural co-operatives in developing countries.

The training provided under this training package, as well as under the other packages in this series, is based on a thorough analysis of:

(i) the tasks and functions to be performed in agricultural co-operative societies in developing countries;

(ii) the common problems and constraints facing the effective performance of these tasks and functions.

The result of this analysis is reflected in the MATCOM "Curriculum Guide for Agricultural Co-operative Management Training". The Guide contains syllabuses for 24 management subjects and it is on these syllabuses that the training packages have been based.

The list of subjects and syllabuses is as follows:

1. Co-operative Knowledge
2. Co-operative Law
3. "Co-operative" Management
4. Farming
5. Collecting and Receiving Agricultural Produce
6. Transport Management
7. Storage Management
8. Marketing of Agricultural Produce
9. Supply Management
10. Rural Savings and Credit Schemes
11. Staff Management
12. Office Management and Communications
13. Book-keeping and Accounting
14. Financial Management
15. Cost Accounting
16. Planning, Budgeting and Controlling
17. Risk Management
18. Statistics
19. Project Preparation and Appraisal
20. Rural Sociology
21. Economics
22. Development Economics
23. Advanced Marketing and International Trade
24. Public Relations, Member Recruitment and Member Education.

For more information on the above training material, please write to:

The MATCOM Project
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International Labour Office
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THE TRAINING PROGRAMME

1. Target Group

Target groups for this training programme on "Transport Management" are transport managers and assistant transport managers or other staff of agricultural co-operatives who run or plan to run a co-operative transport service.

Co-operative officers or extension staff supporting the above target groups can also benefit from the programme.

2. Aim

The aim of the programme is to train people to manage a co-operative transport service effectively.

In particular, the programme will:

- enable trainees to define the role and describe the functions of an agricultural co-operative transport service;
- enable trainees to decide and explain which form of transport is appropriate for a given task;
- enable trainees to identify the factors that influence the choice between hired and society-owned transport and to calculate the costs of owning and operating transport;
- enable trainees to prepare for purchase of a vehicle;
- enable trainees to allocate and schedule transport services so that the best possible use is made of available resources;
- enable trainees to identify and develop systems for vehicle inspection and maintenance;
- enable trainees to work out systems and records for issuing fuel;
- enable trainees to identify what spare parts and how many should be stocked;
- enable trainees to deal effectively with licenses, insurance forms and other documentation needed in a co-operative transport service;

- enable trainees to identify and estimate costs and benefits within a co-operative transport service;
- enable trainees to estimate when replacement of an old vehicle by a new one should take place by comparing depreciation and maintenance costs.

The programme as described in this manual can be used for a special course on transport management, or it can be incorporated in the curriculum for a more comprehensive management training programme.

3. Duration

The complete programme, as described in this manual, consists of 30 learning sessions. Session times vary from 1 to 3 hours. The total programme will take approximately 50 hours, or between 8 and 10 days, depending on the qualifications and experience of the trainees. A timetable should be prepared accordingly.

4. Training Approach and Methods

The programme is based on the assumption that

"training is expensive"

"money for co-operative management training is scarce".

Therefore it looks upon training as an investment, and unless the training yields results, the return on the money invested in it will be nil.

On their return home from the training programme, the trainees should therefore be able to show concrete results of improved management. In order to prepare and equip the trainee to achieve this, the programme has adopted a highly active learning approach through the use of "participative" learning methods and a built-in action commitment.

Trainees will not learn about transport management in a general and passive way. Their day-to-day transport management problems have, as much as possible, been translated into realistic case-studies, role-plays and other problem-solving exercises. Trainees (working mostly in groups) will learn by solving these problems as in real life with the necessary assistance and guidance from the trainer, who will act more as a "facilitator" of learning than as a lecturer.

The built-in action commitment at the end of the programme will give each trainee the opportunity of using the knowledge and expertise of his colleagues in the training programme in order to find a concrete and acceptable solution to a specific management problem he is faced with - a solution to which the trainee will commit himself for implementation.

5. Structure

The programme is divided into nine TOPICS:

1. The Need for Transport
2. Hired or Society-owned Transport?
3. Purchasing Vehicles
4. Allocation and Scheduling
5. Maintenance
6. Regulations and Insurance
7. Costing, Control and Motivation
8. Replacement and Disposal of Old Vehicles
9. Action Programme and Commitment

Each topic is covered by a number of SESSIONS. The following material is provided for each session:

- a session guide for the trainer (yellow pages), giving the objective of the session, an estimate of the time needed and a comprehensive "plan" for the session, including instructions on how to conduct the session.
- handouts (white pages) of all case-studies, role-play briefs, etc., to be reproduced for distribution to the trainees.

6. Adapting the Programme

Before "using" the programme in a real training situation, it may be necessary to adapt it. This can be done as follows:

Read through the programme and decide whether:

- the programme can be run as it is;
- only certain topics or sessions should be used;
- new topics and sessions should be added.

Your decision will depend on the training needs of your trainees and the means you have at your disposal.

Carefully read through the sessions you have decided to use. Check the subject matter in both the session guides and the handouts. Modify them where possible to include local currencies, names, crops and so on. Such adaptation will help trainees identify themselves more easily with the people and the situations described in the handouts and will considerably increase the impact and effectiveness of the training programme.

In the event of substantial adaptation, it is better to retype the page completely.

Minor adaptations (currency, one sentence or paragraph) can be corrected on the original supplied in this binder.

7. Preparing Yourself

Some trainees may feel that material of this sort means that they need only spend a few minutes preparing for each session. This is not the case.

You should carefully study each session guide and prepare a detailed lesson plan based on the content and sequence suggested in the guide, and on the adaptation which you may find necessary.

You should work through all calculations, so that you can explain them to the trainees.

You should obtain and study all necessary local forms, statistics or other material so that you can incorporate them in the sessions where they are suggested.

8. Preparing the Training Material

Handouts constitute an important part of the training material used in the programme. They can be reproduced from the original handouts supplied in the ringbinder, after the necessary adaptation has been made (see "Adapting the Programme"). Reproduction may be done using whatever method is available: stencil, offset printing, photocopy or other.

The only item of training equipment which is absolutely essential is the chalkboard.

Certain sessions contain dialogues which can be pre-recorded and then played to the trainees during the session. After modification for local currency, names and so on, the dialogue can be recorded on any domestic tape recorder. However, if this equipment is not available, the dialogue can be enacted by the trainees in the class-room.

Some suggestions for visual aids are given in the session guides. If flipcharts or overhead projectors are available, you should pre-pare these aids in advance. If they are not available you can still use the chalkboard.

Trainees should be informed in advance to bring examples of the following documentation from their society:

- forms and records used in connection with the servicing and main-tenance of vehicles in the workshop of their society (session 5.3);
- work-schedules used in the vehicle workshop of their society (session 5.4);
- forms and records used in connection with fuel issues in their society (session 5.5);
- samples of local vehicle and driver's licences, application forms, vehicle log books and test certificates and eventual other vehicle documents kept by their society (session 6.1);
- samples of local vehicle insurance application forms, vehicle insurance policies and accident report forms (session 6.2);
- driver's records forms used in their society (session 6.3).

The Pre-course Questionnaire should be sent to trainees in advance.

Trainees should be asked to complete it and hand it in at the beginning of the training programme.

9. Follow-up and Evaluation

it is recommended that you or other resource persons arrange to con-tact the trainees after six months, to see how well they are doing with implementing their "action commitments". The course - not the trainees - should be evaluated by the success trainees have had in the implementation of their commitments.

TABLE OF CONTENTS

Pre-Course Questionnaire

Name: .....

Society: .....

Job Title: .....

Brief description of your responsibilities:

.....

.....

.....

What parts of your job do you enjoy the most?

.....

.....

.....

What parts of your job do you find the most difficult?

.....

.....

.....

Please complete the following sentence:

As a result of attending the course on Transport Management I hope that I shall be able to .....

.....

.....

.....

topic

1

the need for transport

SESSION 1.1

INTRODUCTION

Objective: To demonstrate the importance of effective management of transport services, and to identify sources of expertise within the group.

Time: One to two hours.

Material: Completed pre-course questionnaire, timetable and list of participants.

Session Guide:

1) If a prominent visitor is to open the programme he or she should be asked to give examples of problems or wastage that have arisen through inadequate transport management and to stress that people in the trainees' position can make a major contribution in this area.

2) Ensure that any administrative problems are dealt with; matters of accommodation, payment of expenses, transport, rooms for private study and any other points of information should be settled now.

3) Point out that a training course such as this is an investment; attempt to estimate its total cost (including trainees' salaries while in training). Ask trainees to suggest how they might use this sum of money if it was available to them to improve their own transport service. They may mention purchase of a vehicle, training more drivers, building new maintenance facilities or something else. Point out that unless the value of the benefit to the members from this course exceeds the cost of the course, the money would have been better spent as suggested. Trainees should therefore continually apply in their own minds what they are learning to their own jobs. If it appears irrelevant, mistaken or if they do not understand how to use it, they must say so and the course will be changed accordingly.

4) Go briefly through the timetable and stress that trainees will be required to contribute and not merely to listen. People learn not by sitting and listening but by participating and doing things themselves.

5) Ask each trainee to summarise his prior training and experience, and to state what he hopes to gain from attending this course. Refer to the pre-course questionnaires if necessary. Stress that everyone brings something to the course and that the total experience in the group as a whole is substantial. While trainers and the material will provide ideas about techniques and a structure to the course, a major input must come from the trainees.

Attempt to classify trainees' objectives and experience on the board: identify the special expertise or experience that each trainee brings to the course, emphasizing the point that the group as a whole is an extremely powerful source of expertise and experience.

6) Tell trainees that at the end of the course everyone of them, individually, will be expected to produce and commit himself to an action plan, which will include:

- A statement of a transport problem in his society.
- A brief description of the way in which he proposes to solve this problem.
- Ideas on how he will "sell" this solution to his superior and subordinate staff, and to the committee and members if necessary.
- A specific description of exactly what the trainee expects to have achieved by a certain specified date (within 6 months after the course has ended).

Tell the trainees that the instructors intend to contact them after this specified period to assess how successful they have been in implementing their plans. The course, rather than they themselves, will be evaluated by their success.

SESSION 1.2

TRANSPORT NEEDS AND THE LEVEL OF SERVICE

Objective: To enable trainees to identify the basic transport needs of an agricultural co-operative and to determine whether these are, or are not, satisfied by the transport service.

Time: One to two hours.

Material: Micro cases A to H.

Session Guide:

1) Ask the trainees to list the tasks for which they need transport in their Co-operative. Using the OHP/blackboard for display, elicit a list covering the following:

   - to carry produce from collection points to a warehouse or to a processing plant;
   - to carry produce to a market;
   - to collect farm supplies from a wholesaler;
   - to distribute farm supplies (e.g. fertilizer) from the Co-operative's warehouse to the farmers;
   - to transport people.

   Lists may vary according to local circumstances and the type of Co-operative. Emphasize to trainees that transport includes the movement of produce, supplies or people. It includes tasks carried out by lorries, tractors, animal-drawn carts and human porters.

2) Distribute the micro cases and ask the trainees individually to identify the failings of the transport service in each case or to explain why a better transport service was not available. Take one case at a time.

3) Allow trainees up to thirty minutes for this. Discuss their conclusions and elicit a list covering the following points:

Case A - the existing transport was too slow

Case B - the existing transport was not available where it was needed

Case C - the existing transport was not reliable because of poor maintenance of the transport vehicles

Case D - the existing transport was too expensive

Case E - better transport could not be made available because of lack of credit facilities

Case F - the existing transport became unreliable and will eventually cease because of lack of spares

Case G - the right type of vehicles was not available

Case H - the existing transport vehicle was too difficult to maintain and operate

Case I - the existing transport service was poorly scheduled.

4) Ask trainees, in groups, to write a list of specifications which describes an ideal transport service from the farmers' point of view for a particular crop in their area. One trainee in each group should be responsible for writing down the list.

5) Allow up to thirty minutes for this. Ask one group to produce a list of their specifications and then ask the remaining groups to comment on the list and suggest additions based on their lists. The final list should include (as a minimum) the following:

- the transport service should allow rapid movement of produce and supplies;
- the transport should come to points convenient for farmers to load and unload produce or supplies;
- the transport service should be safe, reliable and free from breakdowns;
- the transport service should be as cheap as possible;
- the right type of vehicle should be available for a particular task (e.g. carrying cattle);
- the transport service should be available at all times (i.e. not in short supply at certain times of year);
- the transport should arrive when promised.

6) Ask trainees to give examples of cases from their experience, where a transport service has failed to be ideal and to meet its users' needs. Do not at this stage discuss methods to alleviate these failings or why it might be difficult to do so.

7) Ask trainees to tick off on their consolidated lists those specifications which their society's transport service successfully achieves. This course should help to increase the number of ticks.

Failing Transport Services

Case A

The farmers of region A produce a crop that deteriorates rapidly after harvesting. They use bullock carts to carry all their produce to markets within 1 or 2 days'distance. A few years ago they increased production but found it was not worthwhile. Although they had enough time to carry the extra produce to more distant markets, the quality of the produce when it arrived was so poor that the price received did not justify the effort and expense of growing it.

Case B

The Co-operative had purchased a truck. It carried a lot of produce (and goods) quickly to and from town. The farmers, however, were not entirely satisfied. They still had to carry their produce long distances to a collection point on a main road because the unsurfaced tracks could not support the weight of the truck especially in the wet season.

Case C

The Co-operative had bought its truck about a year ago. The garage had said that they should return it every 8000 km for inspection and maintenance. They did this once or twice but stopped because it cost a lot of money and all the garage seemed to do was change the oil. Now after about a year the truck keeps breaking down. Last week the truck broke down on the way to market and, as no alternative transport could be found, the whole load of produce it was carrying went rotten and became unsaleable.

Case D

One of the farmers in village D bought a new lorry. He intended to use it to convey other farmers' produce and goods between the village and their markets. At first other farmers were enthusiastic but eventually they all returned to using bullock carts. They said the price they received for their produce in the market was so low that they could not afford to pay the lorry owner the price he asked for his transport services.

Case E

The Manager and the Committee had carefully studied the figures and had come to the conclusion that a truck was economically viable. It would be able to carry much more of the farmers' produce to the market in the city and with its greater carrying capacity it would be much cheaper than hiring vehicles from private contractors. The Manager of the Co-operative asked the salesman if it would be possible to have the lorry delivered as soon as possible and to pay for it in 36 monthly instalments. The salesman said that this was not possible. They should obtain credit from the banks or elsewhere. The Co-operative Bank was the only possible source of credit for the Co-operative but the manager could not agree to finance the purchase of the truck because o£ limited funds. The Co-operative had to continue to transport the farmers' produce the old way.

Case F

The Co-operative in region F bought 2 new lorries. They were ideal for the job, but after a year the back axle of the first lorry broke and six months later the crankshaft broke on the second one. Because the Co-operative could not get replacements for these parts they transferred the back axle on the second lorry onto the first. Now the crankshaft has broken on that one, too.

Case G

The cattle farmers' Co-operative was keen to buy a lorry to carry members' cattle to the market. The Co-operative could buy a lorry with a flat-carrying surface which was big enough to carry the cattle, but it would be necessary to have sides and a roof to keep the cattle on the vehicle and protect them from the weather. It was not possible to buy a lorry properly equipped,so they decided not to buy a lorry at all.

Case H

The Co-operative was proud of its new lorry. It had automatic gears and lifting equipment. It worked well at first. The trouble was that drivers could never learn to use the lifting equipment properly and when anything broke down they usually could not mend it themselves and the Co-operative had to get somebody from the city to come and mend it. This cost a great deal of money and took a lot of time.

Case I

The local transport contractor had six vehicles. They should have been sufficient to serve the local farmers, but there always seemed to be problems. Sometimes the vehicles would arrive a day late or too early in the morning. At other times the lorries would already be overloaded when they arrived to pick up produce. The farmers complained to the truck operator who said he would try to ensure a better service, but the same problems kept recurring.

Assignment:

Study these micro cases and identify the failing in the existing transport service or the reason why a better transport service was not available.

SESSION 1.3

WHICH TRANSPORT?

Objective: To enable trainees to decide and explain which form of transport is appropriate for a given task.

Time: One to one and a half hours.

Material: Case study.

Session Guide:

1) Elicit from trainees typical decisions that a transport manager in a Co-operative has to make. Typical answers might include:
   - whether to purchase a vehicle or hire transport;
   - which vehicle to purchase;
   - how many vehicles to purchase;
   - whether to use rail or road transport;
   - whether to use air or sea transport (when exporting for instance);
   - whether to carry out vehicle maintenance in the Co-operative or outside in a garage;
   - which jobs should be carried out by which vehicles and in what sequence.

2) When the trainees have identified a list of decisions, elicit what a manager should do in order to make the right decision:
   - identify the alternatives available;
   - estimate the costs and benefits of the different alternatives;
   - compare the costs and benefits and decide which alternative is best.

Distribute the case study to the groups. Explain that the case study is about the choice between railway and lorry transport for carrying produce. Ask groups (i) to list the factors that will influence the final choice and (ii) to compare rail/lorry transport for each factor.

Allow up to 30 minutes for this.

3) Reconvene trainees and ask groups to present their lists on the blackboard/OHP. A typical list should be:

Factor	Rail	Road	Best
Cost	$5,000	$4,500	Road
Ease and speed of access to transport	Poor	Good	Road
Speed of delivery	Good	Poor	Rail
Reliability: flooding danger breakdown	Good Good	Poor Poor	Rail Rail
Damage to crop during journey	Very rare	Sometimes	Rail
Convenience and flexibility of departure times	Poor	Good	Road

4) When a satisfactory table has been displayed, ask the trainees which method they would choose. The objective is not to discuss differences of opinion which depend on participants' previous experience or detailed knowledge about such things as the deterioration rate of sugar cane, but to demonstrate how good decisions involve consideration and comparison of all the features of a transport service (cost and the level of service). Elicit the following points from trainees:

- The decision should not be made on one factor alone (e.g. cost).
- The decision should not be made by comparing the number of times each option is best in the final column.

- Anyone who chooses rail is really saying that

higher journey speed greater reliability reduced damage	is worth more than	extra cost $500 poor access rigid timetable

- Anyone who chooses road is really saying that

cost saving of $500 better access more flexible timetable	is worth more than	higher journey speed greater reliability reduced damage

- Trainees may make different decisions depending on what factors they think are more important. If a trainee believes good access is very important, he is more likely to choose road. If he believes a high speed is very important, he is more likely to choose rail.
- A change in cost can change the decision. If a trainee chooses rail, ask him at what cost (of rail) he would switch to road.
- If the factors can be reduced to money then the decision would be simpler. For instance if it was found that the extra value of the crop when it is transported by rail is $1,000, then this can be easily compared with the extra transport cost of $500.

5) Emphasize that to list the factors influencing a particular decision such as used in the table in this session will help to:

- clarify all the implications of a decision;
- make comparison of the alternatives possible and systematic;
- allow other people to contribute to the decision in an orderly manner.

Rail or Road?

The "Sucan-Coop" devotes almost all its resources to the production of sugar cane. About 90 per cent of its cane is-sent to be processed. The sugar factory is however, closing down the local processing plant because it is old and expensive. This means that the sugar cane will have to go to another sugar factory 150 km away by road. Not only does this mean extra cost for Sucan-Coop but it may also result in a lower price for the cane. Sugar cane starts to deteriorate immediately after harvesting and the longer it takes to get to the sugar factory the lower the price that will be received. Sucan-Coop is therefore very concerned to choose the right means to transport the cane from the fields to the sugar factory.

The choice of transport has been narrowed down to two alternatives: either use the railway which passes quite close to Sucan-Coop or hire the services of the local haulage contractor to carry the cane to the sugar factory.

Sucan-Coop has asked the railways and the haulage contractor for an estimate of the cost of carrying the sugar cane from this season's harvest to the sugar factory. The railway has quoted $5,000 which includes all loading and unloading (fortunately the sugar factory has a siding of its own and the cane can therefore be unloaded on their premises). The local transport contractor will carry the cane to the factory for $4,500. Both methods of transport require payment at the end of the harvest. The lorries pick up the crop from the side of the fields and sometimes even in the field. With the railway it is necessary to carry the cane to the railway siding about 2-3 km away. This can be done using hand-carts or tractors towing trailers.

Sucan-Coop is separated from the sugar factory by a major river. Sucan-Coop is only 30 km away from the sugar factory by rail but, because the nearest road bridge is some distance away, the journey by road is about 150 km. The railway journey takes less than 1 hour whereas the journey by lorry over poor roads takes about 6 hours or even longer if the roads are flooded (as they often are in the harvesting season). If a detour is necessary due to flooding, the journey could take up to 24 hours.

The railway is noted for its reliability and regularity. It is never disrupted by flooding and provides a regular once-a-day service to the processing plant. The train stops only long enough to attach wagons. If there is no sugar cane loaded on the wagons the train must leave without any cane. This means that if the farmers are delayed in getting to the railway siding, they have to wait until the next day before the sugar cane leaves for the sugar factory. The lorry drivers, on the other hand, will usually wait an hour or two whilst farmers gather their cane and load it onto the vehicle.

The local contractor uses old vehicles, which are rather unreliable. If they break down on the way to the processing plant it may take a considerable time to repair them or transfer the produce to another lorry. The lorry drivers are paid according to the number of trips that they make, and for this reason they drive fast on the poorly maintained roads.

Sucan-Coop is concerned about this, because their sugar cane may arrive in poor condition.

Should Sucan-Coop choose the railway or the lorries?

Assignment:

1) Identify and list factors which, in your opinion, will influence the choice between rail and road. Use the form below:

Factor	Rail	Road	Best

2) Compare and rate rail and road transport for each factor.

3) Decide whether Sucan-Coop should use rail or road.

topic

2

hired or society-owned transport?

SESSION 2.1

HIRED OR SOCIETY-OWNED TRANSPORT?

Objective: To enable trainees to identify the factors that influence the choice between hired or society-owned transport.

Time: One to two hours.

Material: Role play briefs.

Session Guide:

1) Before the session starts, select two suitable trainees to play the role of the owner of a transport company and the Manager of a Co-operative. Ask them to read their briefs and to prepare themselves to present their case in front of the other trainees. They should use their imagination to fill in any gaps in their briefs. Neither should be allowed to see the other's brief. They should limit their initial presentation to no more than 15 minutes.

2) Arrange the classroom so that a selected group of trainees sit in a circle or square to simulate a committee meeting. Ask the remaining trainees to act as observers. Explain that the Manager has been considering purchasing two lorries to carry out the functions previously carried out by lorries hired from a transport company. The owner of this company has now asked to come and see the committee in order to argue the case why they should continue to hire transport from him. After the initial presentations the committee will be expected to ask the owner and the Manager for more information,and will finally take a decision - by vote if necessary - and give further instructions to the Manager. When the committee meeting has ended, the observers should be asked for their comments.

3) Next,elicit from the trainees a list of the main factors which must be considered when making a choice between hired or society-owned transport. The list must include at least the following:

- Cost and level of service of hired transport.
- Cost of purchase and operation of own vehicles (emphasize that work carried out by co-operative personnel in administration, maintenance etc. is, a cost; instead of doing this work they could have been doing other useful work).
- Availability and cost of credit facilities when purchasing own vehicles.
- Suitability of vehicles for task(s).
- Cost of labour (drivers, maintenance workers).
- Workers attitude: driver's personal interest in vehicles may lead to greater care and less accidents and breakdowns and reduce maintenance costs.
- Location and execution of maintenance: maintenance within the co-operative may be more convenient (no delay, no journey to garage) but will the total maintenance costs become lower?
- Effect of accident or breakdown: the hirer may provide substitute vehicle.
- Ability to meet variable needs.

Role Brief : Manager of Co-operative Society

The transport of members' produce and the collection of supplies is one of your major costs. At the moment you use the services of a local lorry owner. You hire lorries (with drivers) on a monthly basis at a cost of $9,600 per year. You have been trying for some time to reduce these costs. Instead of hiring transport services from the operator in town, you have examined the possibility of purchasing two lorries and employing two drivers. Unfortunately, you have not had time to collect all the data necessary for a detailed calculation of costs, but you estimate that the cost of owning and operating two lorries will be about $8,000 per year. This is roughly made up of:

Vehicle cost (depreciation)	$3,000
Maintenance	500
Drivers wages (2)	2,250
Fuel	2,000
Other costs (insurance etc)	250
	$8,000

You have asked the owner of the private hire company to meet you and your Committee in order to discuss your plans. You have told him that you can save 20% by buying your own vehicles, but you do not intend to reveal the details of your cost estimates. You hope to persuade the hirer to lower his charges or, if he does not do this, to persuade the Committee to allow you to carry out more detailed cost estimates with regard to a possible purchase of two lorries by the Society.

The main reason why you believe the cost can be lower is that the transport company has expensive offices in the centre of town and employs many "office" staff. You also think that drivers and members of the Co-operative will take more care of vehicles which belong to their own Society. In the end, wear and tear, and consequently cost, is therefore likely to be less.

You are also of the opinion that maintenance costs would be lower than those of the company, since the Co-operative could maintain the vehicles if it owned them.

The Co-operative has two mechanics at the moment who maintain farm machinery and it would not be much of a problem or cost to train them to maintain the lorries. This would mean that they could repair or service the lorries at a time convenient to the Co-operative, rather than at a garage's convenience.

At the moment the hirer has only two types of lorry for hire. You believe some other makes may be better and more convenient for your needs.

Role Brief : Owner of Transport Company

The Manager of a Co-operative wrote to you recently explaining that he was planning to buy vehicles instead of hiring from your company because, he says, the cost to have and to operate own transport in the Co-operative could be about 20% less than hiring from you. Although the Co-operative is not a particularly important customer, you do not want to lose their business as it may inspire other Co-operatives also to purchase their own vehicles. You have asked for an opportunity to meet and discuss with officials of the Co-operative, and they have invited you to a meeting of the Committee where you can put your case. You asked one of your employees to give you a breakdown of what you charge to the Co-operative. This is as follows:

Vehicle cost (depreciation)	$2,840
Maintenance	960
Drivers	2,600
Fuel	1,960
Insurance, licences, administration	1,040
Profit	200
	$9,600

You cannot understand how the Co-operative can cut costs by 20%. Perhaps the Manager has not allowed for all the costs of administration that ownership involves (arranging credit, handling licences, insurance etc.) or the full costs of labour. Because you are a big customer the garage gives you a generous discount on new vehicles and maintenance. It is unlikely that the Co-operative will obtain such generous treatment. You also believe that you can meet the Co-operative's needs much better than they will be able to. At the moment their demand for transport varies throughout the year - more is needed at harvest time than at other times of the year and you provide extra vehicles then. In addition if a hired vehicle breaks down, you can often provide a substitute vehicle.

Overall, you believe that your experience and knowledge of the transport industry is better than the Co-operative's. This means that you can purchase the best lorries, have them maintained properly at the cheapest price, obtain the most favourable credit facilities, and because of your strong bargaining position, obtain the largest discounts from lorry suppliers.

SESSION 2.2

CALCULATING THE COSTS OF "OWNING" AND "OPERATING" TRANSPORT

Objective: To enable trainees to calculate the cost of society-owned transport and compare it with the cost of hired transport.

Time: Two hours.

Material: Case study.

Session Guide:

1) Emphasize to trainees that before a choice is made between hired or society-owned transport, it is necessary to make accurate cost estimates of the two alternatives. Before doing this it is important to recognise the difference between standing and running costs. On the chalkboard/OHP display the following:

   Standing Costs are those costs which are incurred in order to have a vehicle and driver just standing ready for work.

   Running Costs are those costs which are incurred when the vehicle "runs".

2) Ask trainees to tell you whether the following cost items are standing or running. Allow them to discuss the problem,and when a consensus is reached write the cost on the blackboard under the appropriate heading - standing or running.

Cost item

- Vehicle Licence duty : standing
- Fuel : running
- Tyres : running
- Administration (postage, office lighting etc.) : standing
- Vehicle depreciation : standing (although it can be argued that depreciation is partly a function of distance run)
- Driver's Licence fee : standing
- Oil and other lubricants : running
- Repairs and maintenance : running
- Vehicle insurance : standing
- Driver's basic wage : standing (i.e. paid whether vehicle is used or not)
- Driver's overtime payments : running (only incurred when : vehicle is being used or run)

3) Display the following figures on the blackboard/OHP and ask trainees to calculate:

The standing cost for the year.

- The running cost for the year.
- The total cost per km.
- The running cost per km.

Operation of lorry during the past year

1)	Distance covered	25,000 km
2)	Value at beginning of year	$ 5,000
3)	Value at end of year	$ 4,000
4)	Repairs and maintenance	$ 1,500
5)	Vehicle insurance, licence fees	$ 1,100
6)	Fuel	$ 1,200
7)	Oil	$ 50
8)	Tyres	$ 250
9)	Driver's basic wage ($10 per day)	$ 2,500
10)	Administration	$ 400

Answer: Standing costs = (2 - 3) + 5 + 9 + 10 = $ 5,000

Running costs = 4 + 6 + 7 + 8 = $ 3,000

Total cost per km = $\frac{(\$5,000 + \$3,000)}{25,000}$ = $ 0.32

Running cost per km = $\frac{\$3,000}{25,000}$ = $ 0.12

4) Divide trainees into groups of 2 or 3 members. Distribute the case study and ask them to complete the assignment, allowing up to 1 hour for this. Emphasize (at the beginning and during the assignment) that their calculations and conclusion should be neatly and clearly displayed so that they can be understood easily by other people.

5) Reconvene the groups and ask them to present their calculations on the chalkboard/OHP. Make necessary corrections and explain accordingly.

6) Results are as follows. Go through the calculations and ensure that all steps have been completed correctly and understood:

Cost of owning and operating a Carrymuch lorry for one year.

Cost	Unit Cost	Units	Total Cost per year
Depreciation			
Value at beginning of the year $5,000 - Value at the end of the year $3,500	$1,500 per year per vehicle	1	$1,500
Insurance	$500 per year per vehicle	1	500
Vehicle Registration	$50 per year per vehicle	1	50
Driver's Licences	$50 per driver per year	1	50
Maintenance	$200 per year	1	200
Driver's Wages			
$1 per hour, 8 hours per day, 200 trips per year	$1 per hour	1600 hours	$1,600
Fuel			
8 km per litre, 16,000 km per year (80 km round trip x 200)	$0.40 per litre	2000 litres	800
Administration			
50 hours of Manager's time	$2 per hour	50 hours	100
Total Cost			$4,800
Cost of Hiring			4,200
Difference in favour of hired transport			+ 600

The concluding figure suggests that it is cheaper for the Farmers Co-operative Society to hire transport than to purchase its own vehicle. Ask the groups to suggest how it can be possible for the hirer to render transport services cheaper than the Co-operative itself would be able to do.

- The answer is that he must have lower costs.

Ask the trainees which standing and running costs can possibly be lower for the hirer than for the society. Suggestions should include the following:

- Standing costs:

  1) Hirer's administration costs per lorry are possibly lower, since the total administration cost can be spread over a larger number of lorries.

  2) He may have lower insurance costs, since he may enjoy high bonus.

- Running costs:

  1) He may have lower fuel costs. Because of bulk purchase of fuel for his assumed fleet of lorries, he may enjoy a considerable discount.

  2) He may have lower maintenance costs, because his fleet of lorries permit him to do the maintenance more economically within his enterprise than outside.

7) Ask trainees to calculate the total cost per km according to data from the table:

$$\frac{\$4,800}{16,000} = \$0,30/km$$

Ask trainees to calculate the running cost per km according to data from the table:

$$\frac{\$1,000}{16,000} - \$0,06/km$$

8) The running cost per km is very low. Ask trainees what factors may increase the running cost:

- the vehicle may be damaged or have a breakdown and require additional expenditure (e.g. even hire another vehicle),

- cost of maintenance and repair may increase in future.

9) Ask the trainees what the society could possibly do in order to reduce the costs of the Carrymuch lorry.

- the society could for example try to hire the vehicle out to obtain income when the lorry is not used.

10) Stress the importance of making REALISTIC cost estimates.

- Distributors in many cases exaggerate the benefits of vehicles: the advantages of purchasing a vehicle are therefore very often overestimated.
- Cost estimates on owning and operating a vehicle are often made assuming ideal conditions, with the consequence that actual costs very often prove to be higher than estimates.

Cheaper or more Expensive?

The Manager of the Farmers Co-operative Society is thinking about purchasing a new "Carrymuch" lorry to carry cocoa and supplies from the town 40 km away. At the moment the society pays a transport operator from town $4,200 per year to provide transport to and from the Co-operative. The Manager has collected information about the cost of operating a "Carrymuch" from a number of sources. Unfortunately he has not had time to draw the data together and construct a table which gives the costs of owning and operating a "Carrymuch" by the Society. You are asked to do this and present your results in a form suitable for distribution to the Committee of the Co-operative. To start with, the Manager wishes to know only the total cost in the first year of operation. The following pieces of information are available:

1) The town is 40 km away. At the moment the hired transport makes 200 trips per year. Farmers bring their produce to the Co-operative by their own transport.

2) The cost of a new Carrymuch is $5,000. The Co-operative could use its own cash for this purchase. After a year's use the vehicle would be worth only $3,500.

3) Enquiries at a number of insurance companies in town have shown that the vehicle could not be insured for less than $500 per year.

4) The fee for registering the vehicle is $50. There are a number of people in the Co-operative who can drive and the Manager is prepared to pay for the driving licence of the person employed as a driver.

5) The Manager believes $1 per hour to be a fair wage for a driver; for each trip to town it would be necessary to pay the driver for 8 hours' work.

6) The vehicle would require regular maintenance. Discussions with a local garage have revealed that a maintenance is recommended every 10,000 km for the Carrymuch, with an average cost of $200. As there is a guarantee with the new vehicle,there should be no other maintenance or repair costs during the first year.

7) The fuel consumption figure for a Carrymuch is about 8 km per litre of fuel. The cost of fuel is $0.40 per litre.

8) The Manager has estimated that the administrative work connected to owning and operating a lorry (arranging credit facilities, applying for insurance and licences, arranging maintenance and paying a driver) should involve no more than 50 hours'work per year. At the moment the Manager is paid $2 per hour. He considers he is more than fully employed, and extra clerical and part-time labour is available at a similar rate.

Assignment :

Construct a table giving the costs of owning and operating a "Carrymuch" lorry.

topic

3

purchasing vehicles

SESSION 3.1

VEHICLE CHARACTERISTICS

Objective: To enable trainees to prepare a checklist of questions on vehicle characteristics which are relevant and important when choosing and buying a vehicle for their Co-operative.

Time: One hour.

Session Guide:

1) Ask trainees in what way the previous session has made better transport managers out of them.

   - Trainees should be able to decide when it is more economical to purchase (i.e. own and operate) a vehicle than to hire transport.

   To decide whether or not to purchase a vehicle is one important decision. If purchasing proves to be the most economical solution, it is equally important to purchase the right vehicle. How do we make sure the Co-operative gets the right vehicle?

2) Tell each trainee to think himself back home in his respective society. The Committee has just decided that the Co-operative will buy a vehicle and they have asked him to survey the market of vehicles and prepare a little report on "possible suitable vehicles for the Co-operative" for the next committee meeting. The report will help the Committee to take a final decision on the type of vehicle to be purchased.

   Ask trainees how they would go about this. Most trainees will probably make suggestions on how to carry out the survey (by letter, through visits, which distributors to include etc.)

   Ask trainees WHAT they will be surveying - "a most suitable vehicle for their Co-operative".

   How will they know whether a vehicle is more or less suitable for their society? How can they find out?

Elicit that before they can make a survey, they must list the characteristics of a vehicle which they consider relevant and important for their society.

3) Ask trainees individually to prepare a "checklist" of questions on vehicle characteristics which they consider relevant and important when deciding on a vehicle. Allow 30 minutes for this. Lists will differ, but ensure that the following are included:

- What does the vehicle cost?
- What is the expected life of the vehicle: in normal circumstances? In the conditions in which it will operate in our society?
- What is the cost of operating the vehicle?
- What is the cost of maintaining the vehicle?
- Does the vehicle require complicated or simple maintenance?
- Can spare parts be found easily all the time and what do they cost?
- Can the vehicle perform the tasks for which we want to use it?
- Will the vehicle be able to operate on local roads and in local conditions?
- Is it a vehicle which drivers will like to drive?

Retain the list for the next session.

SESSION 3.2

OBTAINING INFORMATION

Objective: To enable trainees (i) to identify where to find information on vehicles and (ii) to collect and critically interpret information from such sources.

Time: One to two hours.

Material: Sample advertising material from local vehicle distributors which should whenever possible be used instead of the material supplied.

Session Guide:

1) Remind trainees of the last session in which they drew up a "check-list" of questions on characteristics of vehicle design and operation. Divide trainees into groups and ask them where they can find information about these characteristics. How reliable would they consider information from the various sources?

2) Allow about 30 minutes for this. Reconvene the group and construct a table covering the following points:

Source of Information	Type of Information	Reliability of Information
Vehicle Distributor/ Vehicle Manufacturer	(i) Price (ii) Vehicle Specifications eg. size, weight, maximum payload etc. (iii) Requirements, frequency and cost of servicing.	May have a tendency to exaggerate benefits of the vehicle and conceal disadvantages.
Commercial Motor Magazines	(i) Vehicle Specifications (ii) Reports and results on trials of new vehicles (iii) Comparisons of vehicles	Trials may have taken place in conditions completely different to buyer's conditions.
Second-hand Vehicle Dealers	(i) Lifetime of vehicles (ii) Weaknesses of certain vehicles (iii) General technical knowledge about a wide range of vehicles	Good in general, though they may favour vehicles which they want to sell.
Other Vehicle Users/ Your Own Experience	(i) Cost of operating vehicles (ii) Performance of a vehicle	Beware of placing too much reliance on evidence based on one vehicle or one experience. Instances of dramatic failure or amazing reliability occur with all types of vehicles.

3) Distribute the sample advertising material to the trainees who should work in groups. Tell them that they are considering to buy a vehicle from the Jupiter or the Apollo Range. Using the "checklist" drawn up in the previous session as a reference, ask trainees to compare the two types. They must note where no information is available or where it is limited.

4) Allow thirty minutes for this. Discuss trainees' conclusions and elicit the following:

- What do the "Apollo" and "Jupiter" vehicles cost?

  No information is given in the material. This is quite normal, since advertising material is mostly produced for several years and for use throughout the world. Different currencies and the regular increases in prices make most vehicle producers and distributors print separate sheets with price information.

- What is the expected life of the "Apollo" and "Jupiter" vehicles?

  Both refer to "long life", but no estimate or evidence is given in time or distance.

- What are the costs of operating and maintaining both types of vehicles?

  Phrases as "the best in ..... terms of reliability, long life and economy" for the Apollo and "reputation for dependability, economy and long life" for the Jupiter vehicles are no real evidence. There is also no reference to fuel usage.

- Do the vehicles require complicated or easy maintenance?

  Again, no specific reference, although details of engine type, clutch, and transmission may give some guidance, if the person has previous experience of maintenance. But how often is that the case?

- Can spare parts be found easily and what do they cost?

  No reference whatsoever.

- Can vehicles perform the tasks for which they are intended?

  Tell trainees to extract from the material the information items which are important to measure the performance of a lorry.

Gross vehicle weight:	Apollo 12,220 kg to 13,210 kg. Jupiter 3,660 kg to 5,590 kg.
Payload	Since no reference to the weight of the vehicles, the payload (gross vehicle weight minus vehicle weight) cannot be accurately calculated.
Size	Length and width are given for both types. Important for instance in connection with the "manoeuvrability" we want the lorry to have. For garage space, dimensions are also essential.

Other: The Apollo material refers to "heavy duty features", the Jupiter material to "ideal for congested streets".

The Apollo vehicles also have a long range fuel tank, which may be useful in long journeys, or where fuelling points are scarce.

- Will the vehicles be able to operate on local roads and in local conditions?

The only references made are "heavy duty features" for the Apollo vehicles and "ideal for congested streets" for the Jupiter vehicles. More information will have to be gathered.

- Will drivers like to drive the vehicles?

Both refer to comfort standards.

The Jupiter vehicles: built-in manoeuvrability, sensible cab design with a high level of driver comfort.

The Apollo vehicles: facia incorporates excellent layout of instruments and controls, giving superb driver visibility and maximum control. Acoustic insulation ..... means a quiet, comfortable environment.

This sounds very nice - on paper. One must definitely double-check this, through a test-ride or through other users.

5) The trainees may note a number of other differences in technical details. Ensure that they interpret and discuss the relevance of these differences rather than merely list them.

6) When the listing of differences and their implications is complete, emphasize that advertising material of this standard is clearly of limited usefulness. It must be supplemented from sources such as those discussed in the first half of the session. In particular, distributor's sources should be asked about cost, performance, fuel usage, technical details and optional equipment.

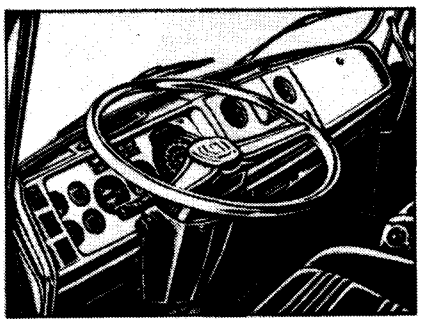
7) If possible, invite a representative of a lorry distributor to present details, possibly including a film, slides or physical demonstration of a vehicle from his range, which might be purchased by agricultural co-operatives. Brief trainees to ask for details such as those mentioned under 6 above which are not normally covered in promotional material.

APOLLO

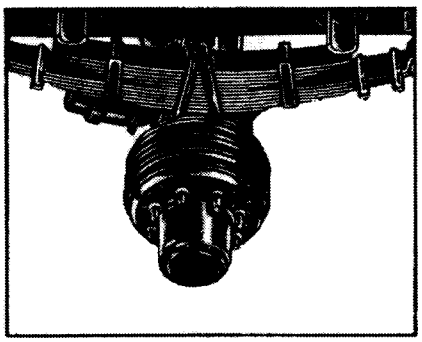
APOLLO

The APOLLO is designed for the operator who is looking for the best in medium weight, 4 x 2 trucks, especially in terms of reliability, long life and economy.

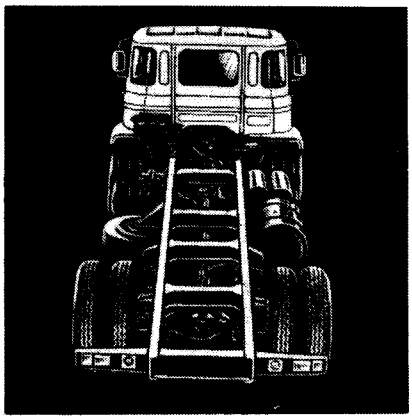
The APOLLO is the medium weight truck with the heavy duty features – big clutch, positive constant mesh gearbox, hub reduction rear axle, air hydraulic brakes on the 4012 model, and full air on the 4013 and 4113 models, long range fuel tank and now a completely redesigned super comfort tilt cab.
With the choice of powerful, performance proved engines, five or nine speed gearboxes with optional overdrive, and four wheelbase lengths, there is an APOLLO model to suit a wide variety of applications.



The APOLLO cab's new facia incorporates an improved layout of instruments and controls giving better driver visibility and maximum control. Acoustic insulation, foam backed floor matting, powerful fresh air vents and brushed nylon seats all amount to a quieter, more comfortable driving environment.



The hub reduction rear axle incorporates a two-stage reduction divided between the spiral bevel differential and epicyclic gearing fitted in the hubs, considerably reducing torque on the half shafts and virtually eliminating the risk of failure.



The backbone of the APOLLO is a light yet immensely strong chassis frame of high-tensile carbon steel, braced with pressed-steel channel section cross members to ensure evenly balanced stress distribution.

Specification

Engines
APOLLO 401 6 cylinder diesel (4012/4013). Bore 107.19 mm. Stroke 120.65 mm. Capacity 6.54 litres. Compression ratio 16.3:1. Maximum power BSAU 141a net rating 132 bhp at 2600 rev/min. Maximum torque 407 Nm (300 lbf ft) at 1800 rev/min.

APOLLO 410 6 cylinder diesel, turbocharged (4113). As above except:
Maximum power BSAU 141a net rating 144 bhp at 2600 rev/min. Maximum torque 480 Nm (355 lbf ft) at 1600 rev/min.

Clutch
Single dry plate. Diameter 356 mm (4013), 381 mm (4012/4113).

Transmission
Constant mesh 5-speed or 9-speed. Overdrive available.

Axles
Front: Rigid 'I' beam. 4830 kg capacity.
Rear: Hub reduction. 9130 kg capacity.

Suspension
Semi-elliptic springs with shock absorbers at front. Tipper chassis fitted with helper type rear springs.

Steering
Manual. Variable ratio recirculating ball type.

Brakes
Air pressure operated hydraulic on both axles (4012). Full air both axles, dual circuit, cam operated (4013, 4113).

Chassis
Heavy duty high tensile steel, ladder type construction.

Cab
All-steel welded construction, forward control, forward torsion bar tilting. Completely redesigned luxury interior, fully adjustable driver's seat, brushed nylon trim. New layout of instruments and controls for maximum accessibility.

Instruments and warning lights
Speedometer, fuel gauge, water temperature gauge, oil gauge, three air pressure gauges. Warning lights for no-charge, main beam, indicator lights. Battery condition indicator.

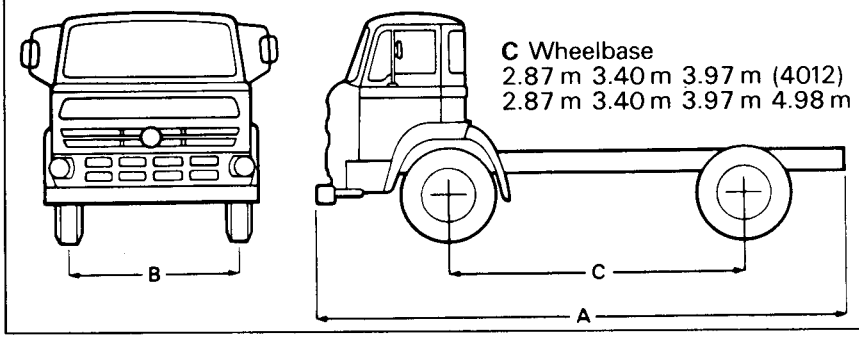
Gross vehicle weight
APOLLO 4012 – 12 200 kg
APOLLO 4013 – 13 208 kg
APOLLO 4113 – 13 210 kg.

Standard and optional equipment
For full details please contact your local APOLLO Vehicles distributor/dealer.

A Overall length
5.40 m 6.47 m 7.49 m (4012)
5.40 m 6.47 m 7.49 m 8.86 m

B Overall width
1.90 m 1.90 m 1.90 m (4012)
1.91 m 1.91 m 1.91 m 1.91 m

C Wheelbase
2.87 m 3.40 m 3.97 m (4012)
2.87 m 3.40 m 3.97 m 4.98 m

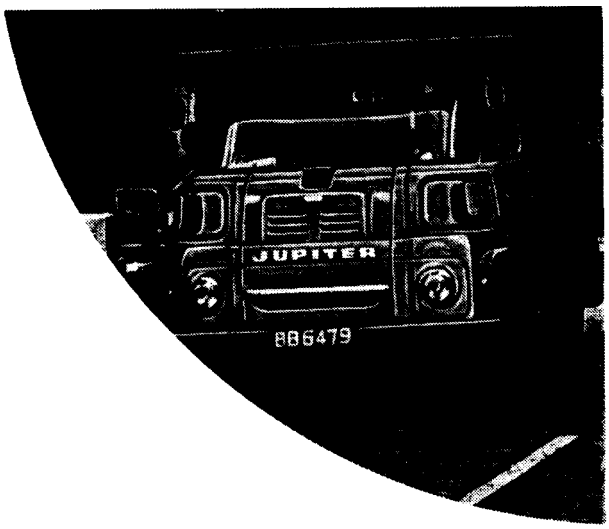


APOLLO Vehicles

Distributed by:

Note:
APOLLO *Vehicles Limited reserves the right to change at any time and without notice prices, colours, materials, equipment specifications and models. Distributors and dealers are not entitled to bind* APOLLO *Vehicles Limited by any express or implied undertaking.*

JUPITER



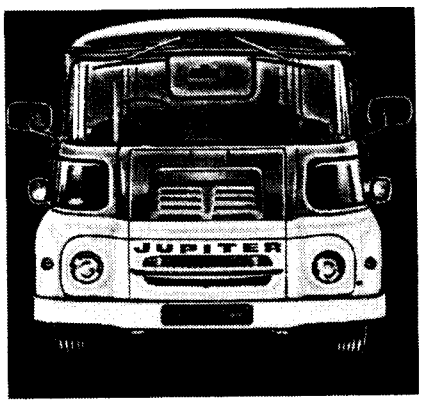
JUPITER

The JUPITERS of forward control trucks from 3660 kg to 5590 kg GVW incorporate all the expertise in truck engineering that has made JUPITER world famous for tough, reliable transport.

In-built manoeuvrability, sensible cab design combined with choice of wheelbase and load lengths makes the JUPITERS ideal for congested city streets.

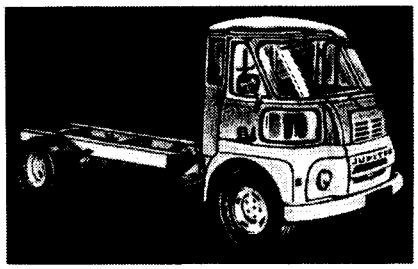
Engine commonality with other models means simplified operation backed by the JUPITER reputation for dependability, economy and long life.

The powerful engines, well tried gearbox and ruggedly engineered chassis and suspension mean that the JUPITERS will get the job done and keep on doing it with a high level of driver comfort.

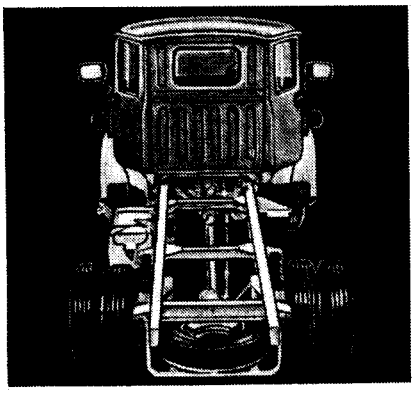


The 360 and 420 models are available with a 2.52 litre diesel engine developed for the stop/start conditions of modern traffic. For longer runs and more arduous conditions where greater power is required, the 4.98 NV diesel engine can be fitted and is standard fitment in the 550 FG. Both engines provide the JUPITER package of performance and economy with many advanced features.

JUPITER
Vehicles



A wide variety of bodies may be fitted to the rugged JUPITER. Exceptional braking and suspension characteristics provide a high degree of safety.
The knee level windows on the JUPITER allow close vision of the kerb and are a unique safety feature. Rear-hinged doors open within the width of the truck providing excellent access in difficult situations.
A wide variety of optional equipment, ranging from a choice of engines to a chassis front end version in place of the standard cab, is available.



The rugged ladder-type frame and parallel chassis provide a combination of durability and ease of body mounting.

Specification

Engines
2.52 litre: 4 cylinder diesel (360, 420 FG).
Bore 88.9 mm. Stroke 101.6 mm.
Compression ratio 20.5:1. Maximum power (BS AU 141 a gross rating) 65 bhp (48 kW) at 3500 rev/min. Maximum torque: 116 lb ft (183 Nm) at 2000 rev/min.

4.98 NV: 4 cylinder diesel (360, 420, 550 FG).
Bore 98 mm. Stroke 125 mm. Capacity 3.77 litres.
Compression ratio 16.8:1. Maximum power (BS AU 141 a gross rating) 75 bhp (55 kW) at 2600 rev/min.
Maximum torque: 170 lb ft (230 Nm) at 1650 rev/min.

Clutch
Single dry plate.

Transmission
Four speed synchromesh (360, 420 FG).
Four speed constant mesh (360, 420, 550 FG).

Axles
Front: Forged steel 'I' section beam, taper roller bearing hubs.
Rear: Split case, straddle mounted spiral bevel pinion.
Alternative ratios available.

Brakes
360, 420 FG, hydraulic standard, servo assisted optional but standard with 4.98 engine, 550 FG servo assisted standard.

Suspension
Semi-elliptic leaf springs all round, shock absorbers standard front, optional rear.

Chassis
Heavy duty ladder type.

Cab
All steel welded construction.

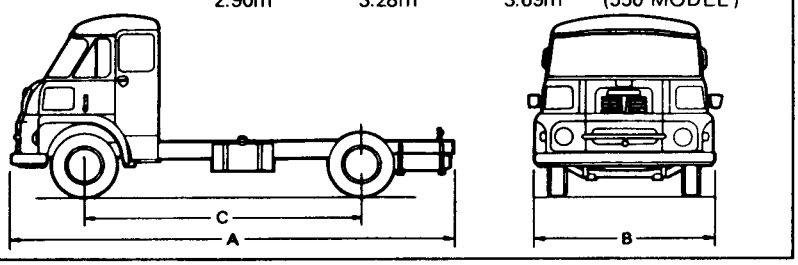
Instruments and warning lights
Speedometer, oil pressure gauge, water temperature gauge, fuel gauge, battery condition meter, warning lights for main beam, no charge, indicators.

Gross vehicle weight

360 JUPITER	3660 kg
420 JUPITER	4270 kg
550 JUPITER	5590 kg

Standard and optional equipment
For full details, please contact your local JUPITER Vehicles distributor/dealer.

A. Overall Length	4.84m	5.22m	—	(360/420 MODELS)
	4.84m	5.22m	5.63m	(550 MODEL)
B. Overall Width	2.13m	2.13m	—	(360/420 MODELS)
	2.13m	2.13m	2.13m	(550 MODEL)
C. Wheelbase	2.90m	3.28m	—	(360/420 MODELS)
	2.90m	3.28m	3.69m	(550 MODEL)



Distributed by:

SESSION 3.3

MEETING THE SALESMAN

Objective: To enable trainees to gather useful information from representatives of vehicle distributors.

Time: One to two hours.

Material: Tape dialogue.

Session Guide:

1) Ask the trainees to imagine they are potential purchasers of the vehicles described in the sample advertising material of the last session. They are to visit the local distributor of these vehicles. Ask them, in groups, to prepare a list of questions, which they will want to ask the distributor.

2) After about twenty minutes ask trainees for their list which should cover the following points:

   - The different types of vehicles available and their selling prices.
   - For what kind of transport are the vehicles ideal/not suited at all?
   - Who is normally purchasing these vehicles and for what kind of transport?
   - How much experience has there been of operating these vehicles in local conditions?
   - What is the average lifetime of the vehicles in miles or kilometers?
   - What is the fuel consumption on hardened roads/earth roads/city?
   - Maintenance requirements: frequency and cost of regular servicing/common repairs (replacement of exhaust pipe, clutch)?

- The availability of spares: where can one find spares, are they expensive,and if not available locally, how long will it take the distributor to get them? How expensive are the most common spare parts?
- Possible optional equipment plus cost.
- Does the distributor have credit facilities for purchasing a vehicle and at what cost?
- Can you trade in your present vehicle and for how much?
- Does the distributor give a guarantee in time and/or distance on the vehicles he is selling?
- What vehicle checks are carried out on the vehicle prior to delivery?
- What is the response of drivers to the different vehicles? Would it be possible for a driver and/or you to take a test drive?

3) Emphasize to trainees that before approaching a distributor they should draw up a list such as the one above, in order to ensure that they gain as much relevant information on the vehicles as possible. This list must be given to the local distributor before meeting him. This ensures that the distributor responds to the questions and cannot put them off with answers such as,"I don't have the figures on me at the moment".

4) Explain the background to the tape dialogue, then play, read out or enact the dialogue completely. Play, read or enact the dialogue a second time, now pausing at each "BLEEP",and ask trainees for their comments on the salesman's response and what their reaction should be. Elicit the following:

BLEEP 1

Do not accept excuses. Ask the salesman if he can give answers within a few days.

BLEEP 2

No, it is not. Do not be satisfied with one or two pieces of information. You want precise answers to your questions.

BLEEP 3

Yes. But ensure that you receive details before purchase, and are clear about what repairs are included (tyres, bodywork damage and other components may not be covered by the contract). Even if you intend to do your own maintenance, this will be a useful clue as to probable costs, and a guide as to whether own maintenance is efficient.

BLEEP 4

Are they really the cheapest? Make sure you compare with other sources of finance available to you before taking any decision.

BLEEP 5

Get the salesman to commit himself to a price before deciding whether to purchase. The price may affect your decision to purchase. Try other potential sources to see whether you can sell at a higher price. The sentence "I have a lot of these vehicles for sale at the moment ....." is a typical trick which should make you believe that the salesman is doing you a favour by taking the vehicle, and probably comes before a rather poor price offer.

BLEEP 6

"A trip down to the market and back" does not seem suitable. A proper demonstration run should include driving under various road conditions such as:

a) a run along a straight, clear road to demonstrate acceleration and speed;

b) a hill to demonstrate starting from standstill, performance on hill and ease of gear change;

c) a rough stretch of road to demonstrate ride and handling.

If the salesman does not suggest a good demonstration run, ask for one. Also ask to drive the vehicle yourself, and if feasible take a driver and mechanic to the demonstration.

BLEEP 7

An attempt by the salesman to pressure you into a decision. He was probably going to offer you the discount anyway. If you insist on delaying your decision the discount will almost certainly still be offered.

5) Emphasize to trainees that the dialogue was intended merely to demonstrate some of the situations that occur between a salesman and a potential purchaser. A real meeting will take longer and cover many more points.

6) The purpose of talking to a salesman and a demonstration is <u>to gain information</u>. This should not be a casual operation. The potential purchaser should plan beforehand what information he wants and ensure that he gets it. Most salesmen will be prepared to provide material and discuss-features about vehicles they are selling.

7) The potential purchaser should decide beforehand whether he is prepared to make a deal at the meeting. If he is interested in comparing a number of vehicles he should collect all the information first and attempt to make the decision after discussing the merits of the vehicles with other interested parties (drivers, mechanics etc.) and away from the pressures of a persuasive salesman or the attraction of the new vehicle. It is advisable never to make a decision at the selling point, but only after careful reflection.

Tape Dialogue

Background

Chesebe is considering buying a Merlin lorry for the co-operative, although he has a number of other vehicles in mind. About a week ago he approached the distributor to request for a demonstration. The distributor agreed to give one today. Chesebe had previously sent him a list of questions similar to the one described by the trainees previously. The meeting went as follows:

Salesman: Hello, Chesebe, nice to see you. Did you find your way O.K?

Chesebe: Yes thanks. Do you have the answers to those questions I requested?

Salesman: Ah! I'm sorry, they arrived only three days ago and I am so busy with demonstrating these vehicles that I haven't had time to answer them.

BLEEP 1

Chesebe: They are important to me and my Committee. Could you send them to me within a few days?

Salesman: I've got some information on cost and credit facilities here. Here is some material on petrol consumption as well. Is that O.K?

BLEEP 2

Chesebe: I would prefer an answer to all the questions.

Salesman: I will do it for you as soon as possible. I get the impression from your list of questions that you are particularly interested in the cost of maintenance. Perhaps I could mention our "Contract Maintenance Agreement" whereby you pay us a certain sum of money per year and we agree to carry out all maintenance and any other repairs that may be necessary. Would you be interested in this?

BLEEP 3

Chesebe: Yes. Could you give me details?

Salesman: Certainly, I have the figures here. Oh, yes, you also wanted information on credit facilities. Most of our purchasers take advantage of our scheme since our credit terms are the best in town.

BLEEP 4

Chesebe: As you know, at the moment we have one of your Apollo vehicles about 5 years old. How much will you offer for it?

Salesman: I shall have to see it first. I have a lot of these vehicles for sale at the moment; everybody is buying the new design. Let's discuss that after you decide whether to buy the new design.

BLEEP 5

Chesebe: Could we go for a demonstration run in the vehicle?

Salesman: Yes certainly. Let's go for a trip down to the market and back.

BLEEP 6

Chesebe: Would you have any objection if we were to go out to the quarry and I was to drive?

Salesman: No, not at all.

After test

Salesman: It's a very attractive vehicle isn't it? Are you interested in purchasing it?

Chesebe: Yes, I like it. I shall have to speak to the Secretary of the Co-operative first.

Salesman: If I were to get you a 5% discount on the vehicle, could we call it a deal?

BLEEP 7

SESSION 3.4

CHOOSING A VEHICLE

Objective: To enable trainees to tabulate the costs and benefits of different vehicles and compare their relative merits.

Time: One to one and a half hours.

Material: Case study.

Session Guide:

1) Remind trainees of the importance of collecting relevant data on different vehicle types so that a comparison of their merits can be made before a decision to purchase is made. Distribute the case study to trainees who should work in groups. Allow up to thirty minutes for this. Emphasize the importance of a neat, precise and easily readable presentation.

2) Reconvene the groups and ask them to present their tables. Their results should be similar to the following example:

Vehicle feature	Apollo	Jupiter (new)	Jupiter (second-hand)
- Cost ($) - cash	15,000	12,000	4,500
- Cost ($) - credit	16,500	14,000	not available
- Maintenance cost ($) per 15,000 km	1,000 until 45,000 km 2,000 thereafter	750 until 45,000 km 1,500 thereafter	1,500
- Value after 5 years	6,000	4,500	Nil
- Licences, Insurance ($) per year	750	750	500
- Operating cost ($) per 15,000 km	2,000	1,500	1,500
- Possibility of own maintenance	Difficult	Easy	Easy
- Availability of spares	Good	Poor	Poor
- Payload (kg)	9,000	6,000	6,000
- Length (m)	5.4	4.8	4.8
- Suitability for rough terrain	Good	Fair	Fair
- Driver's attitude	Very Good	Good	Good
- Variety of bodies possible to fit	Good	Poor	Poor

Allow trainees to make comments about features not referred to or the reality of the costs and performance. Also emphasize that this is an exercise - a thorough comparison of the vehicles would require far more information.

3) Ask trainees to calculate how much the 3 vehicles would cost to operate for 5 years, using the figures given in the table and assuming 15,000 km per year. Trainees should exclude any additional costs such as drivers' wages. The figures are as follows:

Apollo	-	immediate purchase	$33,750 less $6,000 = $29,750
	-	use of credit	$35,250 less $6,000 = $31,250
Jupiter	-	immediate purchase	$27,000 less $4,500 = $22,500
(new)	-	use of credit	$29,000 less $4,500 = $24,500
Jupiter	-	immediate purchase	$22,000
(second hand)	-	use of credit	not available

Ensure that trainees appreciate the need to include the value of the vehicle at the end of 5 years. The second-hand vehicle is then at the end of its life, and therefore has no value. The new vehicles will have a significant second-hand value. The difference between the new price and this second-hand value, therefore,represents the depreciation in the value of the vehicle over that period.

Point out also that the total figure does not take account of when the costs occur. Immediate purchase requires the outlay of funds now, whereas the use of credit facilities allows outlays to be spread over two or three years. The purchaser, depending on availability of finance, may have a strong preference for the delayed payment, despite the higher total outlay of money. Next session will deal in more detail with the methods of payment and their respective advantages and disadvantages.

4) Point out to trainees that the Apollo is more expensive than the new Jupiter vehicle.

Ask what benefits they might expect to receive from this extra expenditure of about $7,000 over 5 years. Elicit the following:

- Vehicle with higher payload (9,000 kg).
- Vehicle with greater carrying capacity in volume terms (longer and wider variety of bodies).
- Vehicle with less time spent under repair (greater availability of spares should ensure this).
- Vehicle more popular with drivers.
- Vehicle very suitable for rough terrain.

5) Ask trainees whether these benefits are worth the extra cost. Allow them to discuss this point for ten to fifteen minutes. During, or at the end,of the discussion, stress that the answer to the question depends on:
   - The task(s) the vehicle is expected to perform.
   - The value placed on the unquantified benefits of the Apollo.

6) Summarise the important aspects involved in comparing vehicles:
   - Full and reliable information on vehicle cost and performance, local operating conditions, and the suitability of the vehicles for the tasks involved.
   - Clear, accurate display of information.
   - Recognition that the choice between vehicles will be a comparison of costs and benefits. Usually this will be a question of whether the benefits of vehicle A are worth its extra cost as compared to vehicle B (refer to the choice between the Apollo and the Jupiter). Whenever considering the purchase of a more expensive vehicle or expensive optional equipment or gadgets, trainees should always ask:

     Are the benefits worth the extra cost?

Choosing a Vehicle

The Agrarian Farmers Society has an old vehicle which is at the end of its useful life. The Society is thinking of purchasing a replacement and has narrowed the choice down to three vehicles - a new Apollo or a new or second-hand Jupiter. As the Apollo is a relatively new vehicle there is no possibility of purchasing a used one. There is however a good second-hand market in the Jupiter Range.

The Society markets its members' maize and supplies members with farm inputs. The vehicle would be used to carry the maize to the market (10 km distance) and to pick up supplies (fertilizer etc.). The demand for transport is fairly steady throughout the year. The society has good storage facilities for its produce and has a small maize mill. At the moment their vehicle covers about 15,000 km per year.

The Manager has visited the local distributor to find out the relative merits of the three vehicles. He has prepared the following three reports:

APOLLO: This vehicle has a maximum gross weight of 12,200 kg which allows a payload of up to 9,000 kg. It costs $15,000. I asked the distributor how much the maintenance costs would be and he said that they have a Contract Maintenance Agreement which costs $1,000 at 15,000 km, 30,000 km and 45,000; thereafter $2,000 at 15,000 km intervals. Operating costs would be about $2,000 per 15,000 km. The insurance and licence would cost about $750 per year. Because of complaints about availability of spares in the past, the local distributor, in conjunction with the national distributor and manufacturer, is investing heavily in stocks of spare parts in order to ensure these complaints do not occur with this type of vehicle. According to the distributor this vehicle is more sophisticated mechanically than previous ones,and he would not recommend that we attempt to do our own maintenance. The drivers with experience of the vehicle that I have spoken to agree that it is an exceptionally comfortable and easy vehicle to drive.

The expected life of the vehicle should be at least 150 000 km. The distributor offers very favourable credit facilities. If we decided to use their financing scheme, we should pay $5,500 per year for a period of three years. The vehicle is very strongly built and is suitable for rough terrain. Its length is 5.4 m and there are a wide range of bodies that we can have fitted, if we wish. The value of the vehicle after 5 years should be about $6,000.

JUPITER: The vehicle examined has a maximum gross weight of 9,150 kg which allows a payload of up to 6,000 kg. It costs $12,000. Unfortunately the distributor does not offer credit facili ties on this vehicle and the only credit terms I can obtain require two annual payments of $7,000 each. These vehicles have been available for a long time now and discussions with other people who have used them suggest that average maintenance costs are about $750 per 15,000 km for the first 45,000 km,and thereafter $1,500 per 15,000 km up to 150,000 km. This last figure appears to be the average life expectancy of the Jupiter. Operating costs would be about $1,500 per 15,000 km. Insurance and licence fees would be about $750 per year.

Unfortunately, these vehicles have a poor reputation for spares availability. The distributor holds rather limited stocks and it is quite common to wait a week for components. A large number of people in town maintain their vehicles themselves and I would anticipate that we could do the same. The vehicles are most suitable for operation in town. They are quite rugged but probably would not be suitable for very rough terrain. Drivers like these vehicles but they are not so enthusiastic about them as the Apollo. The vehicle is about 4.8 m long and there is only one type of body available. The value of the vehicle after 5 years should be about $4,500.

JUPITER: (second hand) The vehicle examined was a 5-year-old model with 75,000 km on the clock. It should have an effective life of 150,000 km (or 5 more years if we continue to run about 15,000 km per year). It has similar characteristics to the new model examined. The payload is 6,000 kg. The cost is $4,500 but no credit facilities are available. Maintenance costs should be about $1,500 per 15,000 km and operating costs should be the same as for the new vehicle. The comments about availability of spares and maintenance that were made about the new model also apply to the second-hand vehicle. This particular vehicle has a standard body. Insurance and licences would cost about $500 per year.

Assignment:

Draw up a clear and concise table which shows the relative cost and performance of the three vehicles and decide which vehicle the Agrarian Farmers' Society should buy. Justify your decision.

SESSION 3.5

BUY, HIRE PURCHASE OR LEASE?

Objective: To enable trainees to distinguish between buying a vehicle for cash, hire purchasing a vehicle and leasing a vehicle, and to list the relative advantages of the three methods.

Time: One to one and a half hours.

Material: Micro cases.

Session Guide:

1) Explain to the trainees that this session is concerned with comparing three possible methods of obtaining a vehicle for use:
   - Outright purchase.
   - Hire purchase.
   - Leasing (if leasing is not available,this option, and references to it, can be ignored).

2) Draw four columns on the chalkboard (see below). Fill in the column headings and, using a vehicle costing $10,000 as an example, fill in the table, line by line, stressing the differences between the three methods (comments in brackets are for this purpose).

	Outright Purchase	Hire Purchase	Leasing
Initial payment	$10,000	$2,500 (typically 20-50% of purchase price).	
Other payments	None	$750 every 3 months for 3 years (typical duration of payments 2 to 3 years).	$650 every 3 months for 5 years (typical duration payments 2 to 7 years).
Total payments	$10,000	$11,500 (excess over purchase price is for payment of interest on $7,500 and will depend on rate of interest).	$13,000 (excess over purchase price is for payment of interest on $10,000 and will depend on rate of interest).
Ownership	After payment	Mostly after completion of all payments.	Never (although the contract may include an option for purchase at the end of period).
Responsibility for servicing and maintenance	Operator	Operator (either own maintenance or in garage).	Operator (either own maintenance or in garage).
Consequences of failure to meet payments	Not applicable	Hirer may cancel contract (if operator has completed most of his payments he may receive compensation).	Lessor may cancel contract (compensation is unlikely).

3) Explain to trainees that hire purchase/leasing involve them and the hirer/lessor in certain obligations which are contained in a legal contract. This serves to protect their interests, it defines the obligations of the hirer/lessor to them as well as vice versa. Ask trainees to imagine they are in the position of a hire purchase company,and draw up a list of factors that they would wish to have included in the operator's legal obligations in a hire purchase or leasing agreement. Trainees should work in groups for about 15 minutes; their lists should include the following requirements:

- To pay the rentals at the correct time.
- To ensure that the vehicle is properly serviced and maintained.
- To allow the owner to inspect the vehicle at any reasonable time.
- Not to use the vehicle for any purpose other than that agreed.
- Not to modify the vehicle.
- To ensure that the vehicle is driven by a competent driver with an appropriate licence.
- To insure the vehicle properly, usually fully comprehensive cover.
- Not to lend the vehicle to anybody not specified in the agreement.

Discuss why each factor is included and whether it is reasonable that it should be.

4) Ask trainees to list (use chalkboard) the owner's (hirer's) obligations in a hire purchase or leasing agreement.

Discuss why they are included and whether it is reasonable that they should be. The list,which is much shorter than the operator's obligations,should include the following:

- Making the agreed type of vehicle available to the operator.
- The hirer may not accelerate payments or terminate the agreement (except for special provisions in the contract , or if the operator fails to meet his obligation).

5) Emphasize that before signing a contract for hire purchase or leasing a vehicle, trainees must ensure that they understand clearly their legal obligations. If they do not understand they must ask the hirer for clarification and if they are still not satisfied they must seek professional advice.

6) Remind the trainees that an important consideration in the choice between the three different methods is that of finance.

Draw up the following table, which presents the three options and the time when payments are due for a vehicle costing $10,000:

Type of Payments	Initial Payment	Year 1	Year 2	Year 3	Year 4	Year 5	Total Payments
Outright Purchase	10,000	-	-	-	-	-	10,000
Hire Purchase	2,000	5,000	5,000	-	-	-	12,000
Lease	0	3,000	3,000	3,000	3,000	3,000	15,000

Ask the trainees in groups to read the Micro Cases given with this session. Trainees should use the above figures and say whether they agree with the Manager's decision in each case. Would they have, taken a different decision, which one and why?

Case A

The new refrigeration unit would save $4,000 in the first two years, whereas the use of hire purchase would only cost an extra outlay of $2,000 in that period. There seems to be a strong case for purchase of the refrigeration unit. However, if $10,000 is spent on the refrigeration unit and the deposit on the vehicle, then cash must be found to pay for the rental payments of $5,000 in Year 1 and Year 2.

Case B

Clearly, the Co-operative should consider hire purchase or leasing. The extra profit from the contract ($24,000 in the 2 years) is just adequate to pay for the lorries if they are obtained by hire purchase. There would be no profit for the Co-operative in those two years, but at the end of the period the Co-operative would own two lorries. The Co-operative might also lease. At a cost of $6,000 per year for two lorries this would still leave a net profit of $4,000 per year. On the other hand,the contract is only for two years;if the Co-operative is uncertain about whether the contract will be renegotiated,it may prefer to pay for the vehicles in two years by hire purchase.

Case C

Whilst the expansion of production does not offer profits immediately, it does promise substantial profits after 2 years. It therefore is a worthwhile investment, even if a vehicle has to be purchased. The Co-operative must,however, try to minimize the cost of vehicle purchase in the first two years, when the Co-operative's sacrifice is greatest. Leasing therefore offers the best option.

7) Remind trainees of the main factors that will influence the choice between these three methods of obtaining a vehicle, notably:

- The cost and availability of capital.
- The alternative use to which capital funds might be put.
- The flow of cash or revenue earnings in the organisation over the next four years.
- The cost and conditions attached to hire purchase and leasing.

Vehicle Purchase Micro Cases

Case A

The Utopian Co-operative Society has $10,000 in the Bank, gaining interest at 5% per annum. A new vehicle is essential. They could buy a vehicle outright for $10,000. An alternative would be to spend $8,000 on a new refrigeration unit and purchase a vehicle using a two-year hire purchase ($2,000 initial deposit + $5,000 at the end of each year). The refrigeration unit would avoid net losses equivalent to about $2,000 per year. The Manager advises to purchase the refrigeration unit and to hire purchase the vehicle.

Case B

The Prospect Co-operative Society has the opportunity of a two-year agreement to supply processed soyabeans to a foreign company. The soyabeans have to be delivered to the port 200 km away. Unfortunately the Co-operative is short of funds,and it is not sure it can raise funds for the purchase of two lorries (cost $10,000 each) to carry the soyabeans to the port. If the Co-operative cannot raise the funds, it will not be able to sign the.contract, even though it could yield profits of $12,000 per year. The Manager has decided against signing the contract,saying that hire purchase is too expensive.

Case C

The Valley Co-operative Society has the possibility to double its production of groundnuts over the next five years. With the costs of clearing land and increased costs of supplies, they do not expect to make a profit from the sale of the groundnuts in the first two years. In year 3, they expect a profit of $10,000 and $20,000 a year thereafter. In order to go ahead with the expansion, the Society must also purchase a lorry now (cost $10,000), to carry supplies and produce.

If the Society does purchase a lorry they will operate at a loss during the first two years. No more funds are available from the Bank because the Co-operative is already borrowing money from the Bank. The Manager is unwilling to go ahead with the proposed expansion.

Assignment:

Did the Managers take the right decisions?

If not, what would your decision be?

Justify your answers.

topic

4

allocation and scheduling

SESSION 4.1

RECORDING AND ALLOCATING TRANSPORT SERVICES

Objective: To enable trainees to design and put into practice an efficient system for receiving, recording and allocating demands for their transport services.

Time: Two hours.

Material: Work diary exercise.

Session Guide:

1) Remind trainees that previous sessions have dealt with the fundamental decision whether or not to operate one's own transport service, and, if so, which vehicles to purchase. Ask trainees what else is needed for an effective service, apart from the correct vehicles and people with the necessary skills to drive and maintain them.

   - Management is needed.

   Ask trainees to suggest what management is:

   - Management is the skill of making the best use of available resources; physical assets such as vehicles and technical skills such as driving or maintenance, must be organized in such a way that they provide a good and economical service.

2) Ask trainees how requests for transport service are received and recorded in their societies. Allow trainees up to ten minutes to list information that should be included in transport requisitions.

   Their answers should include:

   - Requisitions must be numbered and closely controlled to prevent misuse.
   - The requisition must show to whom the service is to be charged.
   - The requisition must be signed "approved" by a responsible official.
   - The requisition must state by which time of the day the goods must be collected or delivered.

- The requisition must state what type of goods is to be transported.
- The requisition must indicate who is responsible for loading and unloading.
- The requisition must state which person is responsible for handing over and/or receiving the goods.
- The requisition must mention the accompanying documents which are involved.
- The requisition must carry some space for it to be marked off when the transport is completed.

3) Ask trainees how transport jobs are requested for in their societies. Many may have no formal system at all,i.e. they operate on "verbal requests" only. Ask what the advantages of a "word of mouth" system are:

- No time is wasted filling in forms.
- There is no need to delay work because authorised signatories are not required.
- Paper and stationery are saved.
- Illiterate staff can complete the job.

In any but the simplest situations however, a written record is an advantage. Ask trainees why this is so:

- Drivers are not always available to receive oral instructions and errors will be made if messages are transmitted verbally.
- Use of vehicles for unauthorised purposes is much more difficult (i.e. the written record makes "control" easier).
- Calculating transport costs and charging them against individual users and/or society operations becomes much easier.
- People may not be able to remember whether jobs have been carried out or not; well-kept written records will tell them.

4) Ask trainees what must be done with requisitions which are correctly completed when they are received. Pose the following alternatives:

- Requisitions must be given directly to the driver responsible for the journey to which they relate.

- Requisitions must be placed in a file for each driver, from which he can take the instructions for each day.
- Requisitions are entered in a diary, from which vehicle jobs can be worked out for each day.

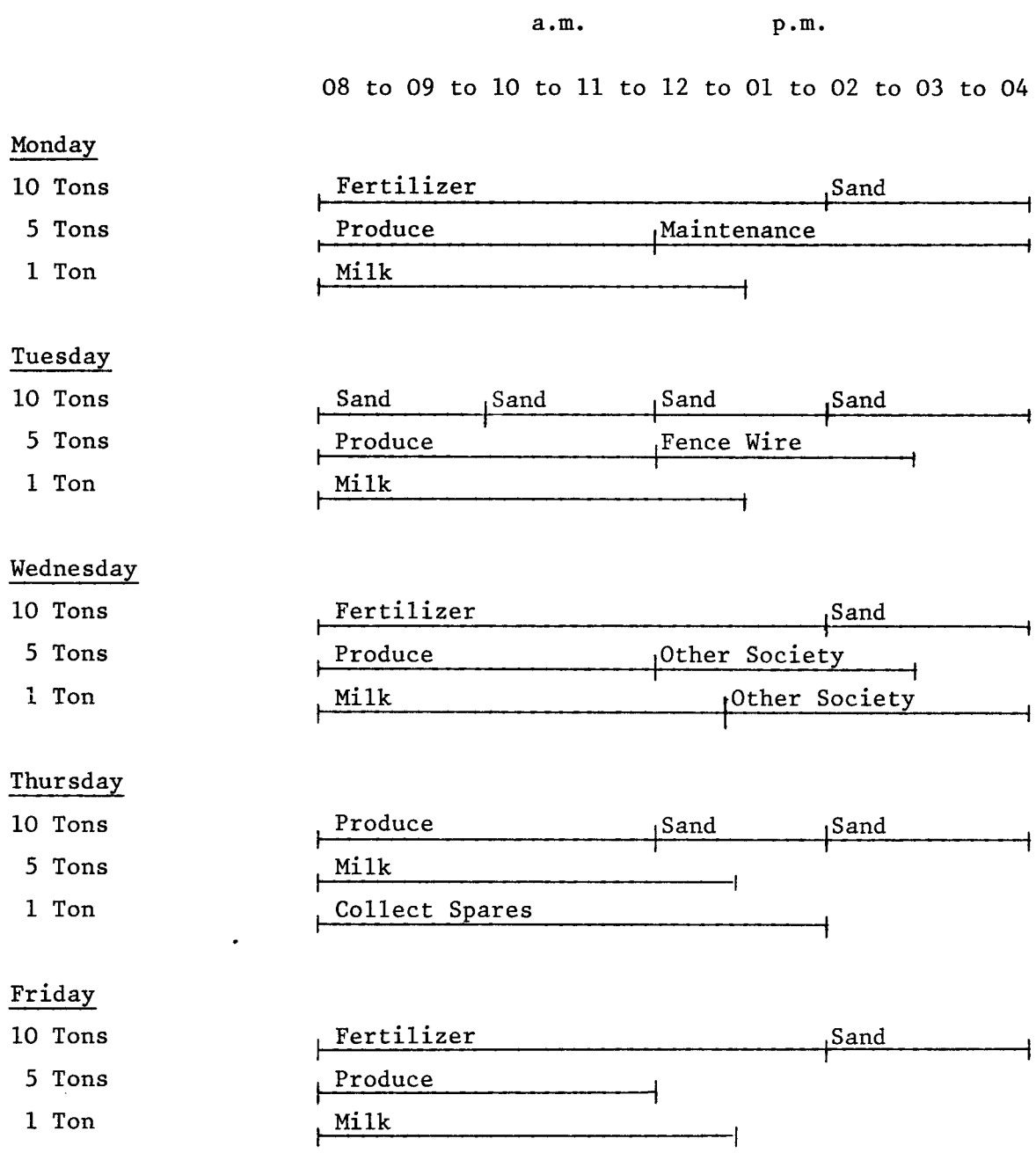
It is essential first to examine all requisitions together, before allocating them to particular drivers and vehicles. Ask trainees why this is so:

- It may be possible to combine some journeys, which would otherwise be assigned to separate vehicles.
- The total demand for transport services may exceed the capacity of the available vehicles and drivers, so that some journeys will have to be rescheduled or contracted to outside hauliers.
- The total demand for transport services may fall short of the capacity of the available vehicles and drivers and vehicles may remain unused. When known in advance, one can plan for unused vehicles to be serviced if necessary, or to be used for outside sub-contracts or for society jobs which can be done at any time.
- A well-kept and up-to-date diary is a valuable record "of the demand for transport services" and will consequently help to assess future vehicle requirements.

5) Divide trainees into groups and distribute the work diary exercise. Allow up to forty-five minutes for groups to complete the exercise. After forty-five minutes have elapsed, or when all groups have finished, whichever is earlier, state that the President of the Society has asked for a special two-ton load of insecticide to be collected before 12 noon. How soon can this be done and by which vehicle?

When they have dealt with this request, say that the Manager of a nearby Society, with close contacts with the Unity Society, has telephoned to say that their vehicle has broken down and they desperately need to transport six tons of perishable produce on Wednesday. It is a three-hour journey. Can they help, and if so how?

6) Ask groups to present their complete suggestions including the last-minute requests. A possible solution is as follows:



The urgent insecticide job can be done by the 5-ton vehicle on Tuesday morning, while the produce can be delivered by the 10-ton vehicle.

The job for the other society can be divided between the 5-ton and the 1-ton vehicles on the Wednesday afternoon, providing they are willing to pay for this.

7) Stress the following points:

- Long journeys should be undertaken by small vehicles whenever possible: it is clearly extravagant to carry a ten-kilogram spare in a one-ton vehicle, but it is far worse to carry it in a five- or ten-ton vehicle.
- A good manager will look for alternative uses for any spare time. For this reason alone jobs must be concentrated towards the beginning of the scheduling period so that there will be time for finding work to fill any spare periods. Jobs which may take longer to complete than expected can then also be rescheduled into the vacant time towards the end of the period.
- Care should be taken to avoid using vehicles for dirty jobs, such as collecting sand, if they are to be used subsequently for hauling foodstuffs or milk. If necessary, time must be allowed for cleaning.

8) Stress that this exercise is very much over-simplified, since the actual journeys are not examined in any way and no allowance is made for rest periods or meals which may be required by Government regulations, trade union agreements or local customs. Ensure that trainees are familiar with whatever is necessary in their countries.

Work Diary Exercise

The Transport Manager of the Unity Co-operative Society has to decide how to use his vehicles during the coming five days. He has the following vehicles: one ten-ton lorry, one five-ton lorry and one one-ton pick-up. Each vehicle can be used for up to eight hours a day on the coming Monday to Friday, starting at 8.00 a.m. and finishing at 4.00 p.m. Drivers work on shifts. They have to return to the Society's depot every night. The five-ton vehicle must spend a four-hour period on routine maintenance this week, and the one-ton vehicle should be checked into the garage for a full day's service if possible, although this can be done next week if absolutely necessary.

The work diary, in which all requisitions for transport have been entered for the forthcoming week, reads as follows:

- Every Day: Deliver five tons of produce from depot to market, two hours each way, must be delivered by 11.00 a.m.
- Monday, Wednesday and Friday: Collect seven tons of fertilizer from rail depot, deliver to Society depot, three hours each way, must be collected by 12 noon.
- Every Day: Pick up milk, one ton total load, deliver to Society's depot, five hours'job, must start at 8.00 a.m.
- As Soon As Possible: Collect vehicle spare weighing ten kilograms from city. Round trip six hours.
- Tuesday: Deliver three tons of fencing wire to member group from Society depot. Total time: three hours.
- When Convenient: Continue moving sand from quarry'to Society depot for new building project, up to ten-ton loads, each round trip lasting two hours.

Assignment:

Work out a clear timetable for the week,using the type of form given to you. Indicate on the horizontal lines what kind of transport should be done and mark on each line the time needed.

	a.m.				p.m.			
	08 to 09	to 10	to 11	to 12	to 01	to 02	to 03	to 04
Monday								
10 Tons								
5 Tons								
1 Ton								
Tuesday								
10 Tons								
5 Tons								
1 Ton								
Wednesday								
10 Tons								
5 Tons								
1 Ton								
Thursday								
10 Tons								
5 Tons								
1 Ton								
Friday								
10 Tons								
5 Tons								
1 Ton								

SESSION 4.2

TRANSPORT PERFORMANCE AND JOURNEY PLANNING
THE HUMAN FACTOR

Objective: To enable trainees to assess the capacity of their transport service, giving due regard to the "human factor".

Time: One to two hours.

Material: Exercise: Ruralis Co-operative Society and Role Play Briefs.

Session Guide:

1) Ask trainees to list the factors that determine the amount of produce or supplies that can be carried in a particular week by all the lorries of a co-operative. Elicit the following:

   - The number of lorries owned and their carrying capacity.
   - The number of lorries available (some may be out of operation due to shortage of spares, or be waiting for repair).
   - The number of drivers available and the maximum number of hours they are allowed to work per day.
   - The time it takes to load/unload.
   - The speed at which lorries move about the area.
   - The efficiency with which the lorries and drivers are used in the available hours (are lorries often travelling'empty or are loads usually found for return journeys?), i.e. how efficient "scheduling" has been done.

   Clearly, the "scheduling" factor could be called the "management" factor. The Transport Manager must work with drivers (the human factor) and lorries (the technical factor). Both are very dependant on each other and the Manager must try to combine them in an optimal way. This session deals with the "human factor" in scheduling; the next session will deal with the "technical factor".

2) Distribute the case study. Ensure the trainees understand the map, particularly the signs used for the types of road. Ensure also that they know and understand the basic relationship

$$\text{time} = \frac{\text{distance}}{\text{speed}}$$

and that if speed is in terms of hours the resultant time will also be in hours. Ask trainees to complete the questions. Circulate amongst them during this period and give assistance, if necessary.

3) Allow about 15 minutes for each question (depending on the ability of the trainees) and then display the correct answer so that trainees can check their workings.

Answer 1	Time (minutes)
a) Check lorry	20
b) Garage to major highway = 24 km at 32 km/h this takes	45
c) Journey along major highway 50 km at 40 km/h	75
d) Total journey time	140 (2 hrs. 20 mins)
e) Arrival time (if start at 6.00 a.m.)	0820

Answer 2	Time (minutes)
a) Check lorry	20
b) Journey to collection point C (5 km @ 15 km/h)	20
c) Loading	20
d) Return journey as "b)"	20
e) Journey along minor highway to B turning (8 km/h @ 32 km/h)	15
f) Journey to collection point B, load, return (b+c+d)	60
g) Journey along minor highway (e)	15
h) Journey to collection point A, load return (f)	60
i) Journey along minor highway (g)	15
j) Journey along highway - 50 km @ 40 km/h	75
Total journey time	320 (5 hrs. 20 mins)
Arrival time (if start at 6.00 a.m.)	1120

Answer 3	Time (minutes)
a) Unload produce	20
b) Journey to warehouse turnoff 15 km @ 40 km/h 22 1/2	
c) To warehouse - 10 km @ 40 km/h	15
d) To load	20
e) Back to highway (c)	15
f) To minor highway turnoff 35 km @ 50 km/h	42
g) Journey along minor highway 24 km @ 32 km/h	45
h) Diversion to drop off load at collection point A - 5 km @ 15 km/h	20
- unload	20
- return	20
Total journey time	239 1/2 (or about 4 hrs.)
Arrive at Garage (if start from market at 11.20)	15.20 (3.20 p.m.)

4) Distribute the role play brief "Transport Manager" to two suitable trainees. The role play brief "Drivers" should be given to the remaining trainees. Decide who will play the role of the Transport Manager and who should be the assistant. The latter is supposed to support the former.

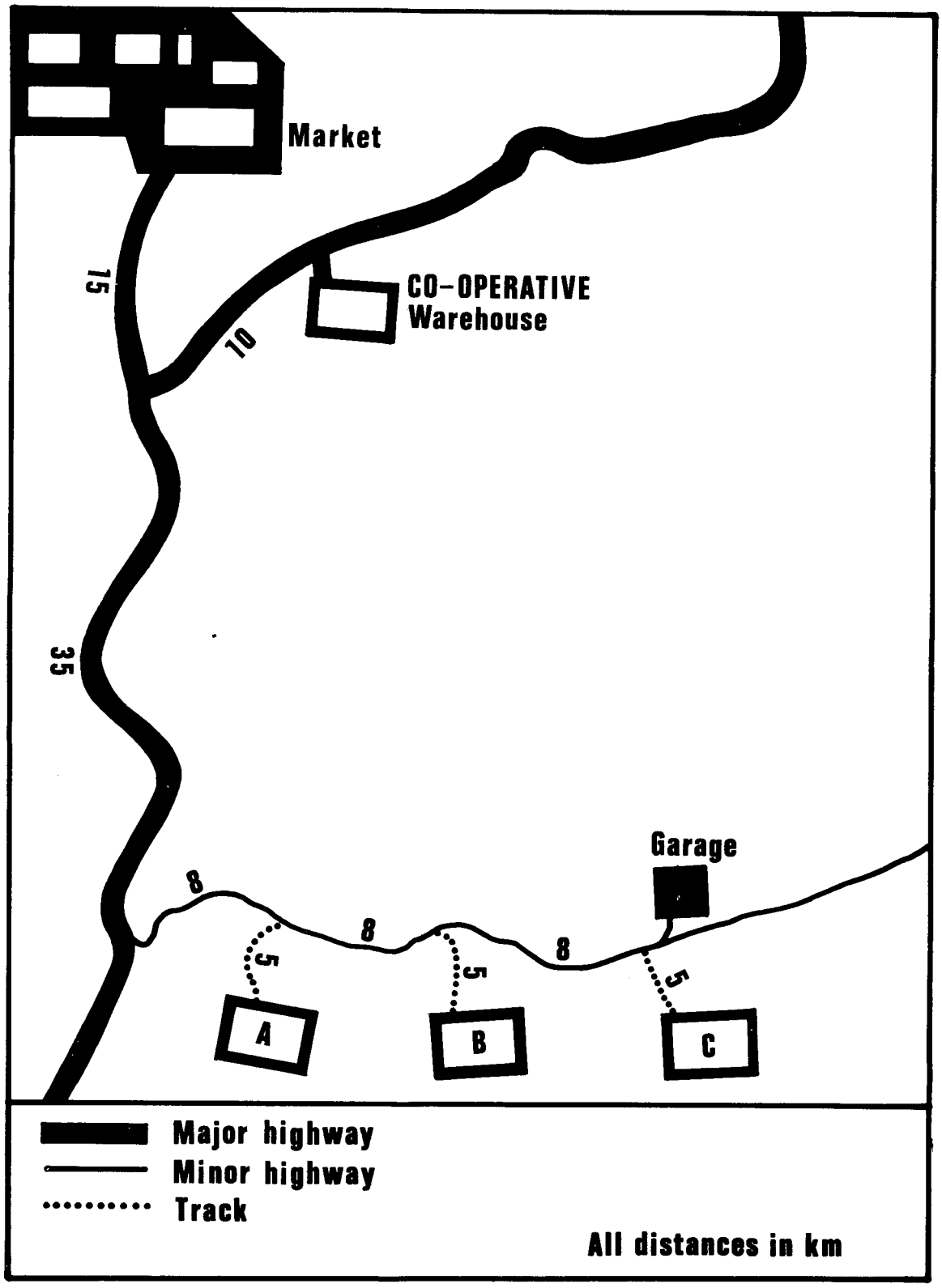
Allow trainees about 10 minutes to familiarize themselves with the brief. Ask them to use examples from their own experiences to supplement the information in the briefs when necessary. Arrange two chairs to allow the trainees playing the manager and his assistant to sit in front of the others. Allow up to 30 minutes for the role playing.

5) Discuss the role play and its conclusions. Stress in particular:

- Standard times are necessary for scheduling in any case; drivers should appreciate the reasons for this. They must however, be involved in setting standard times.
- Drivers should be motivated to work effectively, not only by fear of exceeding set times, but by identifying themselves with the Society's goals. Bonuses may help when exceptional results are demanded from drivers.

"When To Be There?"

Below is a map showing a Co-operative with three collection points (A, B and C) and a garage, also a nearby town and a wholesaler. Examine it and make sure you understand it:



The average speed attainable on the three types of road is:

- Major Highway = 40 km/h
- Minor Highway = 32 km/h
- Track = 15 km/h

The Co-operative owns two lorries which are kept in the garage overnight. In the morning, before a driver takes a lorry out, he is expected to spend 20 minutes checking the condition of the lorry (tyres, oil, etc.) and filling in any appropriate forms. If he picks up or drops a load, he is allowed 20 minutes for each operation.

Assignment:

1) If the driver starts work at 0600 hours and drives to the market without calling at any collection points, at what time will he arrive?
2) At what time will he arrive if he picks up produce at the three collection points A, B and C on the way?
3) At what time will he arrive back at the garage if he drops the produce at market, picks up some sacks at the co-operative ware-house on the journey home and drops them off at collection point A?

Role Play Brief : Transport Manager

As Transport Manager you and your assistant are responsible for the scheduling and operation of 10 lorries. For a long time you had felt that the lorries were being used inefficiently. You had come to the conclusion that the reason for this was the lack of control over the drivers after they had left the garage. In order to rectify this you introduced standard times for operations such as checking vehicles, meal breaks, loading/unloading and journeys. You had the full support of your Manager and Committee. They were keen to save money on transport operations.

Recently, however, due to numerous complaints from the drivers, the Manager has asked you to consider dropping the idea of standard times. You are still convinced of their value. Since you started using standard times drivers have often been doing their work much more quickly than before. In order to try to maintain the use of standard times you have called a meeting with the drivers to justify your use of standard times as well as to listen to their complaints. You must therefore prepare to justify the use of standard times and to respond to their complaints. During the meeting you intend to try and come to an agreement with the drivers on a method of setting standard times.

Role Play Brief : The Drivers

Recently the Transport Manager and his assistant introduced the idea of "standard times" for such tasks as vehicle checking, meal breaks, loading/unloading and journeys. Ever since standard times were introduced, you (together with other drivers) have complained that these times are inflexible and unrealistic. Last week all the drivers voiced their dislike of the new method to the Manager. In response to this, the Transport Manager has called a meeting to listen to your complaints. You intend to point out to the Manager that the new method of standard times is unfair to drivers.

The time taken to load and unload is always different - sometimes you get help from other people; sometimes you have to wait a long time for supplies to be brought to your lorry. Similarly, journey times vary depending on traffic congestion and the quality of roads. You believe that the Manager ought to trust his drivers. Instead of wasting his time on these unnecessary calculations, he could use his time reducing the amount of paperwork involved in transport operations.

SESSION 4.3

TRANSPORT PERFORMANCE AND JOURNEY PLANNING
THE TECHNICAL FACTOR

Objective: To enable trainees to schedule their vehicles efficiently in order to satisfy as much as possible the demand for transport services.

Time: One to one and a half hours.

Material: Exercise "When To Be There?" from previous session, supplemented by "How Do We Manage?"

Session Guide:

1) Remind trainees that the previous session dealt with the human factor in transport management. This session is about matching the demand for transport to the technical resources available.

2) Ensure that all trainees have copies of "When To Be There" from the previous session. Divide trainees into groups of 3 to 4 and distribute the exercise "How Do We Manage". Allow up to 30 minutes for the exercise.

3) After 30 minutes ask trainees for their possible solutions. Some may suggest heavier loads on the lorry, faster loading, higher speeds on the road etc. Some of these may be possible, depending on local circumstances. Allow trainees to discuss the possibilities but ensure that they are also aware of a solution by rescheduling as follows:

   - One journey a day to the warehouse and return takes 5 hours 20 minutes.
   - This leaves 3 hours 40 minutes during which the driver and lorry can be used to:
     - load produce at a collection point for carrying to the warehouse the next day (the lorry stops overnight at the garage).

- check the lorry so that it is ready for immediate departure the next day.
- If this is done, two trips can be made to the warehouse next day in less than 9 hours.
- It is therefore possible to make 3 trips to the warehouse in two days; with 2 lorries this means 6 trips.

A typical scheduling arrangement will be:

Day 1	Time (minutes)
Vehicle checking	20
Collect produce from C	60
Deliver to warehouse/unload	140
Return to Garage	120
with diversion to B (including loading)	60
Vehicle checking	20
Total for Day 1	420 (7 hrs.)

Day 2	Time (minutes)
Deliver to warehouse/unload	140
Return to farm A/load	130
Carry to warehouse/unload	130
Return to Garage	120
Total for Day 2	520 (8 hrs. 40 mins)

Point out that this leaves very little spare time for contingencies. It also assumes that it is possible to pick up the produce and store it on the vehicles overnight.

4) Emphasize that rescheduling may avoid the need to purchase a new vehicle. Scheduling and rescheduling demand "creativity and originality" from a manager. There are no set rules and solutions; for each situation the manager must try, through trial and error, to come up with a number of alternative solutions from which he must then select the best one.

"How Do We Manage?"

The Transport Manager of the Ruralis Co-operative Society has a problem. Five tons of produce at each of the 3 collection points (A, B and C) must be carried to the co-operative warehouse each day. The Co-operative has only two vehicles, each capable of carrying 5 tons. To make two journeys a day to the warehouse is impossible since this takes 10 hours and the Committee and the drivers have agreed that for safety reasons 9 hours of work per day per driver is the maximum permitted. Produce can,however, be stored on the vehicles in the garage overnight.

The Co-operative is short of funds and desperately needs the money that is available for extra supplies of fertilizer and new seed. It is therefore impossible to purchase and operate an extra vehicle. The Transport Manager is desperate: "How Do We Manage?"

Assignment:

How can you manage to have five tons of produce carried each day from each of the 3 collection points to the warehouse with two lorries and without exceeding 9 hours of work per driver, per day?

SESSION 4.3

TRANSPORT PERFORMANCE AND JOURNEY PLANNING
THE TECHNICAL FACTOR

Objective: To enable trainees to schedule their vehicles efficiently in order to satisfy as much as possible the demand for transport services.

Time: One to one and a half hours.

Material: Exercise "When To Be There?" from previous session, supplemented by "How Do We Manage?"

Session Guide:

1) Remind trainees that the previous session dealt with the human factor in transport management. This session is about matching the demand for transport to the technical resources available.

2) Ensure that all trainees have copies of "When To Be There" from the previous session. Divide trainees into groups of 3 to 4 and distribute the exercise "How Do We Manage". Allow up to 30 minutes for the exercise.

3) After 30 minutes ask trainees for their possible solutions. Some may suggest heavier loads on the lorry, faster loading, higher speeds on the road etc. Some of these may be possible, depending on local circumstances. Allow trainees to discuss the possibilities but ensure that they are also aware of a solution by rescheduling as follows:

   - One journey a day to the warehouse and return takes 5 hours 20 minutes.
   - This leaves 3 hours 40 minutes during which the driver and lorry can be used to:
     - load produce at a collection point for carrying to the warehouse the next day (the lorry stops overnight at the garage).

- check the lorry so that it is ready for immediate departure the next day.
- If this is done, two trips can be made to the warehouse next day in less than 9 hours.
- It is therefore possible to make 3 trips to the warehouse in two days; with 2 lorries this means 6 trips.

A typical scheduling arrangement will be:

Day 1	Time (minutes)	
Vehicle checking	20	
Collect produce from C	60	
Deliver to warehouse/unload	140	
Return to Garage	120	
with diversion to B (including loading)	60	
Vehicle checking	20	
Total for Day 1	420	(7 hrs.)

Day 2	Time (minutes)	
Deliver to warehouse/unload	140	
Return to farm A/load	130	
Carry to warehouse/unload	130	
Return to Garage	120	
Total for Day 2	520	(8 hrs. 40 mins)

Point out that this leaves very little spare time for contingencies. It also assumes that it is possible to pick up the produce and store it on the vehicles overnight.

4) Emphasize that rescheduling may avoid the need to purchase a new vehicle. Scheduling and rescheduling demand "creativity and originality" from a manager. There are no set rules and solutions; for each situation the manager must try, through trial and error, to come up with a number of alternative solutions from which he must then select the best one.

SESSION 4.4

SCHEDULING FOR A WEEK

Objective: To enable trainees to prepare a weekly transport schedule.

Time: Two to three hours.

Material: Exercise: Valley Co-operative.

Session Guide:

1) Distribute the exercise to trainees who should work in groups. Ensure that trainees understand the instructions - in particular,how much produce can be loaded per day at the farms given the rate of harvesting (1 ton per day). Allow up to two hours for the exercise. Ensure that trainees appreciate the need for a neat summary table of their schedule.

2) After two hours, ask groups whether they have managed to schedule the two lorries to complete the tasks within the week and what is the total distance covered by the two lorries. Ask the group with the lowest total distance to present its schedule on the chalkboard/OHP and allow trainees to examine it. Question why it is done in the way chosen and suggest any improvements.

3) Below is a possible solution and layout of a schedule. Use it if groups fail to come up with a reasonable solution or as an example of how a schedule can be presented. Stress that:

   - It does not give details of times in the schedule though it does not violate the 8-hour constraint.
   - The schedule concentrates on movement to the wholesaler and supplier in the early part of the week when stocks at the farms are low.
   - Use is made of the time after the trucks return from the wholesaler and supplier.
   - Trucks are free at the end of the week to pick up produce from the farm (a visit to each farm on Friday is absolutely necessary).

POSSIBLE SOLUTION:

	Truck 1	Truck 2	Tons of Produce to Wholesaler	Visit to Supplier	Produce from Points							
					A	B	C	D	E	F	G	H
Monday	PWSP 275 km	PWSP 275 km	10	2								
Tuesday	PWSP 275 km	PWPACP 230 km	10	1	2		2					
Wednesday	PWPBFP 230 km	PWPDEP 220 km	10	-		2		2	3	3		
Thursday	PWPBDP 230 km	PWPACP 230 km	10	-	2	2	2	2				
Friday	PGPHP 80 km	PBFEPACDP 60 km	-	-	1	1	1	1	2	2	5	5
Total	1090 km	1050 km	40	3	5	5	5	5	5	5	5	5

4) Emphasize that scheduling exercises of this kind may consume a lot of time but they are well worthwhile in:

- Reducing distances travelled by vehicles.
- Reducing the number of vehicles required (in some instances).

Valley Co-operative

The Valley Co-operative has two lorries. During the harvest season transport is in heavy demand and the Transport Manager is concerned that, unless he can schedule his vehicles properly, he will have to hire another truck and driver. The lorries must collect produce from the various collection points and deliver it to the processing plant. They must also carry the processed goods to a wholesaler in town 100 km away and collect supplies for the processing plant in another town, also 100 km away. In detail, the situation is as follows:

Farms: There are eight collecting points (A to H) connected by a road network. At each point an average of 1 ton of produce is delivered by members each day (5 tons per week). On Monday it is possible to pick up 1 ton of produce from the points. On Tuesday another ton can be picked up, or 2 tons if none was picked up on Monday and so on throughout the week. All the produce must be picked up before the end of the week (eg. 5 tons could be picked up on Friday). Loading takes 30 minutes regardless of quantity.

Lorries/ Drivers: The two lorries can each carry 5 tons. They average 20 km/h on the roads between the processing plant and the collection points, and 5 km/h elsewhere. Due to an agreewent with the drivers, they cannot under any circumstances work (i.e. drive/load/unload) for more than 8 hours per day. The lorries must be kept in the garage overnight. The garage is adjacent to the processing plant.

Processing Plant: The processing plant wishes to send 40 tons of processed produce to the wholesaler every week. There is ample storage space at the plant and about a week's supply of produce can be held. Similarly there are big stocks of processed produce waiting to go to the wholesaler. Loading at the plant takes 30 minutes so does unloading.

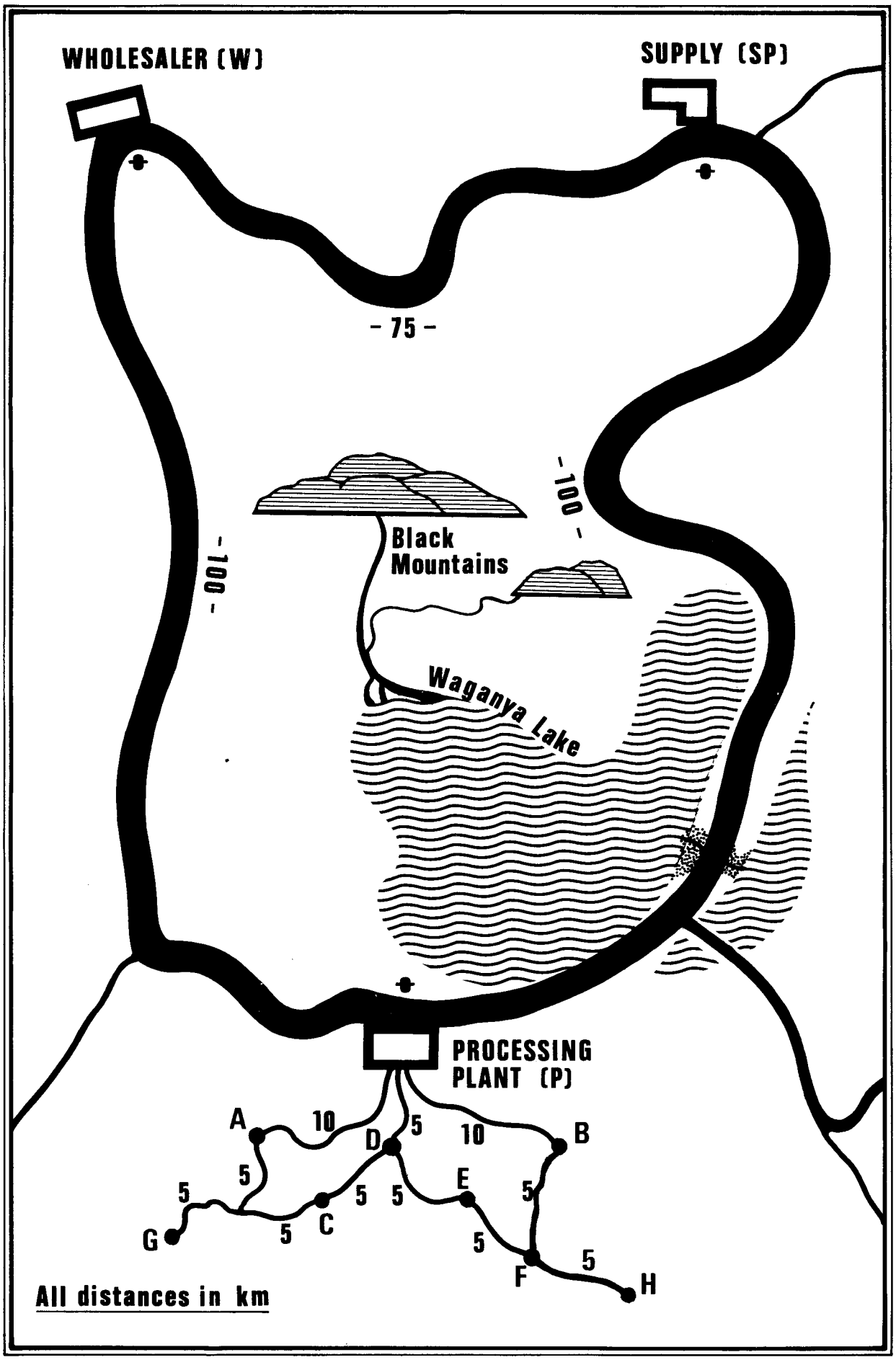
Supplier: Three visits must be made to the supplier every week to pick up essential supplies for the processing plant. Each loading or unloading takes 30 minutes.

Road Network: The distance between the processing plant and the wholesaler is 100 km, between the processing plant and supplier 100 km, between the wholesaler and supplier 75 km. The road network which connects the collection points to the Co-operative is shown on the attached map.

Assignment:

Design a schedule which will allow the two lorries to complete the given tasks in one week, and with a minimum distance travelled. Use the following form to show and present your preferred schedule.

	Truck 1	Truck 2	Tons of Produce to Wholesaler	Visit to Supplier	Produce from Points							
					A	B	C	D	E	F	G	H
Monday												
Tuesday												
Wednesday												
Thursday												
Friday												


WHOLESALER (W)
SUPPLY (SP)
- 75 -
- 100 -
- 100 -
Black Mountains
Waganya Lake
PROCESSING PLANT (P)
A
B
C
D
E
F
G
H
10
5
10
5
5
5
5
5
5
5
5
All distances in km

topic

5

maintenance

SESSION 5.1

MAINTENANCE REQUIREMENTS

Objective: To enable trainees to identify the basic requirements for setting up their own maintenance facilities and to appraise the implications of having and running such facilities.

Time: One to one and a half hours.

Material: Case Study.

Session Guide:

1) Ask trainees why regular maintenance is important. They should mention the following points:

   - To ensure that vehicles are safe.
   - To keep breakdowns and time during which vehicles are out of order to a minimum.
   - To keep total repair and maintenance costs to a minimum (maintenance costs money but if it leads to fewer breakdowns it will result in lower total costs in the long run).
   - To prolong the life of vehicles; regular maintenance - changing oil, etc. - will prolong the life of components; regular inspection will avoid major damage.

2) Distribute the case study and allow trainees up to 20 minutes for the exercise. Discuss their conclusions, and elicit a list covering the following points:

   - Obtain funds for purchase of materials, training etc.
   - Determine site, size and design of garage.
   - Hire contractor to build garage or obtain materials and labour for construction.
   - Determine tools that need to be purchased (do different vehicles need different sets of tools?).

- Place order for tools (how long does delivery take?)
- Determine what spare parts and what quantities are to be held in stock.
- Place order for spare parts.
- Prepare job description and job specification for mechanics.
- Recruit mechanics.
- Arrange training for mechanics if necessary.
- Set up procedure for purchase of spare parts.
- Set up procedure for maintenance of vehicles (when should vehicles be serviced, what records will be kept, how will maintenance of different vehicles be co-ordinated?).
- Appoint an overall responsible for the garage.

3) Ask trainees to comment on the proposal. The Manager has omitted the cost of land and any depreciation cost for the building and tools, and the extra cost of management involved.

4) Stress that setting up a maintenance facility is not just a matter of constructing the garage, buying materials and hiring mechanics. If a society's garage is to be superior in cost and performance to outside maintenance,it must be effectively managed and controlled. Garages may not always produce work of the highest quality or lowest cost, but at the same time they often operate in a competitive environment and if they were hopelessly inefficient they would go out of business. To ensure that a society's maintenance facility is being effectively managed, an annual comparison should be made between the cost of its own and of outside maintenance.

Proposal for Maintenance Facility

(Prepared by the Manager of the Bondo Farmers' Society)

1) We have not been very happy with our current vehicle maintenance agreement for some time. We take our 10 lorries at regular intervals to the garage in town. Drivers are always complaining about the condition of the vehicles. One week after a vehicle was serviced, the brakes failed. The vehicle was seriously damaged and the driver was nearly killed. Even with regular maintenance the vehicles break down almost every month, which leads to loss of produce and expensive bills for repair. Sometimes the drivers themselves carry out minor repairs to the vehicles, because they think the garage has not done the job properly. If a vehicle does break down and the garage is busy, we must often wait two to three weeks before the garage can repair it.

2) Detailed calculations suggest that the cost of setting up and operating our own maintenance facility would be less than the cost of using the garage. Below is a summary of our estimates compared with the cost of maintenance at the garage in town:

Estimated Yearly Cost of Maintenance Facility

Interest Cost		In $
- Interest on Loan for Garage Building		2,000
- Interest on Loan for Garage Equipment		500
- Interest on Money tied up in Spare Parts		750
Staff Costs		
- Wages (2 mechanics)		3,000
- Training (only 1st year)		500
Materials and Spare Parts		2,250
Miscellaneous		
- Electricity, Insurance etc.		500
	TOTAL	9,500
Estimated Yearly Cost of Garage Maintenance		10,000

3) 1 therefore recommend that we go ahead with detailed planning for a maintenance facility of our own. This would provide a better service and lower cost than our current arrangement.

Assignment:

1) Assume the recommendation is accepted. Draw up a list of actions that must be taken before the facility can be used. Consider both:

   a) personnel and materials necessary for operation of the facility, and

   b) management procedures necessary for operation of the facility.

2) Comment on the Manager's proposal: what costs may have been omitted?

SESSION 5.2

VEHICLE INSPECTION AND MAINTENANCE

Objective: To enable trainees to identify the need for an efficient method for (i) scheduling vehicle inspection and (ii) recording of maintenance work.

Time: One hour.

Material: Tape Dialogue.

Session Guide:

1) The session is intended to show that procedures and systems which may appear time-consuming and unnecessary are needed to ensure effective maintenance at an acceptable cost. Tell trainees they are about to hear a dialogue which refers to a number of problems that led to the failure of a co-operative vehicle maintenance facility.

2) Play the tape, or,if no player is available,ask two trainees to play the role of the two characters.

3) Stop the tape (or dialogue) at each "BLEEP" and ask trainees to identify the problems and how they can be avoided. Discuss the recommendations with reference to the trainees` experience if possible. Continue the dialogue having a discussion at each "BLEEP".

4) Elicit and display on the chalkboard/OHP a list of actions and procedures which are necessary for efficient vehicle inspection and maintenance work.

PROBLEM	SOLUTION
BLEEP 1	
Inadequate daily checking of vehicles.	Vehicles must be inspected with the aid of a checklist and it must be clear who is responsible (usually the driver).
BLEEP 2	
Inadequate servicing.	Mechanics must have a checklist of tasks to carry out. The manager must ensure these are carried out properly. The mechanic signs the checklist, indicating which jobs he has carried out. If breakdowns occur, it will be clear who is responsible.
BLEEP 3	
No planning of work programme.	The flow of work into the workshop must be planned so that vehicles come in steadily and mechanics are idle for as short a time as possible.
BLEEP 4	
Supply and availability of spare parts?	Demand for spare parts must be anticipated as far as possible. This is easier if maintenance is planned and there is knowledge of which vehicles are due for service as well as the servicing they require. The society must however, keep stocks of items regularly required.

PROBLEM	SOLUTION
BLEEP 5	
Time necessary to complete a task?	Standard times must be worked out for each task. These should only be exceeded under exceptional circumstances.
BLEEP 6	
Inadequate records of fuel and tyre use.	Records must be maintained to keep track of fuel and tyre use and to discourage dishonesty.
BLEEP 7	
No management records.	A management record system for the maintenance function must be set up (cash, cost, financial records etc.). Training may be needed for this.

Dialogue

Narrator: Terna meets his old friend Sadiq and finds him very depressed. Yet the last time they met, Sadiq was very excited. He had just started his job as Manager of the local co-operative's vehicle maintenance.

Terna: Hello Sadiq, what's the matter? Are you still with the co-operative?

Sadiq: No, that's the trouble; they gave me the sack last week.

Terna: That's terrible, why did they sack you?

Sadiq: They said I wasn't doing the job properly. Vehicle break-downs, they said, were even higher than before,and the costs were higher too.

Terna: Were breakdowns more frequent than when they used the local garage?

Sadiq: Yes,probably.

Terna: Why was that?

Sadiq: I am not sure. The maintenance shed and the tools were the best available and our stock of spare parts was as good as anybody's. The trouble was the work never seemed to be done properly.

Terna: What sort of things happened?

Sadiq: Oh, silly things. We had a number of cases where the vehicles ran out of fuel or where they overheated because there wasn't enough water in the radiator.

Terna: Shouldn't the drivers have checked that?

Sadiq: Well, to make it easier for everybody, I said the mechanics should check the vehicles every morning for things like that, but if they were too busy the drivers could do it. When everything went wrong the mechanics blamed it on the drivers and the drivers blamed the mechanics.

BLEEP 1

Terna: That doesn't sound too serious. Were there any other break-downs?

Sadiq: Oh yes! But worst of all was when they broke down just after they had been serviced. I used to think it was the mechanics' fault but it wasn't really. They have to check a lot of things every time and you couldn't expect them to remember everything. Often though, I wasn't sure which mechanic had done the maintenance.

BLEEP 2

Terna: It sounds a difficult job to me Sadiq. Why didn't you ask for more mechanics so you could do the job thoroughly?

Sadiq: Well, I did and they gave me an extra one but it didn't seem to help. By the time I left, costs were nearly twice as high as the co-operative expected.

Terna: Were the mechanics lazy?

Sadiq: No, not really. But they did seem to be sitting around for a long time. The drivers used to bring the lorries in when they thought it was time for servicing. Some days we had nothing to do, sometimes we had lorries waiting outside the shed. The drivers didn't help either - some used to bring the vehicles in for service every two weeks and the mechanics used to waste their time checking things. One driver never brought his vehicle in all the time I was there. It was always breaking down.

BLEEP 3

Terna: Was getting spares difficult?

Sadiq: No, not really. We held lots of spares, but if a lot of vehicles came in one week we probably had to make a couple of journeys into town to collect more spares; nothing special,but items like oil filters or injectors.

BLEEP 4

Terna: Were the mechanics good at their job?

Sadiq: I suppose so. They seemed to get the jobs done, but sometimes I thought they could have done things quicker.

BLEEP 5

Terna: The Committee doesn't seem to have been very sympathetic to you.

Sadiq: No, they weren't. Another thing they blamed me for was a driver's dishonesty. The Secretary found out he was syphoning petrol and selling it. He also sold the new tyres on his vehicle and fitted old ones. I cannot be held responsible for that, can I?

BLEEP 6

Terna: No, I don't think you can. I bet they accused you of fiddling the books?

Sadiq: Well, almost. I used to be very careful to keep all the invoices,but then they kept asking where I used this and where I used that and how much I had spent on this vehicle or that. It was terrible.

Terna: Why didn't you ask the vehicle manufacturer for help?

Sadiq: I did, but all he did was to send me a package of forms; he wouldn't come and see me to explain how to use them.

BLEEP 7

SESSION 5.3

MAINTENANCE PROCEDURES AND RECORDS

Objective: To enable trainees to develop and use appropriate procedures for recording service and maintenance work.

Time: One to one and a half hours.

Material: Specimen record cards.

Session Guide:

1) Explain to trainees that this session and the next are devoted to procedures and records that will assist in the effective and efficient maintenance of a fleet of vehicles. Effective maintenance means that the job is done properly and in accordance with the vehicle manufacturer's recommendations. Efficient maintenance means that the job is done without wastage of labour and materials, i.e. at a minimum cost.

2) Ask trainees where they would expect to get information on the maintenance requirements of vehicles. They should make the following suggestions:

   - The local distributor who sold them the vehicle. (This information should be studied before purchasing the vehicle; all relevant handbooks and information must be provided by the distributor).
   - The manufacturer or national distributor (the local distributor may hold only certain types of information or record cards, particularly if he does not normally stock the model purchased).
   - Other owners. (This is particularly important for second-hand vehicles).
   - Oil companies sometimes provide useful material as service to their customers and indirectly also as a means to encourage use of their product.

- The Ministry of Transport or local hauliers association occasionally produce material that takes account of local operating conditions.
- Trainees' own experience (manufacturer's recommendations may relate to a quite different environment - for example, oil filters in dusty areas must be replaced much more frequently than in relatively dust-free areas). However, vehicle owners should de viate from manufacturers' recommendations only when there are very good arguments for doing so.

3) Explain that there are many different designs of information or record sheets that are used to control vehicle maintenance. The ones trainees are to see in this session are merely examples. They are typical, but details will differ between countries, between manufacturers and between vehicles. However they all aim to provide:

- a systematic method of inspecting vehicles for defects, and
- a record of servicing or repairs carried out on each vehicle.

In most record systems these two functions are combined and a complete record is kept of the life history of each vehicle. What are the advantages of keeping a complete record of a vehicle history? Elicit the following points:

- Time and mileage of the last service is known for scheduling maintenance, for replacing parts such as oil filters and for resale purposes.
- The age of all components can easily be found for replacement or for claiming in the event of failure during the guarantee period.
- Any special behaviour of the vehicle (such as fuel comsumption) can be monitored.
- Comparisons can be made between the total cost of maintaining and running different vehicles.

4) Distribute the specimen "Medium Service Task Sheet". Ask trainees to examine it. Ask the following questions:

a) What does "Medium Service" mean? There are other services such as "Short Service" to be carried out weekly by the drivers, and there will certainly be a "Full Service" which involves a more comprehensive list of tasks.

b) What is the purpose of the square boxes on the left?

The mechanic/fitter ticks this when he has completed the particular task. This ensures he does not miss a task unintentionally.

c) Why do some numbers have no task?

This allows the insertion of new tasks.

d) Why is a signature required at the end of the job?

What must the "workshop foreman" do before signing?

He must check that all relevant boxes have been ticked. However, this does not guarantee that the job has been done or is done properly. He must devise his own method of checking the quality of work,depending on his knowledge of the skill and reliability of the mechanics. Too much checking will take up too much time; too little may lead to poor workmanship. He may decide to examine in detail a job every 2 or 3 days.

e) There is no space on the sheet for a summary of the time taken and cost of spares used; would this be a useful addition?

A good record system should provide some method of recording this information. This may be either on the service record or on a summary sheet which records when the service is done, the type of service, the cost and spares used. The latter therefore provides an easily read summary of the vehicle's history and avoids the details of each service/repair.

5) Distribute the specimen "Vehicle Inspection Report". This provides a systematic method of checking a vehicle either before a service or at regular intervals (every 10,000 km). Allow trainees to exam ine the record for about 5 minutes, and ask them to identify any weaknesses in the record and whether they can suggest any improvements. They should suggest:

- The titles do not give any indication of the faults to be looked for ("condition of tyres"-8; "transmission"- 57). Additional information may be available from a manual. Otherwise only an experienced mechanic could be employed for this task.
- Little space is provided for describing the defect and appropriate action.

- There is no space for details of the action that must be carried out or who is to carry it out. This is important since the inspection card will normally be attached to a service card (if regular service is due) or a repair card, specifying the details of work to be carried out.
- Some comment could be added to the report giving the urgency of the action required (Should the vehicle be taken off the road immediately, or can it be used safely for another 1,000 km?).

6) Remind trainees that they have examined service record cards and inspection reports. Stress that the two procedures of inspecting and servicing must be co-ordinated. The two procedures can and are very often combined on one record card to avoid unnecessary bureaucracy.

   Ask trainees to comment on the systems used in their own societies. Are the forms as comprehensive as the examples used in this session? Are they regularly filled in? What use is made of them? What improvements can be made?

MEDIUM SERVICE

Reg. No. ..... Fleet No. ..... Mileage .....

Make and type ..... Date In ..... Date Out .....

	ITEM	JOB DESCRIPTION
	Lubrication top-ups and refills	
☐ 1	Steam cleaning	
☐ 2	Crankcase	Drain and refill
☐ 3	Filters - oil	Clean and renew element
☐ 4	Filters - air	Clean and refill wet type
☐ 5	Fuel Injection pump	Top-up (where applicable)
☐ 6		
☐ 7	Gearbox	Drain and refill
☐ 8		
☐ 9	Driving axle(s)	Drain and refill
☐10	Steering box	Top-up
☐11	Shock absorbers	Top-up (where applicable)
☐12		
☐13	Brake-fluid reservoir	Top-up
☐14	Clutch-fluid reservoir	Top-up
☐15		
☐16		
☐17		
☐18		
☐19		
	Lubrication hand-oil and grease	
☐20	Chassis - lubrication points	Lubricate (where ACL not fitted)
☐21	Linkages - clutch,accelerator,gear change,brake	Hand-oil clevis pins,ball joints
☐22	Cables-choke/cold start,engine stop,brake	Check,dismantle,clean and lubricate as necessary
☐23		
☐24	Road springs .	Clean and lubricate
☐25	Water pump-bearing	Grease (where applicable)
☐26	Doors-hinges and locks	Hand-oil
☐27		
☐28		
☐29		
☐30		
	General Engine	
☐31		
☐32		
☐33	Cooling system - radiator	Top-up
☐34	Cooling system - fan belt	Adjust renew as necessary
☐35	Water hose and core plugs	Check and renew as necessary
☐36		
☐37	Diesel engine-fuel filters	Clean bowl and renew element
☐38		
☐39		
☐40		

ITEM	JOB DESCRIPTION
☐ 41	
☐ 42	
☐ 43 Engine test	Start and check for oil water and fuel leaks. Check exhaust system. Adjust slow running (petrol only) top-up sump if oil has been changed
General chassis	
☐ 44 Brakes - linings and/or pads	Check and renew as necessary
☐ 45 Brakes - actuator mechanisms	Service and adjust
☐ 46	
☐ 47	
☐ 48 Brakes - handbrake cable	Adjust
☐ 49 Brakes - pawl and ratchet	Check for wear and renew as necessary
☐ 50 Clutch	Adjust to 1 in. free pedal travel
☐ 51 Wheels and tyres	Check nut torque. Check tyre pressure and condition
☐ 52 Steering gear	Check play and adjust as necessary
☐ 53 Number plate	Check for security
☐ 54 Fire extinguishers	Check for security to panel
☐ 55 Licence holder	Check for security to screen for display
☐ 56	
Electrical	
☐ 57 Battery	Remove and charge. Top-up and clean terminals
☐ 58	
☐ 59	
☐ 60	
☐ 61	
☐ 62	
☐ 63 Lights, instruments,horn and wipers	Check
☐ 64 Starter motor	Check mounting bolts and connections
☐ 65	
☐ 66	
☐ 67	
☐ 68	

Lubrication: oil,water and fluid levels	Done by
☐ 1 Grease/oil all points	.....
☐ 2 Check/top up all units. Drain/refill if scheduled	.....
☐ 3 Check/top up batteries and brake fluid reservoir	.....
if fitted	.....
☐ 4 Check coolant; check antifreeze SG in, corrosion	.....
inhibitor in summer	.....

Service carried out by .....

Defect noted and reported to .....

Job check .....

Workshop foreman

MEDIUM SERVICE TASK SHEET

Fleet number	Registration number	Speedo reading	WI number
Make	Type	Department	Date

No	Title	Action	No	Title	Action	No	Title	Action
1	Position and security of legal plate		26	Speedometer		51	Shock absorbers	
2	Details of legal plate		27	Audible warning (horn)		52		
3			28	Driving controls		53	Stub axles/wheel bearings	
4			29			54	Steering linkage	
5	Emission of smoke		30	Play of steering wheel		55	Steering box	
6	Road wheels and hubs		31	Steering wheel		56	Power steering	
7	Size of tyres		32	Steering column		57	Transmission	
8	Condition of tyres		33			58		
9	Bumper bars		34	Air/vacuum warning		59	Mechanical brake connections	
10	Spare wheel carrier		35	Build-up of pressure/vacuum systems (in cab)		60	Air/vacuum brake wheel units	
11	Trailer coupling and drawbar		36	Hand levers controlling mechanical braking		61	Brake pipes, reservoirs, valves and connections	
12	Coupling on trailers		37	Service brake pedal (in cab)		62		
13			38	Service brake operation (in cab)		63	Obligatory front lamps (positions and functions)	
14	Condition of wings		39	Hand operated air/vacuum brake control valves (in cab)		64	Obligatory rear lamps (positions and functions)	
15	Cab mounting		40			65	Reflectors	
16	Cab doors		41	Condition of chassis		66	Functioning of direction indicators	
17	Cab floors and steps		42	Electrical wiring		67	Vertical aim of headlights	
18	Driving seat		43	Engine mountings		68	Position of headlights	
19	Security of body		44	Oil leaks		69		
20	Condition of body		45	Fuel tank and pipes		70	Trailer parking brake	
21			46	Exhaust and silencer		71	Maintenance of service brake	
22	Mirrors		47			72	Maintenance of secondary brake	
23	View of front		48	Condition of spring pins and bushes		73	Maintenance of parking brake	
24	Condition of glass or other transparent material		49	Condition of suspension units		74		
25	Windscreen wiper		50	Attachment of suspension units		75		

√ = OK O = repairs X = repairs effected

Inspected by _____

Checked by _____ Date _____

VEHICLE INSPECTION REPORT

SESSION 5.4

CONTROL OF THE WORK FLOW

Objective: To enable trainees effectively to plan and organize maintenance work.

Time: One to two hours.

Material: Specimen Record and Exercise.

Session Guide:

1) The major item of information required for effective planning and control of maintenance work is the length of time which different tasks will take. These times are often referred to as "workshop standards". Manufacturers usually provide estimates of how long different tasks take. Sometimes tasks will take longer (or possibly less) time than the manufacturer's recommended time. Below are a number of reasons given by mechanics for taking longer than the recommended times. Ask trainees what their response to these "reasons" would be:

   - "This is the first time a full service is done on this vehicle, and I had to keep referring to the manual".

     Most manufacturers' recommendations are fairly generous on recommended times, but the first service can be expected to take longer. Wait until a second service before considering changing "standard time".

   - "It took a long time because I did not have the right tools". This may be a valid reason. Check the need for any new tools and consider purchase.

   - "This service always takes me longer than the time given. Bill takes longer too. There were no special reasons for it".

     It appears that perhaps the time is not sufficient. The Foreman or the Manager should do the job himself, or observe it being done to assess accuracy of recommended time.

- "I know it took me seven and a half hours instead of seven, but it took me a long while to get the oil filter off; it was stuck".

  Standard times, although often generous, do assume that the task under consideration is carried out with no major problems. In other words, "standard times" assume a normal, average work-load for the task considered. This may not always be the case: now and then, a mechanic may face special difficulties in carrying out a specific task and it may consequently take him more time than normal to do the job. A good foreman or manager will, however, already know from the shopfloor when mechanics are faced with special difficulties. Accepting a longer-than-normal standard time will consequently be no problem.

2) Ask trainees whether the system of "standard times" is used in their societies. If not, what are the reasons and how do they control workflow and work-time in such a case?

   If "standard times" are used, do mechanics try to work to meet these times,or do they always attempt to find excuses and create precedents for not being able to work according to standard times?

   What may be the reason for such different attitudes? How can mechanics be motivated to accept and to work towards standard times?

   - Standard times recommended by the manufacturer or distributor of the vehicles are introduced, only after floor tests have proven that they are realistic. If unrealistic, standard times are ex tended or shortened before introducing them.

3) After having determined how long maintenance/repair tasks take, the next step is to plan them. Most garages or workshops plan their work a week or more ahead and use schedules to do this. Distribute the exercise to the groups and ask them to complete the assignment. Allow up to 30 minutes for this. Ask trainees to work in pencil.

4) Make sure participants' schedules do not exceed 8-hour working days. Cleaning the workshop should be done by both mechanics when they have completed other work. Half an hour by each mechanic is required for this.

A possible schedule for the week will look as follows:

Unity Co-operative Workshop		Work Schedule Week
Day	Mechanic: Joe	Mechanic: Bill
Monday	Work programme for the week ½ hr. Visit local distributor to pick up spares 5 hrs. Repair Footpump 2 hrs. Clean Workshop ½ hr.	Work programme for the week ½ hr. Short Service AB 5 hrs. Miscellaneous/Ad Hoc Repairs 2 hrs. Clean Workshop ½ hr.
Tuesday	Medium Service AB 12 7½ hrs. Clean Workshop ½ hr.	Long Service AB 67 5½ hrs. Miscellaneous/Ad Hoc Repairs 2 hrs. Clean Workshop ½ hr.
Wednesday	Medium Service AB 12 cont. 4½ hrs. Miscellaneous/Ad Hoc Repairs 2 hrs. Clean Workshop ½ hr.	Long Service AB 67 cont. 7½ hrs. Clean Workshop ½ hr.
Thursday	Medium Service AB 23 5½ hrs. Miscellaneous/Ad Hoc Repairs 2 hrs. Clean Workshop ½ hr.	Long Service AB 67 cont. 7 hrs. Clean Workshop ½ hr.
Friday	Medium Service AB 23 cont. 6½ hrs. Clean Workshop ½ hr.	Change Two Wheel-Bearings 4 hrs. Miscellaneous/Ad Hoc Repairs 2 hrs. Clean Workshop ½ hr.

Stress that calling in a vehicle for servicing means that the vehicle is immobilized: the time during which a vehicle is kept in the garage must therefore be kept to a minimum.

To make sure that Bill and Joe know their programme for the week, Tom should:

(i) go over the programme with them first thing on Monday morning (mechanic may make useful suggestions which should as much as possible be taken into account - as long as the jobs get done!)

(ii) preferably write the schedule on a chalkboard in the workshop.

5) Planning "maintenance" jobs is not so difficult - one knows in advance which vehicles have to undergo what maintenance. A workshop, however, also does repairs - and repairs are unpredictable.

In the Unity workshop they reserve an average of two hours per day for miscellaneous/ad hoc repairs. Some days however, they may not need two hours; other days they may need more. The work schedule must therefore remain flexible and may need re-adjustment practi cally every day. The chalkboard in the workshop is therefore a practical planning device.

6) Trainees whose suggested work-schedule for the week proved realistic should continue to work on their own schedule.

Trainees whose work-schedule for the week was wrong in some way or other should be given a copy of the model above.

Now confront trainees with the following situations:

(i) No ad/hoc repairs show up Monday - should Bill do nothing for 2 hours or .....? Ask for trainees'suggestions.

- Bill replaces one of two wheel-bearings scheduled for Friday (2 hours) (this alternative is implemented)

Other possibility: Bill helps Joe to repair footpump.

(ii) On Tuesday afternoon a driver reports that the fuel injection pump system is not working properly. He thinks it must be repaired as soon as possible. The workshop standard for such a job is 4 hours. Can this be fitted into this week?

- Tell driver to come on Wednesday afternoon and give the job to Joe who can work on it 3 hours (2 hours scheduled ad hoc repairs 1 hour idle). Joe completes the job by 9 a.m. on Thursday morning (1 hour scheduled ad hoc repairs) and starts the service on the AB 23 at 9.00 a.m. (This alternative is implemented).
- Other possibility: assuming Bill has changed one wheel-bearing on Monday, he could do the job on Friday morning (4 hours) and change the second wheel-bearing in the afternoon (Friday may however be too late!).

(iii) Wanting to replace the oil filter on the AB 67 on Wednesday morning (1 hour standard time) Bill discovers it is out of stock. The local distributor is the only place where one can buy it.

- Bill completes the service but leaves the old oil filter on; assuming Bill changed one wheel-bearing on Monday and Joe repaired the fuel injection system on Wednesday/ Thursday, Bill has 5 hours on Friday morning to fetch an oil-filter. The AB 67 is asked to report back to the workshop on Friday afternoon for 1 hour - Bill replaces the oil-filter. Bill has 21 hours left: 2 hours for changing the second wheel-bearing, 1 hour to help clean the workshop.

Ask trainees working with their own work-schedule whether they were able to fit in all the "unexpected situations" in their work-schedules. If time allows, ask one or two trainees to present their schedule and the way they were able to cope with the unexpected situations.

Stress that there is no one right answer to scheduling. "Planning" or "Scheduling" as illustrated by the exercise, will however, in most cases lead to a more efficient use of time.

Planning the Week's Work

The Unity Co-operative Maintenance Workshop uses "standard times" for most of the jobs it does in the workshop. Early Monday morning, before the two mechanics Joe and Bill have come in, Tom,who is Unity's workshop foreman, sits down and plans the work for the week.

He has a list of the following jobs for this week.

		Standard Time
1.	Visit to local distributor to pick up spares (urgent - should be done on Monday)	5 hours
2.	Medium Service on AB 12	12 hours
3.	Short Service on AB 45	5 hours
4.	Medium Service on AB 23	12 hours
5.	Repair Footpump	2 hours
6.	Long Service on AB 67	20 hours
7.	Change 2 wheel-bearings on FG 89	4 hours
8.	Daily: cleaning workshop (hour for each mechanic)	1 hour
9.	Daily: miscellaneous/ad hoc repairs	2 hours
10.	Introduction of the week's programme	2 hour

Working hours in the workshop are from 8.00 a.m. to 5.00 p.m., with breaks of 1 hour at lunchtime. The workshop is open 5 days per week.

Assignment:

a) Plan who must do what and when this week. Use following planning schedule:

Unity Co-operative Workshop		Work Schedule Week
Day	Mechanic: Joe	Mechanic: Bill
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		

b) How does Tom make sure that Joe and Bill know what jobs they must do and when to do them?

SESSION 5.5

RECORDS OF FUEL ISSUED

Objective: To enable trainees to design and use records of fuel consumption.

Time: One and a half to two hours.

Material: Case study.

Session Guide:

1) Ask trainees what proportion of their transport costs goes to fuel. It may be 50% or more. How can fuel consumption be controlled and minimized? A special record of fuel consumption must be kept:
   - To prevent misuse of fuel.
   - To monitor how much fuel different vehicles use.

2) Distribute the case study to trainees who should work in groups. Allow about 45 minutes for the assignment.

3) The control systems will differ between groups. Ask each group to present their system and ask other groups to criticize: can they find loopholes or unnecessary controls in the systems suggested by their colleagues? All the systems should refer to the following elements:
   - When is the pump locked? (Only at night-time, or must it be kept locked at all times except when fuel is being drawn?)
   - Who should be allowed to draw fuel? (Drivers, mechanics, others?).
   - Where should the key to lock the pump be kept, and who is responsible for it?
   - Is the issue of fuel from the pump to be observed (if so by whom) or is the recording to be entrusted to whoever fills the tanks?
   - Who is responsible for keeping and filling in the record of fuel issues?

- Who is responsible for taking delivery of fuel and for controlling the amount of fuel in the tank?

4) When all systems have been discussed, each trainee should be given time to compare the systems used in his own co-operative with the systems discussed and to formulate possible improvements in the systems used in his society.

5) Suggested designs of record cards will also differ. A possible design is given below: (Show to trainees on blackboard or OHP).

FUEL ISSUES : ABC Farmers Co-operative Society

Date	Signature	Fuel Out Litres	Vehicle	Fuel Delivered	Fuel in Tank	Comments
7.1.80					2300	
7.1.80		105	AB 99			
7.1.80		85	CD 98			
7.1.80		70	EF 97			
7.1.80		95				
14.1.80		115	XY 88	1750		
14.1.80					2100	
		Total since 7.1.80 1940		Total since 7.1.80 1750		

Essential elements to record are:

- Amount of fuel issued.
- Vehicle number (AB 99, CD 98 etc.).
- Signature of person to whom fuel is issued.
- Amount of fuel delivered to the society.
- Signature of person responsible for taking delivery.
- Amount in the tank should be checked at each delivery (at least).

A comparison of actual fuel used and recorded fuel issues will reveal leakages as shown in following calculations:

Period 7.1.1980 - 14.1.1980

Opening Stock of Fuel	2300 litres
Plus Purchases	1750 litres
	4050 litres
Total Sales of Fuel	1940 litres
Stock should be	2110 litres
Actual Stock	2100 litres
Leakage	10 litres

Control of Fuel Issues

The Farmer's Co-operative Society owns 15 lorries,and the Committee has decided to hold stocks of diesel fuel on the Co-operative premises. The fuel will cost less when purchased in large quantities. Drivers also will not be able to claim for fuel they have not actually bought,or sell fuel from their tanks, as they are believed to be doing now. The Manager is,however, concerned that the new method of fuelling vehicles from their own fuel tank will soon lead to other forms of abuse. He has to design a system which will prevent misuse of the co-operative's fuel tank and pump. In addition he must design a card that records how much fuel is delivered to the tank and taken from the pump.

Assignment:

a) Design a system which will prevent misuse of the new fuel tank and pump.

b) Design a card that records how much fuel is delivered and used.

SESSION 5.6

WHAT SPARE PARTS AND HOW MUCH TO STOCK

Objective: To enable trainees to decide what spare parts should be stocked, and in what quantities.

Time: One to one and a half hours.

Material: Exercise.

Session Guide:

1) Ask trainees to suggest what information they need about a spare part before deciding whether or not to stock it:

   a) Full knowledge about the spare part, its purpose and which vehicles use it.

   b) Its cost.

   c) The cost of collecting the spare part (is a special journey necessary?).

   d) The cost of inconvenience that will result if it is not available. Is the vehicle out of action for 1 hour or 3 weeks? Will this result in lost income to the society? Under this heading, ask the trainees how much it costs their co-operative if a vehicle cannot be used for 1 week due to shortage of spare parts.

   e) How often the component is likely to need replacing.

   f) The likelihood of future shortages of the spare part.

2) Ask trainees where they can obtain this information. (The suggestions below refer to the same letters as above).

   a) The local distributor, or possibly the manufacturer.

   b) The local distributor and manufacturer.

   c) A Society's management should be aware of its costs. (Ask trainees if they really know the cost of sending a vehicle to the nearest town from their society).

d) The Society's management should also know the cost of hiring a vehicle to replace their own, or the cost of spoiled produce or other losses if alternative transport is not available.

e) The local distributor or manufacturer may provide this information but they are generally reluctant to reveal it. If they do give a guide, it is likely to underestimate the need for spares - they prefer to give a good impression of the reliability of their vehicles. The experience of other co-operatives provides some evidence but this may be of limited use. Vehicles of different ages differ in their use of spares and accurate records may not always be kept. A Society should itself collect this information through adopting procedures covered in Session 5.3.

f) Regular discussion with the local distributor might give some information but even he may find it difficult to anticipate shortages. He may wish to secure orders and exaggerate the likely shortages or he may wish to give an inaccurately favourable impression of his firm's service and minimize the risk of delay.

3) Draw up a table with headings as below. Explain to trainees that they will have to consider reasons for holding either high stocks of "spare parts" or low stocks of "spare parts". Write the first reason ("Speedy repair of vehicles") in the left hand column and ask trainees to say whether this will be achieved by high or low stocks and to explain their answer. When agreement has been reached tick the appropriate box and continue down the list.

Reasons for Holding	High Stocks	Low Stocks
Speedy repair for vehicles	X	
Less money tied up in spare parts		X
Mechanics do not waste time waiting for spares		
Less storage space required		X
Future price increases avoided	X	
Fewer special visits to stockist (e.g. to pick up one spare part)	X	
Theft easier to control		X
Less administration required		X
Shortages of spare parts avoided	X	
Discourage continuing use of old defective components	X	
Avoid use of obsolete items or items damaged in storage		X
Avoid loss through stocks lasting after vehicle replaced		X

4) Discuss the relative merits of each argument. Stress that all the arguments are important, and that it is not possible to say that stocks should be high or low in general. In each situation the benefits of holding a particular spare part must be compared with the cost of holding it.

5) Choose two trainees to play the roles of Transport Manager and General Manager. Distribute the table and role play brief to each trainee and allow them 10 minutes to "think themselves" into the briefs. They should use their imagination to fill in any gaps in the role briefs. Distribute the table only to the other trainees.

6) Arrange a desk and two chairs to simulate a meeting between the Transport Manager and the General Manager. Ask the selected trainees to play their roles for about 10 minutes and then allow the other trainees to comment on the negotiations (the Transport Manager should put his case first).

7) The main costs to be considered in this problem are:

- Visits to the stockist.
- Vehicles unavailable.
- Interest payments.

The Co-operative should attempt to minimize the sum of these costs.

The cost under the old Transport Manager was about $3,500.
(= 50 visits to stockist costing $50 + $20 each).

The new Transport Manager's solution would cost about $1,000).
(= 4 visits to stockist at $50 each plus $900 interest payments).

It should be possible to find a solution with even lower costs. With stockholding to the value of about $1,000, unanticipated shortages should not occur more than about 4 times per year. These visits plus the 4 regular ones should cost no more than $500 (8 x $50 + 4 x $20). Interest payments would be about $200 - a total cost of $700.

8) Stress that decisions on spare part stocks are difficult. It is uncertain when a component will fail and the cost and inconvenience of failure is also unknown. Nevertheless, a decision must be made for each item, based on whatever information is available.

What to Stock - Costs

Item	Expected Number Required per year	Cost ($) per Item	Number Requested by Transport Manager	Total Cost
Tyres	5	80	10	800
Fuel pump	1	100	2	200
Gearbox	1	400	2	800
Engine	0.5	1,000	1	1,000
Spring	8	20	10	200
Wheel Bearing	4	30	5	150
Oil	400 litres	2	500	1,000
Piston	1	50	1	50
Crankshaft	2	100	2	200
Fuel Injector	4	10	10	100
				$4,500

The Unity Co-operative Society has just appointed a new Transport Manager for their fleet of 10 lorries. He has put in a request to the General Manager to spend $4,500 on spare parts for the trucks, to be held at the Co-operative. The table above shows his request and the cost of various items.

What to Stock - Role Play Brief = Transport Manager

You have just been appointed Transport Manager of the Unity Co-operative Society. You are shocked to find that the Society holds practically no stock of spare parts. In the past the Transport Manager has been making visits almost once a week to the distributor of spare parts about 150 km away. You believe this to be wasteful. Each visit to the distributor takes a day and costs about $50 (including the costs of vehicle operation and the Manager's time). In addition, the delay in repairing vehicles means that they are out of action for one day more than necessary. You estimate that the cost of hiring a replacement when a lorry is off the road is about $20.

Your proposal is to hold a stock of spare parts as shown in the table. Instead of visiting the stockist once a week you would expect to visit him only once every 3 months to replenish your stocks. With stocks of this size there should be little likelihood to run out of a spare part in the event of failure. It is no good holding only 1 tyre or 1 wheel bearing. Failures do not come at regular intervals. You must hold sufficient stocks to avoid extra trips to the stockist. With the level of stocks requested, you expect to have to make no unanticipated visits to the stockist.

You have purposely estimated a generous level of stockholding in anticipation of having to make a compromise with the General Manager, who you know is anxious to reduce the Society's borrowing from the bank.

What to Stock - Role Play Brief - General Manager

You have received a request from the new Transport Manager to hold stocks of spare parts which he hopes will avoid the regular trips to the stockist that the previous Transport Manager used to make. His request and its cost is given in the table. You already have a large loan with the bank and do not want to increase it unless it is absolutely necessary. The total cost of the stock of spare parts is $4,500. With interest at 207, this would cost you about $900 per year. You appreciate the need to keep visits to the stockist down, but the Transport Manager's request seems exorbitant. For instance,holding one engine in stock costs about $200 per year (0.2 x 1000). Surely, a special visit to the stockist when an engine is required would be more sensible. In most cases his request for spare parts is more than he expects to use in one year. Why can he not accept stocks adequate for 3 months normal needs? Why does he need to hold over a year's supply of oil, or 2 gearboxes when he only expects one to fail in a year? You believe stocks equivalent to 3 months expected demand should be sufficient. This would reduce interest payments substantially. You intend to try and reach a compromise with the Transport Manager that involves stockholding with a value less than $1,000.

topic

6

regulations and insurance

SESSION 6.1

LICENCES AND OTHER DOCUMENTATION

Objective: To enable trainees to explain the purposes of vehicles and driving licences and testing regulations, and to comply with pertaining procedures as applied in their own countries.

Time: One to one and a half hours.

Material: Tape dialogue. Sample of local licences, application forms, log books, test certificates and other internal society vehicle documents.

Session Guide:

1) Play the tape dialogue. If a tape recording and player are not available, enact the tape dialogue. Trainees should note down, while they hear the dialogue, every item of information that is missing.

2) After the dialogue has finished, ask trainees to note by each item of information, the particular document in which it should be provided. They should then consolidate their lists under the heading of each type of document. Allow up to twenty minutes for this and then ask selected trainees to present their suggestions on the chalkboard/OHP.

   One possible answer would be as follows:

   Driver's Licence

   - Driver's name with identifying picture, signature and/or thumb print.
   - Driver's age.
   - Date and place of passing test.
   - Type of vehicle authorized to drive.
   - Physical fitness of driver.
   - Endorsements of any major accidents.

Vehicle Log Book

- Vehicle make and model.
- Vehicle colour and any changes of colour.
- Vehicle engine and registration number.
- Vehicle load capacity.
- Use and range for which licensed.

Test Certificate

- Vehicle fitness for road.

Insurance Cover Note

- Name of insurer.
- Risks covered by insurance.
- Date of premium payments.
- Address to which claims should be directed.

Employer's Identification Card

- Authority to drive employer's vehicles.
- Name and address of employer (and/or painted on vehicle).

Driver's Daily Record

- Hours driven.
- Job being undertaken.

3) Not all countries, or societies, have every document, and various items of information may be available from different sources. The tape dialogue should have shown trainees that all the information is necessary for the protection of the driver and the society in the event of accident, loss or other problems.

4) Ask trainees who else benefits from these licences and other documents apart from the drivers and owners of vehicles or those who may be involved in accidents with such vehicles:

- The Government benefits by collecting fees; these fees may considerably exceed the cost of administration and are a substantial source of taxation to cover the cost of providing roads and other services which are used by vehicles.

- All road users, because unsafe or overloaded vehicles, or inadequately skilled, unfit or reckless drivers are kept off the road.
- The country as a whole, because such documents are the basis of national statistics used for planning road construction, vehicle manufacture, import permits and so on.

5) Distribute or show copies of forms, licences and other documents used in trainees' countries, and in typical societies, together with official application forms. Ensure that all trainees are fully familiar with:

- What licences are required for every type of vehicle and operator.
- Periods for which the licences should be obtained.
- The cost of licences.
- How to fill in the application forms.
- Where and by whom the licences and other forms should be kept.
- The meaning of all the items in every form, such as types of insurance, vehicle or licence classification and so on.

If necessary, trainees should practice filling in application forms. That will also ensure that they understand every item of information that is required and how to obtain it.

6) If official regulations do not require that all the information listed in "2)" above is readily available, ask trainees whether their societies keep or issue to their drivers documents for this purpose. Explain by reference to the dialogue that it is advisable to do this, for the protection of the society and its drivers, even if it is not required by law.

7) Trainees need not go into great detail on insurance or drivers' own records, since these will be dealt with in the following two sessions; stress that no society, or Government, should keep unnecessary records or demand unnecessary licences, but point out that many apparently unnecessary requirements actually have substantial value.

Tape Dialogue : A Disastrous Journey

Sound of vehicle "reving up".

Romo: (To *himself)* Well I'm ready to go; fuel, water and oil topped up, tyre pressure checked and the load is well stowed and secured. It's a long trip, but it ought to be a good one.

Sound of vehicle going into gear and moving away. Pause.

Romo: (To *himself)* Everything going fine, the rain has stopped, nothing on the road, I can really let her have it and I'll get home early after making the delivery.

Sound of siren.

Romo: (To *himself)* Oh dear, now I've done it, there's a police car and I must have been doing at least 100 km, 50 is the limit, I'd better pull in and face the music.

Sound of vehicle slowing down.

Policeman 1: Now then, do you know how fast you were travelling young man?

Romo: No, I'm afraid I don't officer, I had my eyes on the road you know.

Policeman 1: Well, I had my eyes on you, and you were doing 110 kmph, do you know what the limit is?

Romo: Er-yes-er-I didn't think there was any limit out here in the country.

Policeman 1: When did you learn to drive?

Romo: About two years ago I think.

Policeman 1: Did you pass your test?

Romo: Oh yes, of course I did officer, but I can't remember the date.

Policeman 1: You don't look old enough, or strong enough for that matter, to drive a vehicle of this size; how old are you?

Romo: I'm twenty years old sir.

Policeman 1: Mmm, you don't look it, what's your name?

Romo: Ignatius Romo, officer.

Policeman 1: Have you anything to show that shows who you are?

Romo: Well no, I haven't, but that's my name, I know it well enough.

Policeman 1: I see, what's the registration number of your lorry?

Romo: Er I think BZ 434.

Policeman 1: Well I can hardly see your plates with all that mud, but I thought they said DZ 434; I'll check in a moment. How old is the vehicle?

Romo: About two years old I think.

Policeman 1: It looks about twenty years old to me, ought to be off the road.

Romo: It goes well enough.

Policeman 1: When did you set off this morning?

Romo: At about 8 o'clock I think.

Policeman 1: You look pretty exhausted; maybe up too late last night?

Romo: (To *himself)* Ah, here we go.
(To Policeman) I expect you like a bit of fun yourself, officer, but it's hard on Government pay scales isn't it?

Policeman 1: I can't pretend I've got all the money I want certainly.

(Rustle of paper)

Romo: We don't do so badly, with the odd bonus and so on; here, have $20 for your "benevolent funds".

Policeman 1: Hmm, well, don't break the law again, we won't press charges this time.

Romo: Thank you officer.

(Sound of vehicle starting)

Romo: (To *himself)* Well, that's a close thing, and expensive too.

Pause

Romo: (To *himself)* On the road again, I feel a bit sleepy in this heat, but it's not a bad life, I'll soon be there and then I'll be getting ..... *(Sound of crash and tear ing metal)* Oh my God, I never saw him; at least I'm alright, I think, and the lorry, but he's a mess.

(Sound of door opening)

Romo: Are you all right? You ought to look where you're going.

Driver: (Furious) Me look where I'm going? I signalled perfectly clearly that I was going to turn off; now look, my car's a write-off, I'm cut about the head, I'll miss my meeting with the Minister. They ought to keep fools like you off the road.

Romo: *(Frightened)* Well, I was looking out as best I could, maybe the glare from the sun hid your indicator.

Driver: Ah well, let's not waste time. Whose lorry is it?

Romo: Unity Co-operative, sir.

Driver: How do I know?

Romo: Well they're my employers,sir.

Driver: Who are your insurers, if you are insured, that is?

Romo: I know we're insured sir, but I don't know the name of the insurance company.

Driver: *(Exasperated)* What do you know? Is your insurance policy up-to-date?

Romo: I suppose so, they always take care of things like that in our office.

Driver: I hope the clerks are better than the drivers. (Suspiciously) You look very young, are you authorized to drive this vehicle?

Romo: Oh yes, of course I am,sir.

Driver: I hope so,or it will go badly for you. You should have stopped a lot faster, if your brakes are any good that is. Is this lorry fit to drive?

Romo: Oh yes, we maintain them regularly.

Driver: I don't think much of the paintwork, look, where the bumper has hit, you can see green paint underneath the black; mmm it looks suspicious. A hasty respray, stolen or lots of accidents,or both,I'll bet.

Romo: Oh no, I've got a good safety record, I'd lose my job if I didn't, and I promise the lorry belongs to the Society, like I said before.

Driver: Looks heavily overloaded, too; that didn't help you to stop fast. What's the official maximum load?

Romo: I think it's ten tons.

Driver: You think eh! Well, I've got no time to waste, and you'll be hearing more about this later. I'm sure this gentleman who has just stopped will be able to give me a lift.

(Sound of door shutting and car driving away)

Romo: (To *himself)* At least the lorry still goes, I'd better get away from here while I can. Maybe it's not going to be a good day after all.

(Sound of lorry door shutting and lorry starting and driving away)

Pause

(Sound of radio and clattering teacups)

Romo: (To *himself)* Nothing like a break and a cup of tea to refresh you. After my troubles today I needed a rest. Still I must be off to deliver the goods.

(Sound of cafe door opening and closing)

Romo: (To *himself)* Oh my God, the ropes have been cut and the cover's loose, it looks as though someone has been at my load. Oh Lord, at least four boxes gone, what can I do now? Ah, there's a policeman, different from the last one, but it looks a bit fishy I suppose. Oh dear, he's noticed anyway and I'd best tell him what I know.

Policeman 2: What's all this, somebody been at your load?

Romo: Yes, I'm afraid they have cut the ropes and taken four or five boxes, $100 worth at least.

Policeman 2: Better get the details properly. Does your insurance cover goods in transit?

Romo: I don't know, I suppose so.

Policeman 2: Looks like a pretty shabby vehicle and it's registered two hundred kilometers away. Is this vehicle authorized for carrying these goods out here?

Romo: I suppose it is.

Policeman 2: Mm, it all looks at bit strange, what kind of lorry is it anyway?

Romo: Well, the badge is missing, it's a Matador really, but ....

Policeman 2: It looks a bit of a wreck to me, recent damage too, let's check the engine number that ought to tell us.

Romo It's a bit complicated,you see,when they put in a recon-ditioned engine .....

Policeman 2: It is indeed! *(Sound of opening engine cover)* *Hmmm, it's* a Bulldozer engine; what is all this, what is the engine number meant to be?

Romo: I don't know really.

Policeman 2: Maybe you know more than you're admitting; I think you'd best come along with me to the Police Station.

Romo *(To himself)* It all started so well, what did I do wrong?

SESSION 6.2

VEHICLE INSURANCE

Objective: To enable trainees to choose the appropriate insurance for their vehicles.

Time: One to two hours.

Material: Sample Insurance Application Form and Accident Report Form. If possible, forms from local insurance companies should be used. Case study.

Session Guide:

1) The legal requirements covering vehicle insurance and the practice of insurance companies differ between countries. If possible, sample documentation from local companies should be given to trainees in stead of the sample material provided with this session. A local insurance agent or broker could be invited to answer questions and to comment on the session.

2) Ask trainees why they should insure their vehicles. Answers may include:

   - The law requires it.
   - Claims against the Society in event of injury or damage to others might bankrupt the Society.
   - The Society could not afford to replace or repair a vehicle if it is seriously damaged.

3) Ask trainees what can be insured against in vehicle insurance:

Can be insured	Cannot be insured
- Damage to vehicle in accidents.	- Damage to vehicle contents (usually).
- Damage to property (including other vehicles) in accidents.	- Repairs to vehicle after breakdown.
- Injury to people in accidents.	
- Fire damage.	
- Theft of vehicle.	
- Windscreen (sometimes).	

4) Distribute the sample forms to trainees:

- Ask trainees to examine the form "Application for a Commercial Vehicle Policy". Point out that the form is divided into five sections starting with "Personal Details". Ask trainees which person in their Co-operative is, or would be, responsible for completing this form and ensuring that it is accurate.
- Continue to the section "Cover". Explain that this section is concerned with the period for which they receive insurance and the incidents that they are insured against. Ask trainees to indicate which combination of cover would cost the minimum premium and which combination would cost the most.

Minimum

- Third Party only.
- First $50 of any claim.
- No windscreen cover.
- Driving limited to a named driver.

Maximum

- Comprehensive.
- Bear no cost of any claim.
- Windscreen cover up to $75.
- No limitation on driver.

- Continue to section "Vehicle". Explain that the insurance company is interested in the age, size and type of the vehicle(s) to be insured. This will enable the company to estimate the value of vehicles they are insuring and also to be aware of the type of vehicles they are insuring. Some vehicles are more prone to accidents than others. Expensive vehicles (if comprehensively insured) will attract a higher insurance premium.

- Continue to section "Record". Ask trainees to examine the section and suggest the sections and answers which might be expected to increase the premium asked. Responses should include:

  Total number of drivers; large numbers.

  Drivers under 21 years of age; drivers with less than 12 months experience; drivers holding only a provisional licence. Positive responses to these imply inexperienced drivers, which may increase premium because accidents are more likely.

  "Have you or any of your drivers been convicted .....?" Positive response implies poor drivers which may increase the premium.

  "Are you or any of your drivers suffering from any physical defect .....?" Positive response implies that driving ability may be impaired and premium may be increased.

  "If no previous experience ....."; positive response implies inexperience and premium may be increased.

  "Has any insurer .....?" Positive response suggests that another insurer has been unwilling to insure you or has assessed you unfavourably.

  "Have there been any accidents or losses .....?" Large number indicates poor driving ability.

- Continue to section "Declaration". Ask trainees to read this section and to suggest what might happen if they make a false statement.

  The insurance may be invalidated. If an accident does occur and a claim is made the insurance company may refuse to pay, stating that if it had been aware of the full details of driver or vehicle it would not have offered insurance.

5) Explain to the trainees that if an accident does occur an "Accident Report Form" will have to be completed. Ask the trainees to imagine they have been involved in a minor accident at a road junction 150 km from home, which damaged, but did not immobilize, their vehicle and two others. Allow trainees about 15 minutes to list the information they should collect before they leave the place of the accident,and ask for their suggestions:

- Names, addresses, telephone numbers of owners, drivers and insurers of the other two vehicles.
- Details of other vehicles (especially Registration particulars) and damage.
- Name and address of injured persons together with some indication of the nature of their injuries.
- Names and addresses of any witnesses to accident.
- Details of the accident and its location. The incident will be fresh in the driver's memory and details of location may avoid the necessity of a future visit to the scene.
- Distribute the "Accident Report Form" to trainees and point out sections that refer to the list given above.
- Stress that if a claim is to be paid quickly, the form must be completed quickly and accurately. Trainees should ensure that drivers in their co-operative are aware of the need to complete claim forms promptly and fully after an accident.

6) Remind trainees that one of the decisions that has to be made in insurance is the choice of Insurer. Before choosing an Insurer the applicant should request "quotations" from a number of insurance companies. Ask the trainees to imagine that they have a number of "quotations" from insurance companies and that they have to make a choice between them. Allow trainees about ten minutes to draw up a list of the factors they would examine in making this choice:

- The cost of the insurance for a year or whatever period required.
- The cover offered, i.e. the incidents that the insurance protects against and those that it does not.

- Whether payment can be made in instalments (monthly or quarterly, for instance).
- The reputation of the Insurer: is it a well established company with a long history and ample reserves or a new company with uncertain reserves?
- The record of the company in payment of claims; do they pay promptly or do they quibble about every claim?
- The no-claims discount in future years: if the proposer makes no claims against the Insurer in a year,he may receive a reduction in the premium the following year - the no-claim discount.
- Location and convenience of offices.
- Whether it is a member of the Co-operative movement. Ask trainees whether there is a Co-operative Insurance Company, whether they use it, and whether it is competitive with commercial companies.

7) Distribute the case study to trainees individually and allow about 10 minutes for completion. Ask a trainee to present his recommendation. A possible answer is:

- The Co-operative would be in some difficulty if the vehicle was involved in a serious accident with Third Party cover only - they would have no lorry and still owe the Bank money. Recommend Fully Comprehensive insurance. With two years no claim-discount the cost is:

  ABC Ltd. $400 ($500 less 20% of $500)
  XYZ Ltd. $360 ($400 less 10% of $400)

  ABC Ltd. also offers a 10% discount for one named driver. The Valley Co-operative should take advantage of this. With this, the cost becomes:

  ABC Ltd. $350 ($400 less 10% of $500)
  XYZ Ltd. $360

There is also the possibility of paying the first $50 of any claim. This would save $50 with ABC Ltd. and $40 with XYZ Ltd. Whether this should be accepted depends on how likely an accident is the next year. It is probably worth accepting this discount. If this is done, the relative cost is:

ABC Ltd. $300
XYZ Ltd. $320

Recommend insurance from ABC Ltd. - cost less and no other significant advantages from the alternative of XYZ Ltd.

COOP
Insurance Company Limited

APPLICATION FOR A COMMERCIAL VEHICLE POLICY

PERSONAL DETAILS

Full name: Mr., Mrs. or Miss

Date of birth

Address

Occupations (State nature of business)

Number of years resident in the United Kingdom

COVER

Period from ____ to ____

Cover required: Comprehensive ☐ | Third Party Fire & Theft ☐ | Third Party Only ☐

Indicate whether you wish to (a) bear the first part of the cost of any claim for damage to your vehicle: $25 ☐ $50 ☐

(b) include windscreen cover (see over): $25 ☐ $50 ☐ $75 ☐

(c) have driving limited to a named driver: YES ☐ NO ☐

VEHICLE

Detail any variation of chassis or body from manufacturer's standard specification.		Type of body (length of wheelbase if tipping veh.)	Year of make	Date purchased	Cash price paid by proposer	Estimated present value (including accessories)	Seating capacity	Unladen weight	Plated weight	Maximum carrying capacity	Registration mark	Is the vehicle fitted with left-hand steering?
Make	Model											

1 (a) Are you the owner of the vehicle? Yes ☐ No ☐

(b) If not, explain why insurance is required in your name

(c) State in whose name vehicle is registered

2 Unless the vehicle is normally garaged at the address shown above, state address of usual garage.

3 (a) State area within which the vehicle will normally be used.

(b) Is any long distance or night work undertaken? If so, how often?

(c) What is the nature of the goods carried?

(d) In what circumstances will passengers be carried?

4 (a) Will the vehicle be used for the carriage of goods for hire or reward? Yes ☐ No ☐

(b) If not, will the vehicle be used outside a radius from its base of (i) 75 miles Yes ☐ No ☐

(ii) 125 miles. Yes ☐ No ☐

RECORD

7 Give the following details of yourself and all other persons who may drive the vehicle.

Total number of drivers	Number under 21 years of age	Number with less than 12 months experience of driving a commercial motor vehicle	Number holding only a provisional licence	Have you or any of your drivers been convicted for any offence in relation to the operation or driving of motor vehicles, or are any such prosecutions pending?*	Are you or any of your drivers suffering from any physical defect or infirmity, or impaired vision or hearing?*

*If 'yes' give full details here:

8 Name Insurers with whom you have been insured at any time in respect of any mechanically propelled vehicle.

9 If no previous insurance, state how driving experience was gained.

10 Has any Insurer in respect of any motor insurance proposed by you, or any of those referred to in 7 above,

(a) declined such proposal? Yes ☐ No ☐

(b) cancelled or refused to renew such policy? Yes ☐ No ☐

(c) increased the premium or imposed special conditions? Yes ☐ No ☐

(d) required any person to bear any part of any loss? Yes ☐ No ☐

If the answer to any part of this question is 'yes' give full details:

11 Have there been any accidents or losses regardless of blame during the past five years in connection with any mechanically propelled vehicle owned, hired or driven by you or those referred to in 7 above? Yes ☐ No ☐

If 'yes' give details:

Year	Number of vehicles owned	Number of accidents or losses	Own damage £	Third party £	Brief details of occurrence
19 /19					
19 /19					
19 /19					
19 /19					
19 /19					

DECLARATION

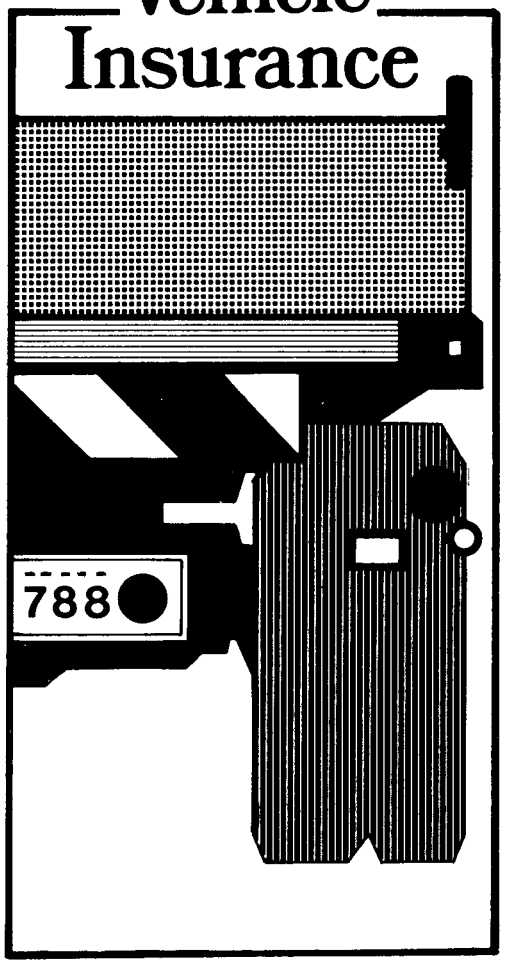
(a) I declare that I have held a commercial vehicle insurance policy without break for the past ..... years and I have received a No Claim Discount each year for the past ..... years. I attach my last renewal notice in support of this declaration.

(b) I warrant that the above statements are true, that no material facts concerning the insurance have been withheld, and that the vehicles described are and shall be kept in good condition. I agree that this proposal, whether signed by me or caused to be signed for me shall be the basis of the contract between Corn. Insurance Company Limited and myself, and I agree to accept the Company's standard form of policy for this class of insurance.

(c) If the answers to all or any of the questions above have been written by others at my dictation or instruction, I confirm that I have read those answers and that they are correct.

Date ..... 19 ..... Proposer's Signature .....

COOP
Commercial Vehicle Insurance



SUMMARY OF THE BENEFITS IN THE COOP COMMERCIAL VEHICLE INSURANCE POLICY

1. Loss or damage to the vehicle and/or accessories*

The cost of repair—including the cost of towing to the nearest competent repairer. If the damage is beyond repair the market value of the vehicle.†

2. A Claim from a third party.

Indemnity to the Policyholder for his legal liability for injury to persons or damage to property arising out of the use of the vehicle, including its loading, unloading, or goods falling from the vehicle.

3. If an authorised person is driving.

The indemnity applies to that person provided he is within the definition of those entitled to drive in the Certificate of Insurance issued with the policy.

4. If a trailer is attached.

The Policyholder is indemnified for his legal liability under the Road Traffic Acts (Note: Full Third Party or Comprehensive insurance is available on trailers if an additional premium is paid. When it is known that a trailer may be towed, Policyholders are recommended to effect not less than a full Third Party insurance by payment of the appropriate additional charge).

5. Legal Defence.

Legal costs resulting from an accident including defence at a Magistrate's Court proceedings or a Coroner's Inquest.

Legal costs for the representation by a Solicitor or Counsel at proceedings for manslaughter or causing the death of another person by dangerous driving—up to a limit of $1,000.

6. Passenger Liability.

Indemnity to the Insured for his legal liability to passengers.

* Does not apply to a third party policy.

† If the driver is in one of the undermentioned categories the Policyholder will be responsible for the first part of any claim up to the amount set against the category:—

CATEGORY	AMOUNT
(a) Drivers under 21 years of age of vehicles having an unladen weight in excess of three tons	$100
(b) Drivers under 21 years of age (other than in (a) above) Inexperienced drivers from 21 to 24 years of age inclusive	$50
(c) Drivers from 21 to 24 years of age inclusive not being inexperienced drivers Inexperienced drivers 25 years of age and over.	$25

An inexperienced driver is deemed to be one who has not held a full (non-provisional) licence to drive the type of vehicle being driven for a period of twelve consecutive months.

NO CLAIM DISCOUNT

The following discounts will be allowed from a renewal premium or from the first premium of an insurance transferred to the Company:—

(a)	After one year's insurance without claim	15%
(b)	After two consecutive years without claim	20%
(c)	After three consecutive years without claim	25%
(d)	After four consecutive years without claim	30%
(e)	After five or more consecutive years without claim	35%

A claim is a payment made under any section of the policy. But the no claim discount will still be allowed if:—

(1) The Policyholder refunds the cost of the claim to preserve the discount, or

(2) Payment is made solely because of an agreement between Cornhill and another Insurance Company or Organisation and the Policyholder could otherwise have successfully recovered the amount of the payment from the party responsible.

OPTIONAL REBATES

OWN DAMAGE EXCESS discount

Policyholder bearing:

(a)	The first $25 of each damage claim	10%
(b)	The first $50 of each damage claim	17½%

LIMITED DRIVING

One named and approved person ... 10%

OPTIONAL ADDITIONAL BENEFITS

WINDSCREEN COVER (without loss of No Claim Discount or subject to excess)

Sum insured not exceeding	Premium	
$25	$2	Not subject to No Claim Discount
$50	$4	
$75	$6	

CONTAINERS

For an additional premium calculated at a rate of $10 per $500 or part thereof on the value of each Container, the policy may be extended to give cover for Containers:—

(1) being loaded onto or unloaded from insured vehicles

(2) whilst detached from any vehicle on premises in the occupation of the Policyholder.

COOP

INSURANCE COMPANY LIMITED

Please complete and return this form to:-

Ref. No.

Insurance House, High Street 5
Greenhills, Blue Valley GV 800
Telephone: Greenhills 555

ADDRESS STAMP OF ISSUING OFFICE

Accident Report Form/Commercial Vehicle

Policyholder:

Name — Policy/Certificate No.

Address — Tel.No. Home — Office

Occupation

Are you registered under the value added tax regulations? — YES or NO.

Insured Vehicle:

Make. — Model — Carrying Capacity — Reg. Details

Year of Manufacture — Name of H.P. Company or Finance House interested (if any)

Description of Damage

Repairer's Name, Address and Tel. No.

Is Vehicle at Repairer's Premises?

Estimated cost of repair (if known)

Purpose for which vehicle was being used

Number of persons being carried (including the driver)

Nature of goods being carried (if any) — Weight of load being carried

Driver: (or person in charge of vehicle)

Name. — Tel.No. Home — Office

Permanent Address

Occupation — Age — Nationality

Current licence No.– State if provisional — Date of first full licence

How long employed by you?

If not the Policyholder, did the driver have the Policyholder's permission to drive? — Answer YES or NO

Does he regularly drive the vehicle? — Answer YES or NO

Does the driver own a motor vehicle? — Answer YES or NO*

*If YES, give the name and address of Insurer and number of Motor Policy

Has driver (1) been concerned in any accident during past three years? — Answer YES or NO

(2) ever been prosecuted for any offence in connection with a motor vehicle? — Answer YES or NO

(3) ever been declined or refused renewal for vehicle insurance? — Answer YES or NO

(4) any physical defect, infirmity or impairment of sight or hearing? — Answer YES or NO

If answer to question (1), (2), (3) or (4) is YES, give details

Third Party:

Name — Tel. No. Home — Office

Address

Name of Insurers

Policy/Certificate No.

Make and Model of Vehicle — Registration Particulars

Description of damage to other Vehicle or Property

Injured Persons:

Name	Address	Nature of injuries sustained	Apparent age	Mark 'X' in appropriate column: Occupant of Insured car	Occupant of other car	Pedestrian

Particulars of Hospital or Doctor attending injured persons:

Witnesses:

Names and addresses of:

(a) All independent witnesses

(b) All passengers in Insured Vehicle

Were particulars taken by:

(a) A.A. or R.A.C. Patrol? If, so give name and number

(b) Police Officer? If so, give name, number and station

Accident:

Date | Time. | Place

State of roads | Weather conditions

		Insured Vehicle		Third Party
Estimated speed	(a)		(b)	
Position in road	(a)		(b)	
Whether horn sounded	(a)		(b)	
What lights were used	(a)		(b)	

Description of Accident:

GIVE SKETCH PLAN OF ACCIDENT HERE
showing if possible, widths of roads, location and direction of travel of vehicles or pedestrians concerned and relevant road signs.

I declare the foregoing particulars to be correct according to my information and belief. This report is made in the bona fide belief that litigation may ensue and to enable solicitors and/or agents to conduct such litigation and advise in relation thereto.

Dated

Signature of policyholder

The Valley Co-operative and Insurance

The Valley Co-operative has just purchased a new vehicle to replace their old one. They borrowed $10,000 for the new vehicle from the Co-operative Bank. A vehicle is essential to the Valley Co-operative in order to send their produce to a processing plant 100 km away. The Co-operative has asked two insurance companies - ABC Ltd. and XYZ Ltd. - how much it would cost to insure the Co-operative's lorry. The basic premium for the two companies is (per year):

	ABC Ltd.	XYZ Ltd.
Fully Comprehensive	$500	$400
Third Party Fire and Theft	$250	$200

The no-claim discount offered by the two companies:

ABC Ltd.
10% after one year's insurance without claim.
20% after two year's insurance without claim.
up to 50% after five year's insurance without claim.

XYZ Ltd.
5% after one year's insurance without claim.
10% after two year's insurance without claim.
25% after five year's insurance without claim.

The Co-operative would be credited with two years no-claim discount.

ABC Ltd. also offers a 10% discount if the driving is restricted to one named driver. The Valley Co-operative already restricts the use of the lorry to one driver.

Both companies offer a 10% discount if the policy holder pays the first $50 of any claim.

Both insurance companies have offices in a nearby town and are well respected by other vehicle owners for their honesty and prompt payment in the event of claims.

Assignment:

Which company and type of insurance do you recommend for the Co-operative, and how much will it cost?

4) Ask trainees to suggest all the possible reasons why drivers' records may be inaccurate:

- Mathematical errors.
- Faulty reading of instruments.
- Faulty instruments (including watch).
- Driver may forget to note time or distance covered.
- Driver may falsify entries to cover up time spent in other activities or other journeys.

Ask how accurately drivers in trainees' societies complete their records. How can this be improved?

5) Ask trainees to suggest what a Transport Manager should do to ensure that driver's records are filled in correctly. Suggestions may include:

- Explain to staff why driver's records are important and ensure they are trained in completing them correctly.
- Ensure that all instruments are in good working order and that any faults are immediately reported.
- Instruct drivers to fill in their records as they complete each task rather than at the end of the day. (In some countries this may be a legal requirement).
- The Manager must inspect drivers' records at random intervals and check whether he can spot inaccuracies or attempts at falsification. To help him he should have a record of times for particular journeys and typical loading/unloading times.

6) Ask trainees what sort of forms their Societies use for drivers' records and where they obtain them. Ensure that.all trainees know how to obtain and use the forms available locally.

SESSION 6.3

DRIVERS' RECORDS

Objective: To enable trainees to identify the need for drivers' records as well as to use drivers' records.

Time: One and a half to two hours.

Material: Sample driver's record.

Session Guide:

1) Ask trainees why drivers' records should be kept:

   - They may be required by law.
   - For planning future journeys,management may wish to have a record of the time taken to travel between places and the time taken for loading and unloading.
   - To help ensure the vehicle is not used for illicit or unapproved purposes.
   - To determine how efficiently drivers and vehicles are being used (Is there a lot of spare time? Can extra trips be inserted in a day? etc.).
   - As a basis for wage or overtime payments.

2) Divide trainees into groups and distribute the sample driver's record. Ask groups to examine the driver's record closely and make a list of any errors, ommissions or failures in the reporting of times and trip details. Allow thirty minutes for this.

3) Reconvene the group, and ask groups for their lists. These should include:

   Monday

   - Total journey time from processing plant to fertilizer warehouse should be 15 minutes, not 30 minutes.

- Loading time at warehouse (1.00) was much higher than unloading (only 10 minutes).
- Return journey to Co-operative took 4 hours compared to total outward journey of 3 hours 15 minutes; distance recorded was 173 km compared to 126 km on the outward journey; the time discrepancy might be explained by the 30-minute rest break.

Tuesday

- Distance recorded, 8, 749 km,does not correspond to 8,743 km of previous evening; has the vehicle been used between these two times or is this an error?
- The time between 11.45 and 14.00 is not fully explained; 1 hour rest break and 30 minutes unloading still leaves a deficit of 45 minutes.
- The morning journey was,122 km whereas the same journey on Monday was 112 km.
- The return journey took longer than the outward journey; road-works and rest break may account for this.
- No distance recorded at end of day.
- No record of what driver did between 18.00 and 19.00.

Wednesday

- No vehicle registration number.
- Journey to processing plant records wrong total travel time (2 hours 45 minutes, not 3 hours).
- No time specified for unloading which may be associated with the incomplete record at midday (finish journey 11.45 plus 1 hour rest break equals 12.45).
- Thirty minutes to load tractor tyre seems excessive; and no unloading time is given.
- Return journey of 113 km in 2 hours 20 minutes is exceptionally quick given the time for similar (not identical) return journeys on previous days.

AGRARIAN CO-OPERATIVE SOCIETY : Record of Driver - C. Muro

Day	Vehicle	Km recorded	Time	Journey	Garage prep. time	Docu-ments	Loading	Journey Time			Off Loading	Km recorded	Rest Breaks	Time Off	Any Delays
								Start	Finish	Total					
Mon 7/1	ABC 123	8444	0800	Co-op Store to process-ing plant (Capitol)	5	10	45	0900	1145	2.45	30	8556	1.00	-	No
				Processing Plant/Fer-tilizer warehouse	-	-	-	1315	1330	.30	-	8570	-	-	No
				Warehouse to Co-op store	-	20	1.00	1450	1850	4.00	10	8743	30	1900	No
Tues 8/1	ABC 123	8749	0800	Co-op Store to process-ing plant (Capitol)	5	10	30	0845	1145	3.00	30	8871	1.00	-	-
				Processing Plant to Co-op	-	-	-	1400	1800	4.00	-	-	30	1900	Road-works
Wed 9/1		9020	0800	Co-op to processing plant	5	10	45	0900	1145	3.00	-	9142	1.00	-	No
				Processing Plant to pick up tractor tyre	-	-	30	1345	1400	.15	-	9146	-	-	No
				To Co-op	-	10	-	1440	1700	2.20	-	9259	-	1700	No

Assignment:

Examine the above driver's record closely and identify any errors, omissions or failures in the reporting of times and trip details.

Note: The form would be completed by hand; typed entries are shown in the interest of clarity.

topic

7

costing, control and motivation

SESSION 7.1

DECIDING WHETHER TO CARRY OUT A TASK

Objective: To enable trainees to distinguish between costs that are incurred through vehicle ownership and vehicle use, and the relevance of that distinction for transport planning.

Time: One hour.

Material: Micro cases.

Session Guide:

1) Remind trainees that they have carried out a number of costing exercises in previous sessions. These have been concerned with the total costs of carrying out given tasks. In some circumstances it is necessary to decide whether a new task ought to be carried out, or an existing one cancelled. Examples:

   - Should produce be carried to a more distant market?
   - Should produce be carried for another Co-operative?
   - Should a journey be made carrying only a small amount of goods?
   - Should supplies be collected from a depot or purchased including delivery to the Society?

   Clearly, those decisions require a comparison of costs and benefits. To do this a distinction must be made between standing costs and running costs.

   Remind trainees that this has been dealt with in session 2.2 already, and check that they remember the distinction.

   Standing costs are those costs which are incurred by having a driver standing ready and available to work on a day.

   Running costs are those costs which are incurred when the vehicle actually "runs".

2) Display following statistics (same as in session 2.2) on the black-board/OHP and briefly re-do calculations of following costs with trainees:

- The standing costs in the year.
- The running costs in the year.
- The total cost per km.
- The running cost per km.

(Trainees made these calculations already in session 2.2)

Agrarian Co-operative Society: Operation of lorry for 1981

1)	Distance covered	25,000 km
2)	Value at beginning of year	$ 5,000
3)	Value at end of year	$ 4,000
4)	Repairs and maintenance	$ 1,500
5)	Vehicle insurance, licence fees	$ 1,100
6)	Fuel	$ 1,200
7)	Oil	$ 50
8)	Tyres	$ 250
9)	Driver's basic wage ($10 per day)	$ 2,500
10)	Administration	$ 400

Answer:

Standing costs = (2 - 3) + 5 + 9 + 10 = $ 5,000

Running costs = 4 + 6 + 7 + 8 = $ 3,000

Total cost per km= $\left(\frac{\$5,000 + \$3,000}{25,000}\right)$ = $ 0.32

Running cost per km = $\frac{\$3,000}{25,000}$ = $ 0.12

Distribute the case studies to trainees who should work in groups. Ask them to study the cases and decide what the decision should be. They should assume that the costs given above are representative of the standing costs and running costs likely to be experienced by the lorries in the cases. Allow up to thirty minutes for this.

3) Ask the groups to present their views and discuss their conclusions. Answers should be similar to the following:

Case A

The cost of hiring out the lorry is only $4.80 (40 km at $0.12 per km). The driver will be paid his $10 per day whether he drives the vehicle or not. The Co-operative would therefore make a profit of $5.20 per day if it agrees to the proposal. There seems to be no argument against this unless there is an alternative use for the vehicle or driver such as in the harvest season.

Case B

If the produce is taken to Capitol the extra revenue will be:

$4 x 400 tons = $1,600

and the extra cost:

40 km x 200 trips x $0.12 = $ 960

an apparent profit of $640.

If the driver receives an extra $500 the Co-operative will still make a profit of $140.

Case C

The profit from selling in Urba will be:

500 tons x $10 = $5,000

The standing costs of the lorry are $5,000 so that this operation would not pay for the operating costs however many journeys are necessary.

Case D

The extra revenue from selling the produce in the city is:

$100.

The cost of making the journey is:

600 km x $0.12 = $ 72

yielding a net profit of $28.

The journey appears to be worthwhile providing the absence of the lorry for two days does not lead to loss of revenue or increase in costs greater than $28.

Case E

The saving in cost would be 100 tons x $2 = $200. The extra distance covered by a lorry would be 200 km x 10 = 2,000 km. This would cost 2,000 x $0.12 = $240, yielding a net loss of $40. The Agrarian Co-operative should continue to have its fertilizer delivered by the Wholesale Society.

Micro Cases

Case A

The Agrarian Co-operative Society has a lorry and a full-time driver. Outside the harvest season, the lorry is unemployed for two or three days a week. The Utopian Co-operative Society has asked if it can hire the lorry for one day per week for 6 months. They wish to use the lorry and the driver to make a trip into town 20 km away and return on the same day. They have offered to pay a maximum of $10 for the hire of the lorry and driver per day. The Manager refused,saying that the cost of the driver alone is $10 per day. The driver says he does not mind doing the work. He would rather do that than sit around all day doing nothing. Should the Agrarian Co-operative Society hire out the lorry?

Case B

The Agrarian Co-operative Society sends its produce to the market in Urba which is 20 km away. The market price for the produce in Capitol, which is 60 km from the Co-operative,is $4.00 higher per ton than in Urba. At the moment the Co-operative sells 400 tons of produce on 200 visits to the market per year. The trip to Capitol will take longer to make and may mean that the driver returns to the Co-operative late at night. The Society would have to pay him $500 overtime per year. What should the management do?

Case C

The Agrarian Co-operative Society sends its produce to the local market by oxcart and tractor trailer. They are contemplating purchasing a lorry which will allow them to sell their produce in Urba (a much bigger market) for an extra profit of $10 per ton. The Co-operative expects to sell 500 tons in the market during the first year. They hope to hire a part-time driver who can be paid by the hour to make the 100 km round trip to Urba. What should the Co-operative do?

Case D

The Agrarian Co-operative has a surplus of produce which it cannot sell in the local market. If it is not sold quickly it will rot and be worthless. One possibility is to send the produce to a large city 300 km away, where a lorryload of produce will fetch $100. The journey will take 2 days to complete. Should the journey be made?

Case E

Every year the Agrarian Co-operative uses 100 tons of fertilizer which is delivered by the Co-operative Wholesale Society's lorry. The Wholesale Society has agreed to reduce the price by $2 per ton if the fertilizer is collected. A visit to the Wholesale Society's warehouse involves a round trip of 200 km. During the period when the fertilizer is required the Co-operative's lorries are generally underused. The lorry of the Agrarian Co-operative can carry 10 tons. Should the Agrarian Co-operative pick up the fertilizer?

SESSION 7.2

COST VERSUS QUALITY IN TRANSPORT SERVICE

Objective: To enable trainees to identify the relationship between the costs and the quality of a transport service.

Time: One hour.

Material: Tape dialogue.

Session Guide:

1) Tell trainees that they are to listen to a dialogue between two Co-operative Managers. Ask trainees to identify and note where the transport services of the two Co-operatives vary.

2) Play the tape dialogue, or,if no player is available,ask two trainees to enact the dialogue supplied.

3) If trainees wish, play or enact the dialogue a second time.

4) Ask trainees to read out their lists. Summarise on the chalkboard/ OHP. The transport services of the Societies differ in the following aspects:

- Time spent waiting for transport.
- How close to members are transport services carried out.
- Availability of transport for all types of load (small load, cattle, etc.).
- Availability of transport at harvest time.
- Susceptibility to breakdown/reliability.
- Speed of delivery to market.
- Ability to react to price changes.
- Ability to maintain quality of produce during journeys.

5) Point out that the number and the type of vehicles that a Co-operative owns will affect the level of service that can be offered to members. If a large number of specialised, well-maintained vehicles are owned, the cost will be high but so will the level of service. If the Co-operative chooses to own few vehicles and ignore maintenance the cost will be reduced but so will the quality of service. Each Society must decide which it wants.

Ask trainees whether they would prefer the level of service in Kappa or Lamda for their Co-operative, and why. Ensure that trainees who favour a high quality service give a valid case for the higher level of expenditure in terms of the benefits gained. Ask them to estimate the value of this benefit in money terms. Examples might be:

- We must have enough lorries available to pick up produce from the fields quickly,or else it deteriorates rapidly. Last year, because a lorry broke down, we lost $1,000 worth of produce in a week.
- We must get our produce to the market quickly. If there is a breakdown, the whole load can deteriorate and become unsaleable. Each lorry load is worth $500.

6) Point out to trainees that when considering new expenditure they should always compare this with the benefits to be gained.

Stress that costs can be high and the quality of service can still be low. The high costs may be due to poor management of vehicles, drivers and maintenance. In this case costs may be reduced by better scheduling and better organisation of maintenance without any reduction in the quality of service.

Tape Dialogue

Narrator: Joe is the Manager of the Kappa Co-operative. His Chairman thinks that transport costs are too high. He says that the Lamda Co-operative, which is similar in size and sells about the same amount of produce every year, has much lower costs. Joe has decided to go and see Bill,who is the Manager of Lamda Co-operative,to see if he can find out why their costs are so low.

Joe: Hello, I am glad you could spare some time to see me.

Bill: Nice to meet you. I understand you want to talk about transport costs.

Joe: Yes, my Chairman tells me your transport budget is only 60% of ours,and yet your members produce about the same amount of crops each year as ours do.

Bill: From the figures that you sent me that's right. How many vehicles do you have?

Joe: Eight.

Bill: We have only five. Do you really need eight lorries?

Joe: Yes, we do. If we had less, the farmers would complain even more. Even with 8 vehicles they still complain if they have to wait more than a day for supplies,or if we don't pick up their produce when they want.

Bill: Our farmers complain too, but we have come to accept that. We just make them wait until a vehicle is available. And you often find that if you don't send a lorry quickly they will do the job themselves.

Joe: Our farmers would never allow that. I must admit though it would make a difference if our members were more helpful.

Bill: If you give them a chance, members will demand that the Society should take supplies right up to their farms and get you to carry small loads of produce that would hardly fill a taxi.

Joe: But we do these things. After all, our job is to serve our members.

Bill: Yes, but you must think about cost. At harvest time we also need more than 5 vehicles but we don't hire or purchase any more because the cost is so high. At busy times we insist that farmers use their carts.

Joe: Yes, I suppose we could save money doing that. What sort of vehicles do you have?

Bill: We have old Lion vehicles; most of them are ten years old.

Joe: They <u>are</u> old! We have mostly new vehicles. We find they are much more reliable.

Bill: Yes, that is true. We thought about new vehicles too, but the cost was too high - all those payments to the Bank. We prefer to buy our vehicles for cash - it's by far the cheapest way. But since we do not have the money,we try to carry on with our good old "Lions"!

Joe: Aren't they always breaking down?

Bill: Well, they do break down from time to time, but it's not so bad. There are a lot of second-hand spares on the market. It's amazing how long you can keep vehicles on the road by clever repairs and searching around the scrap yards.

Joe: I don't think we could run our transport like that. We send our vehicles for regular maintenance. Breakdowns are so inconvenient: sometimes you lose the produce,and what if they cause accidents!

Bill: I think people spend too much time and money on maintenance. Why not wait until a lorry breaks down and then repair it? There's no point in worrying about accidents - if you have old vehicles it doesn't matter,and you're insured aren't you?

Joe: Yes, but we couldn't do that. One reason why we have modern vehicles is to ensure we can get produce quickly to the market so that we can get the best price. Having 8 vehicles means that we can usually take more produce to the market when the price is good. We are very proud of our new refrigerated vehicle. That means our perishables are as fresh when they reach the market as they were when they left our store.

Bill: That's interesting. We have never worried about things like that. We just take our produce to the market twice a week.

SESSION 7.3

CONTROL AND MOTIVATION

Objective: To enable trainees to identify the need for control and motivation of personnel if transport is to be run effectively and in the best interests of the members.

Time: One to one and a half hours.

Material: Tape dialogue.

Session Guide:

1) Explain to trainees that most of the previous sessions have been concerned with how transport services should be run effectively and in the best interests of the members.

   Although it may be possible to decide what should be done by the transport section, it may be much more difficult to ensure that this is done.

2) The task of management is to ensure that drivers, mechanics and other personnel do what is in the interests of the members and do not misuse the resources of the Co-operative. How can management ensure this? Tell trainees they are about to hear a dialogue between two drivers, one (Halim) working in a transport department where drivers perform well, the other one (Lobo) working in a transport department where drivers' performance is bad.

   Ask trainees why, in their opinion:

   drivers perform well in Halim's co-operative and why
   drivers perform badly in Lobo's co-operative.

   Play the dialogue or, if no player is available, ask two trainees to enact the dialogue.

Many trainees will mention strict standards and procedures combined with tight control as reasons for the good performance in Halim's society and the lack of these as the reasons for bad performance in Lobo's co-operative. Ask trainees what reasons a driver has to follow certain procedures and to meet set standards,even if he is tightly controlled.

Elicit that a staff member will perform well only because:

- he has been offered incentives (promotion, money, fringe benefits)
- he has been morally persuaded that a particular course of action is in the best interest of his Co-operative and its members.
- he wants to avoid penalties (reprimands, dismissal, fines) for failure to follow instructions or to use resources correctly.

Stress that whatever approach is adopted, management must control, i.e. compare the wanted level of performance with what is actually achieved. To be able to do this,management must have standards and records to compare performance with.

3) Emphasize to trainees that control and motivation of personnel is difficult and time-consuming. Ask trainees what methods they use, or would use, to ensure that personnel act in the interest of the Co-operative. (rather than merely in their own interest). They should suggest the following:

- Participation in decision making: ensuring that all personnel are aware of their responsibility to the members of the Co-operative who help pay their wages; ensuring that personnel are aware of the reasons for a decision and are allowed to put their point of view on the subject.
- Penalties might be used for negligence (failure to check water level, failure to protect produce adequately etc.) dishonesty or drunkenness.
- Incentives (cash payments, longer holidays, better housing) might be used to reward a good record (accident-free year, good work attendance etc.)

Allow time for discussion and ensure that trainees appreciate that a combination of these three approaches is desirable.

Tape Dialogue

Narrator: Halim has worked as a driver in a Co-operative for a number of years. His friend, Lobo, has just started as a driver in another Co-operative.

Halim: Hello Lobo. How is your new job?

Lobo: Not too bad. Well, the salary isn't too high,but one has at least the opportunity of "topping it up" here and there!

Halim: What do you mean?

Lobo: Well, I can usually fit in one or two jobs for friends every week. Sometimes when the lorry is not full, I can bring back goods from town for my brother who runs the grocer's shop in the village.

Halim: I don't know how you do it. I don't have time to make any extra journeys. And what happens if you are found out?

Lobo: Nothing, I suppose. All the drivers do it and I don't think the Transport Manager or the General Manager care.

Halim: They seem to be very slack in your Co-operative. We have to fill in forms for everything: where we have been, how long it took, how much fuel we use ......

Lobo: We fill in forms but people still get away with things like fuel and spare parts. I know of a driver who sometimes syphons off fuel from his lorry into his brother's taxi. Another driver, after he had a new tyre fitted, got a garage in town to exchange it for a worn one. They gave him $20.

Halim: That's terrible.

Lobo: Well, in our Society it seems part of the rewards of the job. One of the drivers told me the Chairman does the same thing; he gets free fuel for his car and it is serviced regularly by the mechanics. What's good for him is good for us, I suppose.

Halim: I don't know, it seems wrong to me. If we did it, we would get the sack immediately.

Lobo The main trouble in our Co-operative is the members. They are always complaining that we are not doing the job properly. They complain that there is never transport at the collection point when they need it, that we take too long to carry the produce to the factory,and consequently that they are paid less because quality has decreased,etc.

Halim: Yes, we used to have that problem as well, till the Manager explained one day that members are in fact paying for our salaries. If we continue to disappoint members they might leave, and in the long run that would mean no more Co-operative and no more job!

Lobo: That would not work in our Co-operative: our salaries are so low that most of our drivers will probably say that they will work better if they are better paid!

Halim: But don't you get any bonuses? We get a bonus at the end of the year, if we have not had an accident and if we keep our vehicle in good condition.

Lobo: That would not work with us either. We use different vehicles every day.

Halim: This year we might have another bonus. The Transport section has been given a budget,and if we keep within it, we will get a bonus.

Lobo That sounds like a good idea. We always overspend and the members still complain that we don't do a good job.

Halim: It sounds as though your members aren't very happy with their Society.

Lobo: Well, maybe they aren't, but I am a driver and not the General Manager or the Chairman, so why should I worry about that?

SESSION 7.4

RIGHT OR WRONG?

Objective: To enable trainees to recognise occasions when they may be compromised by accepting gifts or other favours from garage owners, distributors or salesmen,and to be aware of the dangers of corruption.

Time: One to two hours.

Material: Exercise.

Session Guide:

1) Distribute the exercise to trainees. Allow them up to thirty minutes to complete the assignment.

2) When trainees have completed the exercise,draw a line on the chalk-board and ask trainees to suggest where each action should be placed. Display their suggestions by writing the appropriate number on the line and discuss major differences of opinion. Attempt to locate the point along the line where the trainees consider the actions become morally wrong.

3) Ask trainees individually, to recall for themselves the "worst" thing that they experienced of this sort, and to place it along the line.

4) Show that once one person has accepted a bribe or a gift in return for a favour,other people may be drawn in to protect his position, because they insist on a share or threaten to talk unless they receive part of the money. Ask trainees to describe examples of networks of corruption of which they were aware.

5) Discuss in each of the cases how corruption could be avoided and turned into benefits for the Co-operative.

6) Ask the trainees how staff can be prevented from making decisions not in the interest of the members:

- Ensure that more than one person is present at discussions where corruption may be suggested.
- Ensure that all important decisions are explained to a wide audience, such as the full committee or general meeting, as soon as they are made.
- Ensure that all discussions are confirmed in writing.
- Ask staff to report all offers of bribes or inducements.

The removal of corruption is a difficult task. To prevent it, trainees must attempt to set an example of honest behaviour, and encourage their staff to do likewise. Where possible, the power of individuals to make important decisions should be reduced. Such decisions should be discussed and agreed upon or cleared by several people (e.g. the management committee). Decisions should also as much as possible be based on objective, measurable criteria (price, quality, service etc.)

Right or Wrong

Study the following list of actions; then draw a line on a piece of paper as follows:

Totally innocent _____ Totally wrong

Place each action along this line, by using its number, according to how wrong or innocent you feel it to be. Also put a cross on the line to mark the point at which, in your opinion, right is divided from wrong.

1) A garage is anxious to do more business with a Co-operative. The garage finds the Manager's son a job,and soon after the Co-operative has all its vehicles serviced at the garage.

2) The Committee, on the advice of the Manager, chooses a new Jupiter truck. The Manager goes to the garage and informs the owner,who immediately offers to take the Manager out for a meal to celebrate. The Manager accepts.

3) The Merlin garage is finding it difficult to sell their vehicles. In order to persuade the Transport Manager of the Co-operative to purchase a vehicle, the garage owner offers a discount of $250 on the vehicle plus an extra $250 for the Transport Manager. The Manager buys the vehicle and tells no one of the $250 he receives.

4) Whilst demonstrating a vehicle to the Transport Manager, the sales man suggests they talk about costs and other things over a meal. The Manager accepts and allows the salesman to pay.

5) The Society has been using the garage of the Manager's brother for over five years. The brother is in financial trouble: there has been a fire at the garage and his wife is ill. The Co-operative has surplus funds since the recent good harvest. The Manager's brother makes out a number of invoices for services and maintenance that are planned, but have not yet been performed. The Manager pays and probably saves his brother from bankruptcy.

6) The Co-operative has been using the same garage for fuel and maintenance for a long time. Just before a new garage opens nearby, the garage proprietor says the Chairman of the Co-operative can have a large discount on petrol in future for his car. The Chairman accepts the offer.

7) The truck driver thinks he is underpaid,and when the man on the warehouse weighbridge suggests they under-record the load on the truck, he agrees and accepts a "gift" of $3.

8) The Chairman of the Co-operative wanted a table and chairs picked up from the city. He asked one of the drivers to make a detour to do this on his way back from market. The driver was not very happy about the extra work but agreed to do it as it was the Chairman who asked.

9) The mechanic is supposed to buy new tyres from the main distributor in the town. However, he has a friend who can get the tyres much cheaper. He therefore arranges for the Co-operative to buy from his friend's business. For his help the friend gives him $5 every time he sells a tyre to the Co-operative.

topic

8

replacement and disposal of old vehicles

SESSION 8.1

REPLACEMENT AND DISPOSAL OF OLD VEHICLES

Objective: To enable trainees to identify the factors that influence the decision to replace or retain a vehicle.

Time: One to one and a half hours.

Material: Role play briefs A and B.

Session Guide:

1) Divide the group into two halves. Distribute role brief A to one half and role brief B to the other. Explain that after about 15 minutes you will simulate a Committee meeting in which a selected number of each half will be expected to represent the case described in their respective role brief. The others will be observers. They should use their imagination to fill in any gaps in the role briefs. Neither should of course be allowed to see the other's brief.

2) After about 15 minutes arrange the desks and chairs to simulate a Co-operative Committee meeting. Act the role of Chairman yourself, or ask a competent trainee to act the role. Ask the observers of each half to follow the discussion closely and make brief notes on the relevant points of the half they represent. Start the discussion by asking a trainee for his views and then allow a response from a trainee with the other brief. Then allow open discussion within the "Commmittee",encouraging everyone to contribute.

3) After about 30 minutes,or when the discussion has finished, restore the desks to their original position and ask the trainees to draw up a table showing:

- The money required to purchase and maintain the new and old vehicles in the first two years.
- The cost of purchasing and maintaining the new and old vehicles in the first two years, assuming the old vehicles are sold at the end of this period.

4) Allow 15 minutes for this; ask a trainee to present his results. The table should be similar to that below:

Item	New vehicles	Old vehicle
Sale of old vehicle	(1,000)	-
Hire purchase payments	15,000	-
Immediate repairs	-	2,000
Maintenance (2 years)	(or 1,000 less)	6,000
Money required	15,000	8,000
Value of vehicle after 2 years	10,000	0 (?)
Cost of purchase and maintenance	5,000	8,000

Ensure that trainees understand that the figures on the bottom row are not the total cost of <u>operation</u> (no allowance made for drivers, fuel etc.). The other elements in cost, however, should not vary much between the two vehicles. Emphasize that the choice between the two vehicles may <u>also</u> depend on such factors as availability of spares or reliability (such as were discussed in the role play).

5) Ask trainees what they consider the main advantage and disadvantage of a new vehicle to be. Answers may vary, but the most likely are:

Main advantage — low repair and maintenance costs.

Main disadvantage — high capital cost (or high depreciation).

Ask the trainees what they consider the main advantage and disadvantage of an old vehicle to be:

Main advantage — low capital cost (or low depreciation).

Main disadvantage — high repair and maintenance costs.

Explain to the trainees that the decision to buy a new vehicle implies that the higher capital cost is compensated for by:

- lower maintenance costs;
- increased liability;
- increased performance/capability.

The decision to keep the old vehicle implies that the higher capital cost is not compensated for by these factors.

Role Brief A : Replace Vehicle

The Co-operative of which you are a member has 5 lorries which cover about 15,000 km each annually. They are used mainly to carry produce to the market in the surrounding towns and collect supplies. All the lorries are the same type and assembled locally. They do,however, vary in their age and condition. The oldest vehicle has just broken down and requires major repairs. The engine needs a complete overhaul. Transmission and suspension units need to be replaced. The cost of these major repairs is estimated at $2,000. The vehicle is 9 years old and has covered 150,000 km and therefore has one or at most two years of useful life left. Replacement of the vehicle with a brand-new one would seem the most sensible decision.

A new vehicle costs $13,500 and, given the Co-operative's shortage of funds this year, hire purchase would be a sensible option. This would involve a down payment of $3,000 with payments of $6,000 during the first year and $6,000 in the course of year 2. The old vehicle would be traded in at a value of $1,000. If a new vehicle were purchased it would be a valuable capital asset for the Co-operative. After the hire purchase payments are completed, it would belong to the Co-operative and be worth about $10,000 according to the salesman, if the vehicle had not covered too great a distance during this period. An advantage of purchasing a new vehicle is the guarantee. This ensures that repair and maintenance bills are low in the first year. Even after this they will be much lower than they would be with an old vehicle. Vehicles with over 10,000 km on the speedometer have notoriously high repair bills. They tend to break down more frequently,causing inconvenience as well as high costs. Estimates are difficult to obtain but repair and maintenance costs should be less than $1,000 per year on new vehicles, whereas it can be as high as $3,000 for vehicles that have covered more than 100,000 km. Obtaining spare parts for the old vehicle might also be difficult in the future.

One other advantage of purchasing a new vehicle is the improvement that has been made to the design in recent years. Not major changes but improvements to things like lights, windscreen wipers, seats, noise insulation and suspension do mean that the new vehicles are superior to the older ones.

Immediate purchase is recommended before any further rise in the price of the new vehicles.

Role Brief B : Retain Vehicle

The Co-operative of which you are a member has 5 lorries which cover about 15,000 km each annually. They are used mainly to carry produce to the market in the surrounding towns and collect supplies. All the lorries are the same type and assembled locally. They do,however, vary in age and condition. The oldest vehicle has just broken down and requires major repairs. The engine needs a complete overhaul. Transmission and suspension units need to be replaced. The cost of these major repairs is estimated at $2,000. If these repairs are carried out there should be no need for any further major repairs for one or two years. At 9 years of age and 150,000 km on the speedometer,it has at least 2 years' useful life left. Replacement of the vehicle with a brand new one is a possibility but would appear to be too expensive.

The cost of a new vehicle is $13,500. The Co-operative is short of funds this year and would find it difficult to raise this amount of money. Hire purchase and bank loans are possible but involve heavy interest payments. The value of the old vehicle is probably only about $1,000 which seems a ridiculously low price for a vehicle of that age. One disadvantage of old vehicles is their poor reliability. This should not be too severe in the case of this vehicle. The major repairs should ensure that repair and maintenance bills are low for the rest of the year and they should probably not be too high after that. The inconvenience of breakdowns is not too high because the other four vehicles are relatively new and should be able to carry essential supplies whilst it is being repaired.

There does not seem to be any major improvement in the performance of the newer vehicles. There are some small improvements (more comfortable seats etc.),but mechanically it is still the same vehicle with similar fuel consumption and speed/acceleration characteristics.

You recommend overhauling the vehicle and keeping it for the next 2 years at least.

SESSION 8.2

COMPARING DEPRECIATION AND MAINTENANCE COSTS

Objective: To enable trainees to compare the cost of owning and operating vehicles of different ages.

Time: One to two hours.

Material: Exercises.

Session Guide:

1) Explain that the two vital factors in the decision to retain or replace a vehicle are the cost of owning vehicles of different ages and the tendency for repair and maintenance costs to vary over the life of a vehicle. (A new vehicle costs a lot but has low maintenance costs,whereas an old vehicle is cheap but costs a lot to maintain).

2) Explain that because of the high investment cost of vehicles and their relatively long life span, it is quite common and legitimate to spread the initial cost over a number of years. The amount determined for each period is referred to as depreciation. Various methods exist for the calculation of depreciation. Tax authorities and textbooks often require or recommend different methods. The basic idea is to measure how much the use of a vehicle has cost an organization in a particular year (or accounting period). Display the left hand side of Table 1 on chalkboard/OHP and ask trainees to estimate the cost of depreciation of vehicles of different ages.

Table 1:

Year	Estimated value of vehicle at beginning of year	Depreciation during year
1	$13,500	$2,500
2	11,000	1,500
3	9,500	1,500
4	8,000	1,250
5	6,750	1,250
6	5,500	1,250
7	4,250	1,250
8	3,000	1,000
9	2,000	1,000
10	1,000	1,000
11	0	

3) Ask the trainees whether they believe the rate of decline in value is reasonable and consistent with their own experience. Ask them also what factors would lead to individual vehicles attracting a higher or lower price than that listed. Elicit responses such as condition of vehicle, distance run, current price of equivalent new vehicle, shortage of vehicles.

4) Display columns 1 - 5 of Table 2 on the chalkboard/OHP. Explain that it records the expenditure on repairs and maintenance on vehicles that covered about 15,000 km per year. Ask them to calcu late the average for each year.

Table 2: Expenditure on Repairs and Maintenance

Year	Vehicle 1	Vehicle 2	Vehicle 3	Vehicle 4	Vehicle 5	Average
1	1,000	1,000	900	1,000	1,100	1,000
2	1,200	1,100	1,000	1,150	1,050	1,100
3	1,000	1,400	1,500	1,200	1,400	1,300
4	1,500	1,700	1,700	1,300	1,300	1,500
5	1,700	1,700	1,400	1,900	1,800	1,700
6	2,100	2,300	2,100	2,600	1,900	2,200
7	2,600	2,400	2,500	2,300	2,700	2,500
8	3,500	2,300	3,000	2,400	3,800	3,000
9	2,000	3,500	3,400	4,000	2,100	3,000
10	4,000	2,100	2,300	2,700	3,600	2,940

5) Ask trainees if this sample of cost data is reasonable and consistent with their own experience. Do not concentrate on the absolute figures but on the fact that costs triple over 10 years, and on the greater variation between vehicles as they become older.

6) Ask trainees to calculate the total cost of operation for 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 year-old vehicles, assuming other running costs are $3,000 per annum, and maintenance/repair costs are the "average" figure.

1 year old	6,500
2 years old	5,600
3 years old	5,800
4 years old	5,750
5 years old	5,950
6 years old	6,450
7 years old	6,750
8 years old	7,000
9 years old	7,000
10 years old	6,940

7) Ask trainees why the cost in year 2 is lower than year 1 (repair/maintenance cost is slightly higher, depreciation is much lower). Assuming there is only the option of purchasing a new vehicle, when should a vehicle be sold and a new one purchased? (At the end of Year 6 - after that the total costs are greater than the cost in Year 1). Ask the trainees if their decision would still be the same if a new vehicle were introduced with $600 lower running costs (Their decision should be different since cost in Year 1 will decrease to 5900 and it becomes more economical to sell a vehicle after Year 5).

8) Remind the trainees that a large number of factors must be considered if the right decision is to be made in the choice between replacing or retaining a vehicle. Depreciation and maintenance/repair costs are the most important factors. The decision is made more difficult by the uncertainty of:

- Future maintenance/repair costs.
- Future prices of vehicles.
- Future availability of vehicles.
- Future need for transport.
- Future changes in running costs/performance/capability of new vehicles.

topic

9

action programme and commitment

SESSION 9.1

ACTION PROGRAMME AND COMMITMENT

Objective: To enable trainees to apply what they have learned to situations in their own societies.

Time: Up to one day.

Session Guide:

Trainees should have been told at the beginning of the course that they would be expected to describe a transport problem that exists in their society,and to prepare a plan which tackles this problem which they will implement when they return home. They should have been reminded at frequent intervals during the course of the need to apply the material in the sessions to their own situation,and in particular to identify one particular problem which the course will help them solve. The purpose of the final day is to give them the opportunity to develop a solution to their particular problem in consultation with a number of other trainees, and to present the solution to the whole group for criticism and discussion.

The problems and solutions chosen by trainees will be unique to each trainee and his organization, but typical examples might be:

- Problem: Vehicles owned by the Co-operative are very unreliable. At the moment the maintenance is carried out by a local garage whenever the driver feels it necessary. Small repairs are undertaken by a Co-operative employee who is responsible for servicing and maintaining farm machinery. He now spends too much of his time repairing lorries.

- Solution: I shall set up a scheme to ensure maintenance is carried out at the right time and done correctly. I will also compare cost of garage maintenance with Co-operative maintenance (including training if necessary). I shall complete this within 6 months.

- Problem: Most of our vehicles are old and dilapidated.
- Solution: I shall collect information on possible new vehicles and assess whether the current vehicles should be sold and, if so, which vehicles should replace them.

The time available should be divided into two periods - the consultancy period and the presentation period. During the consultancy period the trainees should be divided into groups of 3 to 4 people. The groups should not contain trainees of the same Co-operative and ideally should include trainees with different backgrounds. In this period each trainee should be allowed about 30 minutes to present his problem and proposed solution to the other members of the groups,who are expected to comment and help develop a solution to the problem, together with a timetable for its implementation.

During the presentation period each trainee should have at least ten minutes to present his problem and solution to the whole group, and to hear and react to at least a few of their comments. In this brief period the trainee must:

- Describe the problem.
- Describe the solution.
- Describe how the solution will be "sold" to whoever is involved.
- State a specific date by which the plan or programme of action will be completed.

Trainees who are in a position of authority in a Co-operative may feel that it is unnecessary to "sell" their idea to their subordinates. Such trainees should be warned that subordinate staff will contribute more efficiently to the work of the Co-operative if they believe what they are doing is useful rather than if they do it out of fear or simple obedience.

If possible a brief reunion of the trainees on the course should be arranged to take place after an appropriate interval. If this can be done trainees should be asked to state what parts of their plan can be implemented by this date so that progress can be compared with their earlier intentions.

The reunion would not only be a useful course evaluation exercise, it would also provide a powerful incentive to actual implementation of the stated plans.

The actual timing of the "consultancy" period and the presentation period will depend on the numbers on the course. Ensure that each trainee has at least 30 minutes to discuss his problem with other trainees in the group and that at least ten minutes is devoted to a presentation to the full group of course members. In order to ensure that these minimum times are allowed to each trainee, the normal session hours should be extended or some time should be allowed during the previous day. The session is important since it provides an effective "bridge" between the course material and the normal environment of the trainees. It also ensures that trainees regard the completion of the course not as the end of training but the beginning of personal improvement on the job.