MATCOM

# TRANSPORT

a learning element for staff of agricultural cooperatives

international labour office, geneva



by Malcolm Harper

**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.

# TRANSPORT

Contents




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HOW TO LEARN

- Study the Element carefully.

- Trite down answers to all the questions in the Element. This will help you not only to learn, but also to apply the knowledge in your work at a later stage.

- After studying the Element on your own, discuss it with your instructor and colleagues, then take part in practical exercises organised by your instructor.



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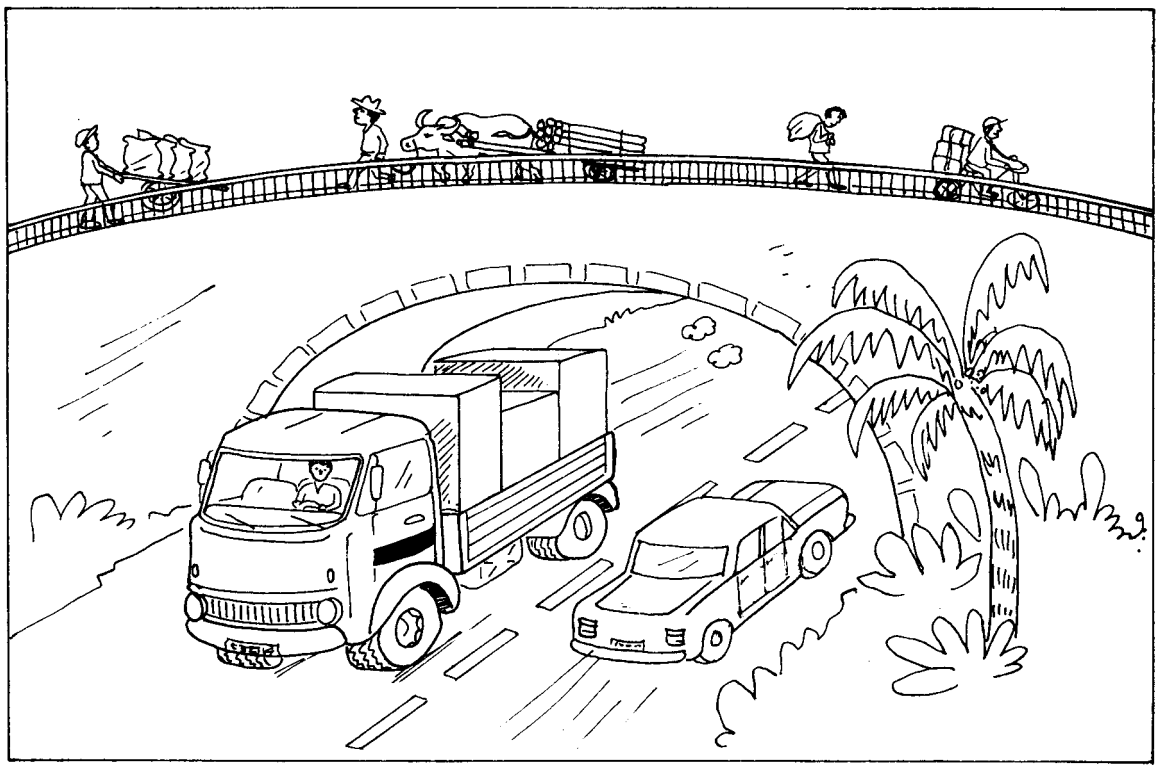
# MANAGING YOUR TRANSPORT SYSTEM

For most agricultural co-operatives, providing transport is a very important service; for many it is also a problem. Consider the tasks involved:

- transporting crops from member farms to the co-operative;
- transporting produce from the co-operative to its customers;
- transporting seeds, fertiliser and farm equipment from suppliers to the society's store;
- transporting these supplies from the society's premises to the farms of members;
- transporting staff.

Some co-operatives carry out all these services; others provide none. Some societies purchase large late-model motor vehicles for transport; others hire vehicles as needed; still others rely on the more traditional means of transport, utilising hand-, bullock-, or horse-drawn carts.



To most co-operatives today, "transport" means motor vehicles. This can be readily justified by the management:

- "In our society there is so much to be transported that we definitely need to use trucks. Our members would complain if they had to use carts or carry heavy burdens. That is old-fashioned and very slow. No, less labour and more machinery is our solution to transport problems! If our members had to arrange for transport themselves, we would have to add the cost of delivery to the price we pay them for their crops. By using our own trucks, we save money on that, as well as on collection and distribution of farm supplies. Our members certainly benefit from our transport services and so does our staff, in terms of time, cost, and convenience."

On the other hand, good arguments still exist for the "old-fashioned" approach. A co-operative without trucks might argue:

- "We leave it to our members and to our suppliers to make their own arrangements for deliveries to us. Members bring in their crops and collect their farm supplies at our warehouse. Moreover, our staff does not mind using bicycles or public buses for travel. We do not want to tie up a lot of money in expensive vehicles; we believe it can be better used. We also think the management of modern transport is very difficult - some societies have bought big trucks and have nothing now but problems. They can't find spare parts or they don't have the money to pay for repairs, petrol or drivers' wages. So what's the point in owning a truck if it only causes problems and expense? We believe in our old-fashioned system. It is cheaper, more flexible and doesn't take any special skills to keep going."

The success of a co-operative depends on the efficiency of its services, its economy and the well-being of its members.

Transport is probably the worst-managed service of any co-operative. It is also the service inost easily improved if the society can select the right transport and manage it properly.

This "MATCOM Element" will help you improve your transport management. Before you read further you should review carefully the tasks of transport your co-operative now pro-

vides. Answer the questions below. They will remind you that on-going evaluation is part of a manager's job. What an organisation does today is not necessarily what it should do tomorrow.

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1.1 Who provides transport in your co-operative for -

a/ crops from members' farms to the co-operative?
b/ produce from the co-operative to the buyers?
c/ farm inputs from the suppliers to the co-operative?
d/ farm inputs from the co-operative to the members?
e/ staff travel?

1.2 Could any of the above transport tasks be performed better, less expensively and more effectively than at present?

1.3 Your co-operative may now be responsible for some of the above services. What would happen if the society were to stop providing these? Who would take over the transport? What would the consequences be?

1.4 What is the approximate cost for transporting 1 ton of produce 1 km -

- if you hire transport?
- if you use the co-operative's own vehicle?

1.5 Explain the consequences if some goods your society now transports by truck were transported by animal-drawn carts instead.

1.6 Suggest ways you and your staff could reduce your own travel costs when visiting members, suppliers, banks, customers, etc.

1.7 What do you understand by "misuse" of transport? Give some examples of misuse of co-operative transport facilities which you have observed.

# TO OWN OR TO HIRE?

Imagine that your co-operative has not offered any transport services to its members before. The committee has now decided that it should do so. You plan to transport members' crops and farm supplies. You have carefully estimated how much will have to be carried, and when, and have worked out that you will need two six-ton trucks. You have calculated that the cost will be as follows:

Vehicle cost = T$ 15,000 each*
Vehicle life = 5 years
Cost per year, per vehicle = T$ 3,000

| | Per year |
|---|---|
| Cost of two vehicles | = T$ 6,000 |
| Maintenance | = T$ 1,000 |
| Drivers' wages and benefits | = 2,500 |
| Fuel | = 4,000 |
| Insurance | = 500 |
| Total | = T$ 14,000 |

A committee member has suggested that the society consider hiring vehicles rather than buying them. So you have approached a contractor who has a large number of vehicles meeting your requirements. He has quoted a figure of T$15,000 to carry out the work. Will you accept his offer, or buy the vehicles for the society?

The solution appears simple. If it costs T$1,000 less to buy the society its own transport, why should there be any question of hiring instead?

But there are other arguments to consider. It might still be better to hire, even if it appears more expensive than purchasing.

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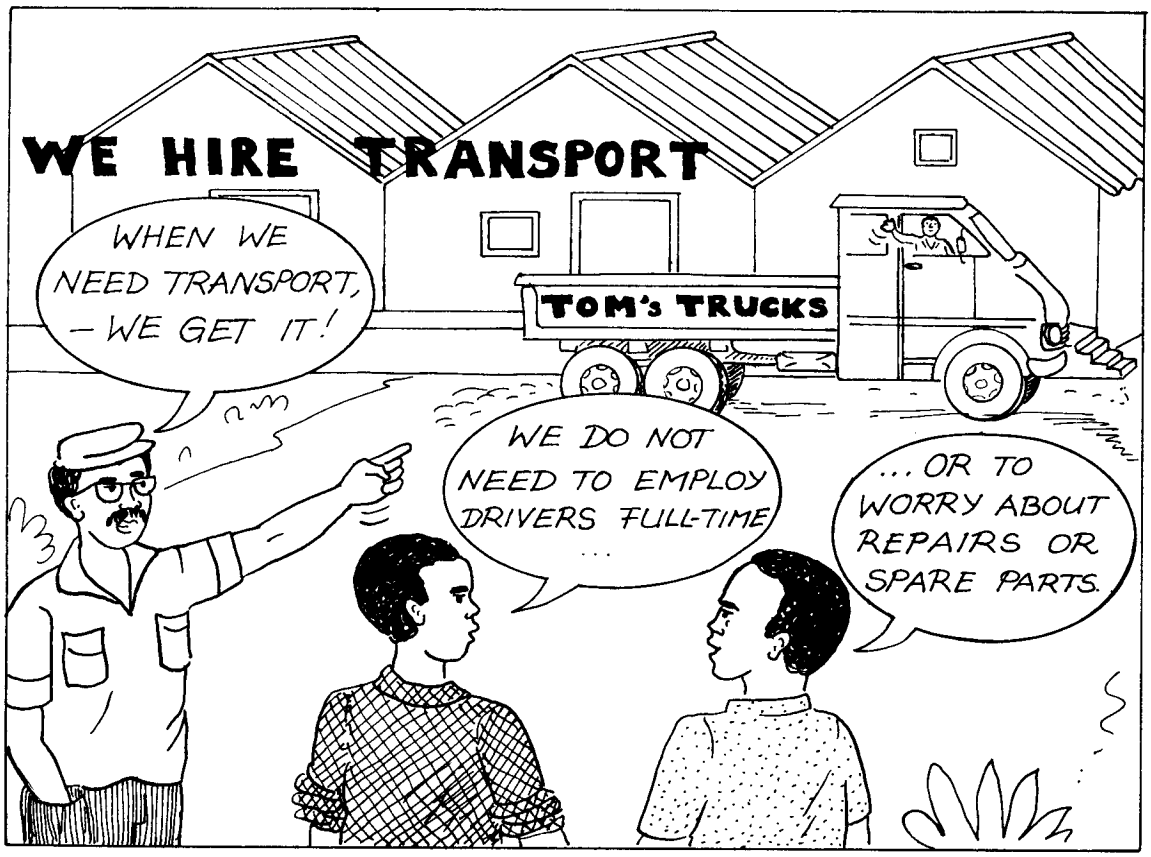
* *We use an imaginary currency here, because this booklet is used in many countries. We call it "Training dollars" (T$).*

Co-operatives deciding to <u>hire</u> transport instead of buying it might argue:

- "We won't have to manage the transport operation itself if we hire and we already have enough to do!"
- "If your own vehicles break down - no transport! But our rental companies will have to give us a new truck if one breaks down - we only pay for what works!"
- "Nobody can use the hired vehicles for any 'private' or unauthorised trips, so we won't have the extra cost of misuse of transport."
- "We don't have to spend (or borrow) a lot of money to buy vehicles - we can use our cash for other things."
- "We can hire exactly the number of vehicles we need, according to demand. If we had our own vehicles, most related expenses such as insurance and drivers' wages would have to be paid whether the transport is used or not."

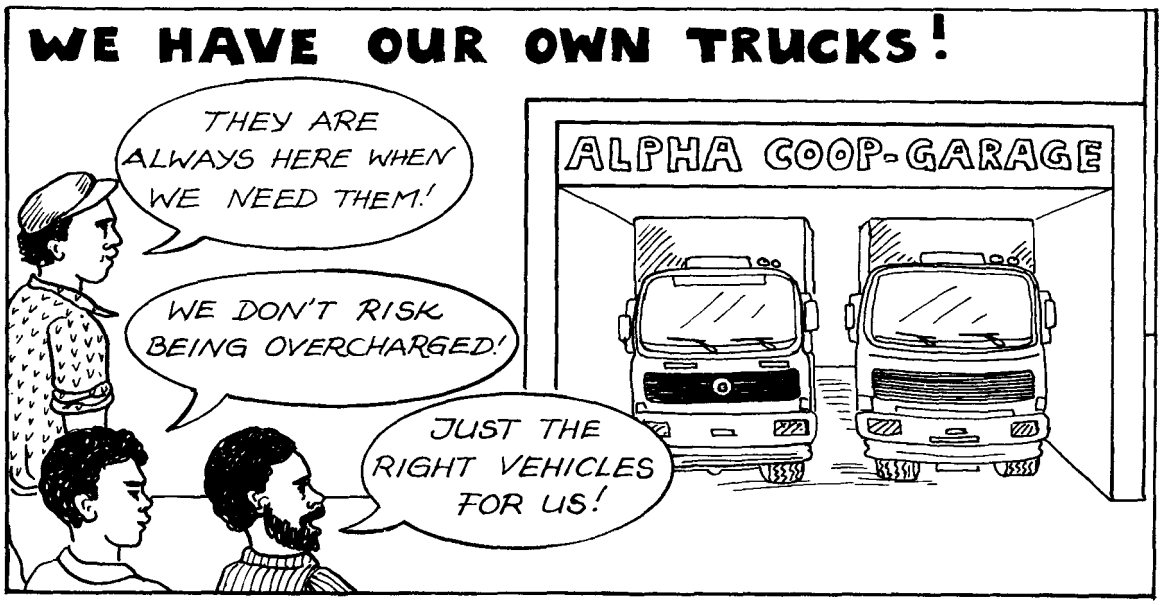



You might think that you have to buy your own transport because there are no suitable contractors available to do the job. But if you make it known that you are looking for hired transport, you may find a number of competent firms coming forward or new firms starting up to take advantage of

the new opportunity. (You may work together with other societies on this to stimulate greater interest.) It makes good business sense to assess the chances of hiring before buying your transport.

There are, of course, advantages to purchasing your own vehicles:

- "Having our own vehicles reduces transport costs. We carefully maintain our trucks and schedule all trips properly. We do not risk excessive charges by outside transport firms."
- "We know exactly what we need in the way of trucks at our society - and we bought just that. The rental company did not have suitable trucks."
- "Our vehicles are always available to us - no one else can call on them."




There is no simple answer to the question "buy or hire?" What is important is to recognise that owning transport may actually cost more money than renting it - and be a much more complex process than hiring.

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2.1 Learn from others' experiences. Ask co-operatives or other enterprises in your region about their problems in hiring and owning transport.

# THE COST OF TRANSPORT

Manager George in Alpha Co-operative had to go to town to settle some business. "Forty kilometres, about four litres of petrol - that is only two dollars, cheaper than the bus ticket," he thought. And so he took the society's pick-up truck to town.

People often act as if fuel were the only cost of transport. In a way, of course, they may be right; fuel may be the only additional cost. In this case, George thought that the truck was already available, that the driver had nothing else to do, and that he was actually saving money by not taking the more expensive bus.

However, George's trip cost a lot more than the price of the fuel. Fuel is only a small part of the total cost of transport.

Just to have a vehicle means that you have to pay certain costs, regardless of how much you use it. Such standing costs include the vehicle licence and the driver's wages.

When the vehicle is operated, you have to pay additional costs for fuel, oil, and so on. These are called running costs.

Yet another high cost is depreciation. Suppose you pay T$10,000 for a vehicle. You plan to use it for five years. It is not reasonable, therefore, to account for the total cost of T$10,000 in the first year. You spread the cost over the five years of use, accounting for T$2,000 each year. This is called the depreciation cost.

The main costs of a vehicle are listed in the table on the next page, which cites as example the truck owned by Alpha Co-operative.

| Annual Costs for a Vehicle | | |
|---|---|---|
| Item | In Alpha Co-operative | In your co-operative |
| Fuel (40,000 km) | T$ 2,000 | |
| Driver's wages | 1,000 | |
| Maintenance | 1,200 | |
| Tyres | 600 | |
| Insurance | 500 | |
| Licence | 200 | |
| Depreciation | 2,000 | |
| Administration | 500 | |
| Total | T$ 8,000 | |

The total annual cost for the truck in George's co-operative is T$8,000. The fuel cost is T$2,000. That means that the total cost for this transport is four times the fuel cost!

George said his trip to town would cost two dollars. The fact is that the cost was four times higher, or eight dollars. The bus ticket would have been cheaper!

The truck in Alpha Co-operative was driven 40,000 km that year. It is easy to calculate the cost for each kilometre driven.

$$\frac{\text{T\$8,000}}{40{,}000} = \text{T\$0.20 per km}$$

We can check the cost of George's trip again. It was 40 km.

$$40 \times \text{T\$0.20} = \text{T\$8.00}$$

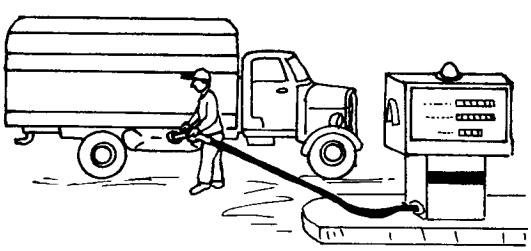
?

3.1 Fill in the costs for a vehicle owned by your co-operative in the table above.

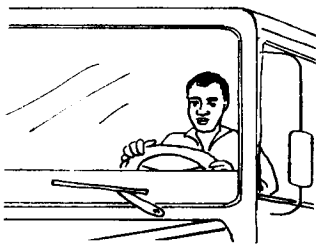
The truck in Alpha Co-operative was driven 40,000 km in a given year. What would happen to the costs if the truck were driven only 20,000 km?

Would all the figures remain the same, would all change, or would each behave differently?

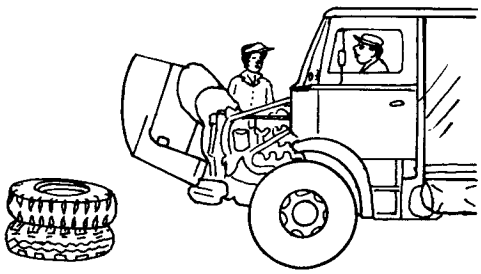
It is fairly clear that fuel costs would be halved if the distance driven were halved.



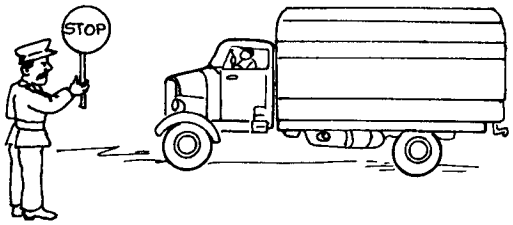
If we keep the driver employed full-time, the cost of wages would remain the same.



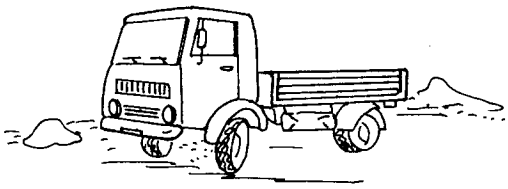
The cost of maintenance and the cost of tyres would be reduced if the vehicle were driven a shorter distance.



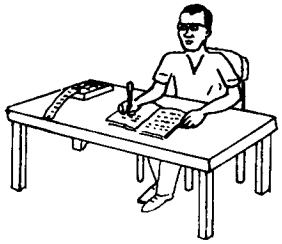
Insurance and licence fees would remain the same.




The depreciation cost might change, because the life of the vehicle depends on the distance it is driven.



The cost of administration would drop because less time would be spent on planning and scheduling.



It is important to note that the various costs behave in different ways when vehicle use is reduced or increased. Look at the table below. Costs are estimated for distances of 10,000 km, 20,000 km and 40,000 km.

| Annual Costs (T$) | | | |
|---|---|---|---|
| Item | 10,000 km driven | 20,000 km driven | 40,000 km driven |
| Fuel | 500 | 1,000 | 2,000 |
| Driver's wages | 1,000 | 1,000 | 1,000 |
| Maintenance | 500 | 700 | 1,200 |
| Tyres | 200 | 300 | 600 |
| Insurance | 500 | 500 | 500 |
| Licence | 200 | 200 | 200 |
| Depreciation | 1,000 | 1,500 | 2,000 |
| Administration | 200 | 300 | 500 |
| Total | 4,100 | 5,500 | 8,000 |

What would be the cost per kilometre in each case?

- For 10,000 km, T$4,100 : 10,000 = 41 cents per km.
- For 20,000 km, T$5,500 : 20,000 = 27.5 cents per km.
- For 40,000 km, T$8,000 : 40,000 = 20 cents per km.

You may have noticed that some vehicles operate only a few hundred kilometres a year (perhaps because of lack of fuel or spare parts) while others run night and day (often without proper maintenance). Clearly, both extremes are bad.

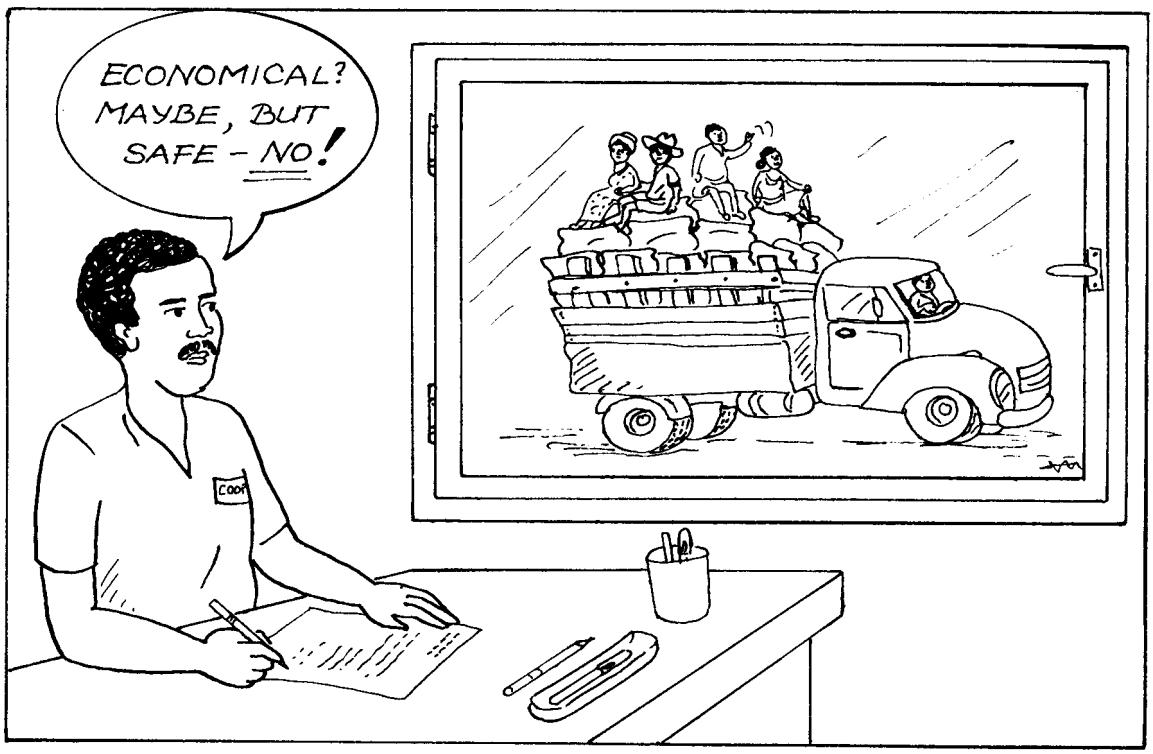
- Very <u>low</u> annual mileage (distance driven) keeps costs per kilometre very high.
- Very <u>high</u> annual mileage may result in lower kilometre-costs but shorter vehicle life unless proper maintenance is performed.

No sensible manager would keep his trucks running constantly simply to achieve a low kilometre-cost. He would take the time for routine maintenance and repairs. Kilometre-cost is only one of the factors he must consider. Cost-effectiveness is another. Many trips are obviously uneconomic, for instance using a ten-ton truck to take the manager to a meeting or to transport only a few bags of something. Such trips, like borrowing a co-operative vehicle for private business, are a form of misuse.

When you manage a transport service, you must look at the whole picture.

- *You must <u>estimate</u> the individual costs of running each vehicle, then check the <u>actual</u> total costs and kilometre-costs at the end of each year (more frequently if possible).*

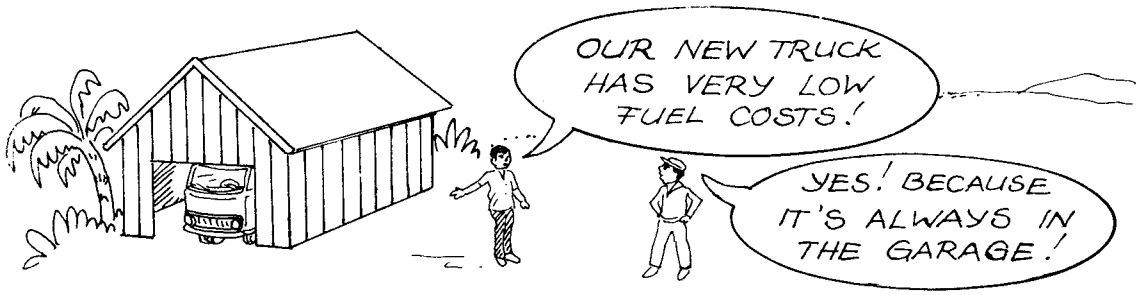
- *For your system to be economic, you must make sensible use of vehicles, seeing to it that they carry as full loads as possible and travel only on relevant co-operative business.*



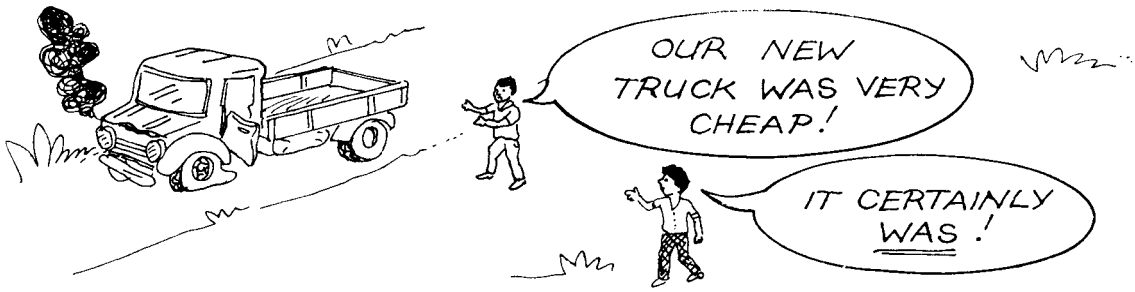
# BUYING VEHICLES

If purchasing proves to be the most economical solution to your transport problems, it is essential to buy the right vehicle at the right price and to find the most economical way of financing and paying for it. As everyone knows, it is easy to make mistakes.

- The committee of Highland Co-operative compared only the fuel costs of several vehicles. It decided to buy a truck with very low petrol consumption. This turned out to be a costly mistake, because it later proved impossible to obtain spare parts for this particular model. The truck was off the road most of the time. The co-operative was forced to hire other vehicles.




- Greenland Co-operative fell in another trap. It urgently needed a truck but had problems in raising the money needed. When the committee members eventually found a dealer who offered generous credit terms, they were eager to buy a second-hand truck from him. In their haste, they failed to check the vehicle properly. It was in poor condition and had to be scrapped after a year.




In both cases, the buyers were so impressed by one particular detail that they forgot to consider others, perhaps more important. To minimise the chances of such error in buying a vehicle, it is a good idea to follow a fixed procedure, like this one:

- *Define the functions and the specifications of a suitable vehicle. What do you want your vehicle to do? What features must it have to do what you expect?*

- *Gather information on suitable vehicles that are available.*

- *List and compare data on these vehicles.*

- *Compare terms of financing and payment for the vehicle; choose the most feasible for your co-operative.*

Let us take a closer look at these steps.

## Functions and specifications

Before even looking at a vehicle you have to identify precisely what you want it for. What do you expect it to do and what features are thus essential? The vehicle must fit the society's needs. You must define your basic requirements as follows:

- *Payload capacity*

  What size loads will generally be carried; volume, weight?

- *Body type*

  What types of loads will generally be carried; in bulk or bags?

- *Suitability for local roads*

  What are road conditions in the area? Is there a need to drive in rough terrain? Are extra sturdy construction and 4-wheel drive needed? Are there vehicle limitations - maximum length and weight - due to road regulations, bridge capacities, etc.?

You may find several vehicle models with the basic features you need. But you must consider other factors as well. Those listed on the next page can be of great importance in the usefulness of the vehicle to your co-operative.

- *Maintenance*

  How often is it required? Where can it be done? What does it cost? Can your drivers do it easily?

- *Spare parts and tyres*

  Are they always available?

- *Guarantee*

- *Cost of licence and insurance*

- *Fuel consumption and cost*

- *Attitude of drivers*

  Can they drive it? Do they like it?

- *Purchase cost*

  Cash or credit terms?

- *Vehicle value after five years*

Gather information

Once you have listed the expected functions and specifications you require, you need to begin gathering information on vehicles. What sources of information are there?

- *Manufacturer's agents*

  They know technical details better than anyone else - but their profit depends on their sales. They are likely to be biased in favour of their own products.

- *Other users*

  People employing the same type of vehicle for the same kind of work can be excellent advisers.

- *Maintenance garages*

  Mechanics experienced in servicing the vehicle in question can provide accurate information - if they are not also sales agents for particular vehicles.

- *Second-hand dealers*

  These can offer advice if they carry a variety of makes and do not try to sell you a particular one.

- *Journals and magazines*

  These carry not only advertising (which can be informational even if biased) but occasional articles that may be relevant.

Prepare a list of data

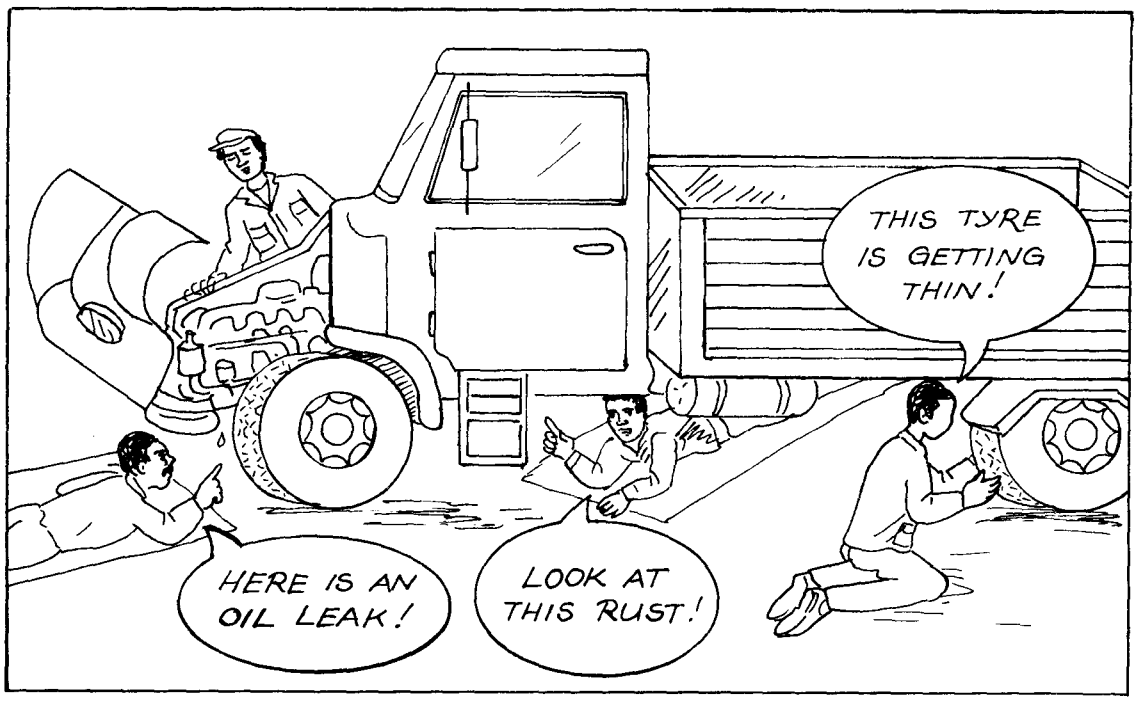
To facilitate both the comparison of vehicles and the final decision on which to buy, it is a good idea to compile your information in a clear and concise table. Here is an example, comparing two new vehicles (Apollo and Rex) and a third one (Sabo) which is used but in good condition.

| Vehicle feature | APOLLO new | REX new | SABO used |
|---|---|---|---|
| Payload (tons) | 9 | 6 | 6 |
| Length (m) | 7.5 | 5.5 | 5.3 |
| Suitability for rough terrain | GOOD | FAIR | GOOD |
| Maintenance - location | GEORGETOWN only | GEORGETOWN BOLA, KRIMA | BOLA KRIMA |
| Maintenance cost per 15,000 km | 1,000 | 750 | 1,500 |
| Availability of spare parts | GOOD | FAIR | GOOD |
| Guarantee | 6 months | 6 months | — |
| Licence, insurance cost | 750 | 500 | 300 |
| Fuel cost per 15,000 km | 1,800 | 1,500 | 1,600 |
| Driver attitude | + | ++ | + |
| Purchase cost; cash | 20,000 | 15,000 | 8,000 |
| Purchase cost; credit | 23,000 | 17,000 | N.A. |
| Credit terms | 2 years via bank | 2 year supplier | — |
| Value after 5 years | 10,000 | 6,000 | 0 |

You are not likely to find a vehicle that fits all your specifications. What are the most important? What can you ignore if necessary?

In general, low initial cost, fuel economy and ideal load capacity are perhaps less important than reliability and availability of spare parts.

Do not forget to investigate the possibilities of buying a second-hand vehicle. While some of its operating life has been used, it will obviously be cheaper to buy - but evaluation is critical. Try to borrow the vehicle for an extended testing period. Have a qualified mechanic do a complete inspection. You might ask the seller to guarantee the vehicle for a certain period.




In the process of deciding which vehicle to buy, it is important to fully involve the people most concerned: the man in charge of the society's transport operations and the drivers. They will have to deal with the vehicle every day. They know what is needed and what problems are likely to arise. Do not ignore their advice.

Paying for the vehicle

Finally, how do you pay for your vehicle?

- Even if your society has enough money in the bank to buy it outright, should you do so?
- If the bank is willing to loan you the money for the vehicle, should you necessarily take it?
- If you do not have the money and cannot borrow it from the bank, do you have any alternative?

The answer may be credit from the supplier. This is commonly offered as encouragement to the purchaser - and must be evaluated just like any other feature of the vehicle.

The table below shows different ways of paying for a truck priced at T$20,000 in cash.

| | Cash | Bank loan | Hire-purchase |
|---|---|---|---|
| Initial payment | T$20,000 | - | T$5,000 |
| Later payments | - | T$500 per month for five years | T$600 per month for three years |
| Total payment | T$20,000 | T$30,000 | T$26,600 |

What is the best alternative? In terms of total cost, obviously cash is the cheapest, followed by hire-purchase and bank loan, in our example.

But total cost may not be the only consideration. Suppose, for instance, that a co-operative society needs a truck, but at the same time it needs to buy another important piece of equipment and to pay its members for their crops. The society has some cash, but not enough for all three purposes. The bank is willing to advance a loan for one of them but not more. In this situation, the credit offered by the ve-

hicle supplier (the hire-purchase alternative) could be the additional source of money needed by the society to develop its business as planned. If the co-operative were to use its available cash to buy the truck (the alternative which at first glance appears cheapest), it would in fact be more "costly"; the society would be unable to provide another vital service.

This example shows that decisions on payment must be made in view of the whole picture. Management must find the best overall solution for the actual situation.

When buying a vehicle for your co-operative:

4.1 What are potential mistakes to avoid?

4.2 What are the most common problems facing truck owners in your area? What can you do to avoid them?

4.3 What people might you ask for advice?

# VEHICLE SCHEDULING

once you have selected the best vehicle for your co-operative and have bought it in the most economical way, your responsibilities as manager have only begun. Your task now is to make your system of transport as efficient and economic as possible.

- A given society had three trucks. Some days they were so busy that produce would go bad for lack of transport; other days the vehicles had nothing to do. The last two days of every month all trucks were in for service; nothing could then be moved at all. The manager insisted he needed at least one more truck to cope with all the requests for transport.

Poor management like this can easily render any investment in vehicles unprofitable, no matter how carefully it was made. The proper use of vehicles is as important as their careful selection and purchase. In transport management, this means careful scheduling - making the most effective use of the vehicles you have before seeking outside resources. Scheduling means that you:

- *find out in advance what the transport needs are;*
- *balance the available transport against the needs;*
- *decide what tasks must be done at specific particular times, and what can be more flexibly timed;*
- *allocate the vehicles to the tasks;*
- *draw up a programme stating what vehicles are doing what, when;*
- *leave some flexibility for unexpected needs or problems;*
- *monitor, maintain and (when necessary) modify the programme as it is implemented.*

For effective scheduling it is necessary to have one person responsible for all these tasks. (It may be the manager himself, a staff member designated as transport supervisor, or a special transport manager.) He will have to ascertain the transport needs and decide how each vehicle is to be used, every day.

If you only have one or two vehicles, and they routinely perform the same tasks, you may not need a formal system. But you still must know their functions and locations at all times, if only to be able to re-arrange them if something unexpected comes up.

If you have more than two or three vehicles, however, a <u>requisition system</u> is in order. Anyone then requesting transport should give the responsible manager a "requisition form" like this:

TRANSPORT REQUISITION

To: Transport Supervisor, Alpha Co-operative

From: H. Green Section: M Date: 20.5.87

LOAD Description: Maize, 22 bags

Weight: 1100 kg

COLLECTION DATE and TIME:
Earliest: 24.5 8$^{00}$ Latest: 25.5 16$^{00}$

COLLECTION POINT: Valley Buying Station

DELIVERY POINT: Alpha Godown

TRANSPORT COSTS TO BE CHARGED TO:

- [ ] Supply Section
- [x] Marketing Section
- [ ] Consumer Section
- [ ] Gen.Admin. Section

REMARKS: Please inform Johnson about delivery time.

For Transport Supervisor's Notes

VEHICLE: _____ COLLECTION TIME: _____

Ask yourself some questions about your transport operations:

- Are your vehicles ever used for illicit purposes?
- Is it ever difficult to pin down who authorised a journey or to what department it should be charged?
- Are vehicles idle at some times and urgently needed in several places at other times?

You can eliminate most such problems with a requisition system. Our model form (on the previous page) is quite simple. Only certain people in the co-operative have the right to request transport; the transport supervisor accepts requisitions only from them. The forms help him to schedule the journeys effectively - and provide a way to check that the vehicles have not taken any unnecessary or illicit trips.

To facilitate the work of the transport supervisor, his colleagues in the co-operative should submit their requests to give him adequate preparation time. He can then lay out a more effective transport schedule.

We will show an example here. It concerns a transport supervisor, Mr. Tarus of Alpha Co-operative, who had one truck (five-ton) and one pick-up (one-ton) at his disposal. His drivers worked from 7 a.m. to 4 p.m. with an hour for lunch. On Saturday, Tarus received transport requisitions for the following tasks:

A. Daily: collect four tons of produce; a three-hour task; to be completed by 3 p.m.

B. Daily: drive the chief clerk to town for one hour (to go to bank, post office, etc.); must leave after 8 a.m. and return by 1 p.m.

C. As soon as possible: take a ten-ton fertiliser load from the manufacturer's store to the society; five hours duration.

D. As soon as possible: collect approximately 50 kg of machine spare parts from the depot; a two-hour journey.

E. As convenient: collect and deliver 100 tons of gravel; a one-hour task for each trip.

F. Monday: deliver a three-ton load any time after 1 p.m.; a two-hour task.

G. Tuesday: take manager and chief clerk to capital to visit the bank head office; a seven-hour journey.

H. Friday: collect two tons of supplies, not before 12 noon; a three-hour task.

I. Saturday: collect cashier from a training course; a three-hour journey; must leave after 8 a.m.

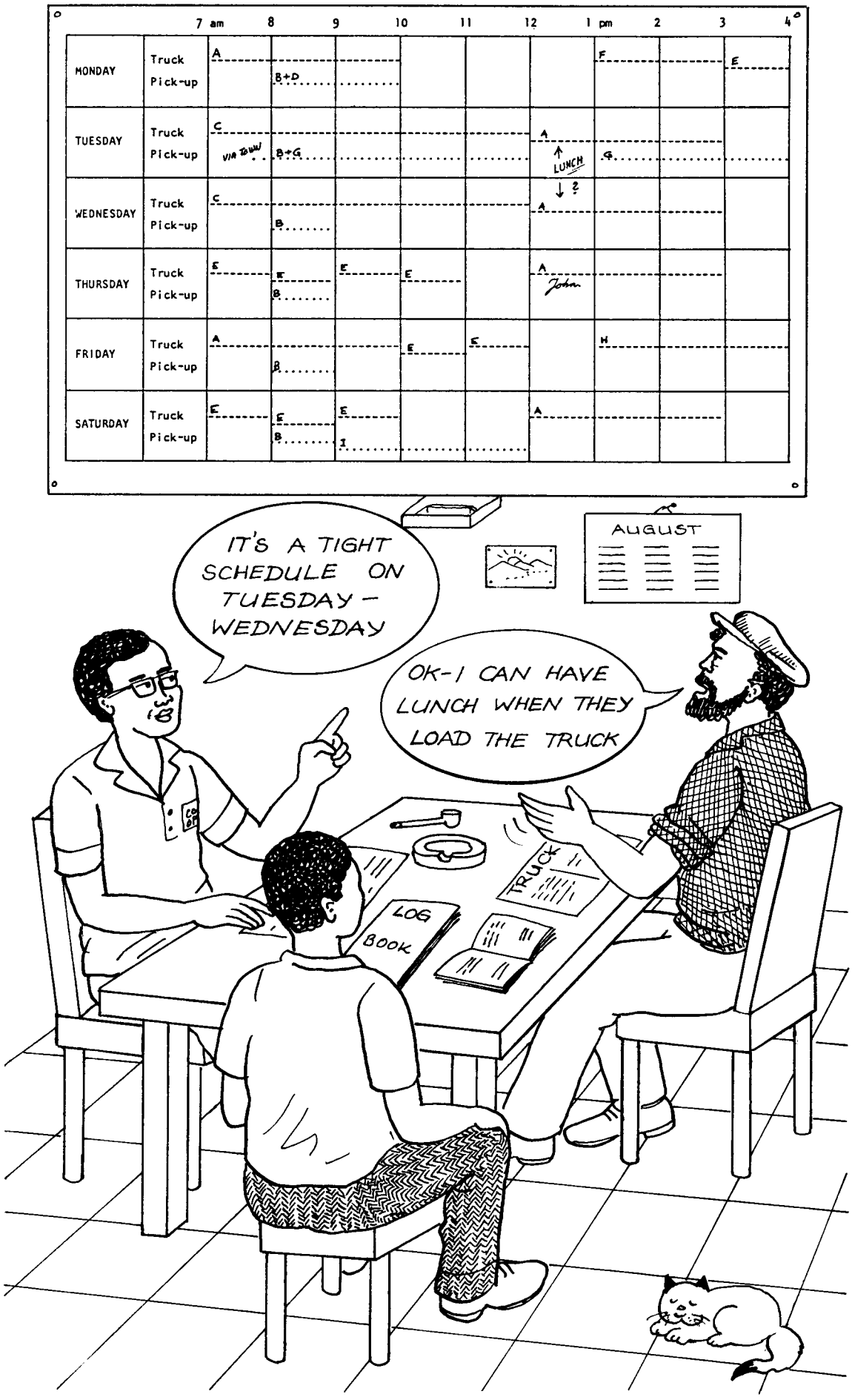
With these requisitions in his hand, Tarus started to work out a schedule. He simply used a chalkboard on the wall, where he indicated when the various tasks should be done, and by whom. You can see his schedule on the next page.

Of course, Tarus knew that there would be changes in his schedule during the week. For instance:

- vehicles might break down;
- loads might not be ready in time;
- staff (drivers and helpers) might not turn up or perform as expected;
- extra urgent tasks might suddenly have to be done.

Some people argue that because of such problems, it is a waste of time even to try to plan out a schedule. It is rarely, if ever, possible to stick to it.

But Tarus has a different experience: "My schedule is most useful when things go wrong. I can see at once when we can do some extra jobs, which tasks will have to be cancelled or how we should modify the plans. The point is to have a clearly presented schedule which can easily be amended."


7 am
8
9
10
11
12
1 pm
2
3
4
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
Truck Pick-up
LUNCH
IT'S A TIGHT SCHEDULE ON TUESDAY - WEDNESDAY
OK-I CAN HAVE LUNCH WHEN THEY LOAD THE TRUCK
AUGUST
LOG BOOK
TRUCK

For instance, during the next week, the following happened:

- On Tuesday afternoon Tarus was asked when he could first move a four-ton load, a task taking three hours. He could immediately see that the pick-up would be available and could do the job in four three-hour trips on Wednesday, Thursday and Friday.
- On Wednesday afternoon the pick-up had the exhaust pipe damaged on a bad road. Tarus told the driver to fix the pipe on Thursday morning, and to do his daily run to town late, at 9 a.m.

Preparing a schedule is a means of planning transport and a useful tool when dealing with problems, as we have seen. But an efficient transport manager should also try to anticipate and eliminate problems. There are **certain** things he must do:

- *have regular maintenance scheduling;*
- *motivate drivers by setting standard times for journeys, loading and unloading;*
- *ensure that drivers can obtain the help needed loading and unloading;*
- *allocate adequate time for journeys according to road and vehicle conditions.*

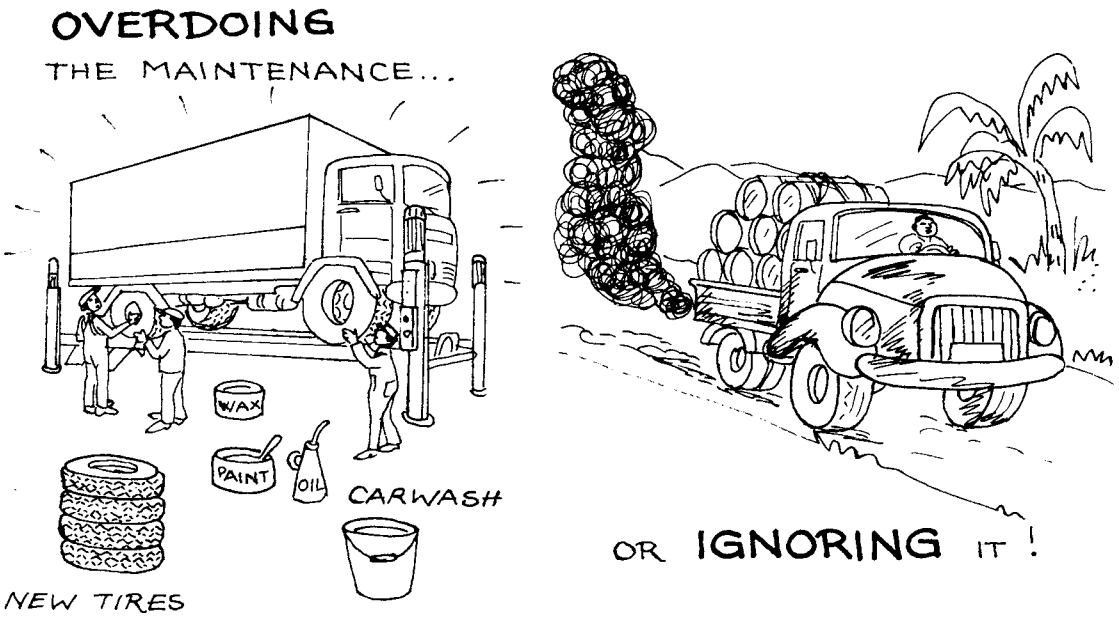
5.1 Describe a system for requisition of transport services which would be suitable for your **co-operative.** In particular, point out:

- who is authorised to order transport services;
- how requests should be made (orally or in writing);
- what the requistion form should look like (if used) ;
- how the requisition form is used (who fills it out, who receives and uses it, who files it);
- how the **costs for transport are calculated and allocated within** the society.

# MAINTENANCE

What happens if you neglect the maintenance of your vehicles? They will break down, sooner or later, leaving you at least temporarily without transport.

Suppose you give your vehicles excessively good service - **you** keep them in the garage for a full day's service every week, change tyres every 5,000 km and so on. Would that be all right? Well, some breakdowns might be eliminated, but such maintenance would itself be costly, and with the vehicles off the road so much you would still be left often without transport.




Like all other management jobs, vehicle maintenance is a **balancing** act; you have to find the right point between extremes. There are both technical and economic aspects to consider here. The aims of maintenance are:

- *to ensure that vehicles are safe;*
- *to minimize breakdowns and time off the road;*
- *to control and reduce costs;*
- *to maximize economic vehicle life.*

There are two types of maintenance:

- *planned maintenance;*

  this includes the daily check by the driver and the regular garage inspections and servicing; and

- *emergency maintenance;*

  the repairs necessary when something breaks down.

Owning maintenance facilities

We saw earlier that there are good reasons both for and against a society owning its own transport. The objective is not to own the vehicles, but to provide the transport service. It is the same with maintenance. You can have your own garage and mechanics, or have maintenance provided by outside firms.

Which is best? There are advantages and disadvantages to both systems. Let us listen to a manager with positive experience in providing maintenance within his co-operative:

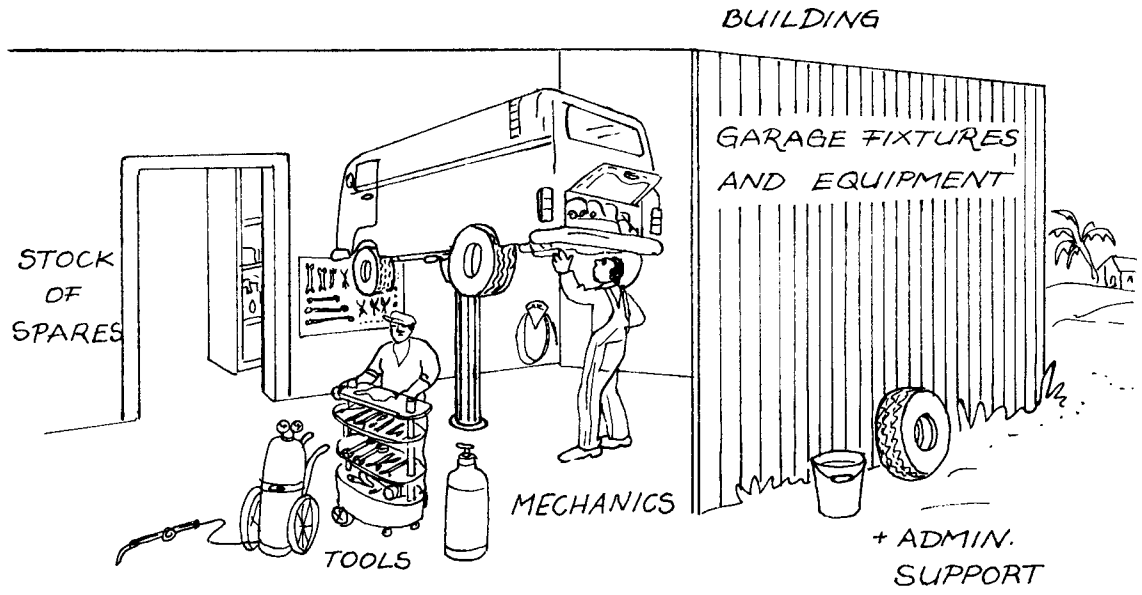
- "We can keep close control on our trucks. The service is available on-site as needed. As soon as something happens we can check on and repair it. Our mechanic knows our trucks very well. He knows what spare parts we need and we can stock these. Our drivers share the work with the mechanic as necessary. We probably have lower maintenance costs than many other societies."

But another manager had largely negative experience with his own maintenance facilities:

- "I think we have lost money on our own maintenance. We have three different makes of trucks, all new to our staff, which creates problems. For major repairs they always refer to the agents in town. We have spent a lot of money on tools and spare parts; now it looks like many tools have disappeared and the parts will never be used here. I don't know what to do with the garage staff."

Obviously, there are many matters to consider before you decide whether or not to set up your own maintenance facilities: the number of vehicles you have; how complicated they are; how much money you can invest in buildings, equipment and spare parts; whether you can find a qualified mechanic. Your decision, in any case, is not permanent. You must periodically re-evaluate it. Even if you have had your own facilities for some years already, you must remain open to the possiblity of changing over to an outside supplier, if this should prove better and cheaper.

MAINTENANCE FACILITIES:




The costs of maintenance are, of course, of decisive importance. You can never come to the right decision if you do not know the maintenance costs for each vehicle. For this, you require records.

Maintenance records

When a mechanic performs planned, regular service on a vehicle, he works systematically, checking a large number of parts and functions. To be sure that he does not forget anything, he follows the special service instructions issued by the manufacturer in the form of a service book or a service card. This is like a check-list where he can tick off every job done. It is important that these manufacturer's instructions are observed carefully.

To monitor services and repairs and what they cost, records must be kept for each vehicle. Whether the work is done in your society or outside, you must have records on:

- *planned service intervals, when the last was done and when the next is due;*
- *any defects discovered and repaired;*
- *any parts substituted;*
- *the costs of all material and parts used;*
- *the cost of the labour (if the work was done by your own staff you must know how much time they took for it).*

Maintenance costs

Your maintenance records will enable you to ascertain the total annual maintenance costs of each vehicle. These should include any costs you may have had for a workshop building and equipment and the time spent on maintenance. It is easy to forget the time the manager or a supervisor uses to organise and supervise maintenance work.

All this information is necessary for your management decisions. You need it to:

- assess whether the staff is taking good care of the vehicles;
- calculate the total cost of a vehicle and how much to charge for the use of it;
- decide whether or not to retain a particular vehicle (high costs may indicate that it is time to dispose of it);
- decide whether you should change your system of maintenance (from your own to external services, or vice versa).

6.1 Suggest ways to improve the maintenance of the vehicles in your co-operative.

# FUEL

Fuel is vital to your transport operations. It accounts for a large part of your transport costs. It is easily stolen or misused (by unauthorized or unnecessary trips). The fu.el consumption of individual vehicles must be monitored. You must have an effective system for the issuing of fuel.

Your system will depend on local conditions, whether you have your own tank and pump on the premises, and so on. In any case, you must design it so that the following questions can be clearly answered.

?

Fuel-issued_on_your_premises:

7.1 Who is responsible for issuing fuel to individual vehicles (the driver or someone else)?

7.2 Is fuel available at any time, or only during limited hours?

7.3 How is the amount of fuel issued recorded at the pump? In the vehicle?

7.4 How is the volume of fuel in the tank checked? How often? By whom? Who is responsible for ordering fuel from the supplier?

7.5 How are total fuel issues compared with individual issues and the contents of the tank, so that any possible "leakage" is discovered?

Fuel bou ht on the road:

7.6 Are drivers permitted to buy only from nominated suppliers, or anywhere?

7.7 How do the drivers pay for the fuel?

7.8 How are fuel purchases recorded by the drivers?

7.9 Who checks the fuel consumption of each vehicle? How is it done? How often?

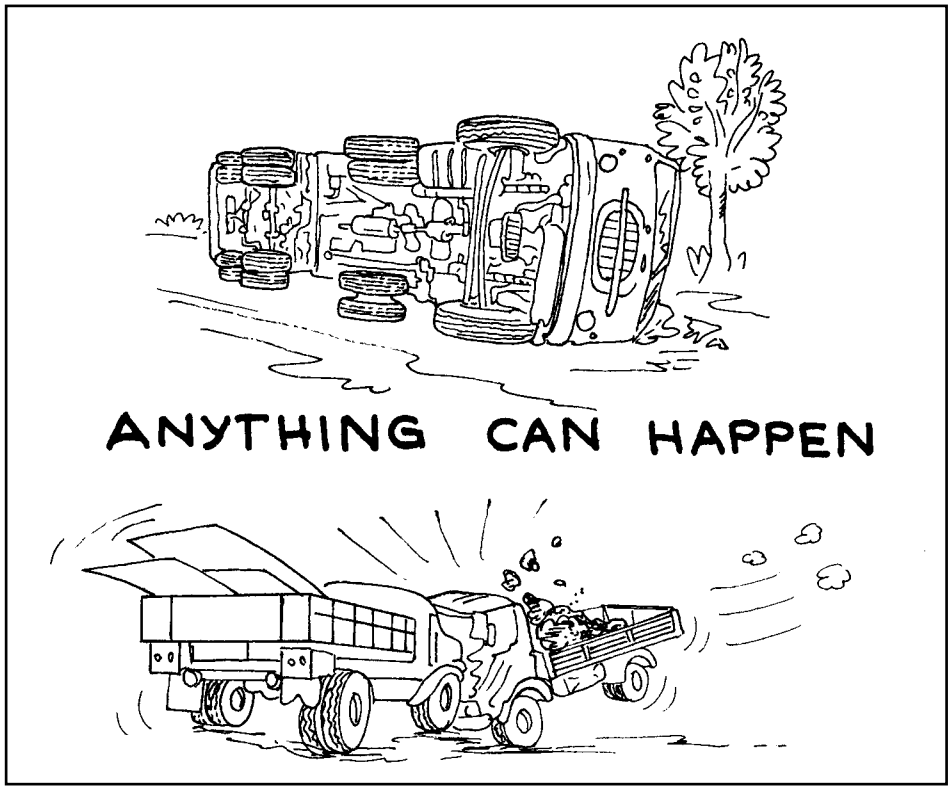
# INSURANCE

If your vehicles are properly maintained and your drivers are well selected and trained, you reduce the risk of accidents. In most countries, however, vehicles have to be insured for "third-party risks". This covers any claims which may be made by other people who suffer loss or injury because of your society's vehicles. Why does the law require this?

- If your vehicle causes a great deal of damage to other people's vehicles or property, the amount claimed may be so large as to completely "break" your society. The risk is not worth running.

- Your vehicle may severely injure or kill someone. While money is no substitute for health or life itself, claims for personal damages in such a case are likely to be very large. It might be unjust to the injured (and disastrous to the society) if such a claim could not be paid. Insurance makes the payment possible.

Although the law usually only requires third-party insurance, most reputable organisations also insure their vehicles on a "comprehensive" basis. This covers repairs or replacement of the society's vehicles if they are damaged or destroyed in accidents caused by your own drivers. If a vehicle has to be replaced or undergo a major repair, the cost is likely to be substantial to any society. In case a damaged vehicle has not been fully paid for (the society may have a loan), the society will have to repay the loan and pay for the repair or replacement. The double burden might be a disaster for the society. Therefore, it is generally wise for a society to take out comprehensive insurance, even if the drivers are better than average, the vehicles better maintained and the insurance at first apparently uneconomic to buy.




Insurance costs vary. Some companies have better deals than others. Costs are also affected by "no claim bonuses" and "deductibles".

- No claim bonuses are reductions in insurance costs given after no claims have been made for a certain number of years. This is reasonable, because vehicles with a history of less frequent accidents are less likely to have accidents in the future. The safer societies should not bear the burden of those less safe. Reductions of 30% or even 50% are quite often available.

- Deductible insurance requires the insured party to cover costs up to a certain amount. The insurance company only pays those amounts in excess of a particular figure. This protects the insurance company from small claims, which cost a great deal of money to verify and administer in proportion to the money paid out.

You usually have a choice of insurance companies. To select the most economical insurance you have to compare their

deals. For example, which of the following would you prefer?

| | Insurance Company X | Insurance Company Y |
|---|---|---|
| Cost per year | T$600 | T$500 |
| No claim bonus:<br>First year accident-free<br>Second year accident-free<br>Third year accident-Free | <br>20%<br>30%<br>40% | <br>10%<br>20%<br>30% |
| Deductible (to be paid by insured) | T$50 | T$100 |

In this case there is no right or wrong answer; if your record is clear for three years, Company X's charges will go down to T$360 and Company Y's to T$350. But the high "deductible" for Company Y means that you will have to pay T$50 more on any claims you do make. If you believe you are unlikely to make claims, Company Y is best; otherwise Company X.

There are still other factors to consider which are more important than small differences in the cost of insurance premiums. The questions below will help you to identify such factors.

Take a look at your own vehicle insurance.

8.1 Is your insurance company well established and unlikely to cease operations or go bankrupt?

8.2 Is the company represented locally so that its staff can deal quickly with any claims?

8.3 Does it have a reputation for fast, fair and efficient service?

8.4 How do the premiums compare with those of other companies?

# RULES AND REGULATIONS

You must insure your vehicles, by law, and we have seen that it is wiser to go further than the law demands. What other legal requirements are there? What papers must your vehicles carry to show that you are operating within the law?

Regulations vary, but most countries require the following:

- *Driver's licence*
- *Vehicle tax disk*
- *Licence plate*
- *Inspection certificate*
- *Insurance cover note*
- *Log book and/or electronic "Tachometer".*

These regulations may seem no more than bureaucratic inventions. But let us go through the list and examine the practical reasons why each document and rule is good not only for the country as a whole but also for the operators, who sometimes get irritated over all these regulations - and even ignore some of them.

- Driving licence: incompetent drivers can cause accidents, affecting themselves as well as others; therefore anybody driving a vehicle must have passed a test to be sure that he is competent to do this.
- Tax: the government needs money to pay for roads and other services; every vehicle owner has to contribute.
- Licence plate: the registration of the number provides a record of ownership, and the plate provides a means of vehicle identification - useful if the vehicle is stolen or involved in an accident.
- Insurance: the cover note is proof of insurance. It enables people involved in accidents to make direct contact with the insurance company.

- Log book: drivers must not drive for more than a certain number of hours without a rest. The log book enables you to check on this and also prevent drivers from misusing vehicles.

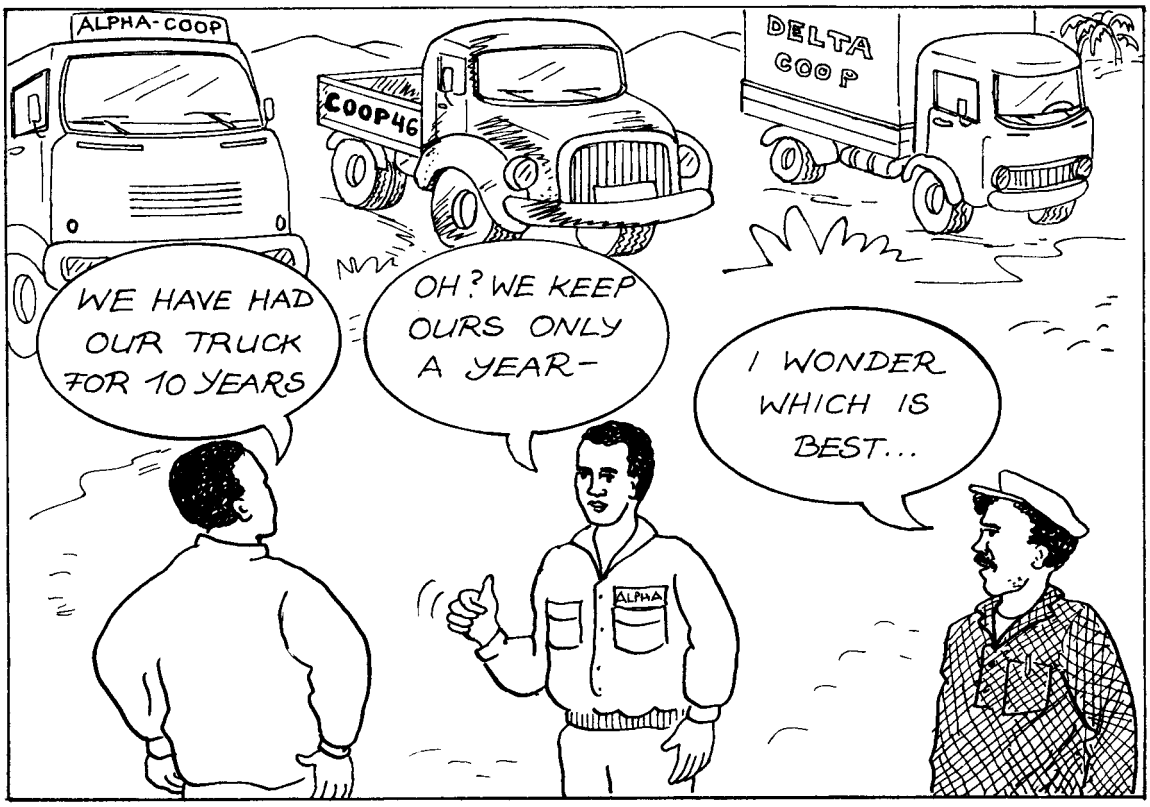
The log book may not be required by the law in every country, but is still used by most transport operators as a record of work done and for control purposes. Look at this example of a log book.

| Date | Time | | Journey | Purpose | Kilometres | |
|---|---|---|---|---|---|---|
| | Start | Finish | | | at end | for journey |
| 14.5 | 08.30 | 11.00 | Store to Kuru Town & return | b.f.<br>Deliver crops, collect spares | 23050<br>23112 | 62 |
| 14.5 | 12.00 | 17.00 | Store to Fertilizer Depot & return | Return bags, collect new supplies | 23200 | 88 |
| 15.5 | 08.00 | 12.00 | Store to Kuru Town & return | Deliver crops. | 23282 | 82 |
| 15.5 | 15.00 | 16.30 | Store to garage & return | Change tyres | 23302 | 20 |

Such entries in a log book, together with transport requisitions and the transport schedule (see pages 22 - 25), serve the following purposes:

- allocation of transport charges to the right tasks or departments;
- calculation of transport costs;
- monitoring of usage of vehicles;
- monitoring drivers' performance;
- avoidance of misuse, unauthorized private work, and so on.

# KEEP IT OR REPLACE IT?




How do you decide when to replace a vehicle? Do you:

- only replace a vehicle when it is totally wrecked or will not go any more?
- replace vehicles on a regular basis, after one or more years, regardless of their condition at the time?
- assess the situation every year, and decide on the basis of likely costs and benefits?

The last method is best, but most complex. It requires some estimates, calculations, and judgement; it is not an "automatic" decision like the other two.

You need information about the possible <u>new vehicle</u>.

- What will it cost?
- What payment terms can be arranged?
- How much fuel will it use?

You must estimate:

- how much it will cost to maintain and
- how much it would be worth if you sold it after one or more years.

Your supplier (and your own and others' experience) can help you here. We have already discussed (on pages 16 - 20) how to collect information about new vehicles.

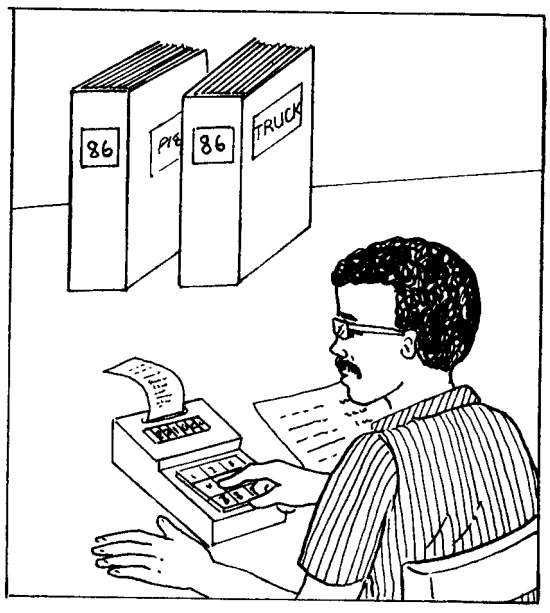
You also need information about the old vehicle.

- What could it be sold for now?
- What has it cost to maintain it so far?

You will have to estimate:

- how much it will cost to maintain in the future;
- how much fuel it will use;
- how much more likely it is to break down than a new vehicle;
- when in the future you think you will decide to replace it; and
- how much you will be able to sell it for when you do replace it.

If your maintenance records and fuel records have been kept as suggested in this book, you should have no difficulty in finding out what has happened in the past or in estimating for the future.



Your information might be presented like this:

| | Keep old vehicle | Buy new vehicle |
|---|---|---|
| Initial payment | | T$7,000 |
| Annual payments (3 years) | | T$5,000 |
| Maintenance charges per year | T$2,000 | T$1,000 |
| Fuel charged per year (@50 cents per litre) | T$6,000 (12,000 litres) | T$4,000 (8,000 litres) |
| Resale value after four more years | T$1,000 | T$10,000 |

(Note that there is no need to include <u>all</u> the costs, but only those which would be likely to be significantly different in each case.)

You then work out the cost of each vehicle over four years and subtract what it would be worth at the end.

| | Cost + Maintenance + Fuel - Resale value = Total |
|---|---|
| Old vehicle | T$0 + T$8,000 + T$24,000 - T$1,000 = T$31,000 |
| New vehicle | T$22,000 + T$4,000 + T$16,000 - T$10,000 = T$32,000 |

Faced with this choice, what would you do? Are there any other important factors that have not been considered?

Clearly an old vehicle is more likely to break down than a new one. You must decide whether the cost of breakdowns (and of not having the vehicle at these times) will be more or less than T$1,000 over the four-year period. Most managers would probably decide to buy the new vehicle, if the difference were this small.

It is important to remember that vehicle replacement decisions, like all management decisions, cannot be made purely on the basis of calculations. You must use your own judgement with the figures to guide you.

# COMPLEMENTARY EXERCISES


To complete your studies of this topic, use the following exercises, applying what you have learned to real situations.

1. Make a transport system analysis

Examine the transport system and its costs in your co-operative.

As a basis for your study, list the various types of transport tasks performed for your co-operative last year, by both your own and hired vehicles. Sum up the total costs.

Based on last year's data, estimate the need for transport during the coming year. Suggest alternative systems, using either owned or hired transport, or a combination.

Calculate the costs of the alternatives.

Present your findings in a report., using tables to clearly set out costs. List the advantages and disadvantages of the alternatives. Suggest how problems arising previously might be solved.

Recommend the best possible transport system for your co-operative.

2. Prepare a job description for drivers

Prepare a general "job description" outlining the main duties and responsibilities of drivers.

Then draw up a list of "job specifications" itemising the tasks of the drivers.

Finally, prepare "notes for the driver", explicit reminders as to what he must and must not do. (This is to amplify and clarify the job specifications.)

# MATCOM TRAINING MATERIAL

Have you studied these other MATCOM "Learning Elements" for staff of agricultural co-operatives?

| | ISBN |
|---|---|
| - Basic economics of an agricultural co-operative | 92-2-103699-5 |
| - The budget | 92-2-103698-7 |
| - Supply services | 92-2-105021-1 |
| - Crop collection | 92-2-105161-7 |
| - Planning | 92-2-105215-X |

MATCOM has also designed a comprehensive eight-day course on "Transport Management", as well as several other courses for managers of agricultural co-operatives.

The Trainer's Manuals for the following courses are available from ILO:

| | ISBN |
|---|---|
| - Collecting and receiving agricultural produce | 92-2-103164-0 |
| - Transport management | 92-2-103855-6 |
| - Storage management | 92-2-103165-9 |
| - Marketing of agricultural produce | 92-2-102983-2 |
| - Supply management | 92-2-102365-6 |
| - Rural savings and credit schemes | 92-2-103371-6 |
| - Staff management | 92-2-102939-5 |
| - Work planning | 92-2-103479-8 |
| - Financial management | 92-2-103478-X |
| - Cost accounting and control | 92-2-105080-7 |
| - Risk management | 92-2-103956-0 |
| - Project preparation and appraisal | 92-2-102446-6 |
| - Export marketing | 92-2-103681-2 |
| - Management of larger agricultural co-operatives | 92-2-102631-0 |

Inquiries and orders for MATCOM training material should be sent to:

The ILO-MATCOM Project
c/o COOP Branch
International Labour Office
CH 1211 Geneva 22
Switzerland

In the log book on the previous page, you may have noticed the following discrepancy:

- The journey to Kuru Town took 62 km on May 14th and 82 km on May 15th. There may be a good reason for this, but it should be investigated.

A co-operative vehicle should always carry a record of this sort to be completed before and after every journey.

This and all the other forms and regulations are intended to help you manage your vehicles safely and efficiently.

- *You must make sure that your vehicles conform to the law in every respect.*

- *You must make sure that your drivers conform to the law and to your society's own procedures, and that they understand why they should do this. People usually fail to follow procedures because they do not know why they are necessary.*

9.1 Copy the headings in your vehicle log books. Explain why each item is needed, and when and how you make use of the information provided by the drivers through the log books.

9.2 Make a list of all the documents that are needed for your vehicles, according to regulations. Which documents can be kept in the office, and which should be carried in the vehicle?