1st Edition

Logistics

Disaster Management Training Programme

DHA/94/2
GE.94-00020

Logistics

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Module prepared by
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DHA 

Disaster Management Training Programme **1993**

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ACKNOWLEDGEMENTS

This training module has been funded by the United Nations Development Programme in collaboration with the Department of Humanitarian Affairs of the General Secretariat of the United Nations for the Disaster Management Training Programme (DMTP) in association with the University of Wisconsin Disaster Management Center.

The draft of this text was reviewed by Michael Day Thompson, Terry Jeggle, and Michael McCray.

Editorial services, including design, educational components and formatting, have been provided by Intertect Training Services. Design consultation and desktop publishing have been provided by Artifax.

Cover Photo: Truck carrying relief supplies through a muddy section of "road" in Operation Lifeline Sudan in 1989 photo by UNHCR/G. Karrenbrock.

INTRODUCTION

Purpose and scope

This training module, *Logistics,* is designed in introduce this aspect of disaster management to an audience of UN organization professionals who form disaster management teams as well as to government counterpart agencies, NGOs and donors. This training is designed to increase the audience's awareness of the nature and management of disasters, leading to better performance in disaster preparedness and response.

The content has been written by an expert in the field of disaster management and in general follows the UNDP/UNDRO *Disaster Management Manual* and its principles, procedures, and terminology. However, terminology in the field of disaster management is not standardized and authors from different institutions may use the same terms in slightly different ways. Definitions of terms provided in the text are those of the author. A complete glossary of disaster management terms as used in this series may be found in the UNDP/UNDRO *Disaster Management Manual.*

Overview of this module

This module discusses the importance of logistics in the provision of aid to disaster survivors as well as its place in the carrying out of other disaster management operations. It focuses on the design of logistics systems and the coordination required by the various agencies and actors involved in carrying out a logistics operation.

Part One is an analysis of logistics systems in general. It points out the elements of a "systems exercise" which form the basis of all logistics operations. These systems are greatly affected by the environment they operate in as well as the capabilities and motivations of the actors involved.

Part Two describes the basic structure and organization of a relief logistics operation. It presents the idea of a "supply chain" and develops this idea by identification of the components or links. The typical organizational models for this type of "logistics chain" is also presented.

Part Three deals with the general relationship between various aspects of disaster preparedness as it relates to logistics systems.

Part Four outlines the basic preparedness tasks necessary to carry out a logistics preparedness plan.

Part Five discusses linkages between development in general and logistics programs. It makes the point that large scale logistics operations have widespread social and economic impacts which should be covered from the start.

The case studies presented in the module are derived from the book *The Ethiopian Famine* by Jansson, Harris, and Penrose.

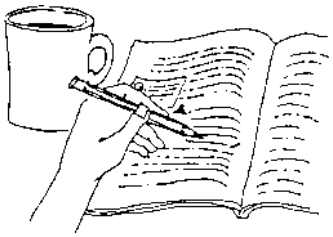
Training Methods

This module is intended for two audiences, the self-study learner and the participant in a training workshop. The following training methods are planned for use in workshops and are simulated in the accompanying "training guide". For the self-study learner the text is as close to a tutor as can be managed in print.

Workshop training methods include:

- group discussions
- simulations/role plays
- supplementary handouts
- videos
- review sessions
- self-assessment exercises

The self study learner is invited to use this text as a workbook. In addition to note taking in the margins, you will be given the opportunity to stop and examine your learning along the way through questions included in the text. Write down your answers to these questions before proceeding to ensure that you have captured key points of the text.



PART 1

RELIEF LOGISTICS

This part of the module introduces the subject of relief logistics. After reading it you should be able to identify:

- *the variables affecting a relief logistics operation*
- *the constraints to effective operations*
- *planning tools and resource agencies*

LEARNING OBJECTIVES

Introduction

Most relief workers and development officials get only a limited view of emergency logistics. Although logistics is often the largest and most complex element of relief operations, it is normally seen only as a series of local, disconnected activities.

In reality, emergency (or relief) logistics is a systems exercise, involving integrated and coordinated performance from widely scattered groups of skilled specialists. Much of this activity, particularly the work of the control and support staff, is hardly visible to the outsider. There are many different types of logistics programs, but they all have common features, and they need a systematic and professional approach. This module gives a broad overview of the range of logistics activities in disaster relief, how they can best be organized, and the plans that can be made beforehand.

LOGISTCS

The basic task of a logistics system is to deliver the appropriate supplies, in good condition, in the quantities required, and at the places and time they are needed.

Relief logistics

The basic task of a logistics system is to deliver the appropriate supplies, in good condition, in the quantities required, and at the places and time they are needed. Although mostly concerned with the movement of goods and equipment, relief logistics also encompass the relocation of disaster-affected people, transfer of casualties, and the movement of relief workers.

A great proportion of the relief logistics operation never receives international attention. ***A whole range of transport and distribution-related activities will usually be improvised at the local level during emergencies.*** Examples include marshaling of local vehicles for casualty transport, or actions by a transport firm or bus company to aid evacuation. Locally organized actions are often the most effective and appropriate. Some of the most effective official planning focuses on ways to support and reinforce local spontaneous responses.

Persian Gulf War. Thousands fleeing Kuwait and Iraq were evacuated, assisted by locally-provided trucks in Jordan.

Refugees, March 1991, UNHCR/L. Astrom

Moving bulk commodities

Bulk commodity logistics for refugees and displaced people have the potential to save more lives than almost any other relief activity.

Some emergencies generate ***a limited need for very rapid, and very specific deliveries from outside the area,*** and sometimes from outside the country. This can include the re-supply of small quantities of critical medical items in some major emergencies; delivery of communications equipment or generators to key facilities; or provision of specific repair items for **"lifeline"** systems such as urban water supply, sanitation, electric power, or public-service broadcasting. This is often accomplished by small teams, in one or two vehicles, delivering specifically requested or pre-designated supplies to a particular location. The choice of items is determined by the risks to particular groups of people, and the precise strategies needed to reduce or eliminate those risks. These small, precise actions are among the most effective. They can be planned in detail at all levels. International organizations can play an important supporting role. This is also an area where neighboring countries can give valuable mutual support.

The conditions in which large amounts of external relief are needed are usually more limited than most observes believe. Consistently, many of the internationally supplied relief goods flown into countries affected by sudden natural disasters prove to be inappropriate and unnecessary. These goods may even be a barrier to more important deliveries. Sometimes, a major management challenge is to find ways to ***limit and prioritize relief inputs.*** Preventing the delivery of unnecessary items can itself contribute substantially to more effective management of relief and recovery. Some sudden emergencies eventually do generate a need for organized transport and materials handling on a large scale, but usually at a late stage. In cyclones and earthquakes much of the demand for logistics services is related to debris clearance, rehabilitation of services, and the movement of material and resources for reconstruction.

Moving bulk commodities

Large quantities of relief food and other basic items will mainly be needed in situations where famine or conflict has already resulted in massive population displacement, or in areas cut-off for long periods by conflict. There may also be a need in areas where (for a variety of reasons) increasing numbers of people cannot afford to purchase food, but where population movement has not yet occurred. However, additional approaches involving market interventions, livestock purchase, or cash distribution are now also routinely considered, especially where a crisis has been anticipated and where operating agencies have extensive local knowledge and contacts.

Refugees from Somalia in Ethiopia. Hartisheik Camp food distribution. This emergency aid was airlifted from Europe and Asia.

UNHCR/B. Press

Bulk commodity transport for large populations is a major planning and management challenge. Operations of this type are extremely expensive and usually take several months to assemble. Highly experienced staff are needed. Nonetheless, bulk commodity logistics for refugees and displaced people have the potential to save more lives than almost any other relief activity.

Moving people

Recently, there have been several internationally-managed logistics operations to ***relocate large numbers of people*** affected by emergencies. Before the Gulf War, there was a huge operation to repatriate foreign workers fleeing from Iraq. In addition, there have been several large refugee repatriation programs involving the organized return of hundreds of thousands of people.

Honduras. Salvadoran refugees in voluntary repatriation to El Salvador.
UNHCR/D. Bregnard

Military involvement

A further dimension has been added to relief logistics with the increasing involvement of ***UN peacekeeping forces and other military units*** in both an escort and a relief transport role. There is an increasing tendency to use military transport aircraft to move bulk relief supplies, especially to supply areas where road access is too difficult or too dangerous. How the very high costs of such operations are allocated is a subject of considerable controversy in the relief community. With the growing number of relief operations to support victims of civil conflict, military involvement in humanitarian logistics is now high on the international agenda. Perhaps the biggest overall lesson has been the need for mutual understanding and trust between partners whose natural inclination has often been to dismiss each other.

Military involvement

Q. *What are some vulnerable "lifeline" systems in your community or country?*

A. _____

_____

_____

Q. *Describe a "bulk commodity" transport operation.*

A. _____

_____

_____

Q. *For the disaster types listed below, what are some of the possible related logistical service needs?*

A. Earthquakes and cyclones: _____

_____

Famine or conflict/population displacement: _____

The operating environment

Relief logistics often need to be organized quickly under severe constraints. These include the pre-existing logistics infrastructure in the affected area, political factors, the damage caused by the disaster, and sometimes the security environment in operating areas.

The overall effectiveness of relief logistics often depends on ***the level of prior investment*** in both the transport and communications infrastructure and how far relief requirements have been considered in the planning of that investment. Effectiveness often also depends on how far the vulnerability of those elements to various hazards has been considered and compensated for.

Capacity

Capacity

In many less-developed countries, the physical and economic infrastructure may be a serious barrier to effective relief logistics. Among the problems encountered are limitations in port and airfield capacity, shortages of secure warehousing space, and difficulties with commodity handling and packaging. The road and rail transport systems are often in poor condition, with bridge weight or height limits and other bottlenecks. Parts of the route may be impassable during rains. On railways, locomotive and wagon shortages, signaling problems, and track deterioration all limit emergency

■ *CASE STUDY*

The Emergency Relief Operation in Ethiopia, 1984–85

Part one – Organization

In November of 1984, the United Nations opened the Emergency Office for Ethiopia (OEOE) to respond to the drought and famine affecting 7.9 million people. A Resident Representative was assigned with the task of coordinating an international emergency relief operation. In the wake of criticism about the slowness of international response to the crisis, he had to work very quickly to mobilize resources. To fill a major gap in the existing arrangements, the UN OEOE took the task of reporting on the changing needs as the crisis evolved based on the assessments of donors, NGOs and the Ethiopian authorities as well as reporting on the distribution of relief.

The OEOE office was quickly staffed by a skeleton crew. The Resident Representative hired a group of field monitors to provide feedback to donors. Secondly, an estimate of need had to be agreed upon by government officials from the Relief and Rehabilitation Commission (RRC) and the international donors. It was decided that a total of 1,330,000 MT of food would be needed for the next 12 month period. Third, the logistics network would have to be improved to handle the vast quantities of food, medical supplies, materials for shelter and other survival items.

It was apparent from initial assessment studies on the logistics capacity in Ethiopia, conducted by WFP in 1984, that the major logistical bottleneck would be shortage of trucks. However, Assab port required improvements before the influx of food aid arrived. Food and other relief supplies were shipped to the two Ethiopian sea ports of Assab and Massawa and also to the port of Djibouti which was linked by rail to Ethiopia. Assab port was improved through addition of equipment such as dumper lorries, bagging machines, port tractors and trailers and more workers. These inputs, provided over a six month period in late 1984 and early 1985, increased the unloading (storage) capacity of the port from 135,000 MT per month to 180–200,000 MT per month. Massawa's port capacity was 15–24,000 MT and Djibouti could unload about 15-20.000 MT for Ethiopia.

deliveries. In many countries there are periodic fuel shortages, and a general shortage of spare parts and other supplies. The commercial transport sector may be under capitalized.

Lack of capacity is especially serious when other competing demands arise. For example, where a country is highly dependent economically on the harvest and export of a cash crop, commercial truck operators may be encouraged to divert resources away from relief. There may also be competition between private voluntary agencies for limited transport capacity.

Politics

Control of large amounts of food usually confers immense political influence. Institutions and groups tend to vie with each other for access to commodity distribution chains. Those in control of ports and warehouse complexes are often is a position to divert goods or to delay shipments for weeks.

Control of large amounts of food usually confers immense political influence.

Disaster conditions also present major constraints. These include damage to physical infrastructure; blockage of routes due to debris, flooding or landslides; destruction of telecommunications; and disruption of imports of critical inputs such as fuel and spare parts.

Conflict

Conflict causes special problems. These include attacks on relief vehicles and relief workers, and closure of routes because of the risk of miner or ambush. Supply centers and distribution points may be attacked. Damage to bridges or other facilities can lead to long delays. In addition, general insecurity may discourage commercial contractors from operating in some areas.

U.N. truck burned by rebels in Eritrea.
Sheila Reed

Q. *What are the infrastructural constraints to effective relief logistics in many developing countries? . . .in your country?*

A.

ANSWERS (from page 11)

1 – Water supply, sanitation, electric power. communications, food

2 – Mainly occurs where there is massive population displacement or major needs for relief requiring movement of large quantities of food and other basic items.

3 – *Earthquakes* and *cyclones:* debris clearance, rehabilitation of services, movement of materials and resources for reconstruction.

Famine or conflict/population displacement: food, medicines, water supply equipment.

Planning for effective implementation of logistics programs

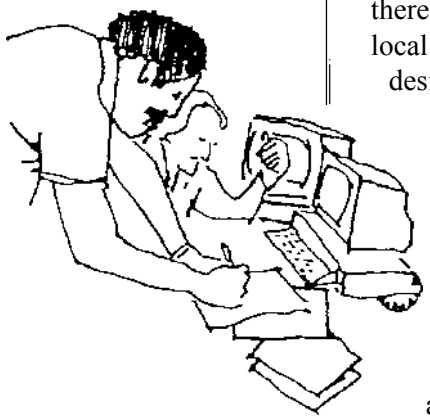
Planning and anticipation are cornerstones of good logistics. This planning must be based on a thorough knowledge of the operating environment including geological, technical, political and physical aspects. Building any new relief logistics operation also requires an appropriate ***implementation and operations plan,*** understood and accepted by everyone involved.

The first part of the plan needs to describe what tasks must be done to ***build*** the system, with what linkages and in what sequence. It should list the resources involved (and who supplies them) and show how progress is to be measured. The plan for ***operations*** will need to set out the goals and responsibilities for relief deliveries, with the schedules proposed to meet the goals and the ways in which the control system will operate. All plans for logistics activities will usually need to be coordinated with plans in other operational relief sectors. All plans must allow for potential breakdowns in the system, with redundancy, extra capacity, and alternative procedures built-in. The need for flexibility is especially great in situations of conflict or collapse of civil administration.

Information and control systems

A key component of implementation is the design and planned introduction of information and control systems. Whatever their type, size or duration, logistics operations require procedures for maintaining accountability and regular monitoring of performance against realistic and continually assessed standards. Commodities (or equipment, or people) have to be moved systematically and securely through a series of stages. Control depends on reliable procedures for recording and reporting the quantity, location and condition of commodities, where and when they will move next, and who is responsible for them at each stage.

Effective commodity accounting requires a comprehensive set of requisition forms, waybills, stock records, and reporting formats. Although there are well-established standard models, these will need to be adapted to local conditions. Documentation and procedures will generally need to designed *before* an emergency arises. A stock of ready-to-go documentation should be a component of every preparedness plan. When an emergency does occur, the control systems, forms, and procedures must be in place as soon as shipments begin. Once an operation is under way, it is almost impossible to reconstitute commodity control reporting after the fact.



The availability of cheap and powerful computers, database software, and portable telecommunications equipment introduces new opportunities for management control. Benefits include faster planning and scheduling of operations, and faster and more accurate tracking and reporting of commodity movements. Just as with manual systems, a thorough initial analysis of the information content and flows is essential and must start during the planning stage.

ANSWER (from page 13)

Pre-existing logistics infrastructure, lack of capacity, political factors, damage by disaster agents, local security environment.

Q. *What are the general content guidelines for a logistics implementation and operations plan?*

A.

Q. *Name some of the tools needed for implementation of the plan.*

A.

International involvement

The degree of international involvement in relief logistics varies greatly. Some operations are mainly the responsibility of government. International organizations may still play a limited role; for example, by attempting to coordinate shipments from international sources. Nonetheless, control of the operations remains wholly in the hands of the national authorities. In other situations, for example, refugee crises, food emergencies and conflicts, there is international involvement from an early stage. Here, one of the UN agencies may manage some of the internal relief logistics, often with the support of specialist consultants or NGO implementing partners. Internationally, the UN system can play an important coordinating role for donor inputs to disaster-affected areas. A listing of the various actors and their competencies can be found in Annex A at the end of this module.

The UN system

The UN system can also help with mitigation and preparedness in the logistics sector. UN agencies may assist with the rehabilitation of transport systems, and in assessing the transportation strategies needed for national economic recovery. The UN system also faces a new challenge in helping to meet the growing global requirements for experienced UN and national government staff and consultant specialists in relief logistics operations.

Q. *Name some agencies in your country which can assist in a logistics operation.*

A. _____

_____

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_____

_____

_____

■ SUMMARY

- Emergency logistics is a "systems exercise" that requires:
  - the delivery of the appropriate supplies in good condition, when and where they are needed
  - a wide range of transport often improvised at the local level
  - limited, rapid, and specific deliveries from outside the area
  - a system of prioritizing various relief inputs
  - storing, staging, and moving bulk commodities
  - moving people
  - possible military involvement (especially in cases of civil conflict)

- The operating environment greatly affects logistics operations. The main factors which shape the response are:
  - capacity of the infrastructure
  - politics of the situation
  - civil conflict in the area of operations
- Effective planning for logistics programs requires both implementation and operations plans as well as information and control systems.
- International involvement in logistics operations varies greatly from situation to situation. However, some or all of the following usually comprise the responders: UNDP, DHA, WFP, UNHCR, UNICEF, WHO, ICRC, IFRC, NGO's, and increasingly, the military.

ANSWERS (from page 15)

1) – Resources, linkages and sequence for building the system.

   – Goals and schedules for relief deliveries.

   – Information and control for accountability.

2) – Information and control systems, forms, waybills, computers and tele-communications equipment are some of the tools required for implementation of a logistics operations plan.

PART 2

STRUCTURE AND ORGANIZATION OF RELIEF LOGISTICS

LEARNING OBJECTIVES

This part of the module explains:

- *the "supply chain" concept of movement of goods*
- *needs for facilities and equipment*
- *organizational and support staff structures*

The flow of transport and goods

Consider first the idea of a "supply chain". The objective of most logistics operations is to establish the operational equivalent of a series of "conveyer belts" for commodity delivery, using the most appropriate type of transport. The essentially cyclical character of the flows, and the division of the operation into discrete segments is seen most clearly in large-scale international food supply operations. However, the basic concepts are the same in all relief programs, whatever the quantities moved, the mode of transport, and the area involved.

Consider the example of internationally supplied relief. The typical flow for relief commodities is through **a port of entry,** into a **primary warehouse** at or near the port or airport, transfer to a **forward warehouse** for holding, transfer to a terminal storage point, and then direct or indirect delivery into the hands of the beneficiaries.

The supply chain is normally divided into **long-haul and forward supply** (sometimes, the equivalent terms "Axial" and "Radial" are used). Long-haul may involve road or rail transport over distances of 1000 km or more, sometimes across one or more national frontiers. Forward supply, from forward buffer warehouses to the beneficiary or user, usually involves smaller vehicles over shorter (and often more difficult) routes (100–300 km). Each operation has different features, and wide variations can be found on the typical patterns, reflecting the need to achieve a balance between speed, security, and storage and transport costs.

In the larger, long-running operations, flow patterns may vary from month to month according to the need to build up buffer stocks at intermediate points, and according to the rate of supply and the urgency of demand. There may need to be local trans-shipment between different modes of transport. Some routes may need specialized vehicles for all or part of a year. Sometimes high value items or equipment may be air-shipped and delivered directly to the points where they are needed. There will often be circumstances where food and other items are purchased (or exchanged) locally and shipped direct to forward warehouses or terminal stores.

Q. *Distinguish between long haul (or axial), and forward (or radial) parts of the supply chain.*

A. _____

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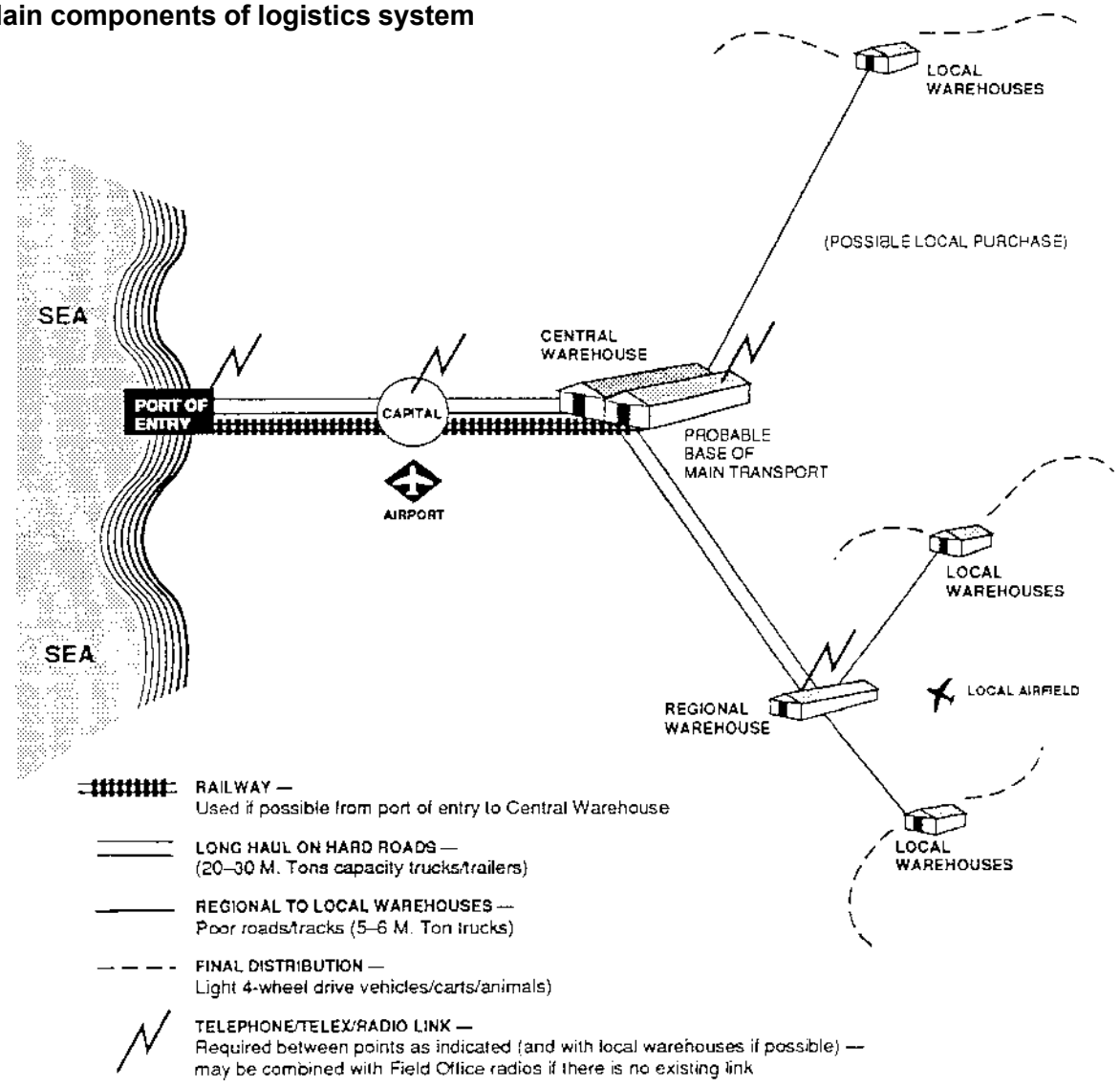
_____

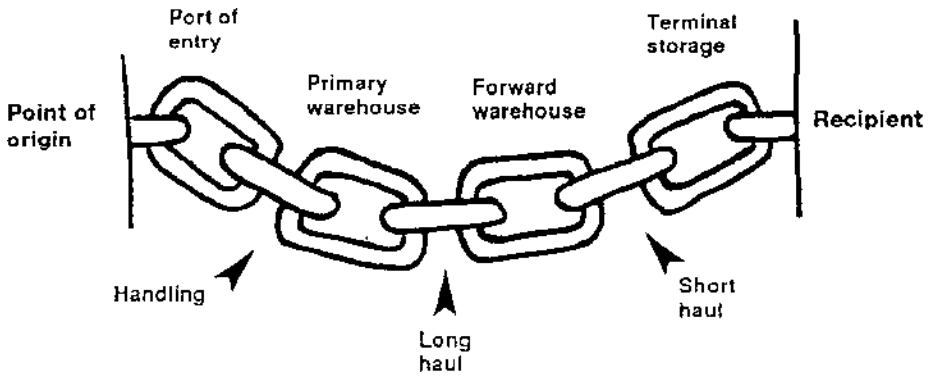
Main components of logistics system



Specialist relief supply operations, including many of the tasks needed in sudden impact disasters, may involve only a few staff and vehicles and may cover much smaller distances.

All these variations should not, however, obscure the concept of the basic "chain" of flows from the point of origin to the distribution point or final user, with the interspersion of storage and holding points, where necessary, to regulate and control the flows.

The logistics chain



Q. *Describe the "supply chain" concept. Why is it a useful conceptual base for relief logistics?*

A. _____

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_____

Facilities and equipment

Many, though not all, logistics programs are heavily capitalized: they depend on expensive fixed facilities, and both static and mobile hardware. Some of the facilities will be concentrated in a base area; others may be distributed widely over the operating region. Depending on the size of the operation, they may include some or all of the following:

- Offices and administrative equipment
- Warehousing for commodity storage: main, regional, local
- Fuel stores, workshops, spares stores
- Vehicle parks and checkpoints
- Personal vehicles for management staff
- Fleets of trucks, and specialist equipment such as cranes, tankers, and cargo-handling machinery
- Communications equipment
- Accommodation for field personnel

The resources may be owned by one relief organization; supplied under contractual or leasing arrangements by private operators; or mobilized by governments using emergency powers. In a limited number of cases a major additional financial investment in facilities (and possibly transport and other equipment) will be required. It is worth emphasizing, nonetheless, that many logistics operations remain relatively small.

Operational and support functions

Many different tasks have to be performed in relative harmony for a logistics operation to work. In most relief programs, these tasks are grouped together into the following functions (for small operations), or organizational units (for larger ones).

1. Director/senior management.
2. Central support functions: financial control, personnel services, overall security management, strategic planning, communications and information management and external relations.
3. Procurement: purchasing the items needed; calling forward supplies.
4. Port clearance: moving goods through customs, often with the help of clearance agents.
5. Operation of warehousing/storage: warehousing near ports and regional stores, with warehouse staff, porters, accounting staff.
6. Transport and transport operations support: fuel and spares management; maintenance and repair; driver management; equipment maintenance.
7. Scheduling and operations planning and management: relating demand to supply, ensuring that consignments of food or other items reach those in need in the right sequence; working out inputs (fuel, spares, etc.) needed to keep the operation on the road.
8. Commodity control: keeping track of what is where, from the Center; following the movement of supplies from one segment to the next; ensuring that consignments are properly documented, and that commodity accounting procedures are followed.
9. Control of terminal distribution to beneficiaries (in fully integrated operations).

ANSWER (from page 18)

Long haul or axial supply may involve road or rail transport over distances of 1000 km or more, sometimes across one or more national frontiers. Forward or radial supply, form forward buffer warehouses to the beneficiary or user, usually involves smaller vehicles over shorter routes, up to 100 km.

ANSWER (from page 19)

The supply chain is the "flow" or transport of commodities from the source to the distribution point, with storage and holding points where needed. The goal is to achieve a balance between speed, security and storage and transport costs. The concepts are the same in all relief programs, whatever the quantities moved, the mode of transport and the area involved.

Organizational structures

In many large operations it usually takes a considerable time to gather these functions into a tightly coordinated system. Initially, a very loose form of organization may be improvised, followed by a gradual progression to more centralized control.

Loose structures

Following most sudden disasters, loose and multi-organizational structures can quickly develop. For example, a commercial trucking company, contracted and scheduled by a local NGO, may move goods procured and cleared through an airport by an international organization. It may use warehouses supplied by a government body, with check point security and

communications provided by the military, and with terminal storage and distribution carried out by a local religious group. A combination of improvised documentation, ambiguous responsibilities, uncertainties about actual needs and priorities, and lack of organized security generates chaos. The most common outcome is disappearance of critical items for days or weeks among other relief goods, inappropriate distribution to unaffected group and widespread theft.

In sudden emergencies, the emergency relief transport requirements tend to diminish after two or three weeks. Individual agencies and local government bodies may expand their existing transport functions for clean-up operations and deliveries to selected groups, but the operations often remain segregated and relatively small.

Relief transport in major food emergencies and refugee operations also tend to start in a very uncoordinated way. Existing government departments and NGOs begin supplying relief using whatever vehicles and support resources are available. Initially, there are often separate small transport operations in progress over a wide area, sometimes competing with each other for spares, and skilled staff, and bidding against each other for commercial transport. As the demands grow more intense, logistics will usually be consolidated under the control of a single agency or at least a central coordinating unit. That implementing agency will normally be given a stronger capital base.

CASE STUDY

The Emergency Relief Operation in Ethiopia, 1984–85 Part Two – The Problem of Trucks

Ethiopia is twice the size of France but has one of the poorest road networks in the world. There are approximately 30,000 km of primary, secondary and feeder roads of which less than half are composed of asphalt or gravel. The mountainous interior has very few roads and most areas are accessible only by foot or donkey. Rugged terrain and poor road conditions imposed heavy wear and tear on vehicles. Four sets of tires with certain specifications were required for each vehicle per year. An average of 50 trucks broke down and were out of service each month.

To further complicate matters, the activities of rebel groups in the northern provinces of Eritrea, Tigray and to a lesser extent in Wollo and Gondar imposed security risks on road transport. Armed escort was required in these areas and traveling in slow moving convoys was standard procedure. Due to the conflict, road transport operations ere frequently interrupted.

Pressure to increase port offtake reached a pinnacle in early 1985. The government trucks managed by the Ministry of Transport, numbering around 4,000, were not sufficient to carry out the relief operation and some were in poor repair or relegated to other non-relief activities. To make up the deficit, the NGOs began to establish their own trucking fleets by importing new trucks or contracting with local private or Kenyan trucking firms. The UN Resident Representative created a UN Transport Fund and donor countries contributed a total of $2.9 million which was used mainly to procure tires and spare parts and subsidize NGO food transport. USAID and Band Air provided a UN/WFP transport unit with 100 trucks.

Eventually the total number of trucks provided by donors topped 1,100 in early 1986. However, management and servicing were very difficult for the fleet which included 47 different makes of vehicle and over 100 models. Problems included mismatched semi-trucks and trailers which would not combine because the couplings were different, and the shipment of tires and trucks unsuitable for conditions in Ethiopia. Reasons for lack of standardization included lack of coordination and failure to control NGO imports and the rapid start up of the emergency program making improvisations difficult to avoid.

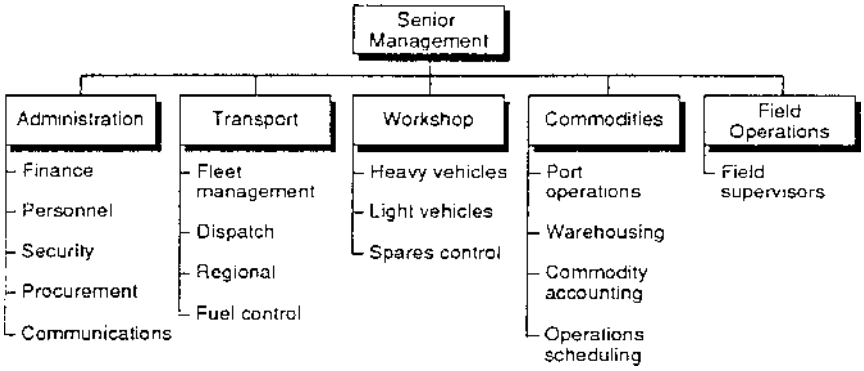
Unitary structures

For major programs, it is now widely recognized that the logistics operation will be more reliable if procurement, clearance, warehousing, commodity control and scheduling are controlled by a single commodity management unit, with a single individual ultimately responsible. The unit must be able to enforce accountability, to impose a single, integrated management control system, to independently select honest, capable staff, and to remove staff who do not perform to expected standards.

Whether to extend beyond this set of core functions to a fully "unitary" organization depends on local conditions. There are examples where relief logistics have worked adequately where other activities are shared or sub-contracted. Transport fleet operation and maintenance, in particular, can often be contracted out, especially, where there is sufficient commercial competition, or where an experienced and responsible NGO is available.

The opportunities for contracting out transport services are sometimes restricted. Private transport operators will usually be unwilling to risk their vehicles in combat areas, or on routes where heavy rains can block movement for long periods. Also, there is a tendency in some countries for private transport firms to form cartels, pushing carriage rates up by factors of two or more.

A Unitary Logistics Organization



Governmental structures

Transport and warehouse services may also be provided by government-owned organizations. Generally, from a coordinating agency's perspective, control is more difficult and problems with accountability are more likely. Government-owned implementing partners may have to be supplied with additional vehicles and equipment, fuel, spares, and other items. Those responsible for relief logistics will tend to have little authority over the care of equipment, the costs incurred, or the performance of staff. Where the government-owned agency is in a monopoly position, logistics managers often face a long and frustrating task in negotiating improvements in operations.

Distribution

Distribution of commodities to individuals and families at the field level is generally regarded as distinct from transport and handling of bulk consignments of commodities. The task of distribution is commonly devolved to a separate agency. The effectiveness of distribution systems depends largely on how recipients are selected and identified in the first place. Often this is a complex and highly political activity, over which external implementing agencies have only limited influence. Some of the most serious problems with diversion of relief aid occurs at this stage. Extensive experience and political independence are essential requirements for agencies assigned the task of beneficiary selection and managing subsequent large-scale distributions.

The effectiveness of distribution systems depends largely on how recipients are selected and identified in the first place.

Q. *What problems might occur in a decentralized logistics organization?*

A.

SUMMARY

- The basic structure and organization of relief logistics is based on the "supply chain" concept. The components or "links" of this chain are as follows:
  - port of entry
  - primary warehouse
  - forward warehouse
  - terminal storage point

- The logistics system must be supported by adequate facilities and equipment to carry out the following functions:
  - management
  - central support
  - procurement
  - port clearance
  - warehousing/storage
  - transport
  - scheduling
  - communications
  - commodity control
  - distribution control

- The organizational structures used in logistics systems may be categorized as:
  - loose structures
  - unitary structures
  - governmental structures

ANSWER (from page 23)

Disappearance of items among other relief goods, inappropriate distribution theft, chaos, competition for spare parts.

PART 3

LOGISTICS PREPAREDNESS

LEARNING OBJECTIVES

This part of the module discusses the role of the United Nations Disaster Management Team (UNDMT) in preparedness for logistics operations. Reading this part should provide you with a basis for:

- *assessing vulnerability of logistics systems*
- *conducting resources assessment*
- *analyzing logistics preparedness plans*
- *analyzing emergency information systems*
- *establishing tracking and tracing procedures*

It is essential to ensure that logistical aspects are covered in national preparedness plans. Logistics will also need to be considered in planning for the role of the UNDMT and its response in support of the national authorities. A detailed understanding of the vulnerability of the logistics infrastructure to natural and other hazards should underlie the operational planning process. Wherever possible, development initiatives in the transport and related sectors should be designed to protect and enhance emergency logistics capabilities, and should not in any event contribute to increased vulnerability of transport infrastructure.

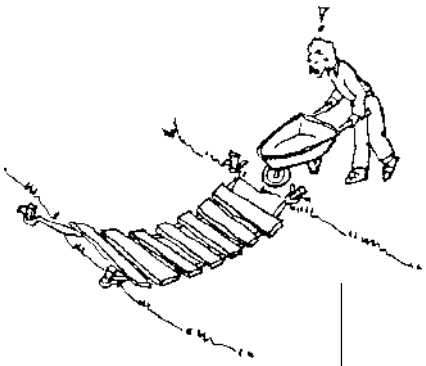
Planning for emergency logistics

The main need will be to establish the UN system's precise role in support of the national response.

The relative roles for the national authorities and the UNDMT in preparedness will vary according to the disaster profile of the country concerned and the state of national preparedness. Where national plans and systems are well developed almost all of the analysis will be carried out by the national authorities. UN input will usually be limited to specific technical and liaison activities. The main need will be to establish the UN system's precise role in support of the national response. Where national planning is either weak or non-existent, the UNDMT may need to take the initiative in reviewing all aspects of logistics preparedness and helping to formulate contingency plans.

Analyze infrastructure vulnerability

Vulnerability assessment needs a structured and systematic approach, bringing together staff of national government ministries, specialist technical staff, and the organizations which are likely to provide emergency logistics services. The National DMT can play a major role in this. UN specialists may be able to give some technical assistance. The approach will vary according to local conditions, but is likely to include the following:



- Map and systematically review key elements of the national transport infrastructure (port, road and rail, and air), such as capacities and constraints on strategic routes, key bottlenecks such as bridges and ferries, availability of communications, and risks of blockage due to hazard impact. A major concern will be port and airport vulnerability to natural hazards. This can include, for example, cyclone damage to hangers, warehouses, refueling and cargo handling equipment, and the impact of earthquakes on key systems.
- Review the potential secondary effects of disaster, such as road blockages by population movement from affected areas.
- Analyze annual weather records to see how climate can constrain transport system capacity at different times of the year.
- Regularly monitor major modifications and new construction which may introduce temporary limits and diversions; for example, bridge weight, height or width restrictions due to repairs.

Review the strategic resources available for logistics support

This must be a continuous process; in many countries, new investments and development initiatives will quickly change the pattern of resources available. Overall, the following activities need to be considered:

- **Build an inventory** of in-country sources of the types of supplies which might be needed at short notice in an emergency, including medical equipment, food, shelter items, fuel and rescue equipment. The analysis should consider lead times for the supply of critical items.
- **Review the means of transport** to move supplies and people. There should be a detailed review of the capacity of commercial contractors such as fleet size, capacity, location of facilities and rates. Special attention should be given to existing relief operations. In countries where an ongoing refugee or food relief operation exists, a large specialist relief transport organization may have developed over several months or years. These organizations can be of considerable value in any natural disaster by providing an established, reliable system for receipt, clearance, transport and storage of high-value shipments, which may be quickly expanded. However, the ongoing demands of the existing relief operation will still need to be met.

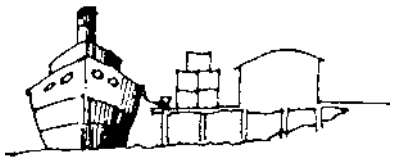
  Additional resources which might be used to augment existing departmental transport resources include pools of heavy transport vehicles from government sources. In addition, most local authorities may have small fleets of public works department vehicles. Inventories should include the number, type and availability of trucks under the control of government ministries.

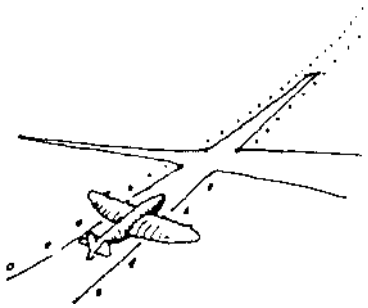
  In some countries, railways move large quantities of goods. A logistics review should include daily movement capacity and loading limits on lines; seasonal availability of wagons and locomotives; and estimates of reliability.
- **Examine sites** for operational logistics bases, buffer storage, and fuel supply. These can include existing transport facilities, both commercial and government-managed; large warehouse complexes; and factories or other facilities which can be adapted.

- **Review the availability of spare-parts** stocks and repair facilities. There may be large public or private workshops which can provide services to the operation as a whole. There will, however, need to be clear policies for allocation and scheduling.
- **Review port and airport capacity** to handle relief commodities under different scenarios.

  Ports – Examine port facilities for bulk handling, on-quay storage, and bagging. Review port statistics and identify the times of the year when ports are normally at full capacity. Take account of needs for container storage and handling. Review labor relations issues at ports and airports. Seek advice on import arrangements from clearing and forwarding agents and cargo inspection companies.

  Air – Where air transport operations are planned, seek expert advice (from ministries, senior airport staff, and local ICAO staff) about the types of aircraft that can operate, airport capacity and aircraft landing requirements such as lighting and navigational aids. Take account of the need for cargo handling equipment, including lifts, and lighting; man-power needs for unloading; and arrangements for safe aircraft refueling and engine restarting. Where assessment operations are planned, examine the options for emergency helicopter operations (including police and military aircraft) and the availability of air charters.
- Explore other transport options. Coastal and river craft can often provide an additional route for relief supplies in an emergency and can also be used for evacuation and rescue. Review the availability of government and commercial shipping, including barges, tugs, and landing craft.





Review government emergency logistics plans and preparedness

Analysis of existing plans will need to take account of different needs in different types of emergencies. Professional technical support may be needed. Annex B at the end of this module contains a checklist of general questions that can help start the process in those situations where external agencies have a part to play.

Checklist for emergency logistics planning

- ✓ Analyze infrastructure vulnerability (port, road and rail and air).
- ✓ Review the strategic resources available for logistics support.
- ✓ Review existing government and UN plans.
- ✓ Ensure that major gaps in both government and UN preparedness are identified, and that all parties have agreed how to fill them.
- ✓ Where appropriate, upgrade emergency logistics plans.
- ✓ Define how UN resources will be used.
- ✓ Establish a coordinating structure for logistics support.
- ✓ Improve UN and NGO emergency logistics plans and preparedness, including practical steps to give operational support for UN logistics teams.
- ✓ Establish information systems for logistics support.

Strengthening local infrastructure and institutions to support emergency logistics.

The largest gains in disaster protection generally come from carefully designed, long-term development initiatives to build disaster mitigation into structures and institutions. However, considerable improvements are also possible from short-term actions focused on key areas of risk and vulnerability. Some of these actions are listed below.

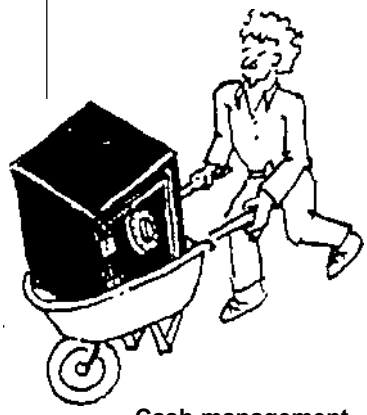
- **Physical protection of key resources against natural hazards.** A range of simple measures can reduce the vulnerability to hazards of critical logistics systems such as strategic fuel storage and pipelines, communications, vehicle workshops and spares storage, parked vehicles and warehousing. A technical assessment will identify many specific options. But even simple, common-sense measures can work extremely well. For example, prior to cyclones, basic preparations to tie down loose equipment, relocate electrical equipment, strengthen or replace aerials, and board-up windows can reduce damage to logistics offices, workshops, and warehouses considerably. Preventing the collapse of spare parts racks can save months of costly resorting.

Aircraft damaged by Hurricane Gilbert.

World Development, September 1989. UNDP/Cherie Hart

- **Protecting existing supply systems.** Local emergency responses will usually depend on existing local supply systems. For example, hospital and clinic operations in the first days after an earthquake usually depend on the regular Ministry of Health pharmaceutical replenishment process, rather than on any international input of supplies. Urban water systems may need resupply of fuel, chlorine-based compounds, and other consumables. One of the most important planning measures is to ensure that these regular resupply arrangements can still operate. Their warehouses, vehicle and fuel storage, workshops, and office accommodation, and communications should all be reviewed for vulnerability and staff encouraged to plan for continued operation. Any specific strengthening or other protection identified by engineering staff will usually be an effective use of resources. Barriers to operation should be systematically examined at every stage. Consider simple inputs first; to give one example, basic emergency lighting for night operation will often speed up the response significantly.
- **Ensuring that enough vehicles and logistics staff will be available.** In some countries, up to 40% of administrative vehicles owned by government departments may be inoperative because of breakdowns, or shortage of fuel or spares. In the emergency phase there may not be much time for repairs. Extra vehicles may need to be made available to cover breakdowns or accidents. It may also be possible to provide back-up support for "lifeline" recovery and operation by establishing small, reliable and capable emergency transport units, which can be assigned specific emergency roles.

- **Ensuring capacity at ports and airports** for managing the sudden influx of relief goods. There have been a number of recent initiatives to improve international support for countries faced with a massive influx of external aid. (The PAHO SUMA project reproduced in Annex C is a good example). It can be extremely useful if port and airport staff can be familiarized with the procedures likely to be used before any emergency. Planning needs to focus on establishing "protected routes" for small quantities of critical, urgently needed items through ports and airports clogged with unwanted relief items. There should be arrangements to simplify the documentation needed for clearance and onward carriage.
- **Financial preparedness, banking and cash management.** Most relief logistics operations generate a need to transfer large quantities of cash. The protection of communications links for banks, and prior arrangements for secure transport of cash will generally help to get an operation established quickly.



Cash management

External logistics resources

A possible starting point for defining how external resources will be used is to conduct an inventory of supporting logistics resources. These might include specialist personnel, mobile communications, vehicles of various types, workshop facilities and equipment stockpiles. Almost all these resources will be allocated to existing projects, and decisions will have to be made by the concerned government bodies, the UN and other agencies regarding their reallocation for emergency operations.

It is vital to prioritize vehicle allocation; critical tasks should get first priority. In particular, sufficient vehicles with mobile communications should be reserved for prompt survey and investigation and for relocating UN personnel in emergencies.

Skilled UN project personnel can be a major resource. Some UN agencies such as WFP and UNICEF will often have professional program staff who have managed major logistics programs. Their advice should be sought. Where there is an existing relief logistics operation – for example, for refugees – its staff will usually be able to provide useful information for response planning.

UNDP may be coordinating development projects involving specialist UN agencies and technical consultants; for example, for transport infrastructure improvements or port or airport construction. These staff may also be in a position to assist with both planning and some types of emergency response, particularly damage assessment.

Coordinating structures

Emergency logistics coordination should take place within the framework of the national emergency committee structure. Where possible, there should be a single logistics coordinator heading a working group. This group should draw on technical and advisory resources from national organizations and, where necessary, from the international community.

Contacts and relationships established before an emergency may prove to be very useful later on. Locally, specialist government staff and representatives of large commercial organizations may have considerable knowledge to contribute. NGO and Red Cross staff may have extensive experience of other operations, even where those agencies are not currently involved in any local relief activity. Where large-scale transfers of people are anticipated, staff from IOM and UNHCR may be able to highlight useful lessons.

■ CASE STUDY

The Emergency Relief Operation in Ethiopia, 1984–85 Part Three – Air Transport

To circumvent the areas in Ethiopia where armed conflict was occurring, it was necessary to airlift food supplies particularly to distribution centers in severely affected Tigray and Northern Wollo. The airlift operation was initiated in November of 1984 with 27 transport planed and 24 heavy helicopters provided by seven donors. In early 1985, the operation expanded with more helicopters and NGO operated planes, bringing the total of planes to 76. Most of the aircraft, coordinated by the RRC, remained in Ethiopia throughout 1985 and distributed 15% of the food for that year.

A major dilemma existed regarding how to serve the areas on the high plateaus where there were no airstrips. After some experimentation, a consultant to the UN devised a plan using Royal Air Force (RAF) and Luftwaffe aircraft with two Polish helicopters. The helicopters flew to the sites and selected and prepared a drop zone. The planes then dropped the grain which was specially prepared by rebagging into double or triple sacks each containing 25 kg and placed on wooden pallets which were dropped from a height of about six to ten meters above the ground. Occasionally the helicopters were used to carry grain into even more remote areas inaccessible by other means. The effort was joined by air crews from USSR, GDR, USA, Italy and Libya.

Although the airlift and airdrop operations posed highly complex management and maintenance problems, they were vital humanitarian efforts to save lives in the emergency. Criticized by some as too expensive, in fact the costs were shared by donor military and civilian budgets and provided training for military personnel. The food and supplies dropped were enough to keep about 200,000 persons alive and to provide medical aid to over 12,000. Further, it was an example of international cooperation, involving pilots and air crews from seven different countries.

Information systems

The host government's national *Emergency Operations Center (EOC)* should be responsible for the collection, analysis, and distribution of information for logistics support. Part of the UNDMT's role may be to encourage the host authorities to build-in these capabilities.

The UNDMT may also need to construct its own supplementary information system, particularly to record damage assessments and keep track of government requests, international pledges, and changing demand patterns.

Emergency information systems

Information systems in emergencies are covered in detail in a separate DMTP training module *Information Management and Communications.* Briefly, in sudden emergencies relating to logistics, the government's EOC should keep track of specific needs for risk reduction measures and critical inputs, such as damaged lifelines needing repair, etc., and hospitals needing resupply. It should also track demands for mass care (such as shelter materials), with estimates and forecasts of the numbers of people requiring specific types of assistance. The EOC should link logistics planning to assessment, taking account of network damage, weather, fuel, and security. It should also take account of changes in vehicle and driver availability as a result of the disaster. It should track the current tasking of transport resources by the priority of specific supplies. Scheduling of material movement will usually take place against a background of disorganized and often chaotic spontaneous redistribution of all kinds of relief goods.

International requests

The government normally will be encouraged to channel requests for international assistance through the Resident Co-ordinator and the UNDMT. For materials and other support not available locally, the Resident Co-ordinator will pass the request to DHA-Geneva, who in turn will seek to mobilize and coordinate inputs from international donors. DHA-Geneva will relay the status of these requests to government via the Resident Co-ordinator.

A role for the Resident Co-ordinator and UNDMT will be to assist the host government to prioritize specific requests to international donors. For most sudden emergencies, the focus will usually be on specific and carefully analyzed inputs, such as the items needed to restore the 'lifeline' infra-structure around which survivors will re-order their own affairs. However, disaster conditions differ, and decisions will need to based on detailed field assessment.

Requests will often take place against a background of rapidly growing arrivals of spontaneous assistance of all kinds, some of it unnecessary. Nonetheless, for diplomatic reasons, some of this material will need to be tracked, acknowledged, and taken into account in future requests. At the same time, the arrival of critical items will need to be carefully followed, and the goods sent on quickly to where they are needed.

For most sudden emergencies, the focus will usually be on specific and carefully analyzed inputs, such as the items needed to restore the "lifeline" infrastructure around which survivors will re-order their own affairs.

DHA Supply Depot at Pisa has developed the ability to mount targetted operations for specific disaster situation.
UNDRO News, Jan/Feb, 1988.

Tracking

Tracking requires three datasets, covering requests, pledges, and arrivals. Where possible, these should be shared between the national EOC and the UNDMT. Some of the arrivals will normally also be recorded by any supply management system established to track specialist items such as medical supplies. The list on the following page presents a guideline for establishing tracking systems for requests and pledges of relief commodities.

Requirements for logistics information management in food and refugee emergencies will normally be the responsibility of the relevant host government food aid department, WFP, UNHCR, and any implementing organizations. In some crisis areas, single large food shipments can determine the survival of thousands of people. Even slight delays and gaps can sometimes have huge significance. ***All members of the UNDMT should keep themselves informed about emergency food shipment schedules and be aware of the possible implications of delays.*** A key point to bear in mind is the risk of confusing the arrival of different "baskets" of food. Some parts of a shipment may already be earmarked for regular food aid projects and not for emergency use. Annex D at the end of this module provides a standard classification for disaster relief supplies.

CASE STUDY

The Emergency Relief Operation in Ethiopia, 1984–85
Part Four – Assab Port

Despite significant improvements taken by WFP to speed up truck offtake, the port in Assab, Ethiopia experienced major congestion throughout the relief operation. Ships often had to wait for up to nine days before docking due primarily to the shortage of trucks to remove shipments from the port area. Compounding this problem was the untimely arrivals of donor ships which often converged on the port and the arrivals of commercial goods such as fertilizer and grain which competed for unloading with relief shipments. Port offtake was only around 2,500 MT per day or around 75,000 MT per month, leaving the remainder in often substandard storage areas. Losses occurred due to spoilage despite efforts to protect exposed bags of grain from sun and rain with tarpaulins.

Removing goods from Assab was an extremely cumbersome procedure. About 42 forms were required to be signed before trucks could leave the port area! Some of this was undoubtedly double handling which provided badly needed revenue for the government but resulted in long turn around times for trucks at the port. The average waiting time was 18 hours. Further, the port charges in Assab were among the highest in Africa and the subject of constant complaints from the donors and NGOs.

Some major improvements were made throughout 1985 by the logistics network in dealing with Assab port. WFP issued regular bulletins listing ship arrivals and projecting be unloading and storage situations. Daily telexes were received by the UN OEOE regarding the daily problems at the port, which were often handled immediately by the Resident Representative in conjunction with the Ministry of Transportation. Donors focused on the problems in weekly "shipping meetings" held in the capital city, Addis Ababa. Port authorities agreed to add a third work shift to speed offtake, and finally after long negotiations, the port fees were reduced.

Requests and pledges

A tracking system for determining at any given time what commodities have been requested and those that have been supplied or promised may be based on the following information.

Requests	Pledges
1) Item description	1) Donor
2) Category	2) Item description
3) Priority	3) Quantity, packaging
4) Unit of issue	4) Delivery mode
5) Quantity requested	5) Destination
6) Type of packing	6) Carrier
7) Date required	7) Current status of delivery
8) Place required	8) Due date
9) Request made to	9) Arrival date
10) Consignee	
11) Current balance	

Q. *What are some key aspects of assessment for infrastructure vulnerability?*

A. _____

Q. *What are some strategic resources for logistics support?*

A. _____

SUMMARY

This part of the module has dealt with various aspects of disaster preparedness as it relates to logistics systems.

- There are roles for both the UNDMT and the national authorities in establishing logistics preparedness.
- Logistics planning requires a thorough analysis of infrastructure vulnerability.
- A review of available strategic resources will include:
  - building an inventory
  - reviewing the means of transport
  - examining sites
  - determining the availability of spare parts
  - reviewing port and airport capacity
  - exploring other transport options
- Existing government emergency logistics plans and preparedness should also be reviewed.
- Where required, local infrastructure and institutions should be actively strengthened as a preparedness measure by:
  - physical protection of key structures
  - protection of supply systems
  - ensuring availability of vehicles and staff
  - ensuring capacity at ports and airports
  - establishing financial preparedness
- Coordinating structures and information systems should be in place in advance of any disaster. These will help in the coordination of:
  - emergency information systems
  - international requests
  - tracking of relief supplies and pledges

ANSWERS (from page 33)

1) Mapping and review of key elements of the national transport infrastructure, review of secondary effects of a disaster, analysis of weather record, monitoring of modifications and new construction.

2) In-country sources of supplies, various means of transport, logistics base sites and buffer storage, spare parts and repair sites, ports and air transport facilities, other transport options.

PART 4

SPECIFIC PREPAREDNESS TASKS

LEARNING OBJECTIVES

After reading this part of the module you will have a better understanding of the specific tasks required for implementing logistics preparedness plans. You will be able to identify preparedness needs in your office or agency for:

- *developing the interrelationship of national plans and resources and support for UN logistics teams*
- *controlling damage and needs assessments*
- *conduting damage and needs assessments*
- *managing relief goods at the point of entry*

Administrative and equipment support

The degree of involvement of the UNDMT will depend on the level of national preparedness. In some cases, the members of the UNDMT may need to invest considerable time and effort in contingency planning for a UN coordinated international support for a relatively weak national response system. In others, where national plans and resources are extensive, the main focus will be on ensuring the continued operation or rapid recovery of the UN's own activities, while still providing a local framework for international aid coordination in exceptionally large or unusual emergencies. Annex E at the end of this text provides some general lessons for large-scale logistics operations. The following points should be considered, according to local conditions.

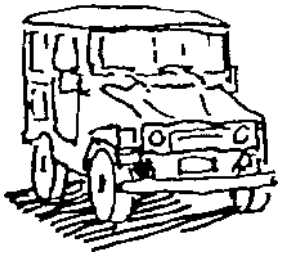
Responsibility

For a major operation, or one handling high-value items, the UN Resident Coordinator should be prepared to designate an internal or shared transport/logistics support group, with staff responsible for:

- Port and airport clearance
- Commodity tracking and scheduling
- Local procurement of goods and equipment
- Vehicle allocation, management and maintenance
- Driver support and payment
- Storage

Mobility

It is vital that key staff are mobile in the immediate aftermath of a disaster, particularly those involved in assessment and the establishment of emergency UN offices in affected areas. UNDMT and UNDP offices will



need to prepare a basic logistics support "package" for emergencies, with pre-designated vehicles, fuel stocks, emergency spares, experienced drivers, sets of maps, and emergency maintenance arrangement. It is important for operational units to be relatively self-contained for an emergency period. All vehicles in the emergency pool should have mobile communications, and should be equipped to carry survival equipment and spares, including tents, sleeping bags, and food supplies, extra fuel, and extra UN identification such as decals and flags.

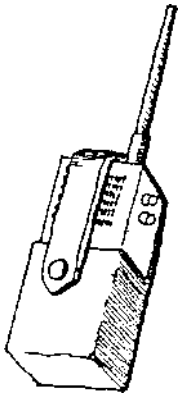
Standing arrangements may need to be made for emergency air charter to move UN teams rapidly to where they may be needed.

Pre-packaging

The extent to which basic supports systems are pre-packaged is usually a sign of an implementing agency's experience and professionalism. They include:

- Standard filing systems
- Pre-established accounting system
- Standardized commodity control systems
- Prepackaged field offices
- Pre-assembled workshops
- Domestic requirements for staff housing

Pre-established systems can save much time and effort. However, even the best arrangements sometimes prove to be insufficient. Temporary back-up support from local UN or NGO sources can often cut delay; examples include practical items such as photocopiers, computer printers, video equipment for assessment and briefing and maps. It can be worth identifying loan stocks of these types of items as part of the UNDMT preparedness arrangements.



Increasingly, the concept of prepackaging modules for sectoral needs is being accepted and institutionalized. These include logistics, water, and health teams complete with personnel, equipment, and support from the donors. For example, trucking units were supplied, complete and ready to operate by ODA for use in former Yugoslavia.

Telecommunications

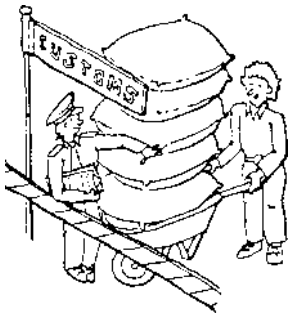
A reliable telecommunications network is essential. Radio communications is the foundation of an effective transport/logistics operation on any scale and is vital also for effective use of personal transport by specialist staff. Radio can be used to quickly divert staff for special investigations; to give information on road conditions; and to warn of special risks or problems. It enables investigation staff to call forward extra supplies quickly, and to request assistance for damaged or disabled vehicles. Radio can also be essential for effective commodity control. Warning of the dispatch of shipments by radio ensures that diversion of loads can be detected quickly.

It is important to ensure that all communications equipment (existing, and expected) is properly approved and licensed before the emergency. This includes equipment supplied to implementing partners. In longer running operations, repair facilities for radios will need to be identified.

Procurement procedures

Procurement departments usually take on a crucial role in emergencies. Procedures for emergency procurement are now well established in most operational UN agencies, and their HQ's will normally reinforce field offices where necessary. Provision of additional direct telephone, fax, and telex lines will generally make the work of local procurement staff much more effective; this should be done before an emergency. Lack of authority for unplanned expenditures is a severely constraining problem for many operations. Large amounts of cash are sometimes needed to purchase fuel, spares, and other items on the local market. Arrangements for the physical handling of cash should also be reviewed, including repairing safes. Staff in all offices should be familiar with their organization's ordering system. They should also be aware of the services provided by the UNICEF-UNIPAC system, which can give a vital back-up in emergencies.

Local procurement opportunities should be examined in detail. Local procurement in the immediate aftermath of a disaster is an important source of essential supplies, and often the only option in the short-term. The advantages of response time, stimulating local enterprise, and using familiar commodities and distribution methods must be evaluated against control, quality, and cost considerations.



Customs

Large quantities of international supplies may be consigned directly to United Nations organizations, often without prior warning. Existing arrangements for clearance and storage of goods will need to be reinforced. Staff normally assigned to clear items through customs should be reinforced and given mobile communications. These staff members should be pre-assigned. Normal customs procedures and any emergency arrangements for bypassing them should be thoroughly documented for the benefit of new staff. Additional warehouse space may be needed, together with porters and materials handling equipment. These resources should be identified, and standing contracts established. Be prepared to transport items in lockable containers which can be left on or near the site of operations. A database for tracking incoming goods may be needed.

Packaging

Packaging of supplies should be given close attention. Factors such as handling equipment determine the size of the unit package. Storage and transport conditions determine the necessary strength of the package unit; for example, items such as cooking oil in plastic bottles (usually packaged together in cardboard boxes) do not stack or survive rough road transport. Other relevant factors include shelf-life, climate, pilferage, spoilage and vermin resistance.

Emergency logistics operations during the Gulf War.

Refugees, June 1991. UNHCR/ A. Hollman

The level of control should match the value and importance of the gooods.

Security

Security arrangements will need review. Access to some routes and airfields may be controlled. Staff may need clearance and permits, especially in emergencies. Arrangements should be made to obtain the relevant documents before, rather than after, the onset of a disaster.

Controlling and monitoring

In the aftermath of sudden disasters, the flow of relief goods will usually last for a relatively short time. Commodity tracking and accounting procedures need to be as simple as possible, and common sense is needed in deciding when to apply them. The level of control should match the value and importance of the goods. Plans should designate named staff to receive incoming goods, and a record of signatures should be kept. Procedures for handing over high-value items should be documented; and signatures and display of identification should be required for their receipt. A basic system of cyclical documentation (using multi-part waybills) should be established at the planning stage, and printed and numbered forms stockpiled securely at an accessible location. Logistics staff of existing UN specialist agencies will generally be able to assist with the design of locally appropriate commodity control procedures.

In longer-term, bulk relief programs, experienced international agencies will usually have standard commodity accounting systems. Where local agencies (such as a national Red Cross society) are likely to be involved, for example as partners in terminal distribution, one option is to get a reputable local management accounting company to draw up a set of manuals and forms in the local language.

Basic requirements for controlling the movement of relief goods

1. Field staff stationed at the local level, to supervise and monitor receipt and distribution.
2. Procedures for giving prior warning to field staff of the dates and times of shipments.
3. A checkpoint system at the field end, with radio or other communications, to monitor and report arrivals.
4. Secure local storage for goods: local facilities or lockable containers.
5. Designated, accountable individuals, responsible overall for the security of stored items.
6. Separate staff responsible for recording the receipt and dispatch of goods from each store.
7. A basic inventory accounting system, using printed and numbered waybills and ledgers.
8. Arrangements for verifying the eligibility of recipients.
9. Arrangements for supervising distribution to final recipients.

Specific early responses in sudden emergencies

Land, air, and water transport operations are needed immediately before and after sudden disasters for a range of different tasks. Depending on the emergency, these tasks include:

1. Preparations on receipt of warning (such as relocation of critical equipment and resupply of hospitals)
2. Evacuation
3. Assessment
4. Road clearance (debris, vehicles and landslides)
5. Movement of casualties
6. Moving rescue and repair teams and their equipment
7. Resupply and rescue of isolated populations

A wide range of equipment may be needed, including aircraft, boats, trucks and buses, al-terrain personnel vehicles and boats.

A wide range of equipment may be needed, including aircraft, boats, trucks and buses, all-terrain personnel vehicles and boats. National governments will normally contribute a high proportion of the equipment and personnel needed. However, by carefully focusing on critical tasks, the UN system can also make an important impact in some countries. This section concentrates particularly on ways in which national authorities and the UN system can collaborate during the early logistics response.

Government workers in Chiangzhou city, Jingsu province, distributing food supplies to flood victims.

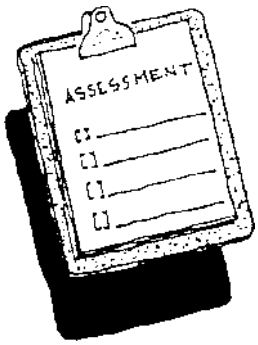
UNDRO News, Jul/Aug 1991,. China News Agency.

Supporting damage and needs assessment

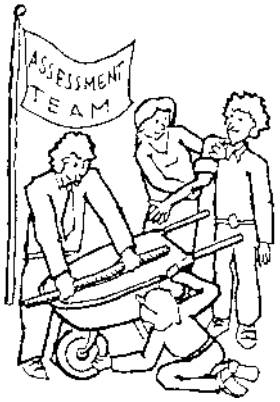
There are two aspects of damage and needs assessments: logistics for assessment, and assessment for logistics. In the first case, most of the resources will be provided by the national authorities, although there will occasionally be opportunities for input from a UN specialist. In the second case, UN organizations may be able to contribute to a joint overall assessment of damage and needs. This topic is covered in the DMTP module on *Disaster Assessment.*

Lifeline support

Critical "lifeline" systems may need specific resupply before they can function effectively. For example, a hospital may run out of anesthetics, orthopedic splints, or X ray film in the first hours after an earthquake. A radio station may need a specific item before it can resume broadcasting public information messages. A water supply system may need communications and additional tools for its repair teams. Although in most disasters the national authorities will provide almost all the inputs, UN organizations (and NGOs) with local logistics and communications resources can sometimes play a vital part in ensuring that the needs of especially critical facilities are identified, and equipment and materials moved to them.



Logistics for assessment



Assessment for logistics

It is also critical that government has full confidence in the intrinsic competence of the agency and its strategy.

Logistics for assessment

When planning logistics for assessment, it is vital to select the right vehicles for specific assessment tasks. For example, in damaged urban areas, a major problem may be debris, resulting in tire and suspension damage. Personnel vehicles with heavy tires and strong suspension should be moved into the area. In tropical storms, there may be extensive flooding of roads. It is useful to have high-wheel base, light trucks; diesel engines are usually more appropriate, but only if diesel fuel is widely available. In earthquakes and some floods and storms, roads may become severely damaged or blocked by landslides. Transit may require four-wheel drive personnel vehicles and trucks. For UN organizations, it is important that vehicles of this type (with drivers experienced in operating them) are identified and pre-assigned.

Assessment for logistics

The second aspect is assessment for logistics. UN and other assessment teams should support the authorities by collecting specific information relevant to relief logistics soon after the disaster. Efforts should be made immediately to map road conditions and operating constraints. Information should be shared with the local emergency operations center, and directly with other organizations. The following initial information will be needed:

1. Breaks in road networks and limitations on road capacity (including bridge loading limits and any height and width restrictions en route).
2. The potential effects of any adverse weather conditions.
3. Availability of fuel en route.
4. Security conditions.
5. Current and forecasted estimates of round trip times.

Government relations

It is vital that the implementing agency has a close relationship with the government. It is also critical that government has full confidence in the intrinsic competence of the agency and its strategy. Much of this depends on the leadership and staffing of the operation, but it is important to formally establish the "ground-rules" of the operation. Some of the most effective operations have involved a formal tripartite agreement between UN, government and implementing agency.

Key aspects of an operation will have to be discussed and formally agreed by the government authorities at the start. The following issues have consistently proved to be central to overall harmony and success:

- Agreement over the form and content of the master commodity management plan.
- Agreement on the agency's authority to control commodity movement and distribution. An agency will aim to get authority to select its own local staff and to suspend and dismiss them when necessary. It will usually want to have access to stores and distribution centers without prior warning, to check stocks and documentation.
- Agreement on setting up communications networks, involving radio, radio-telex and, if necessary, satellite links.

- Arrangements for travel in restricted areas.
- A public commitment to the security of agency staff, and action to be taken in the event of specific incidents.
- Use of agency resources in support of the authorities in the event of specific emergencies.
- Duty-free/taxation exempt status for all equipment and consumables.
- Favorable foreign exchange rates.
- Early agreement on the strategy for phase over of the operation to national authorities.

It will often help if these issues can be discussed and explored before any emergency with senior government staff as part of on-going national DMT preparedness planning. Negotiation of complex tripartite and other agreements will also often require input from the Resident Representative.

Transfer and termination procedures

External agencies usually emphasize the need to use local management skills as much as possible. They will generally also develop strategies for phasing-over control of the operation before they finally withdraw. Planning tends to be delayed by operational demands. However, phase over needs to be considered as soon as possible, particularly in the selection of local senior management staff and in the design of the organization's training strategies.

Q. *How would you compare logistics for assessment with assessment for logistics?*

A.

SUMMARY

Part four covered the basic preparedness tasks necessary to carry out a logistics preparedness plan.

- Administrative and equipment support should be provided for by the UN Resident Coordinator through establishment of an internal or shared logistics support group.
- Pre-package the basic support systems to the extent possible, including:
  - telecommunications systems
  - procurement procedures
  - customs arrangements
  - commodities packaging standards
  - security arrangements
- Controlling and monitoring systems should be designed in advance.
- Materials, personnel, and plans for immediate response to sudden emergencies should be pre-arranged and should include:
  - assessment needs
  - "lifeline" support
- Relations with government must be close. All aspects of preparedness plans should be thoroughly discussed.
- Transfer and termination of logistics operations must be planned for from the beginning.

PART 5

DEVELOPMENT POLICY AND RELIEF LOGISTICS

LEARNING OBJECTIVES

This part of the module is designed to provide you with an overview of the relationship between development planning and planning for logistics. After reading this part you should be able to compare:

- *ways that development inputs contribute to logistics preparedness*
- *specific measures that strengthen logistics capacity through development programs*

Development policy has a major impact on the effectiveness of relief logistics. At the same time, disasters and their accompanying relief operations have important implications for development planning. This section considers broadly how these interactions can be assessed.

Some disasters are an opportunity for new development initiatives in the transport/logistics sector, including upgrading of infrastructure and more comprehensive mitigation measures.

Relief and recovery capacity

Development programs in the transport sector can aid (and occasionally impede) both immediate relief and longer-term economic recovery after disaster. Where an increase in capacity is combined with measures to protect the investment against disaster agents, it may be possible to move relief much earlier and on a much larger scale than otherwise would have been possible. Occasionally, new development measures can actually increase vulnerability. For example, the risk of road blockage by landslides sometimes increases after upgrading of routes. Nonetheless, the impact of development programs is generally very positive.

Many protective measures involve large scale capital investment in new infrastructure or adaptations to existing facilities. But specific, very small-scale actions can also have an important impact. The general approach to integrated relief and development planning will depend on local conditions. Planners will probably consider all the areas of intervention listed below, but as part of a comprehensive, national planning process considering a wide range of investment and programming options in this sector. Planners should involve relief logistics specialists, working through the emergency assessment process long before there is an emergency.

Central America. "Establishing a formal link between emergency aid to refugees and the development of entire areas where refugees, returnees and displaced people are living."

Refugees, March 1989. UNHCR/S. Lamb.

Upgrading private transport

This has a major impact on the speed and reliability with which a relief operation can be put in place. High levels of competition will keep rates down, and increase the flexibility with which the sector responds to additional demands. The ability of small operators to obtain credit to upgrade vehicles and purchase extra vehicles will be particularly important in some countries.

Protecting vital supplies

Large-scale, relief logistics need regular and sustained inputs of critical and fast-moving supplies: fuel, oil, lubricants, tires, and fast-consumed spare parts. In addition, expansion of an operation requires shipments of high-value specialist equipment. Investments in the following areas (including mitigation measure to protect against disaster impact) are likely to prove valuable:

- fuel import, refining, and storage
- materials handling and storage at ports, including cranes, grain unloading and bagging equipment, container handling, and secure storage
- airport handling and storage, including cargo handling equipment and storage at less-developed regional airports
- local manufacture and secure storage of tires and spares

Protecting emergency stocks

Heavy rain and flooding – Food aid commodities, electrical items, and packaging for medical items are especially vulnerable to water damage. There have been several recent incidents where thousands of tons of emergency food shipments for famine victims have been destroyed by rain and flooding on dockside quays because safe warehousing was already full. Consider the risk to aid shipments at crowded ports and airfields in any future emergency. Fast removal of vulnerable items and stockpiling of wooden pallets and large tarpaulins can reduce the risk to food stockpiles and other goods. Drainage for warehouses, quays and storage areas may be worth reviewing during port development programs.

Wind or earthquake damage – At some sites, there may be a risk of collapse of internal storage racks for medicines, engineering equipment or spare parts. There may also be a serious risk of contamination where insecticides, fuel, or other chemicals are inappropriately stored in the same building as food or medicines. Ensure that storage bins and racks are well secured, and that potentially dangerous items are kept in separate storage and are properly marked and recorded.

Loss of power – Items such as vaccines and some medicines may require electric power for refrigeration. Emergency generating equipment should be assured on a routine basis. In a major disaster, generators may be needed for longer periods than usual, and additional fuel, spare parts, back-up equipment and trained staff may be needed.

Upgrading essential transport routes

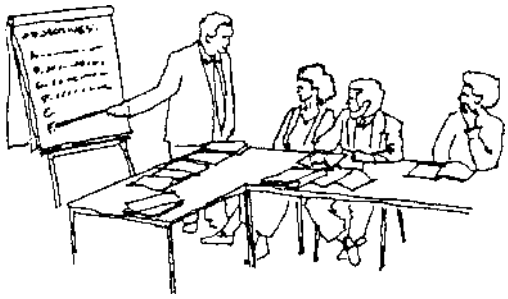
Essential transport routes may involve several modes–road, rail, water transport, and sometimes air routes (for example on islands). Measures will usually focus on removing bottlenecks (such as weight limits and height limits on roads and bridges), building up transport capacity (for example, locomotive numbers or capacity, or investing in larger ferries). Analysis at this stage should take account of the longer-term economic vulnerability to natural disaster. Interruption of inter-industry flows because of blockage or shortages can have a dramatic impact. It may also be important to consider reconstruction needs. Recovery in many industrial sectors will depends on the construction industry, and its use of the transport infrastructure.

Vehicle and stock security

Investment in storage and handling facilities on the transport network will aid logistics in both sudden and longer term emergencies. Measures include construction of new warehouses (or protection of existing ones, in cyclone areas, for example); logistics operating bases; and provision of high quality fences and lighting.

Logistics operations often depend on specialist commercial repair facilities for certain types of maintenance. These include servicing of fuel injector pumps; repair of certain types of vehicle electronics, and communications equipment servicing.

Training programs



A professional logistics program requires large numbers of trained staff at management and operating levels. Management training programs, aimed specifically at the transport sector, and vehicle workshop technician training will both substantially improve the pool of qualified staff from which to draw.

During the analysis, it is important to take account of possible interactions in multiple and compound disasters. For example, will private transport that is currently being used for refugee relief shift towards reconstruction in the aftermath of a sudden emergency? What implications will this have for the ongoing relief operation?

More detailed economic modeling may sometimes be needed. Extensive damage to the transport sector usually results in long-term interruption of inter-industry flows and considerable production losses. A range of additional measures may be needed to protect those elements of the transport sector whose contribution to economic activity is most essential.

Emergency logistics operations provide development opportunities

Once they get under way, large long-term emergency logistics programs have widespread social and economic impacts: they are development opportunities. These types of operations generate additional capital investment; they encourage private sector development; they increase the number of trained staff; and they often introduce new types of equipment and practices.

The long-term outcome of these emergency programs needs to be considered from the start. Planning needs to consider how the location and design of emergency facilities and staff development methods can contribute to the improvement of the transport sector in the long term.

Q. *How does an emergency relief logistics operations contribute to development goals and vice versa? Describe some realistic interventions which will serve the needs of both infrastructural development and emergency preparedness.*

A.

■ CASE STUDY

The Emergency Relief Operation in Ethiopia, 1984–85
Part Five – Capacity

A crisis occurred in May of 1985 when stocks in Assab reached 101,000 MT and a brief and unexpected rain spoiled 10,000 MT of grain. Inexperienced port authorities and food management personnel did not take necessary measures to save it immediately after the rain. Unfortunately, the world press made a sensational story of the affair claiming that people starved while food rotted at the port. In fact, this food represented only 1% of all food shipped to Ethiopia by that time and did not impact on the needed food stocks for distribution. However, this incident served to focus international attention on the logistics crisis.

The Resident Representative finally met with the President of Ethiopia regarding the matter. As a result of that meeting, military vehicles were made available to carry food to a secondary storage area capable of holding 100,000 MT where NGO trucks could pick it up for distribution. Finally in mind 1985, the various steps taken to increase port capacity resulted in a daily offtake of up to 4,000 MT, or double the amount from the beginning of the relief operation.

Case Study Reference:

Jansson Kurt; Michael Harris and Angela Penrose, *The Ehiopian Famine,* Zed Books, London and New Jersey, 1987.

SUMMARY

This part of the module has discussed some of the linked aspects of development and logistics programs.

- Disaster relief logistics and development policy matters are closely related. Planning for relief as well as recovery capacity will require:
  - upgrading private transport
  - protection of vital supplies
  - upgrading of essential transport routes
  - investment in storage and handling facilities
    training programs
- Large scale logistics operations have widespread social and economic impacts which should be considered from the start.

NOTES

ANSWER (from page 46)

Emergency logistics operations can be opportunities for development of basic infrastructure. Planning development projects with a view to preparedness for emergencies can save assets in a disaster and prevent the reversal of development. Interventions include upgrading private transport, investments in production of vital supplies, upgrading essential transport routes, investing in storage and handling facilities, promoting specialist workshop services and training for staff.

ANNEX A

International agencies involved in relief logistics

In its development role, The **UN Development Programme (UNDP)** has a vital role in promoting and funding risk-reduction measures. It can help governments to ensure that the existing transport and distribution infrastructure can survive foreseeable disasters, and support a relief and recovery operation. It may provide technical support for a host government's emergency logistics planning and also for post-disaster rehabilitation and reconstruction, including activities in the transport sector.

The **UN Department of Humanitarian Affairs (DHA)** plays an essential role in helping mobilize and co-ordinate international relief inputs. It also provides advisory services and technical assistance. Acting on behalf of the Secretary General, DHA may assist the government of an affected area to assess the need for external relief assistance, including logistics aspects, and communicate that information to prospective donors and other interested organizations. DHA may also organize logistics support to ensure the timely arrival of specific relief goods.

The **UN World Food Programme (WFP)** provides food aid to meet emergency food needs, and supports governments in assessing those needs. WFP helps to mobilize, co-ordinate and schedule the delivery of food assistance from all sources. It can give specific logistics support if required. In some conditions (in "least-developed countries") WFP may contribute towards the costs of internal transport, storage, and handling of WFP-supplied commodities. Under exceptional conditions, WFP may provide vehicles, equipment, and expertise to support national food logistics. It may, exceptionally, set up and manage large relief transport operations under the control of specialist units.

The **Office of the UN High Commissioner for Refugees (UNHCR)** has a prime goal of assuring that protection and assistance reaches refugees in emergencies, and longer-term programs. It is involved with host governments in identifying recipients of assistance. Through implementing agencies (and in partnership with WFP in the case of food deliveries) it ensures the delivery of large quantities of relief goods. UNHCR is expanding its internal capacity to plan and supervise large-scale relief logistics and refugee relocation programs; it also uses a network of regular logistics consultants and stand-by emergency teams.

The **UN Children's' fund (UNICEF)** seeks to mobilize and give direct relief assistance in situations where the immediate needs of children and mothers are not adequately met. The agency may become directly involved in logistics operations of all kinds where there are constraints to the delivery of the assistance and services needed by children. In addition to specific field interventions, UNICEF also maintains an emergency stockpile at its supply division and warehouse in Copenhagen (UNIPAC) providing rapid response to requests for emergency supplies from a UNICEF country office. This service is available on a reimbursable basis to other organizations.

The **World Health Organization (WHO)** can give technical assistance for both preparedness and rapid health assessments in disasters, and can mobilize delivery of emergency medical supplies and equipment. The agency has developed a number of specialized Emergency Health Kits, containing essential drugs and equipment. WHO transport in or near the affected area may also be made available. WHO, through its regional office for the Americas, the Pan American Health Organization, is involved in the Supply Management Project of Latin American and Caribbean countries in the aftermath of disasters (SUMA). This project provides technical support, computer equipment and communications to help manage material flows through ports and airports in emergencies.

Other agencies regularly play an important role in relief logistics. The **UN's International Civil Aviation Organization** can assist in mobilizing emergency air transport. The **International Telecommunications Union** assists with international communications planning.

Private agencies make a major contribution. For example, **CARE International** has extensive experience in both emergency and long-term food and other emergency transport operations. The **International committee of the Red Cross (ICRC)**, and the **International Federation of Red Cross and Red Crescent Societies (IFRC)** both have long histories of involvement in emergency logistics. Other agencies with expertise include **GTZ**, the **Lutheran World Federation, and Swiss Disaster Relief**. The **International Organization for Migration** has extensive experience in moving large numbers of people. Recently, there has been increasing **military involvement** in relief operations, including air-support and convoy escort under UN Peacekeeping arrangements, and in some cases unilateral direct transport and distribution in partnership with NGOs.

ANNEX

B

Checklist of questions for reviewing logistics plans

- ✓ Is there a national emergency plan, and are logistics aspects included?
- ✓ Is there a central co-ordination body and is logistics represented?
- ✓ What contingencies are being considered?
- ✓ Are operating areas and specific roles assigned to teams of identified job-holders?
- ✓ Are logistics resources identified, inventoried, and assigned?
- ✓ Have special skill requirements been identified?
- ✓ Are there training programs for staff?
- ✓ Have arrangements been made for additional back-up staffing, and family support for staff in key posts.
- ✓ Are there standing arrangements with contractors and NGOs for supply of logistics services? Are these arrangements reviewed regularly?
- ✓ What proportion of government-owned equipment is likely to be operational and available?
- ✓ Are any specific arrangements needed to ensure that fuel/oil/ lubricants and critical fast-moving spares (tires, filters, lights, etc.) will be available at the locations required?
- ✓ Are there specific plans for protecting logistics resources from damage or theft?
- ✓ Is logistics linked to damage assessment? In particular, who will check that specific logistics resources and transport routes are functional?
- ✓ Are reliable tele-communications already available, and can they provide for call-forward of supplies and feedback on deliveries in emergencies? What back-up services exist?

ANNEX

C

PAHO SUMA

Disaster relief officials face two major problems when managing emergency supplies. First, distinction must be made between urgently needed supplies and those which are less important and impose a burden on the logistics system. The second problem involves the need for precise and technical information to describe supplies which have been received, so that needs in the field can be adequately met. As field workers are often too busy to make detailed inventories, a more practical approach is to manage relief supplies at the point of entry.

The Pan American health Organization (PAHO), a regional office of the World Health Organization, has designed SUMA, the Supply Management System for computer tracking and management of supplies and consignments in the aftermath of a disaster. To date, 400 professionals from 18 countries have been trained to use the SUMA system.

The program operates from both a central computer and terminal points, or field based computers. The CENTRAL program is used to maintain a general data base of the information received from all terminals. This information can be used to generate a series of reports regarding different types of supplies, to monitor the consignments received at a particular terminal or point of entry and to establish a balance between the offer of and request for supplies, based on availability. The CENTRAL program can also be used to define all the characteristics of a particular operation, or "the environment of the emergency". At the CENTRAL level, the following system "table" or lists can be updated:

- Table of items
- Titles for the system
- Table of currencies
- Table of places of origin
- Table of addresses

In the terminal project, a terminal is defined as any piece of equipment used at the **point of entry** to record information about donations that arrive after a disaster. The terminal is used to record:

1) General information about a donation, such as origin and destination
2) Specific information in eight basic categories:
   – Medicine
   – Water and environmental health
   – Health
   – Food and beverages
   – Shelter/housing/electricity/construction
   – Logistics/administration
   – Personal needs
   – Unsorted

In addition to the computer application, PAHO/WHO SUMA will create and staff standby teams of health personnel trained to sort, classify and manage donated relief supplies. When a disaster occurs, the team will travel to the site and provide the following services:

– make an inventory of health related supplies and sort them to identify those for which an immediate need exists
– identify and clearly label items that require special handling
– enter the data using portable computers
– provide authorities with daily detailed lists.

The PAHO SUMA program is explained in detail in two users manual: SUMA CENTRAL and SUMA TERMINAL. Technical information regarding SUMA software, hardware requirements or a copy of the software source codes is available from PAHO, 525 Twenty-third Street, N.W., Washington, D.C. 20037-2895, U.S.A.

Source: "Improving Relief Supply Management: A Pan American Initiative", *UNDRO News,* May/June 1992, p. 29–20.

ANNEX

D

Standard classifications for disaster relief supplies

A standard operational classification for donated relief supplies has been developed jointly by the SUMA project of the Pan American health Organization, and the US Government, especially to aid computer tracking of incoming relief goods. The main categories are:

Medicines (Standard WHO categories such as)

1) Analgesics
2) Anesthetics
3) Antibiotics
4) Cardiovscular drugs
5) Steroids
6) Vaccines

Health Supplies/Equipment

1) Medical Dental
2) Surgical
3) Blood Bank/Laboratory
4) General anesthesia/X-ray
5) Patient Transport
6) Others

Water and Environmental Health

1) Water treatment
2) Water distribution
3) Vector/Pest control
4) Human/other waste disposal
5) Others

Food/Beverages

1) Cereal/Vegetables/Grain
2) Oil/Fats
3) Dairy/Meat products
4) Water/Other beverages
5) Others

Shelter/Housing/Electrical/Construction

1) Shelter/Housing
2) Electrical
3) Construction
4) Others

Logistics/Administration

1) Logistics/Administration
2) Transport
3) Radio communications
4) Others

Personal Needs

1) Clothing
2) Sleeping gear/blankets
3) Personal hygiene
4) Cooking
5) Others

Unsorted

1) Clothing
2) Drugs
3) Food
4) Mixed
5) Other
6) Unknown

ANNEX

E

Some general lessons for large-scale logistics

- Ensure that there is a master operations plan, simple enough for everyone to understand.
- Generally, reduce complexity at every stage. Each addition means checking more interactions among elements and being more careful about the design of each element. Move as little as possible, and as few different items as possible.
- Build in back-up arrangements and redundancy and contingency arrangements. Keep asking “What if…?” Assign a group to work on this on a regular basis.
- Think ahead, and build up buffer stocks to cope with seasonal interruptions to vehicle movement, new influxes of people, etc.
- Continuous reorganization is very disruptive. Use normal structures as much as possible.
- Pay attention to detail. Apparently insignificant factors can cripple an operation: for example, breakage of a microfiche-reader bulb (used to check spare-parts catalogs) can halt many workshop repair tasks for days.
- Keep everyone in the operation informed, regularly.
- Use task forces to deal with major problems, but keep the normal framework of responsibilities.