SECTION THREE

EMERGENCY/DISASTER COMMUNICATIONS MANAGEMENT

THE FUNCTION OF THIS SECTION IS TO PROVIDE ASSISTANCE TO MANAGERS AND PLANNERS IN THE FIELD OF EMERGENCY OR DISASTER COMMUNICATIONS.

THIS IS THE FINAL SECTION OF THE MANUAL AND SHOULD BE READ AFTER READING SECTIONS ONE AND TWO.

CHAPTER ONE

PLANNING FOR EMERGENCY/DISASTER COMMUNICATIONS

GENERAL

1.01 SUPPLEMENTARY FACILITIES

Control and co-ordination of emergency operations depend on reliable communications. The communication facilities of emergency service organisations are usually sufficient to meet normal administrative and routine tasks. However, some emergencies and disasters may require additional communication facilities to supplement existing systems.

1.02 PREDICTABLE REQUIREMENT

Although each emergency/disaster is to some extent unique, much of the operational activity during these events is predictable. It is therefore possible to draft appropriate plans to match these operational circumstances. Experience has shown that successful emergency/disaster communication systems are those which have been included in plans that are subjected to regular testing and review.

1.03 It is essential that communications planning be an integral part of any emergency or disaster plan.

PLANNING CONSIDERATIONS

1.04 EXPERIENCE

The person responsible for communications on a disaster planning committee must be experienced in emergency/disaster communication system concepts. While technical qualifications may be an advantage they are not essential.

1.05 AUTHORITY

The authority or reference document for preparing a disaster response communications plan must be clearly stated.

1.06 ROLES AND RESPONSIBILITIES

The roles and responsibilities of the various organisations with communications responsibilities must be clearly defined as a result of the agreement of all parties.

1.07 CONTROL AND COORDINATION

Most emergency/disaster operations require a number of agencies to work together. Each agency will operate its own individual communication system. A high level of communication between agencies will be necessary. Inter-communication between agencies may be achieved by:

a. public switched telephone network, unlisted telephones, intercoms or private line facilities;

b. courier services;

c. data, facsimile or telex;

d. dedicated radio network for Co-ordination purposes; and

e. by co-locating elements of the agencies.

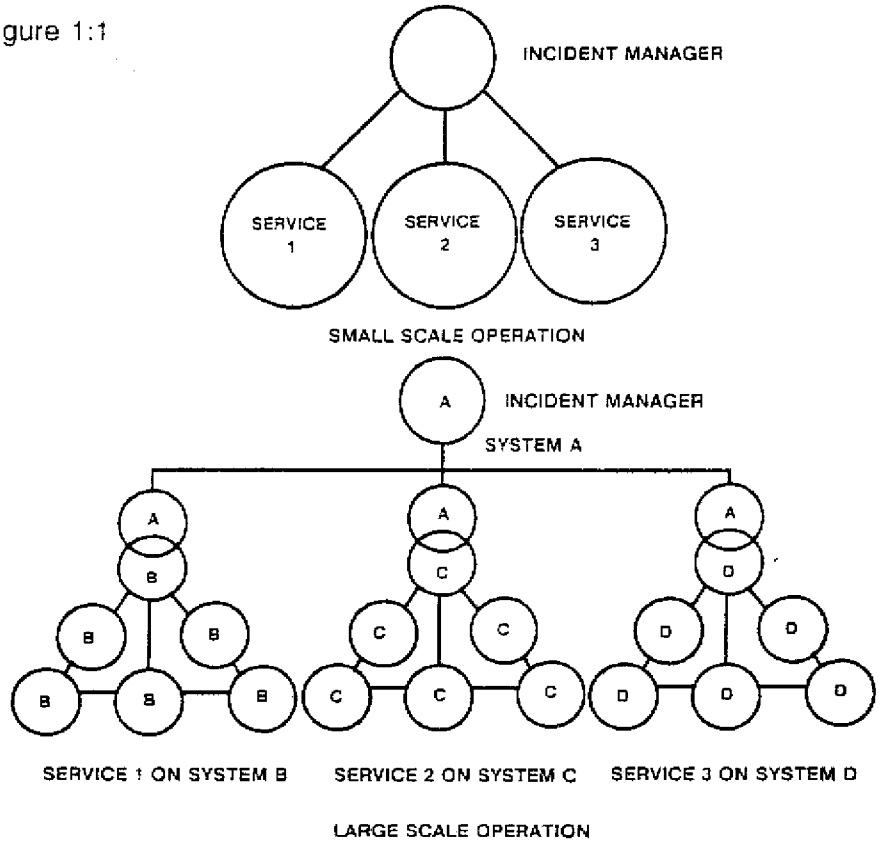
1.08 INTER-AGENCY COMMUNICATIONS

a. Agencies will usually be brought together in the one place to enhance the disaster response of the emergency operation.

b. Whilst each agency involved may have its own communication facilities, placing these facilities together can cause a number of difficulties. Of particular concern is background noise which can be minimised by the use of sound absorbent material and headsets. Another concern is the co-location of radio communications equipment, which may generate interference across the radio networks.

c. It is often suggested that placing all elements dealing with an emergency on a common radio channel may enhance the management of the operation. While this may be a solution with a small scale operation involving a minimal number of organisations, with a large scale operation separate frequencies and networks are essential, otherwise network congestion will occur.

Figure 1:1



d. To aid inter-agency communication for the purpose of co-ordination during disasters, it is recommended that dedicated communication networks be established.

e. While there may be advantages in operating on a common channel it is usually more appropriate for each radio network to handle messages for its own organisation.

f. The use of multiple networks will ensure that the majority of messages proceed should a single system fail. However these networks need to be tied together with a dedicated co-ordination network.

1.09 RESOURCES

The plan must include an annex that lists contact names and numbers and appropriate resources. This list should include information on how these resources can be obtained at short notice and it must be up-dated continually. It is recommended that a map displaying the distribution of communication resources be included.

1.10 COMMUNICATIONS FOR SPECIFIC OPERATIONAL SITUATIONS

It may be approoriate to prepare detailed plans for specific operational situations, especially where communication difficulties are anticipated. Special communication facilities may be required to meet these situations.

1.11 NETWORK DIAGRAMS

Network diagrams provide a visual display of communication structures and traffic flow, and are useful in illustrating the networks available.

1.12 REDUNDANCY

Whenever possible, alternative or backup communication facilities should be identified and any necessary compromises noted.

1.13 PLANNING DETAIL

Plans relating to events at a local community level, can be quite detailed. Plans intended for regional, state or national events can be less detailed. Plans should be kept as brief as clarity will permit.

1.14 PLANNING REFERENECE

It is recommended that reference be made to the 'Australian Emergency Manual - Community Emergency Planning Guide '

CHAPTER TWO

THE COMMUNICATIONS CENTRE.

GENERAL

2.01 FUNCTION

The Communications Centre (COMMCEN) is the focal point of all means of communications at any Headquarters. The function of a COMMCEN is to ensure that communications traffic is handled accurately and efficiently making the most economical use of available communication systems.

2.02 RESPONSIBILITY

The COMMCEN is responsible for messages, reports and despatches from the time they are accepted at the COMMCEN until they reach their destination. It's aim is also to reduce to an absolute minimum, the period of time between the receipt and dispatch of COMMCEN traffic.

2.03 ORGANISATION

The COMMCEN is organised and staffed to enable it to:

a. accept messages, reports and despatches and deliver them to the appropriate destinations;

b. route and dispatch messages by the most suitable communications system; and

c. maintain a record of messages, reports and despatches actioned, for tracing and reference purposes.

MESSAGE MANAGEMENT

2.04 REGISTRATION OF MESSAGES

It is essential that minimal delays be imposed on the handling of messages by complicated systems of registration. Sufficient records should be used to enable the tracing of messages which may be delayed or do not reach their destination. An example of a message registration form is shown at Figure 2.1.

Date	Time	Mess No	From	To	Message Details	Action	Init

Figure 2.1
Sample - Message Registration Form

2.05 MESSAGE HANDLING PRINCIPLES

The method of dealing with messages through a COMMCEN appear in Figure 2·2 and is based on the following:

a. It is assumed that every message accepted by a COMMCEN will be delivered to its destination If not the Originator must be advised.

b. While speed in the delivery of messages is essential,**accuracy** is paramount.

c. The COMMCEN staff must never alter any portion of the text of a message, without the approval of the Originator.

2.06 BASIC MESSAGE FORMS

a. A message containing important information should always be written on a message form A written message will ensure that their is:

(1) a record of where the message originated and its addressee:

(2) a record of the text; and

(3) a record of the date and time of receipt or dispatch of the message

b. A formatted message enables telephone or radio operators to send or receive messages clearly and concisely. This minimises time on congested networks.

c. Some organisations prefer computer generated forms. It is advisable for emergency service organisations to retain the ability to revert to manual operation in the event of computer failure.

Date: _____ Message Number: _____

Time: _____

From: _____ To: _____

Message: _____

Signature: _____

Time of Receipt: _____ Time of Despatch: _____

Figure 2:2
Basic Message Form

ORGANISATION AND EQUIPMENT

2.07 LAYOUT

The layout of a COMMCEN will vary according to the size and operational requirements of the organisation. It may be permanently set-up or temporarily established for a particular task. Although the facilities and concepts may vary, the basic functions should remain the same.

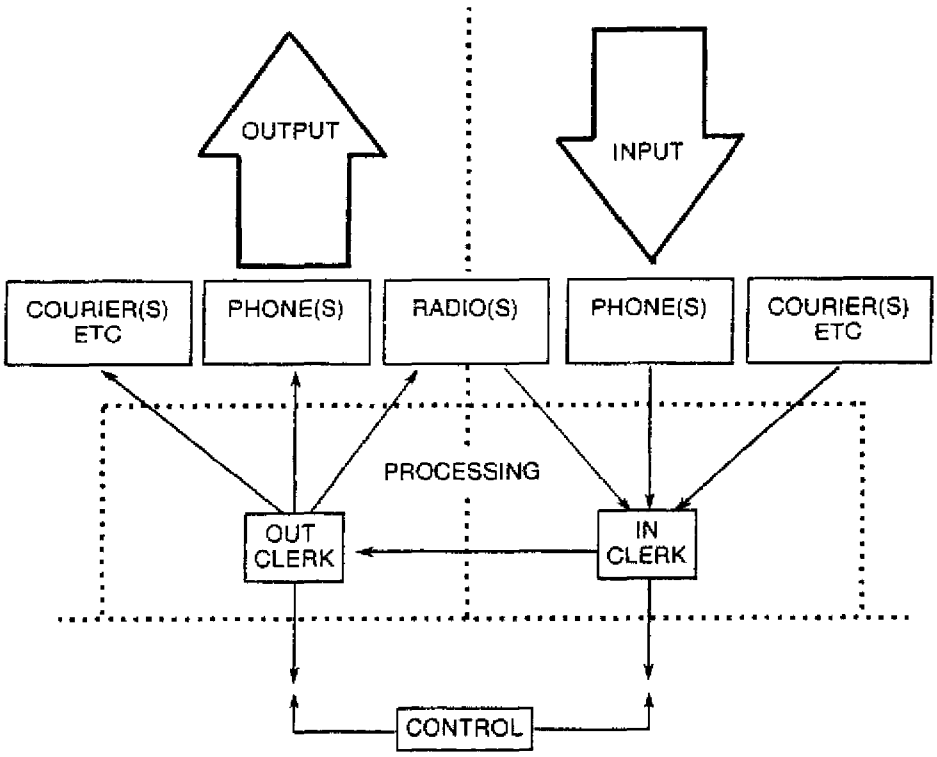


Figure 2:3
Communications Centre Flow Diagram

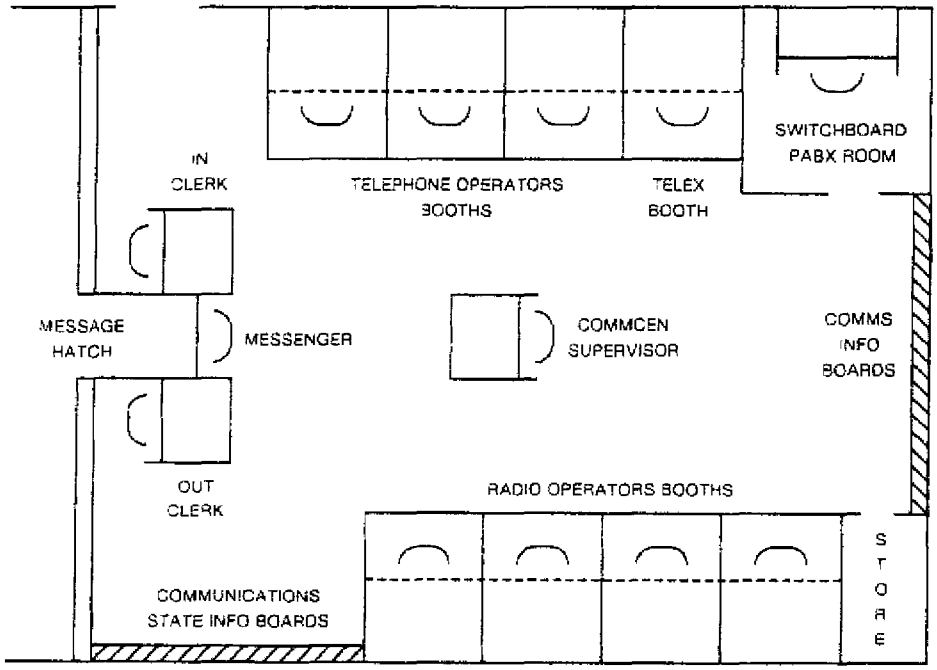


Figure 2:4
Communications Centre Layout

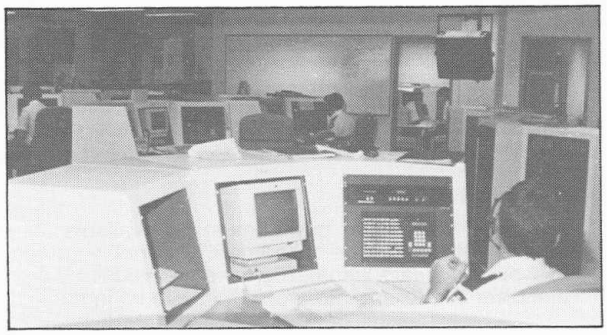


Figure 2:5
SA Police Communications Centre

2.08 **PROCEDURES AND STAFFING**

The procedures and duties to be undertaken in a COMMCEN remain the same regardless of the size of the organisation. The number of personnel employed will vary according to the size of the operation.

2.09 **SUPERVISION**

The Supervisor is responsible for the efficient management of staff and facilities to enable the COMMCEN to function effectively. This person must have a thorough knowledge of the COMMCEN and its procedures including a working knowledge of the various communication systems available.

2.10 **STAFF WELFARE**

Facilities should be designed to minimise staff fatigue and discomfort. Operators should be rotated through various duties to reduce stress. Staff who have been exposed to traumatic messages should be included in Critical Incident Stress Debriefing (CISD) programs.

2.11 **'SILENT' TELEPHONES**

The COMMCEN should be equipped with 'silent' or unlisted telephone numbers to enable calls to be made in the event of congestion or exchange failure. It is recommended that these telephones be connected to different telephone exchanges via alternate cable routes.

2.12 **NOISE REDUCTION**

Noisy equipment such as radios, computer printers and telex machines should be acoustically isolated.

2.13 **ACCESS**

Access to the COMMCEN by unauthorised personnel should be strictly controlled to avoid disruptions.

2.14 **EMERGENCY OPERATIONS CENTRE SITING**

It is essential that COMMCEN supervisory and technical personnel are consulted PRIOR to the establishment of any permanent or temporary operations centre. If a site is selected without consultation with communications personnel the centre may be deficient in all or part of the necessary communication systems.

COMMUNICATIONS FOR FIELD OPERATIONS

2.15 SITING

Field Operations Centres require good communication facilities. If possible the centre should be sited where existing communications systems operate.

2.16 POWER SOURCE

Adequate sources of power must be available for equipment and to enable batteries to be recharged. If portable generators are used for this purpose care should be taken to reduce noise and to minimise electrical interference to the radio systems in use.

2.17 SAFETY

Staff must be aware of precautions necessary for the safe use of electrical equipment.

2.18 BATTERY MAINTENANCE

Due to possible dependence on battery-powered equipment, proper management of battery charging and/or replacement is essential and should be the responsibility of a centrally located person.

2.19 ANTENNAS

A clear area adjacent to the operations centre may be required to allow the erection of antennas and masts.

2.20 NETWORK DIAGRAM

The communication arrangements need to be clearly understood by all staff and a network diagram should be prominently displayed. Figure 2.6 shows an example of a typical network diagram that may be used for a small field operation.

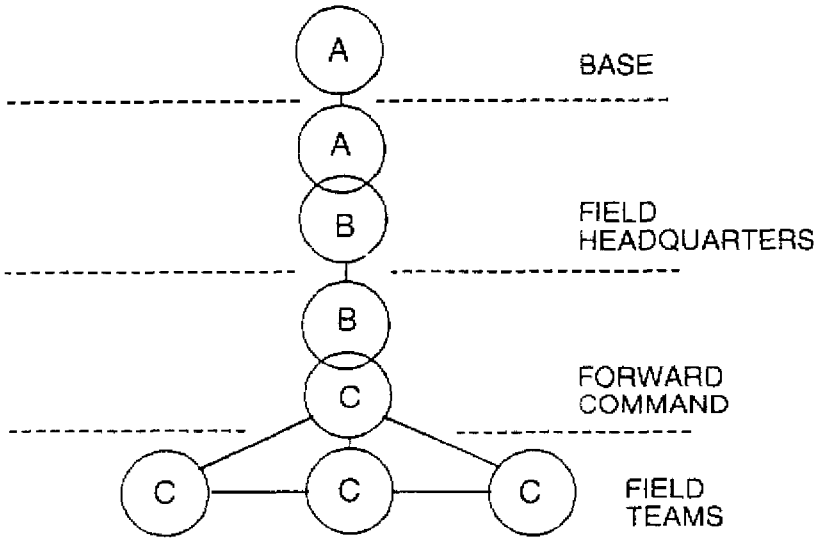


Figure 2:6
A, B and C Discrete Communications Network

CHAPTER THREE

ADDITIONAL CONSIDERATIONS

COMMUNICATION SURVEYS

3.01 COVERAGE

On completion of the installation of a fixed radio communications system, it is essential that a radio survey be conducted. This will provide operational managers with detailed knowledge of the area coverage available. Although the task is labour intensive the results obtained will ensure communications are more effective by identifying areas where difficulties can be expected.

3.02 SURVEY TECHNIQUE

The survey technique is simple. Field operators are given a map or an overlay and are sent into a specific area. At pre-determined distances the field operator calls the base and receives a signal report. If signals are readable he places a green dot on the map at his position. If signals are unreadable he places a red dot on the map.

3.03 MASTER MAP

This process is repeated until the area specified has been covered. When the operators return to base, information from the individual maps is transcribed to a master map Over a period of time a signal performance profile of the area is built up. This clearly identifies those areas where good communications are possible as well as identifying trouble spots.

3.04 Caution must be exercised to ensure that equipment being used is in good working order When system up-grades take place the survey needs to be repeated

3.05 Variations are possible. One map may show 'hand-held' performance, another, 'manpack' performance; while yet another may show mobile transceiver results. Different signal levels may be shown by the use of additional coloured dots.

3.06 PRIORITIES

The task is obviously labour intensive and priorities should be used to undertake the task so that some useful data is available early in the process For example, areas where operations occur frequently should be tested first. Suspected poor performance areas may be surveyed next and so on. Surveys can be done in conjunction with other field activities.

3.07 Although a fair amount of effort is required to complete the survey the results gained will make the operational communications run more smoothly by identifying communication difficulties ahead of time.

PUBLIC INFORMATION

3.08 COMMUNITY NEED

Disaster-affected communities have a need to receive information relevant to their circumstances. In the absence of such information, rumours often emerge and consequent difficulties may be experienced.

3.09 MEDIA ALTERNATIVES

If the normal media outlets (eg TV, Radio and Newspapers) are either not available or do not provide sufficient relevant detail, then other methods will be needed by the effected communities.

3.10 EMERGENCY BROADCASTING

In the event that the local radio broadcast facilities are unserviceable, it may be possible to use the Transportable Emergency Broadcasting Station (TEBS). This equipment is owned by the Commonwealth Natural Disasters Organisation and deployed and maintained by Telecom. It consists of a low power, frequency agile AM broadcast transmitter, complete with studio, antenna and power facilities. It is air transportable and can be set up within three hours following delivery to the site, and is designed to be used on the frequency of the local broadcast station (when it is off the air).

3.11 PRINTED INFORMATION

Printed media in the form of newsletters or newspapers can be used to good effect in providing public information to the disaster effected communities.

3.12 MEDIA LIAISON

As a general rule media liaison officers are appointed to ensure that information is disseminated to the public.

LICENSING OF RADIO TRANSCEIVERS

3.13 INTERNATIONAL COMMUNICATIONS COMMITTEE

The radio spectrum is a limited resource, with high commercial value to any community or country. The spectrum is organised into an international management system which allows responsible use by radio operators. Australia is a member of this International Communications Committee, and abides by its ruling.

3.14 AUSTRALIAN LICENSING

The licensing arrangements within Australia are managed and controlled by the Department of Transport and Communications (DOTAC) and the resource is provided on a 'user pays' basis. The provision and use of the Radio Spectrum is charged at various rates dependant upon services provided.

3.15 Radio Transceivers must be operated in accordance with the relevant regulations and licensing requirements.

NOTE: Severe penalties apply to illegal users of the radio spectrum.

REFERENCES

The National Consultative Committee acknowledges assistance provided by use of numerous references necessary to produce this Australian Emergency Manual - Communications. The Committee thanks:

Aussat Pty Ltd

Codan Pty Ltd

Department of Environment and Planning, South Australia

Department of Transport and Communications

IPS Radio and Space Services

Motorola Australia

Philips Data and Communications

Overseas Telecommunications Commission

Queensland State Emergency Service

South Australian State Emergency Service

State Electricity Commission of Western Australia

Telecom Australia

Victoria State Emergency Service

Wagner Industries

Western Australian State Emergency Service