
UNIT 13 EMERGENCY OPERATIONS CENTRE

Structure

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13.0 LEARNING OUTCOME

After studying this Unit, you should be able to:

- Know in detail, the organisation and operation of the EOCs, including facilities, decision support system and telecommunication features; and
- Discuss the Incident Command System and the Multi-agency Coordination System.

13.1 INTRODUCTION

An EOC is the physical location where an organisation comes together during an emergency to coordinate response and recovery actions and resources. These centres may be alternatively called *command centres*, *control rooms*, *situation rooms*, *crisis management centres*, or using other similar terms. Regardless of the term, this is where the coordination of information and resources takes place. The EOC is not an *incident command post*; rather, it is the *operations centre* where coordination and management are facilitated. Emergency Operations Centres are needed *in addition to command posts* in case of disasters with multiple site impacts and in case of large complex disasters that demand significant involvement/mobilisation at macro scales, that is, the Central and State levels. Unlike a command post, an EOC is established away from the disaster site, often near government offices, like the local government / district or state headquarters, depending on the scale of the response needed. The main tasks of the EOC are; establishing priorities for the distribution of resources among the various sites and handling other *off incident concerns*, such as interaction with off site facilities such as shelters; ordering of resources from distant jurisdictions or through state or central jurisdictions, and overall coordination and communication between agencies handling different aspects of

emergency response. The idea of EOC is originally, a civil defence concept, though it is now adopted for peacetime activities as well. It holds special significance for disaster response which is no less an exigent situation than war, as it warrants mobilisation of manpower and material on an equally large scale (Training Programme, Lucknow, 2002).

Requirements in a National EOC

An EOC is always maintained in a state of readiness for being operationalised instantly at the onset of an emergency situation. Once a warning or a First Information Report is received, the EOC will become fully operational. During an emergency situation, the EOC is operational round the clock. The EOC is under direct command of the head of the disaster management agency.

The EOC stays operational throughout the year in a *preparedness mode*, working to take care of the extended preparedness activities of data management, awareness and training, which is essential for the smooth functioning of the EOC during crisis situations. During an emergency, the EOC gets upgraded and representatives of all emergency stakeholders man it round the clock.

EOCs can be at various levels of operation: *National level, State level, District level* and at *Organisational level*. The set up and scope of activities for each of these may vary as per the strength and the context of the area of operation but the basic aim of these is the same.

Proposed National EOC shall be the hub of all the activities related with disaster response in the country. For the effective management of resources, disaster supplies and other response activities, nodal points or centres will have to be established. These points will have to be well networked starting from the centre to the state and finally, to the disaster site. EOCs at the Centre and the State and Field Coordination Systems at the disaster site are the designated *nodal points* that coordinate overall activities and the flow of relief supplies from the Centre.

13.2 FEATURES OF THE EMERGENCY OPERATIONS CENTRE (EOC)

Planning, Organising, Staffing, Directing, Coordinating, Reporting, Budgeting (POSDCoRB) activities including principles of organisation including authority and responsibility, unity of command govern the efficient management and operation of Emergency Operations Centres (EOC). The basic features in an EOC to make it fulfill its operational requirements are:

- **Flexibility:** There is need to plan operations and adapt operational space to meet the needs of hazard events. For example, it is essential have sufficient space, equipment, furniture, administrative supplies, telecommunications, computer support, etc., available to satisfy mission requirements.
- **Sustainability:** It should be able to support operations for extended duration; for example, could be 24 hours/seven days a week during all emergency situations without interruption; to the extent practicable, be located in a place that is not a high-risk area for known hazards such as flood zones, other natural hazards, nuclear power plant, hazardous material sites, etc.

- **Security:** It should be guarded against potential risks and its operations should be protected from unauthorised disclosure of sensitive information. There should be sufficient security and structural integrity to protect the facility, its occupants, communications equipment and systems from possible threats/ hazards.
- **Survivability:** It should be able to sustain the effects of a realised risk and continue operations from the EOC or a fully capable alternate location. This implies that there should be an alternate EOC that can be activated and used if the primary one is destroyed, damaged, or is not accessible for some reason.
- **Interoperability:** They should be able to share common principles of operations and exchange routine and time-sensitive information with other EOCs, that is, they should be able to communicate with local government EOCs and emergency response teams at or near an incident site from the State EOC. Hence communication modalities such as radio codes, web connectivity et al should be primarily considered.

Aim of the Emergency Operations Centre

The aim of the EOC at the National level is to provide centralised direction and control regarding any or all of the following functions:

- Emergency operations,
- Communications and warning,
- Requesting additional resources during the disaster phase from areas neighboring the affected area,
- Coordinating overseas support and aid, and
- Issuing emergency information and instructions specific to Central and State agencies, consolidation, analysis, and dissemination of damage assessment data and preparation of consolidated reports.

Location of the Emergency Operations Centre

The EOC is set up at a suitable location with the entire infrastructure according to the given layout.

- The Central or State government or its designee initiates the activation of emergency services of the EOC;
- Activation of the EOC should immediately follow the threat perception;
- The individual who declares the emergency announces the location of the EOC;
- The individuals staffing the EOC are responsible for establishing communications with their respective departments through radio and telephone etc.;
- The EOC Chief or designee will determine what staff he/she deems necessary to effectively operate the EOC apart from the prescribed staff; and
- The designated officers of the police provide security at the EOC.

13.3 THE INCIDENT COMMAND SYSTEM

The Incident Command System (ICS) provides a management structure and system for conducting emergency operations. It is applicable to small-scale daily operational activities

as well as major mobilisations. The ICS provides EOC and operational staff with a standardised operational structure and common terminology. Because of this, ICS provides a useful and flexible management system that is particularly adaptable to incidents involving *multi-jurisdictional* or *multi-disciplinary* responses. ICS provides the flexibility needed to rapidly activate and establish an organisational format around the functions that need to be performed. It uses the concept of 'modular organisation', that is an organisational structure that waxes and wanes as per changing/altering requirements. The concept of the Incident Command system originated in the USA, where traditional organisations could not tackle effectively, the California wild fires in the 1970s. It was part of the FIREScope programme that was conceptualised/ originated as a result. The other part of the programme was the MACS or the multi agency coordination system that would be discussed subsequently (Section 13.7 of this Unit).

The Incident Command operates on modern management concepts such as Management by Objectives (MBO) for multiple capabilities in that an organisation should be equipped to handle multiple/complex emergencies; in the specific case of disaster management, different kinds of disasters; fires floods, earthquakes, man made disasters *et al* through technical capability and trained manpower. *Principles of Organisation*, notably, are kept flexible, implying span of control, unity of command, line and staff, specialisation, functional division, organisational structuring, communication, planning, staffing, finance *et al*. This also refers to the concept of modular organisation, in that the organisation is facilitated in expanding as new work is added and can contract when an organisational unit or work function is no longer needed. This dispenses with organisational rigidity that impedes mobilisation and performance of traditional organisations during exigent times. Resource sharing between involved organisations is an important part of the Incident Command System. It is attempted under the aegis of an umbrella organisation. No activity suffers resource constraint at any point, which often determines success/failure (Irwin, 2002).

Back-up EOC

It is always desirable that an alternate EOC is also established. This EOC should be a mirror image of the primary EOC and serve as a back-up to handle any eventuality, should the main EOC be rendered in operational due to any accident, disaster or any other reason. The main EOC may be established at the nodal agency, which is responsible for emergency management in the state, since it is the focal agency. The backup EOC may be at another location and be used during non-disaster times as a training centre for main EOC operations.

Event Information Tracking

Managing response and recovery operations involves tremendous amount of information. The EOCs job is to collect this information and to manage and control event information, information collation and dispersion as per requirements and response activities. Typically, the information flow will look something like this:

- Incident occurs
- Notification is sent to the staff
- Status is evaluated by EOC managers
- EOC is activated

- Tasks are assigned according to plan
- Resource allocation is done
- Task performance is laid out in terms of stipulations
- Status briefings and updates to stakeholders

Information Management

All of the information received during an emergency response operation will need to be managed and documented. A strong information management system is thus a must at the EOC. Emergency managers need to provide a robust command, control, and monitoring function that will:

- Above all else, be easy and efficient to use;
- Collect failure information to allow rapid and early contingency response;
- Track multiple incidents and resources;
- Communicate activities across the system; and
- Provide documentation capability.

Good information management tools can greatly help contingency managers in creating and organising their plans as well as in exercising and executing them. While contingency plans often end up in binders or files, a good information management system can make plans and supportive materials easily available to managers, thereby making disaster response functional.

EOCs should be able to perform all of the following functions:

- Operate an alert network
- Incident logging
- Team tasking
- Resource deployment and monitoring
- Managing status notice boards
- Executive briefings
- Documentation

EOC Decision Making

Strong management is needed during EOC operations. EOCs should be activated as soon as possible to ensure rapid decision making. During the incident response phase, the real-time tracking of incidents and response resources is critical. Resources may be in short supply while multiple requests for services pile up. An *operations log* is needed to fulfill the requirements of documenting, tracking, and managing the response to an infinite number of concurrent incidents.

13.4 ORGANISATIONAL SET-UP OF EOC

EOC comprises the following:

1) *EOC In-charge*

The in-charge is the primary role-player in the EOC, and is responsible for the overall coordination and decision-making in the organisation. He also reports the status of the EOC operations and the disaster situation to the Central and State authorities/agencies.

2) *Operations Section*

The Operations Section ensures smooth and planned functioning of the EOC. It will fulfill the following functions:

- Handle requests for emergency personnel, equipment and other resources;
- Designate responsibilities and duties for management of the EOC;
- Manage storage, handling and set-up of incoming equipment and personnel;
- Ensure medical care, feeding and housing for EOC personnel;
- Maintain documentation of resource inventories, allocation and availability; and
- Manage finances for EOC operations.

3) *Representatives of Line Ministries*

Representatives of the following line ministries or departments normally need to be present at the EOC to take part in the operations and facilitate quick coordination between the EOC command and their parent organisations towards ensuring quick information availability and decision making for disaster response:

- Information and Communications
- Health
- Transport
- Public Works
- Home
- Defense
- Agriculture and Livestock
- Rural/Urban Development (depending on areas affected)
- Irrigation
- Environment
- Finance, and
- Others, depending on the nature and location of the disaster

Suggested EOC Staff

Besides the departmental representatives who will participate in the EOC, certain specific staff positions are needed to conduct the basic functions of the EOC. These include:

- Emergency Management Director
- Chief Executive (s)
- Public Information Officer
- Communication and Warning Officer
- Liaison Officer
- Radio Operators
- Telephone Attendants
- Disaster Assessment Officer
- Police Liaison
- Fire Liaison
- Hospital Liaison
- Shelter Operations Liaison
- Messengers
- Resource Officer
- Security Officer

EOC Layout and Design

A properly designed EOC should serve as an effective and efficient facility for coordinating emergency response efforts. An EOC may serve a number of uses including, operations, training, meetings, accommodation and other uses. The EOC can optimise communication and coordination by effective information management and presentation.

The EOC must be sized to handle the maximum anticipated staff that would be called in the event of a major disaster. A minimum of 5 square metres per person is essential/required (10 square metre preferred) including restrooms, etc. The EOC should have the following features in a user-friendly layout and disaster resistant building:

- Projection Systems and Screens
- Operations Section
- Dormitories
- Recreation Room and Canteen
- Toilets
- Communication and Power Backup Control Room
- Store

Equipment Requirements

The EOC will need to operate round the clock, and may itself be subjected to adverse conditions due to the impact of the disaster. It needs to be equipped with the following

hardware and software for its efficient functioning:

- Resource Inventories and Databank of maps and plans at District, State and National level on a GIS platform for quick retrieval and analysis,
- State-of-art communication equipment for staying linked with the head office, headquarters of line ministries, field teams, media, and national and international support agencies,
- A mobile command vehicle with communication equipment,
- Work stations and communication lines for all representatives of the line ministries,
- Radios and television sets tuned to different news channels,
- Video conferencing facility,
- Projection equipment and screens,
- Emergency power backup, and
- Stock of drinking water, food, medicines, bedding and essential items required for personnel manning the EOC for long time durations under stressful conditions.

Resource Inventories

Resource inventories are useful in quick retrieval of vital information regarding availability and sources of rescue and relief material and personnel during times of emergency. Resource inventories are essential elements of EOC operations. Such inventories need to be prepared and maintained through regular updating at the national and state levels. Inventories include the following basic elements, and other locally relevant information:

- *Contact details* of all personnel and organisations concerned with emergency management;
- *List* with specifications and availability procedures, of all equipment that may be useful for responding to an emergency. This will include communication equipment, transport vehicles, earth moving equipment, cranes, tools etc. that are available with agencies within the jurisdiction;
- *List* with specifications and rate schedules, of relief material that can be sourced from local aid agencies and markets. This will include dry rations, tents and beddings, clothing, utensils, first-aid items and other basic necessity items.

Field Coordination System

The state and local authorities have to play an efficient role at the local level to support the EOC's requirements for field information and coordination. The EOC also needs to field its own field teams and through them, establish a Field Coordination System. The system will comprise:

- Field command
- Field information collection
- Inter-agency coordination at field level

- Management of field operations, planning, logistics, finance and administration, and
- Rapid Assessment Teams and Quick Response Teams.

13.5 NON-DISASTER TIME ACTIVITIES OF THE EOC

Non-Disaster time activities of the EOC are very crucial for the efficiency of its response in a disaster situation. These activities include:

- Ensure through appropriate statutory instruments that the relevant Disaster Management Plans are operationalised;
- Ensure that standard operating procedures for various actors are operationalised;
- Ensure that funding mechanism for operationalisation of the plans are established;
- Encourage sub-units in jurisdiction to prepare their respective Disaster Management Plans;
- Carry out specific vulnerability studies;
- Identify and interact with research institutions to evolve mitigation strategies;
- Serve as a databank to all line departments, planning agencies and others with respect to risks and vulnerabilities;
- Upgrade and update the disaster management plan according to changing scenario in the region;
- Carry out post-disaster evaluation and update the disaster management plan accordingly;
- Disseminate the disaster management plan to all stakeholders;
- Prepare personnel and organisational directories as well as resource inventories and keep them updated;
- Monitor preparedness measures undertaken periodically, and specially before the onset of known disaster seasons;
- Monitor training imparted to government officials, NGOs and other stakeholders;
- Monitor public awareness campaigns on disaster mitigation and preparedness;
- Receive reports and documents, warnings, and first information reports and submit the same to the head office for appropriate action; and
- Ensure that warning and communication systems in EOC infrastructure are in good working condition.

EOC Activation Procedure

- 1) On receipt of a disaster warning or a first information report, and after verification that the situation merits activation of the EOC, a meeting is convened to plan immediate steps;
- 2) Based on the ratification of the group, further course of action is determined;

- 3) The EOC, till then operating in the preparedness mode, is upgraded to the emergency mode. Concerned line ministries and departments are informed to post their representatives at the EOC on a round-the-clock basis with immediate effect.

Rapid Assessment and Quick Response Teams

Quick response teams of specialised personnel will have to be sent for effective management of the disaster situation. Depending on the magnitude of the disaster, two different types of teams may be fielded by the EOC:

- Rapid Assessment Teams
- Quick Response Teams (Search and Rescue Teams)

Rapid Assessment Teams

The Rapid Assessment Teams are multi-disciplinary teams comprising of four or five members. They mainly comprise senior level specialised officers from the fields of health, engineering, search and rescue, communication and one who has knowledge of the disaster affected area, physical characteristic of the region, language etc. These officials should share a common interest and commitment. There should be clear allocation of responsibilities among team members.

Quick Response Teams

Deployment of search and rescue teams can help reduce significantly, the numbers of deaths that would otherwise accrue. A quick response to urgent needs must never be delayed because a comprehensive assessment has yet to be completed. The following teams must be sent to the disaster site or disaster affected area as early as possible:

- First Aid Team
- Search and Rescue Team
- Communication Teams
- Power Team
- Relief Teams
- Shelter Teams
- Water and Sanitation Teams, and
- Transport Team

All other nodal department will keep ready their response teams, which may be deployed after receiving the rapid assessment reports.

Reporting Systems

Representative of the affected community directly informs either the nearest district administration office or any government official or an NGO, who then informs the district administration. If the information comes directly to disaster management agency, then the incharge will verify information. The disaster management agency, would call the State head of the affected State and the neighboring states to verify the scale and intensity of the disaster. Based on the information available, the EOC activation process will be initiated if deemed required.

First Information Report

The main aim of the first information report (F.I.R.) is to confirm the occurrence of the disaster event. It specifies the perceived scale and magnitude of a disaster and its effect on the local area and the people. It also talks about the steps that have been taken by the local administration to control the situation, the type of relief that may be required and the resources and services required for immediate emergency measures.

Initial Assessment Reports

The clear and concise assessment of damages and needs in the aftermath of a disaster is a pre-requisite for effective planning and implementation of relief and recovery measures. The objectives of damage and needs assessment are to determine:

- The nature and extent of disaster
- Damage and secondary threats
- Needs of the population

Two types of assessments that may have to be carried out are:

- Initial Assessment
- Technical Assessment

Technical Assessment Report

Rapid Assessment Teams will carry out the Initial Assessment. Line ministries will send specialist teams and prepare the technical assessment report to assess the losses and restoration of services. The following aspects will be covered in most disaster situations, but these may be determined by the EOC in accordance with the situational requirements:

- Health
- Housing
- Social impacts
- Food and drinking water
- Power
- Agriculture and livestock
- Telecommunication
- Transport
- Environment
- Industries

Leading ministries directly concerned in the given situation will set up their emergency operating center and update the EOC with regard to their activities. After the initial report and the technical report stages, the EOC incharge will reassess the situation of the site for deciding on further action.

Emergency Support Functions

Emergency Support Functions (ESF) is a thematic emergency management node comprising various coordinating agencies, which manage and coordinate specific categories of assistance to an emergency management effort. Each ESF is headed by a lead organisation/ministry responsible for coordinating the delivery of goods and services to the disaster area, supported by numerous other organisations. These ESFs form an integral part of the EOC. Extension teams and workers of each ESF will be required to coordinate the response procedures at the affected site, and with the parent organisation while representing the ESF at the EOC.

Primary and Secondary Agencies

The designated primary agency, acting as the nodal agency will be assisted by one or more support agencies (secondary agencies) and will be responsible for managing the activities of the ESF and assisting the EOC in the rescue and relief activities and ensuring the mission is accomplished. The primary and secondary agencies have the authority to execute response operations to directly support the EOC.

13.6 PROBLEMS WITH EOCs

In most cases, EOCs have worked well. Even where/in which case an EOC has not been planned/provisioned for in disaster planning, one is likely to come up anyway/spontaneously in case of an emergency as a central hub of activity. Though a study of 180 local disasters has brought to light the high success rate of emergency operations centres, certain problems are inevitable (Training Programme, 2002, Lucknow).

The Number of EOCs

A number of EOCs are likely to emerge in different areas, which might make the disaster situation chaotic. Outside agencies, such as private business or civil society might not know whom to contact, where and when. Inter-organisational coordination might become an insurmountable problem. Therefore, if a disaster strikes some districts in one state, state would be the appropriate level for an EOC.

Alternative EOC Sites

Provision is seldom made for an alternative site in case the original facility could not be used or was abandoned due to damages from flooding or earthquake, etc. It has been estimated that in as many as one-fifth of disasters the necessity of moving the center became a problem. In at least three cases, it was due to flooding. Such possibilities should be explored, using floodplain maps.

Knowledge about EOC Location

Case studies have brought out incongruities as key people and organisations not being aware about Emergency Operations Centre, because, either, they did not figure in disaster management plans, or because its location was not specifically known as it did not even feature in disaster management drills.

EOC Management Responsibility

Responsibility regarding management should be specifically stated in the disaster plan itself. Often problems arise regarding what space or communications equipment should be

allocated to which organisation; that should be allowed access to the EOC, whether, VIPs, or the media, non-governmental organisations, etc.

Presence of those with Decision- making Authority

Manpower deployed in Emergency Operations Centres usually comes from the middle rungs of relevant/respective organisations. These personnel are oriented to following orders of their superiors strictly rather than exhibiting leadership, innovation and creativity, which are required during emergencies. Hence, it is opined that high-level personnel from involved/concerning organisations should be involved.

Organisations represented at an EOC

Certain crucial private sector organisations such as the Red Cross and private utility companies tend to get excluded from the EOCs. Hospitals are another crucial service not included in the EOCs. Certain non-local groups, operating at the state or regional/national level are also not included as by the time they approach, perhaps the initial response phase is over or the membership has already been decided.

Also, the phase in disaster management during a particular time period must be a factor in deciding membership; for example, in the pre- disaster phase, agencies responsible for rehabilitation and reconstruction may not need to be mandatory participants, rather those involved in warning, preventive, preemptive planning/activities may be engaged. Hence, the scope of activity and participation should be need based and therefore flexible.

13.7 THE MULTI-AGENCY COORDINATION SYSTEM (MACS)

The MACS and the Incident Command System originated in the FIREScope programme after traditionally managed fire services failed to control the wild fires in California in the 1970s, as explained earlier. (The Incident Command System has already been discussed earlier in Section 13.3 of this Unit).

While the Incident Command System (ICS) was designed primarily for on-scene coordination, the MACS were mandated with region wide functions, as:

- Information Management;
- Situation Assessment; and
- Resource Allocation.

The MACSs house computer databases, which connects them with the incident command post and all other agencies involved in fire control. It is administered through an operation coordination centre (OCC), which acts as the central resource and information coordination point.

For Situation Assessment, the following information is needed by the OCC:

- Geographic Information; including topography, fire risk, and man made structures
- Current usage and availability of fire fighting resources from the various agencies
- Current and predicted weather conditions

- Current and computer predicted wildfire involvement, including damages sustained; estimates of property threatened; and involved access, terrain and vegetation
- Current and predicted effectiveness of fire suppression activities.

Resource needs are assessed by involved organisations for separate operations at the incident command site. Resource allocation decisions are taken jointly at the OCC. The administration of the MACS and decision-making are organised in such a way that it does not usurp the functions/authority of other organisations; rather participants from various involved organisations run it.

13.8 CONCLUSION

Emergency Operations Centres are essential for effective direction, control, and coordination of emergency response efforts. They may operate at national, state, local or organisational levels, yet at each level, the basic purpose of an EOC is to coordinate the multi-sector, multi-agency, multi-level response activities during or immediately after an emergency.

An EOC has a clear command structure, with one-person in-charge and a team of technical support staff and external stakeholders. The line ministries and other departments that are responsible for functions critical to response are also represented at the EOC. These are in the form of Emergency Support Functions, under which again there may be a number of agencies involved as primary and secondary agencies.

The EOC needs to be in a physically strategic facility, with a disaster resistant building, and with all required facilities such as communications, power, security, meeting facilities, and support facilities for the staff manning the EOC.

13.9 KEY CONCEPTS

- Emergency Support Functions:** Transportation and communication, *et al*, which are secondary but nonetheless crucial, or delivery of mainline services, are termed support functions.
- First Information Report** : First Information Report is the official complaint filed with the police by the victim of threat to person or property or any other unlawful activity of which he may be a victim. The police commence investigations with the filing of the first information report.
- Initial Assessment Report** : The Initial Assessment Report will give the immediate picture about the damage scenario. The immediate first aid, search and rescue will depend on the initial assessment report. Since disaster involves many agencies, it would be a multi- disciplinary effort.
- Technical Assessment Report:** After the initial assessment report, detailed reporting would be attempted by various line ministries, through their specialist personnel, such as health and housing who would assess the situation from their perspectives.
- Rapid Assessment Team** : Rapid assessment teams carry out initial assessments. These comprise specialists from various technical

agencies such as health, engineering *et al* to communicate a quick review of the situation and the resource needs.

Quick Response Team : Quick Response Teams comprise trained personnel who are kept in a state of readiness to meet emergency situations. They are equipped with state-of-the-art technology. Their preparedness is kept updated with drills and exercises.

13.10 REFERENCES AND FURTHER READING

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13.11 ACTIVITIES

- 1) Imagine that there is an earthquake of high magnitude. Plan how the Emergency Operation Center will work, how the staff members will perform their duties and finally handle the situation successfully. List the primary Emergency Support Functions required in the EOC for responding to an earthquake situation.
- 2) Prepare a detailed flow diagram after doing the above exercise indicating how the information flows during emergency operation, and discuss the shortcomings in the operation of the EOC and how the performance of the EOC can be made better.