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DISASTER MANAGEMENT IN INDIAN RAILWAYS

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"Railway Disaster is a serious train accident or an untoward event of grave nature, either on railway premises or arising out of railway activity, due to natural or man-made causes, that may lead to loss of many lives and/or grievous injuries to a large number of people, and/or severe disruption of traffic etc, necessitating large scale help from other Government/Non-government and Private Organizations[1]."

The Indian Railways is the world's largest government railway. It is a single system which consists of 65,436 route km of track that criss cross the country, on which more than 20,238 number of trains ply, carrying about 23 million passengers and hauling nearly 2.77 million tonnes of freight everyday[2]. Therefore, the safety of operations on the Railways and the safety and security of the millions availing the services of the Railways are of paramount importance[3]. India is vulnerable, in varying degrees, to a large number of natural as well as man-made disasters. Heightened vulnerabilities to disaster risks can be related to expanding population, urbanization and industrialization, development within high-risk zones, environmental degradation and climate change. It can also be related to increase in terrorism around the Globe[4].

DISASTER DEFINED IN RAILWAYS' CONTEXT

The concept of a Disaster was not adequately and comprehensively defined on Indian Railways, till the year 2005. It was accepted that a Disaster situation implies, on the railways, to cover only cases of serious rail/train accidents. The definition of Disaster Management (DM) as given by the Government of India was legislated for the first time in the Disaster Management Act, 2005. The broad principles of disaster for any department of the Government changed to the concept of any incident which could not be handled with alone by that department i.e. if it was beyond the coping capacity of a particular department, the incident could be termed as a disaster. With this came the concept of the departments of Government of India as also the State Governments required to join hands to extend whatever facilities were available with them to provide relief/rescue and mitigation on the occurrence of a disaster[5].

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[1] India. Ministry of Railways, Disaster Management Plan, September 2014, p. 6
[2] India. Ministry of Railways, Outcome and Performance Budget of Railways for 2014-15, p2
[3] India. Lok Sabha (15), Standing Committee on Railways, Twenty First Report on Major Railway Accidents, 2013, p. 1
[4] *Op.cit*., Disaster Management Plan, p. 3
[5] *Ibid*, p. 3

Disaster in the Railway context was traditionally a serious train accident, caused by human/equipment failure, which may affect normal movement of train services with loss of human life or property or both. This is now extended to include natural and other man made disasters. Different types of disasters are described along with a few examples, below :

a) Natural Disaster includes Earthquakes, Floods, Cyclones, Land Slides, Snow Avalanches, Tsunami etc.

b) Train Accident related Disaster includes Collisions (with a huge number of casualties), Train marooned (flash floods), derailments on a bridge over a river and coaches falling down, train washed away in cyclone, derailment of a train carrying explosives or highly inflammable material, tunnel collapse on a train, fire or explosion in trains, and other miscellaneous cases etc.

c) Manmade Disasters covers Acts of Terrorism and Sabotage, i.e. causing deliberate loss of life and/or damage to property, which includes Setting a Train on fire, Railway installations etc., bomb blast at Railway Station/Train, Chemical (Terrorism) Disaster, Biological, Radiological and Nuclear Disaster[6].

With the enactment of the Disaster Management Act, 2005 and other developments on the national level, Disaster Management Philosophy has also changed to adopt the latest concepts, which are:

- Serious train accidents, not the only events termed as disasters;
- Other events, e.g. Internal security related events like terrorist attack at station/train; marooning of train due to flash flood, disruption to traffic due to natural factors like earth-quake, cyclone, floods etc;
- No more Relief and Rescue Centric; and
- Holistic Approach adopted to incorporate prevention, mitigation, preparedness, rescue, relief, and rehabilitation.

New Philosophy gives more Emphasis on Prevention and Mitigation as under:

- Prevent and mitigate disasters;
- Audit Existing Systems for Disaster Resistance, Disaster Prevention and Mitigation on the basis of National Disaster Management Authority's and self prepared guidelines ;
- Disaster Management in Developmental Planning – New activities should be disaster resistant;
- Preparedness, Rescue, Relief and Rehabilitation - Dimensions of DM;
- Expertise based response from all stake holders; and
- Pooling of resources of all agencies, e.g. local administration, community, defence, hospitals and other Government organizations[7].

[6] *Ibid*, pp. 4-5
[7] *Ibid*, p. 5

The Disaster Management (DM) Act 2005 mandates creation of new institutions and assignment of specific roles for Central, State and Local Governments. Under the provisions of the Act, the National Disaster Management Authority (NDMA) has been established under the Chairpersonship of the Prime Minister and a National Executive Committee (NEC) of Secretaries has been created to assist the NDMA in the performance of its functions. At the State level, a State Disaster Management Authority has been created under the Chairpersonship of Chief Minister, which has been assisted by a State Executive Committee. At the District level, District Disaster Management Authorities have been created. The responsibility of laying down the policies on disaster management, approving the National Policy on Disaster Management (NPDM) and laying down the guidelines on Disaster Management has been given to NDMA under the Act. The NDMA accordingly prepared a draft of the National Policy on Disaster Management in consultation with the Home Ministry and submitted the same for approval of the Government. Approval of the Cabinet to the NPDM was given in the Cabinet Meeting held on 22 October 2009[8].

Disaster Management Act 2005

The Disaster Management Act, 2005 stipulates that Ministries of Government of India shall be responsible for taking measures necessary for prevention, mitigation, capacity building and to respond effectively to any threatening disaster situation or a disaster in accordance with the guidelines of the National Disaster Management[9].

The NPDM envisages a holistic approach to disaster management, encompassing the entire disaster management cycle including prevention, mitigation, preparedness, relief, response, rehabilitation and reconstruction. It addresses all aspects of disaster management covering institutional, legal and financial arrangements, capacity building, knowledge management, research and development. It focuses on the areas where action is needed and the institutional mechanism through which such action can be channelised[10].

[8] *Ibid*, p. 7
[9] Disaster Management in Indian Railways, www.iritm.indianrailways.gov.in, p. 4
[10] *Ibid*

IMPORTANT PROVISIONS IN THE DISASTER MANAGEMENT ACT, 2005 CONCERNING RAILWAYS:

Sections 35, 36 and 37 of the Disaster Management Act, 2005 states the responsibilities of Ministries and Departments of Central Government as per which a number of measures/actions are to be taken either on their own or in consultation with National Disaster Management Authority (NDMA).

Section 35 of the Act states that the Central Government shall take all such measures as it deems necessary and it includes coordination of actions of the Ministries or Departments of the Government of India, State Governments, National Authority, State Authorities, Governmental and Non-Governmental organizations, ensure appropriate allocation of funds, deployment of Naval, Military and Air Forces and provide assistance to the National Authority and State Government[11].

Section 36 of the Act states that it shall be the responsibility of every Ministry or Department of the Government of India to take measures necessary for prevention of disasters, mitigation, preparedness and capacity-building, respond effectively and promptly to any threatening disaster situation and make available its resources to the National Executive Committee or a State Executive Committee for the purposes of responding promptly and effectively to any threatening disaster situation or disaster[12].

Section 37 of the Act states that every Ministry or Department of the Government of India shall prepare a Disaster Management Plan, review and update annually the plan and forward a copy of the plan to the National Authority for its approval[13].

DISASTER MANAGEMENT SYSTEM AND STRATEGIES ON INDIAN RAILWAYS

In India, the railways are the most preferred mode of transport both for the movement of people and goods consignments in bulk. Unlike in other countries where the role of Railways, in the event of a disaster, is restricted to clearing and restoring the traffic, in our Country Indian Railways handles the rescue and relief operations. The 'Citizen Charter' of the Indian Railways

[11] *Ibid,* pp.8-9
[12] *Ibid*, pp. 8-9
[13] *Ibid*, p. 10

also spells out the railways' commitment in providing safe and dependable train services to passengers[14].

Disasters on the railway network are a consequence of human and equipment failures, natural calamities and acts of sabotage and comprise collisions and derailments of trains, accidents at level crossings, fires on trains; floods, cyclones, earthquakes, bomb blasts, terror attacks and other destructive/disruptive activities[15].

The Indian Railways were managing disasters relating to train accidents in accordance with the rules and procedures contained in the Accident Manual 1992. Increasing traffic density, longer length of trains with a large number of passengers on board, higher operational speeds of trains, emerging technologies etc., called for a paradigm shift from the existing level of preparedness and readiness to combat any disastrous situation to a much higher level of an effective 'Disaster Management System'. Consequently, the Ministry of Railways constituted a **High Level Committee (HLC)** (September 2002) to review the Disaster Management System over the Indian Railways related to train accidents and natural calamities and to identify additional technological and managerial inputs required to quicken the pace of rescue, relief and restoration of operations. The Committee recommended additional inputs to be in place within a period ranging from three to 36 months and all of its 111 recommendations were accepted (April 2003) by the Railway Board. The HLC did not address disasters such as earthquakes, floods, cyclones, fires, industrial accidents, accidents involving trains carrying explosives/ inflammable/ hazardous material[16].

Major recommendations of HLC

- Detailed disaster management plans should be devised at the zonal and divisional levels.
- Relief trains and medical vans should be adequately provided, strategically located, upgraded to operate at higher speed and equipped with modern equipments.
- Rescue ambulances and other infrastructure should be provided including facilities in hospitals. Communication facilities should be upgraded.
- MoUs should be entered into with State Governments, public/private agencies, Armed forces etc to improve the response time during disasters.
- Crack rescue teams should be formulated. Specialised training in rescue, extrication, relief and restoration techniques should be provided to staff[17].

[14] *Op.cit*., www.iritm.indianrailways.gov.in, p. 3
[15] *Ibid*, p. 4
[16] *Ibid,* p. 3
[17] *Ibid*

CORPORATE SAFETY PLAN (2003-2013): The Ministry of Railways, *inter alia*, suggested for modernization of Disaster Management (DM) on Indian Railways. The main focus area are – faster response, better facilities and equipment, expanding resources to meet requirements in major accidents, better customer focus and training and preparedness, etc. For modernization of Disaster Management, 18 (eighteen) strategies have been suggested in the Corporate Safety Plan, out of these, 14 (fourteen) have so far been implemented as on 28 February 2013 on Indian Railways[18].

Salient features of the Corporate Safety Plan

- Extensive use of Anti Collision Device (ACD) to prevent collisions.
- Replacement of overaged tracks bridges, Signal & Telecommunication gears and rolling stock to reduce derailments.
- Manning of unmanned level crossings and use of Train Actuated Warning Device and ACD to reduce level crossing accidents.
- Introduction of modern bridge inspection and management system.
- Filling up of safety category posts[19].

For implementing the strategies for modernization of Disaster Management, following measures have already been taken:-

- Disaster Management (DM) Plans have been made at Corporate Level, Zonal and Divisional Level and dovetailed with State/District DM Plans;
- Tie-up with reputed Private/Civil Hospitals;
- Provision of rescue ambulances and Collapsible coffins in each Divisional hospital;
- Taking assistance of armed forces including Air-Force for assistance whenever required during disasters;
- Provision of Emergency Escape Route;
- Delegation of adequate financial powers to concerned officers for quick rescue operations; and
- Minimum one 140 Tonne breakdown crane have been provided in each Broad Gauge division and all Accident Relief Trains (ARTs) have been provided with Air-brake stock[20].

[18] *Op.cit.,* Disaster Management Plan, p. 87
[19] *Op.cit.,* www.iritm.indianrailways.gov.in, p. 3
[20] *Op.cit.,* Disaster Management Plan, p. 87

The financial implication for modernization of DM on Indian Railways as per the Corporate Safety Plan is approximately Rs 400 crore. The main areas of focus on disaster management are:

- Faster Response;
- Better facilities and equipments;
- Expanding resources to meet requirements in major accidents;
- Better customer focus;
- Training and Preparedness; and
- ART management to undergo major changes covering Rolling Stock Management, status of equipment, monitoring of utilization of assets and availability and consumption of stores etc[21].

While the Corporate Safety Plan addressed the causes that lead to disaster and was preventive in nature, HLC's focus was on effective management of disasters[22]**.**

Disaster Management Review Committee: Another Disaster Management Review Committee was appointed on 27 February 2007 under the Chairpersonship of Shri Gajendra Narain, an ex-IPS officer. The committee suggested comprehensive study and audit of current preparedness and management practices referring to all types of disasters/hazards for different phase of disaster management and ways and means for integration of disaster reduction concept into development planning. The Committee gave 106 recommendations, out of which 41 recommendations have been accepted. Out of the 41 accepted recommendations, 36 have already been implemented and only 5 are under implementation[23].

Expert Group Committee: An Expert Group Committee for Modernization of Indian Railways was constituted by the Ministry of Railways which submitted its report in February 2012. The Committee recommended for upgradation of Disaster Management facilities which *inter-alia* included provision of high speed self-propelled Accident Relief Trains and Medical Vans, Road Cum Rail Vehicles for accident relief, 175 tonnes cranes, setting up of Disaster Management and other Training Centers[24].

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[21] *Ibid*, p. 88
[22] *Op.cit.,* www.iritm.indianrailways.gov.in, p. 4
[23] *Op.cit.,* Disaster Management Plan, pp. 91-92
[24] *Ibid*, p. 91

ROLE OF SECURITY DEPARTMENT IN DISASTER MANAGEMENT

The security on Indian Railways is being managed by 3 agencies – District Police, Government Railway Police (GRP) and Railway Protection Force (RPF). The District Police and the Governments Railway Police function under administrative control of respective State Government and their role is prevention and detection of crime [except those covered by the Railway Act and the Railway Property (Unlawful Possession) Act] and tackling of law and order problems. The Railways Protection Force is an 'Armed Force of the Union' constituted by an Act of Parliament, the Railway Protection Force Act 1957, for the protection and security of railway property, passenger area and passengers and for matters connected therewith[25].

The **Disaster Management Plan** focuses on accidents as well as on a whole range of disasters including terrorist acts and natural disasters. It has worked out detailed methodology for the prevention of such situations like increased rush at stations during festivals or floods and earthquakes. The Disaster Management Plan-2013, which conforms to the guidelines of the National Disaster Management Authority (NDMA) and the Disaster Management Act 2005, relies heavily on modern technology for prevention, mitigation and rescue and relief[26].

According to the plan, the Integrated Security System being installed at 195 important stations of the country will be equipped with video analytics that will give alert when the crowd density will reach the prescribed limit at a station. The plan provides for co-ordination with State Administration for prior information on crowd movement. In addition to Integrated Surveillance System with CCTV cameras under an Internet protocol, bomb detection and other facilities are to be made available at these stations[27].

The plan has given a major role to the Railway Protection Force (RPF). It provides for constituting a disaster management team at the divisional level with 15 RPF personnel and a Quick Reaction Team (QRT) at the zonal level. The teams are being trained by the National Security Guard (NSG) in techniques including bomb detection and its disposal. The Plan-2013 envisages an emergency communication system using ISRO 3C Satellite Communication System for updating imagery for 45 minutes or so of accident sites[28].

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[25] *Ibid,* p. 37
[26] railnews.co.in dated 29.5.2013
[27] *Ibid*
[28] *Ibid*

The Disaster Management Plan includes who is responsible for what activities in detail, to ensure the basic steps as below:

- Rapid access to the site of the accident.
- Effective site management by making best use of on-board and locally available resources.
- Quick extrication of victims.
- Speedy transportation of victims to hospital.
- Proper communication system both for assisting the stranded passengers as well as giving out timely information to the media.

In compliance to the above instructions of the Railway Board, all 17 Zonal railway Headquarters and 68 divisions have prepared their respective Disaster Management Plans. Zonal Railways have also hosted their Disaster Management Plans on the Railnet for the widespread sharing[29].

The Ministry of Home Affairs is the Central Nodal Ministry to tackle hostage or terrorist situations requiring specialized handling. National Security Guard (NSG) has to be requisitioned in such situations. The Crisis Management Plan of the Ministry of Railways envisages management of such crisis by the National Crisis Management Committee (NCMC) and the Crisis Management Group (CMG) at the Railway Board level and by the Zonal Management Group at the zonal level[30].

DISASTER MANAGEMENT TRAINING

National Institute of Disaster Management (NIDM): The National Institute of Disaster Management (NIDM) has been envisaged as the apex body which runs several multi-disciplinary training programmes including the programmes on transportation related disasters in which railway officers have also been invited to attend.

Disaster Management Training on Zonal Railways and Division: Till now, training on the subject of Disaster Management implied subjects connected with Train Accidents only. There was no training given for natural calamities or for terrorism related items. With the adoption of

[29] *Op.cit.,* Disaster Management Plan, p. 92
[30] *Ibid,* p. 40

this new concept the training requirements for Lower, Middle and Higher Management officials of the Railways is re-oriented to cover these concepts[31].

Conclusion

No doubt, massive efforts have been made in the decades since independence to modernize and strengthen the infrastructure relating to accident relief and restoration. There has been general Upgradation in the tools, equipment and the amenities to the staff, which has enhanced their capability and effectiveness. These improvements have increased the operating speed of the Accident Relief Trains and brought down the transit time between the base depot to the accident site. But, in case of an accident involving human life even the least delay can be crucial. However, the concept of golden hour is an ideal one, which cannot be achieved in any disaster/accident unless it occurs in the vicinity of the railway disaster management infrastructure/city/civil/armed forces establishments with adequate medical infrastructure. Therefore, a paradigm shift is now called for. The total approach to the concept of disaster management and the investment decisions thereof needs a revamp. The strategy for setting up an effective Disaster Management System on the railways has to be based upon the twin plank of a stronger and appropriate infrastructure, backed by a well-trained team of disciplined and dedicated manpower[32].

[31] *Ibid,* p. 78
[32] www.indianrailways.gov.in (HLC Report on Disaster Management), 2002, p. 3