

Search, Rescue and Evacuation: Present Status and Future Needs in Indian Armed Forces

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Abstract

This article attempts to analyse disaster preparedness, how the mandated agencies of the Government (both at Central and State levels) - mainly the National Disaster Response Force (NDRF), Armed Forces, including the Coast Guard, and other specialised forces, some Non-governmental Organisations (NGOs), Humanitarian and UN Agencies, Public Sector Undertakings (PSUs) etc., work towards this specialised response. It tries to study their specific modes of disaster planning, to make their tasks efficient, responsive, participatory and transparent. It tries to understand the mechanics of the complex operations of Search And Rescue (SAR), as practised in India and also globally. It also looks at evacuation; disaster technologies in vogue and worldwide organisations involved. It specifically looks those in India and, finally recommends measures, to make this task effective.

Introduction

The Indian sub-continent is increasingly becoming prone to disasters, which repeatedly cause heavy loss of life and property. We need to deploy Disaster Response teams round the year. We need to analyse the issue of SAR as part of Disaster Response. SAR is the search for and provision of aid to people who are in distress or imminent danger.

Types of Search and Rescue

(a) **Ground (Lowland) SAR** - Ground SAR is the search

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for persons who are lost or in distress on land or inland waterways. People may go missing for a variety of reasons. Some may disappear voluntarily, due to issues like domestic abuse. Others disappear for involuntary reasons such as mental illness, getting lost, an accident, death in a location where they cannot be found or, due to abduction. Such missions that occur in urban areas should not be confused with “urban search and rescue”, which in many jurisdictions refers to location and extraction of people from collapsed buildings and other entrapments. In most countries, Police is the primary agency for carrying out searches for missing persons on land. Some places have voluntary SAR teams that can be called out to assist in these searches.

(b) **Mountain Rescue** - Mountain Rescue relates to SAR operations specifically in rugged and mountainous terrain. Qualified and experienced trekkers/mountaineers do this type of search, aided by ground navigation and air support. These are among the most challenging of SAR operation.

(c) **Cave Rescue** - Its a highly specialized form of rescue for rescuing injured, trapped or lost cave explorer, and requires, perseverance and expertise.

(d) **Urban Search And Rescue (USAR)** - USAR also referred to as Heavy Urban Search and Rescue (HUSAR), is the location and rescue of persons from collapsed buildings or other urban and industrial entrapments. Due to the specialized nature of work, most teams are multi-disciplinary and include personnel from police, fire and emergency medical services. Unlike traditional ground search and rescue workers, most USAR responders also have basic training in structural collapse and the dangers associated with live electrical wires, broken natural gas lines and other hazards.

(e) **Combat Search And Rescue (CSAR)** - CSAR is search and rescue operation that is carried out during war within or near combat zones. Again it is challenging, as it may have to be carried out from under the nose of enemy and under hostile fire.

(f) **Maritime Search And Rescue** - Maritime Search And Rescue is carried out at sea to save sailors and passengers

in distress, or the survivors of downed aircraft. The type of agency which carries out maritime search and rescue varies; it may be the coast guard, navy or voluntary organisations. When a distressed vessel is located, these organizations deploy lifeboats to return to land. In some cases, the agencies may carry out an air-sea rescue (ASR). This refers to the combined use of aircraft (such as flying boats, floatplanes, amphibious helicopters and non-amphibious helicopters equipped with hoists) and surface vessels.

SAR in the World Today²

Canada has the world's biggest SAR component, with the duties shared between the Canadian Coast Guard and the Defence Forces. It has assigned five aircraft squadrons plus three combat support squadrons with SAR roles. Some municipalities and provinces have their own SAR units, plus some volunteer non-profit associations that conduct SAR in the country. USA was the first to develop the expertise and technology of SAR. Presently, countries like Israel, Germany, Russia, UK, Turkey etc. also have a well developed SAR network.

SAR in India

The Indian Air Force (IAF) provides regular relief operation for food and medical facilities using its cargo aircraft most notably the Ilyushin (IL-76). Major SAR operations undertaken in recent times¹:-

- (a) **During the 2010 Ladakh floods**, two IL 76 and four Antonov-32 aircraft of the IAF carried 30 tonnes of load, including 125 rescue and relief personnel, medicines, generators, tents, portable X-ray machines and emergency rescue kits. MI-17 and Cheetah helicopters were extensively employed to increase the effectiveness of rescue operations.
- (b) **During the 2013 Uttarakhand floods**, Indian armed forces took part in rescue operations. By 21 June 2013, the Army had deployed 10,000 soldiers and 11 helicopters, the Navy had sent 45 naval divers, and IAF had deployed 43 aircraft including 36 helicopters. From 17 to 30 June 2013, IAF airlifted a total of 18,424 people-flying a total of 2,137 sorties and dropping/landing a total of 3,36,930 kg of relief material and equipment.

(c) **Nepal Earthquake, 2015 - Operation Maitri** (Amity) – IAF mobilised 1xIL 76, 2xC-130J Hercules, 4xC-17 Globemaster transporters, 2 x Advanced Light Helicopters and 8xMi-17 helicopters starting 25th April.

(d) **Jammu and Kashmir Floods: 2014** - Starting 06 September 2014, 23 aircraft of IAF and 26 helicopters were deployed, along with 6 teams of NDRF and 200 Marcos commandos of Indian Navy. Additional resources were deployed subsequently,

(e) **Kerala Flash Flood: 2018** HADR Operations by IAF - Nearly 1000 plus Ladies, children, elderly people and residents were winched from the rooftops of submerged houses to safety. Helicopters also dropped food and water packets to the stranded people.

Evacuation

This operation involves removing people from zones at risk of an imminent disaster to safe locations. Though common to cyclonic storms, evacuation is also a frequent requirement with technological/ industrial disasters. For it to be effective, there must be a timely and accurate warning system, clear identification of escape routes, provision of transport, an established policy that requires everyone to evacuate when ordered; an education programme to make the community aware of the plan. Most evacuation operation are dovetailed with and generally follow the SAR operation.

Disaster Technologies

For SAR and evacuation to be effective, certain essentials are required -shelter, food and drinking water, communication, power supply, clearance and access, public information and security, health and sanitation, temporary subsistence supplies. Technologies, such as interactive maps, open databases, text bots, apps, tele-health services or drones have great potential to help people stranded in life-threatening situations and make first response teams more effective during disasters. Remote sensing, satellite imagery and computer based GIS systems are also of great help.

Disaster Organisations

As per CRED², 337 catastrophes related to natural hazards were

reported worldwide in 2014. They affected 94 countries. While this might seem huge, the number of natural catastrophes was the lowest. Floods were the most frequent, followed by earthquakes and then storms. These events call for coordinated reaction at short notice. That's where disaster relief organizations come into focus, aiding the SAR efforts. They often operate together with other organisations. Some major organisations listed below³:-

(a) **International Search and Rescue Advisory Group (INSARAG)** - A UN organisation, for Coordination of Humanitarian Affairs (OCHA). This is a network of disaster-prone and disaster-responding countries and organizations, dedicated to urban SAR and operational field coordination. The duty to render assistance is covered by Article 98 of the UNCLOS. It aims to establish standards and classification for international USAR teams as well as methodology for international response coordination in the aftermath of earthquakes and collapsed structure disasters.

(b) **United Nations High Commissioner for Refugees (UNHCR)** - It was created in 1950, to help millions of Europeans who had fled or lost their homes. The start of the 21st century has witnessed UNHCR helping refugee crises in Africa, Middle East and Asia. During its lifetime, UNHCR helped over 50 million refugees to successfully restart their lives.

(c) **United Nations Disaster Assistance and Coordination (UNDAC)** - Created in 1993, it is designed to help the UN and governments of disaster affected countries. UNDAC also assists in coordination of incoming international relief at national level and/or at the site of the emergency. Its teams can deploy at short notice. Assessment, coordination and information management are UNDAC's core mandates.

Recommendations and Suggested Policy Changes⁴

Recommendations

(a) **Training of SAR Teams: Towards an Improved and Effective SAR.** SAR involves location, extrication and initial medical stabilisation of victims trapped in confined spaces. It is considered a "multi-hazard" discipline, as it may be needed for a variety of emergencies including earthquakes, cyclones,

floods, dam failures, technological accidents, terrorist activities, avalanches and hazardous material releases. The training needs to be institutionalised. Besides, same could also be outsourced to private enterprises, like Rescue Training Associates (RTA) of USA. Established in 1998, to improve disaster management and technical rescue training within USA. There is a need to encourage such ventures to come up in India. We have a repository of experience in handling varied nature of catastrophes in all kinds of terrain. Efforts need to be synergised.

(b) **Cater For Emergency Support Functions** - Besides SAR, there would be many other support departments and ministries in States/Centre, keeping in view their roles in the realm of managing disasters. These roles must be made explicit and should not be left ambiguous. Once responsibilities are assigned, suitable organisational changes should be effected and adequate resources must be allocated.

(c) **Build Local Capacities** - The focus should be to enhance capacities at international, regional, national state / province levels and at local levels. Efforts to build local capacities at the village, block and local community levels is more important especially after setting up of NDMA / NIDM and raising of NDRF. This would contribute not only towards improving resilience of the community but also provide a fillip to self-confidence and self-esteem of locals, in the long run. It would help bring in positive changes in the behaviour pattern of the community towards responding to disasters.

(d) **Improve Readiness State of Stakeholders.** Preparedness aspects should lead to improving readiness state of all the stakeholders to include individuals, organizations and the vulnerable communities. Three important aspects which would contribute towards better preparedness and readiness are:-

- (i) Training and Knowledge.
- (ii) Mock up drills and rehearsals.
- (iii) Integration of stakeholders.

(e) **Build a Coordination Mechanism** - There would be a need to allocate areas of operation, areas for establishing bases, relief camps, medical camps and for other such activities. It would require well thought out SOPs. This is an area where NDMA and NIDM need to work further and chalk out a strategy to streamline procedures.

(f) **Suggested Policy Changes**

- (i) Keep adequate funds for these tasks, which are unforeseen and give very little reaction time. This money has to be in-built as a contingency fund,
- (ii) Concept of placement of Disaster Bricks - as enunciated by Armed Forces to be practised and provisioned with the NDRF / State Disaster Forces.
- (iii) Delineation of responsibilities of NDMA, MHA/other Ministries to be clearly spelt out and known to all concerned, to facilitate smooth/prompt response.
- (iv) Best practices pertaining to disaster mitigation be documented and disseminated in vernacular language/ pictorial format to the community at large.
- (v) Coordination and knowledge net-working among stakeholders, researchers, academicians and NGOs periodically by a nodal agency.
- (vi) Integration of disaster mitigation in universities resulting in research outputs ,with a positive impact.
- (vii) Uniformity in bye-laws would result in several advantages such as updation, cost effectiveness, training, development of software for checking conformity.
- (viii) Involvement of private sector is imperative. Similarly, creating conditions for development of insurance markets, and use of risk reduction financial instruments.
- (ix) Towards long term socio-economic and psycho-cultural rehabilitation, political and administrative support is essential. Support of community at large is very important.

Conclusion

Search, rescue and evacuation, are among the most challenging tasks, more so in a post-disaster situation. Hence utmost skill, training and expertise is needed for those responsible for the onerous task. This is not the responsibility of the Government alone, and requires community effort.. NDMA has made a beginning, and together, with the help of Armed Forces / NGOs / Private Sector, it is hoped the task will be accomplished. It will lead to more lives saved ,while facing future disasters. In this regard, we should be willing to take help of UN agencies and adopt models and good practises from Canada and USA, who are the pioneers of SAR and evacuation techniques in the world today.

Endnotes

¹ Summarised from HQ IDS and Directorate Gen of Military Operations media briefings and After Operation Reports with respect to HADR operations - accessed through personal interactions by the author.

² CRED- the Centre for Research on Epidemiology of Disasters is the worlds largest research body in this field.

³ Accessed from websites of INSARAG, UNDAC and UNHCR.

⁴ Extracted from the thesis 'Disaster Management and Role of Armed Forces in India'- by the author.