

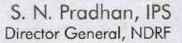


STANDARD OPERATING PROCEDURE ON Collapsed Structure Search & Rescue Operations

National Disaster Response Force Government of India "We cannot stop natural disasters but we can arm ourselves with knowledge: so many lives wouldn't have to be lost if there was enough preparedness."

Petra Nemcova

Foreword





The structural collapse has been a frequent phenomenon in India and imposes serious risk on the populace. Dense population, multi-storeyed buildings, poor construction, seismic activities and lack of maintenance often lead to structural collapse and multiply the risk. Adopting safe practices and strictly following building codes can minimise the damage to an extent.

The management and control of the adverse consequences of future structural collapse incidents will require co-ordinated, prompt and effective response system at the Central and State Govt. levels. Preparations in this regard constitute an important part of our efforts for better management of disasters in the country.

The purpose of this SOP is to formulate the guidelines for NDRF responders to standardise response post structural collapse incidents. These procedural guidelines identify some of the critical issues/gaps which must be adhered to for managing these incidents.

The compilation of this SOP is driven by on the lessons learnt by NDRF and other stakeholders during past incidents. I hope this SOP on CSSR Operations will prove to be helpful not only to NDRF rescuers but other stakeholders as well. It will also guide other stakeholders to adopt a certain level of uniformity in response. The SOP is dynamic in nature & subject to further improvements based on future inputs.

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AOR	Area of Responsibility
BLS	Basic Life Support
BMS	Base Medical Station
Bo0	Base of Operation
COVID-19	Corona Viral Disease -2019
CP	Command Post
CSSR	Collapsed Structure Search & Rescue
DEOC	District Emergency Operation Centre
DG	Director General
EOC	Emergency Operation Centre
IC	Incident Commander
ICMR	Indian Council of Medical Research
IMO	Information and Media Officer
NSARAG	International Search And Rescue Advisory Group
IRS	Incident Response System
MOST	Maintenance & Operation Stores and Tool Room
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
PPE	Personal Protective Equipment
PTSD	Post-Traumatic Stress Disorder
QDA	Quick Deployable Antenna
RDC	Reception & Departure Centre
RO	Responsible Officer
SAR	Search And Rescue
SEOC	State Emergency Operation Centre
SITREP	Situation Report
SOs	Sub-Ordinate Officers
SOP	Standard Operating Procedure
TEA	Tools, Equipment & Accessories
USAR	Urban Search And Rescue
UT	Union Territory
VLC	Victim Locating Camera

STANDARD OPERATING PROCEDURE ON COLLAPSED STRUCTURE SEARCH & RESCUE OPERATIONS

1. INTRODUCTION:

Collapse Structure Search & Rescue is a term applied to rescue & recovery operations at the scene of a large & complex structural collapse or multiple structural collapse. It can also be applied to the scene of a less complex "Structural Collapse". A collapse refers to a failure of a structure or component to maintain its structural integrity.

CSSR is an operation to conduct safe and effective search & rescue operation in which a wide range of knowledge, skill & ability are required with use of advance techniques to locate, extricate & stabilize the victim trapped inside the confined space/void of a collapsed structure. The ultimate goal of search & rescue operation is to rescue trapped victims in shortest span of time.

2. AIM:

The aim of this SOP is to lay down guidelines for NDRF teams for responding in CSSR operations.

3. PURPOSE:

The purpose of this SOP is to establish the procedure for the response of the Search and Rescue Teams of NDRF BN for Collapsed Structure. The SOP provides guidance and assign responsibility for adopting various executive actions to ensure prompt response during CSSR operation.

4. SCOPE:

- i) To define a 'Standard Operating Procedure' for CSSR operation.
- ii) The SOP applies to all elements of the Command while performing CSSR operations.
- iii) This SOP is a guideline and should be reviewed periodically.

5. OBJECTIVE:

The objective of this SOP is to formulate action plan for specialist response during a CSSR Operation while all safety measures are to be followed. These are as under:

- i) Guidelines for rescuers during CSSR operation.
- ii) Reducing reaction time of the teams in responding to the CSSR operation.
- iii) Coordinated and collaborative instructions during CSSR Operation.
- iv) Achievement of best result by well-planned rescue operation.

- v) Establishment of BoO, CP, Communication Post, Medical Post, Staging Area based on INSARAG Guidelines & Methodology.
- To take immediate actions for temporary support and protection to endangered/ collapsed structures.
- vii) To rescue the survivors trapped under the debris from the damaged/ collapsed structure.
- viii) To provide First Aid to the trapped victims and to dispatch them for advance medical care.
- ix) To recover, hand-over and dispose off the bodies of the deceased.

6. RESPONSIBILITIES:

- a) Executives/Supervisors/Commanders: It shall be the responsibility of all the Executives/Supervisors/ Commanders at all levels of the chain of the command of NDRF who are involved in the CSSR response to ensure that all aspects of this SOP are adhered to.
- b) Responders: It shall be the responsibility of all the responders to know, understand and follow the directions of the SOP in the letter and spirit.

6.1 ROLE OF SUPERVISORY OFFICERS:

On receipt of information regarding any structural collapse, one version of information be available with all Supervisory Officers i.e. battalion Commandant, DC (Ops), Unit Control Room and Team Commander. The DC (Ops) of the unit will be responsible for:

- i) On getting the information, DC (Ops) of the unit will immediately alert the 'On wheel' team for getting ready for move and unit Control Room to get the details about the operation from the incident site. He will also inform the Commandant and DC (Ops) at HQ NDRF.
- ii) Simultaneously, coordinate with district officials (DM/ADM/SP/SDMA or any other local officials) for actual details of the team to augment the 'On wheel' team before move.
- iii) To brief the team before move and check the availability of TEAs as per the requirement.
- iv) To remain in contact with the local authorities/media for further updates and ascertain the requirements of additional teams/resources, if any.
- v) To remain in constant touch with the team commander and guide him during the operation.
- Sharing of all operational details to HQ NDRF along with good quality photo and videos.

All above action be closely monitored and supervise by the Commandant.

6.2 ROLE AND TASK OF UNIT CONTROL ROOM:

Unit Control Room play a very vital role. It acts as a buffer between the team and Bn. Commanders/FHQ NDRF Control Room:

- i) Provide all the operational details such as road maps, civil officials contact details, logistics details, current situation, stake holders on ground etc. to the SAR team commander moving out for the CSSR Operation.
- Receive all the information related to Incident/Operation, consolidate and share it with higher Headquarter.
- iii) Upgrade the information about the incident and will share with team commander.
- iv) Collect the photos & videos of Incident/Operation and share it with higher Headquarter.
- Maintain a data bank of the information, photos and videos for de-briefing, case studies and future requirements.
- vi) Collect en-route information from Team Commander.
- vii) Collect the information regarding initial assessment of the incident.
- viii) Remain in close contact with Team Commander.
- ix) Collect the information of on-going operation and outcomes.
- Collect and consolidate the Incident Report of the operation and send it to HQ NDRF as per proforma mentioned as Appendix-R.

6.3 ROLE AND TASK OF TEAM COMMANDER:

It will be the responsibility of team Commander of CSSR team who is involved in the CSSR Operation to ensure that all aspects of this SOP must be adhered. On receipt of warning orders, Team commander will ensure the following:-

- Collect all concerned information about incident from DC (Ops)/ Unit Control Room and will plan his strategy as per ground conditions of the concerned State/ District.
- ii) Chalk out the shortest route to be followed by the vehicles during the movement and discuss it with the DC (Ops) and will mark it on the digital maps of the drivers.
- Before mobilization, Team commander will prepare and submit marching out statement to the Unit Control Room immediately in the format as per Appendix – J.
- Detail a suitable person to carry camera and recording equipment with spare battery.
- Availability of CSSR equipment, K-9 Squad, Communication equipment and emergency medicines with the team.
- vi) On the way to the incident site, he will collect the required information from local sources/media and liaise with local administration for essential requirements and ask for a guide.

- vii) Upgrade the information from local administration, Unit Control Room, media and other stake holders.
- viii) On arrival at incident site, team commander will assess the situation and plan the employability of his team accordingly for prompt response.
- ix) Brief Sub-team commanders and team members to familiarize them with their area of operation. He will also brief them about the safety instructions, local customs and culture.
- x) After assessment and initial briefing, he will start the rescue operation with all their Search and Rescue TEA, K-9, victim locating instruments etc. Search and Rescue operation will be conducted as per INSARAG guidelines.
- xi) Ensure efficient and multiple communication means like HF/VHF/QDA/Sat Phone with Unit HQ, HQ NDRF, SEOC and DEOC.
- Ensure that all electric and gas connections are cut off and the building is safe to enter.
- xiii) Liaise with the other agencies working in the area for better co-ordination during the rescue operation.
- xiv) Physically monitor the operation and record the outcomes.
- xv) Maintains seamless communication with Control Room of the unit with all the progress related to CSSR Ops.
- xvi) Brief the Incident Commander on the progress of the operation and discuss the further planning of the operation.
- xvii) Ensure the rest, recoupment and Adm. arrangements of his team.
- xviii) Ensure that all sub-teams remain in contact with team commander for better span of control.
- xix) To ensure that rescuers do not enter any building that is damaged unless it has been properly checked and declared "GO" by the safety officer.
- xx) To ensure the rescue operation should be conducted in presence of civil authority or the representative appointed by them to avoid any legal complications.
- xxi) To ensure good quality photographs & videos of operational activities and will send the same to unit Control Room at a regular interval.
- xxii) Team commander will not get himself engaged unnecessarily with electronic & print media and no ambiguous or partial statement will be given by him during the operation.
- xxiii) If RO/IC/IMO is not present at incident site, then team commander may communicate with the media but will limit himself to the operational activities by his team only.
- xxiv) Team commander will utilize standard formats (as per proforma given as Appendix-Q) for giving information of the incident, check-up of the victims and daily report of operational activities etc. to unit Control Room.

6.4 ROLE AND TASK OF TEAM 2IC:

He will assist the team commander and ensure the following:-

- Responsible for proper unloading of TEAs and establishment of BoO on arrival of team at safer place.
- ii) Monitor the operation carried out by the team.
- Ensure that all the rescue operation is conducted in a planned manner, as discussed.
- iv) Ensure proper rest and relief for the rescuers.
- v) Ensure adequate lighting on work site.
- vi) Team 2IC should be well versed with the role of Team Commander and will perform the duties of Team Commander in his absence.

6.5 ROLE AND TASK OF SAFETY OFFICER:

- Responsible for operational worthiness of TEAs, loading of shoring materials and equipment.
- Responsible for performing Structural triage and render his technical expertise regarding behaviour of collapsed structure as and when required.
- iii) Mark the entry and exit route for access and extrication.
- iv) Ensure that safety and security considerations are included in action plan and briefing.
- v) Safety officer will brief the well-established warning system and evacuation plan. He will further ensure that it must be properly briefed and executed on ground during any emergency.
- Safety officer will brief about the field signals, whistle signals or any other signals by using loudhailer before commencement of CSSR operation.
- vii) Ensure that team is working with proper PPE on the site.
- viii) Ensure that team personnel do not work alone and in isolation. He will ensure the buddy system during SAR.
- ix) Ensure biomedical control measures are adhered to i.e. body recovery, patient handling, sanitation & hygiene etc.
- Ensure that personnel and equipment decontamination practices are followed prior to leaving the work site.
- xi) Ensure that all team personnel are in contact with means of communications during the operation.
- xii) Safety officer will ensure rest, rotation and hydration of team members.
- xiii) Maintains his position so that he is visible to all commanders present at work site during operation.

6.6 ROLE AND TASK OF SUB-TEAM COMMANDER:

- i) To remain in contact with Team commander and safety officer.
- ii) To receive work instructions from team commander.
- iii) To assign task to rescuers.
- iv) To decide which specific TEA is to be used.
- v) To monitor work rotation of rescuers and equipment.
- vi) To update the CP on progress & task completed.
- vii) To ensure safety of his sub-team.
- viii) To maintain a log of all events, actions & expenditures.

6.7 ROLE AND TASK OF RESCUER:

It will be the responsibility of all the responders to know, understand and follow the directions of the SOP in letter and spirit.

- Wear proper PPE.
- ii) Carry out rescue work according to the instructions from sub-team commander.
- iii) Take proper safety measures while using TEAs.
- iv) Inform the progress of task to sub-team commander.
- Request Sub-team commander for additional resources for completing task, if required.
- Rescuer working as a logistic position will provide additional TEAs and other resources, if required.
- vii) Work in pairs to provide physical support, monitoring safety & rest of his buddy.

6.8 ROLE AND TASK OF ADM NCO:

- i) Receive Adm. related instructions from the Team Commander/Team 2IC.
- ii) Ensure all Adm. arrangements for rescuers.
- iii) Ensure to provide food and water timely to the rescuers.
- iv) Ensure the safety and security of the Adm. Base.
- v) Ensure the replenishment of fuel, gasoline, tools and accessories.

6.9 ROLE AND TASK OF MEDICAL TEAM:

- i) To provide medical support to the SAR team during CSSR operation.
- Medical team will consist of one medical officer and two para-medics or as per the requirement/gravity of the incident.
- iii) To carry all emergency medicines.
- iv) Ensure the availability of Ambulance equipped with BLS.
- v) Ascertain the details of hospitals/ medical facilities near the incident site.
- Medical officer will liaise with doctors of nearby hospitals for advance medical care.

7. DECISION FOR DEPLOYMENT OF CSSR TEAM:

7.1 SAR Team of NDRF will be mobilized:

- i) On receiving specific orders from HQ NDRF.
- ii) On the request/requisition of the affected State/UT Govt./local administration or the affected authorities.
- iii) On the orders of Battalion Commandant.

7.2 The procedure for requisition of NDRF team(s) is given below:

- i) The State Govt. is required to make a telephonic request to HQ NDRF for sending SAR Team(s) for rescue operation followed by a written requisition through Fax/Email/Dak on the prescribed proforma (Appendix-I) duly filled up in all respects to the HQ NDRF.
- State authority can also make a requisition to NDRF unit directly in case of emergency.
- iii) Under exigencies, on getting the direct request from the State Authority, Commandant of the local BN, after due appreciation of the situation, will mobilize his SAR Team(s) without wastage of time and simultaneously seek formal approval from the HQ NDRF.
- Following authorities of the State/UT can place requisition for the Team(s) of the NDRF during disaster;
- a. The Chief Secretary/ Principal Secretary, Disaster Management/ Relief Commissioner of the State/UT.
- DC/DM of the concerned district may request for the NDRF team which falls in the AOR of NDRF Battalion.

8. EXECUTION OF CSSR OPERATION:

8.1 PHASE -I: PREPARATION

Following preparation level is expected from all the Battalions of the NDRF at any given time for launching CSSR operation:-

- i) Two SAR teams at BN HQ and one team at each RRC should be "On Wheel" with all the required equipment, tools and stores. On Wheel team will move within 30 minutes from the Unit/RRC location for the incident site.
- ii) The man management and logistics management of every coy of each Battalion should be such that after taking into consideration the leave/reserve/temporary duty, three teams of each coy should be readily available for responding to any incident.
- iii) Each SAR team should comprise of all components of team as per authorization. The composition of NDRF SAR team is given as Appendix-H. However the team composition may vary keeping in view the nature/gravity of the incident and other administrative issues.

- iv) Before mobilization, Control Room of the Unit will provide all the available operational details such as road maps, civil officials contact details, logistic details etc. to the SAR team(s) moving out for the CSSR Operation.
- Each SAR team will carry sufficient ration before leaving the campus for duration of minimum 15 days and MRE may be taken for first 48 hours by each team.
- vi) Sufficient advance for the fresh/dry ration for the team will be provided by the Unit Quarter Master.
- vii) All Tools, Equipment and Accessories should be operationally ready through regular inspection for effective response.
- viii) The vehicles of the Unit will be earmarked for each team. Beacon lights, emergency sirens and NDRF monogram in every vehicle are mandatory. Vehicles should be operational-worthy at any time.
- ix) Mobile kennels for dogs should be available with each SAR Team.
- x) An ambulance equipped with BLS equipment, DM medicines along with other required stores should be prepared to be taken with SAR Team or made available at the site in coordination with the State/local authority.
- xi) Complete Communication stores with QDA & Satellite Phone should be earmarked and taken with each SAR Team.



8.2. PHASE-II: ACTIVATION AND MOBILISATION:

8.2.1 ACTIVATION:

After receiving the information from the authenticated source, this phase activates. The sequence of action are as under:-

i) The BN Commandant will activate SAR team(s) on receipt of orders from HQ NDRF. The number of SAR Team(s) to be sent will be decided by the HQ NDRF/BN.

- ii) Following information will be passed by unit Control Room to SAR team for further course of planning and action for CSSR operation:
 - a. Place of incident.
 - b. Time of incident.
 - c. Number of people affected.
 - d. Number of casualties, if any.
 - e. Other rescue agencies operating.
 - f. Number of rescue teams required.
 - g. Nodal officer and his contact number.
 - h. Weather at incident site.
 - Hazardous materials present at incident site.
 - j. Routes/Terrain.
 - k. Action taken by local administration before arrival of SAR team.
 - I. Location of RDC for reporting of SAR teams.
 - Movement order along with the complete list of stores will be ready with intimation to HQ NDRF.
- iii) Briefing of SAR team will be done by the Supervisory officer/respective Team Commanders on following aspects:
 - a. Cross checking and confirming the readiness of the team on all aspects.
 - Details of incident site and current situation.
 - c. Route to reach the incident site.
 - d. Initial deployment plan.
 - e. Safety precautions to be taken en-route.
 - f. Briefing of drivers and halting points.
 - g. Order of March.
 - h. Checking of morale of team members and motivational briefing.
 - i. Ensuring TEAs, communication equipment, camera & other stores.
 - j. Contingency amount.
 - k. Do's and Don'ts.
 - The bag and baggage to be carried by rescuers depending on topography of that place.



8.2.2 MOBILIZATION:

In this stage, SAR Team(s) and other operational elements moves from BN HQ/ RRC to incident site for conducting rescue operation. The fastest movement of SAR Teams will be ensured so that the rescue operation can be commenced at the earliest at the incident site.

Following actions are required to be taken by the concerned Bn/Team:

- i) To ensure the effective and timely response upon confirmation of the request for assistance. The Commandant/ DC (ops) of the local Unit will coordinate with the affected State/UT/District for immediate response.
- ii) Following instructions will be adhered during mobilization:-
- a. "On Wheel" Team will be mobilised within 30 minutes after getting formal orders from HQ NDRF/BN Commandant along with its all components.



- Light vehicle -1 and Medium/Heavy vehicle -3 (including one bus) will be provided to one SAR Team.
- c. Team Information Sheet will be made available with each SAR team as per the proforma mentioned at Appendix-P. Unit must send this in advance to the requisitioning authority for arrangements of logistics at the incident site. This is an essential requirement if the team is to be sent to any other country for responding in CSSR operation.

- Battalion will send a message in detail regarding mobilization of SAR Team(s) mentioning its composition to the HQ NDRF.
- e. Unit Control Room will communicate with the team en-route regarding road worthiness, other sister agencies working on the site, place of reporting of team and availability of resources at the site.
- Decision for reinforcement lies with HQ NDRF/ BN which will be communicated immediately for further course of action.
- g. In case of reinforcement of CSSR teams by air or rail, suitable transport as well as guide will be provided by the State/UT Govt. for timely arrival at the disaster site. The co-ordination will be done in advance by the HQ NDRF/Concerned Battalion.



8.3 PHASE -III: OPERATIONS:

On arrival at the operation site team will establish its Base of Operation close to the incident site keeping in view the situation on ground. Simultaneous actions will be carried out to save the time prompt response.

- i) Immediately, on arrival of SAR team, Team commander will get the briefing from the Responsible Officer or appropriate designated authority, which should include all the aspects relevant for effective response by the team.
- ii) By the time Team Commander is taking briefing, Team 2IC and other Supervisory staff to have a look of the incident site for possibility of multiple entry/worksite.
- iii) After discussing the situation with the Responsible Officer or appropriate authority, Team Commander in consultation with Team 2IC will chalk out his action plan and execute it professionally.

- iv) In case of multi storey or major building collapse, multiple entries to the building will prove fruitful. In such a case, Team Commander and Safety Officer to ensure that action of one sub team does not compromise the security of other sub teams.
- v) The primary task of the CSSR team is to ensure the search, rescue, safety and protection of the victims trapped or entangled in any life threatening situation. Responders will triage and provide pre-hospital treatment to the injured victims before handing them over to EMS.
- vi) In case any live victim is located, the medical component must accompany the sub team while rescue.
- vii) During the operation by SAR team, local Govt. can be asked for all necessary services/facilities like heavy machinery (Excavators, Tractors, Bulldozers and Cranes etc.) and POL etc.



- viii) Following instructions will be adhered in the operational stage of CSSR operation:
 - a. Battalion will be in communication with the team(s) on regular basis, monitor the progress of the operation, outcomes and tasks yet to be accomplished.
 - Battalion will assess requirement of additional manpower & resources and will provide reinforcement to the deployed team(s).
 - c. Battalion will provide assistance to the team(s) in case of any difficulty and liaise with other agencies, EOC of the concerned State/ District for better co-ordination during rescue operation.
 - The SAR Team Commanders will brief and interact with the media as per procedure, if required.
 - e. The Unit Commandant will keep on boosting the morale of the rescuers on every achievement.



- Rest and relief within the team will be ensured by team commander during the operation.
- g. SAR Team will adhere the INSARAG guidelines and procedures during the operation. Proper coordination with other stakeholders will be ensured by team commander.



8.3.1 SAFETY MEASURES DURING CSSR OPERATION:-

It is the resoponsibility of the team commander and safety officer that safety measures are be followed by all team members during the CSSR operation.

- i) Incident Site:
 - a. Scene must be secured before commencement of the operation.
 - b. No one is allowed to enter the incident site without explicit prior permission from the safety officer.

ii) Personal Protective Equipment:

Anyone entering the operation area must wear required PPE.

iii) Hygiene:

To reduce the possibility of contamination or contagion, as much as possible, rescuers must wash hands with soap and water before and after entering the work area; before and after eating and before and after using the bathroom.

iv) Safety Officer:

Safety Officer will be in charge of all safety-related matters (over all safety, site specific safety and special hazards safety) throughout the entire operation. He will have the authority to partially or completely halt all activities, if needed.

v) Team Safety:

Team commander will be responsible for the safety of the rescuers of his team. He should observe any unsafe action, condition or an emergency and immediately alert the team. All rescuers should be aware of predecided signals to be used in an emergency.

All operations involving the use of TEAs must be conducted in pairs so that one rescuer can use the tool or equipment while the other acts as a safety lookout. The safety lookout will use a signal system in which one tap on the shoulder means to stop working and two taps means to continue.

vi) Safety Violations:

Team Commander/Safety Officer will ensure the instructions on safety measures and rescuer cannot violate safety rules.

vii) Whistle Signals: (Stop, Evacuate and Continue)

Safety Officer will use the whistle to give alarm signals and alert on the operation site using the following signal:

- One long whistle: Stop all work and listen for instructions.
- · One long, one short: Continue working.
- Three short whistles: Leave the site immediately to a previously designated safety zone.

viii) Safety Zone:

Safety Officer will earmark a safety zone near the operation site. The safety zone will be used in case of any emergency requiring immediate evacuation from the operation site.

ix) Emergency Medical Services:

A medical first responder kit must be available and means of communication to ensure arrival of EMS immediately at the time of emergency.

x) Fire Extinguisher:

Portable fire extinguishers will be available on work site.

xi) Maintenance:

The maintenance of equipment will be done properly during the Operation.

After the completion of the operation maintenance of all tools, equipment and accessories must be ensured.

xii) Rotations:

Each sub-team must ensure personnel rotation as directed by the Safety Officer. Under normal conditions, rotation will be done after every 15 minutes.

xiii) Trash:

All trash must be placed into designated trash cans or waste containers. No littering is permitted.

xiv) Adverse Weather Conditions:

Team Commander/ Safety Officer will ensure all necessary arrangements during adverse weather so that operation can be continued.

xv) Safety Marking:

All objects or areas on the operation site that may pose a hazard to anyone must be marked with scene tape and cones.

xvi) Miscellaneous:

Team Commander/Safety Officer will resolve any other safety issue not specifically covered in the above mentioned safety measures.

8.3.2 STAGE -I&II: SECURING THE SCENE AND INITIAL ASSESSMENT:

- Team commander will take Command and begin an immediate size- up of the situation.
- ii) Team commander will do an immediate hazard assessment and mitigation.
- iii) It must be ensured that utilities are secured.
- Scene must be secured for perimeter control and controlling spontaneous rescuers/civilians by using physical barriers.
- v) Structural triage will be done by structural engineers who are specially trained in structural assessment and building marking system. Team Commander and Structural Engineer will prepare a Worksite Report as per proforma mentioned at Appendix-M.
- vi) If there is a possibility of hazardous materials team commander will ask for HAZMAT expert from civil administration for building triage.
- vii) Initially, team on the scene will start the rescue of surface victims. Rescuers must be aware of all the physical hazards present at the scene of a collapsed structure.

viii) During initial assessment victim triage should be done by using the following benchmarks:-



- a. Respiration
- b. Perfusion
- c. Mental Status

Note:- Victim triage flowchart is attached at Appendix-L.

 ix) Victims should be immediately dispatched for advance medical care after giving PHT.

8.3.3 STAGE -III: SEARCH AND LOCATE:

- Team commander will derive action plan for search and rescue of victims.
- ii) Team will be in possession of appropriate PPEs and TEAs.
- iii) Team commander will assign specific radio designation to each sub-team.
- iv) Once building triage is complete, the search team will carry out search of buildings. If building triage team determines that the building is structurally unstable, SAR team will not enter until appropriate shoring and stabilization has been done.

SHORING:

a. Shoring should be done on the structures with severely damaged panels, loose pieces of concrete, cracked or broken pre-fabricated panels and cracked masonry walls etc.



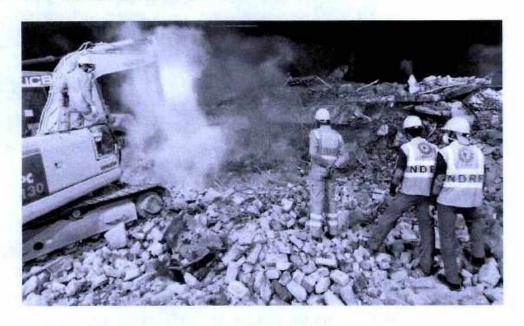
- Shoring should be done before conducting search and rescue operation inside the collapsed structure.
- Shoring will be conducted by shoring teams as per procedure and safety rules.
- d. Shoring team commander will determine what type of shoring is required and following factors will be kept in mind:-
 - Weight of construction materials.
 - · Weight of structural elements to be supported.
 - Normal load capacity of existing undamaged structure.
 - Condition of the structure to be supported.
 - Condition of foundation and surface angle to determine stability of shoring.
 - Availability of shoring materials.
 - Lateral and vertical instability.
- After completion of physical search, team will carry out K-9 search followed by technical search.



- vi) Search team will use standard marking system after building has been searched. The basic marking process as per the INSARAG methodology is mentioned at Appendix-K.
- vii) SAR team should consider the use of periodic "All Quiet" calls which involves the shutdown of all noise making equipment/ devices to hear trapped victims.
- viii) If victims are located, SAR sub-team calls for additional rescuers and equipment in order to extricate the victims and treat that space as a confined space.
- ix) Technical Search will be carried out by using technical/ special equipment like VLC and Life Detector Mark -I & Mark -II etc.

8.3.4 STAGE -IV & V: GAINING ACCESS AND EXTRICATION OF VICTIM:

- If search and rescue team needs to breach walls, floors or roofs to gain access to victims, they should attempt to gain access by not compromising the stability of load bearing walls.
- ii) Victim assessment must be made and the proper extrication method must be chosen to avoid any further injuries to the victim.
- DEBRIS REMOVAL: Debris removal may be conducted if it is part of SAR Ops, i.e. until all the victims have been extricated of accounted for. Once all the victims have been extricated, i.e. there is no possibility of trapped victims; search and rescue operations may be called off in that collapsed structure after due consultation with State/District administration. Following be kept in mind during debris removal if it is part of SAR Ops:
- Rescuers must be very careful when removing debris so as not to cause secondary collapse or further injury to the victim.
- Debris should be removed firstly from the selected areas where there is highest probability of trapped victims.
- c. Debris should be removed systematically and gradually from top to down.
- d. Rescuers must be careful, not to remove pieces that may affect the stability of the structure; when in doubt, consult structural engineer.
- Mark debris to prevent duplicate search efforts.



- iv) After evacuation, victims will be immediately dispatched for advance medical care after giving PHT.
- v) After extrication of any victim, proper Victim Extrication Form will be prepared and handed over to the concerned Agency/ Authority. The suggested proforma is mentioned at Appendix-N.

vi) Besides victims, valuable items if found during the operation be duly accounted for as per the proforma at Appendix-O and handed over to concerned authority.

8.4 PHASE-IV: DE-ACTIVATION AND DE-MOBILIZATION:

After completion of operation, SAR Teams are de-mobilized:

- i) Once the SAR team has completed the task, the decision to terminate the operation will be taken by the HQ NDRF /DIG (Ops)/Unit Commandant in consultation with the concerned State/District authority.
- All required clearances are taken from the concerned State/District authorities.
- iii) Before de-mobilization of SAR team, De-mobilization Form will be prepared by team commander as per the proforma mentioned at Appendix-S.
- iv) Check and count all equipment at ops site for loss and damage, if any. Stores are loaded and teams move back to their respective locations.
- Following instructions should be adhered during the de-mobilization stage:
 - a. After the operation is finished, Unit Commandant will demobilize all the teams as per the planning. The teams which were inducted first should be de-inducted first and the teams which were inducted in the last should be de-inducted in the last. Unit Control Room will inform HQ NDRF about the progress of de-mobilization.
 - Unit Control Room will assist the teams in smooth withdrawal from operation site.
 - Unit Control Room will inform the HQ NDRF regarding the arrival of the teams.

8.5 PHASE-V: POST-OPERATIONAL ACTIVITIES:

After arrival of teams at BN HQ, following post-operational activities are carried out:

- Checking of all TEAs will be done by unit 'MOST'.
- ii) Loss & damage of any TEA will be brought in the notice of unit HQ.
- iii) Medical and physical examination of all rescuers will be ensured.
- iv) PTSD session for all rescuers will be organized at BN HQ.
- v) De-briefing session will be conducted on following aspects:
 - a. Summary of all activities.
 - b. Operational achievements.
 - Improvisations and innovations made, if any.
 - d. Problems faced during the operation.

- e. Mis-happening, if any, during the entire operation.
- f. Requirement of TEAs or any other special equipment.
- g. Adm. and logistic arrangements.
- h. Points for improvement.
- i. Lessons learnt during the operation.
- Feedback report.
- Detailed report/Post-Ops Report will be sent to HQ NDRF as per the proforma mentioned at Appendix-T.
- Case study.
- m. Data bank.

9. PRECAUTIONS IN VIEW OF COVID-19 PANDEMIC:

Keeping in view of COVID-19 pandemic, the following precautionary/preventive measures should be taken during CSSR Operation:-

- i) Selection of the rescuers should be done from the age group of preferably 50 years or below & physically/ mentally fit. They should not be suffering from respiratory problems, hypertension, diabetes and kidney diseases etc.
- ii) Two Paramedics/ NA will be included in each Team. Detailment of sanitation SO/ NCO with every team should be made mandatory so that he may ensure that all precautions are being followed by the rescuers.
- iii) Instructions/ briefing will be given to entire team as per ICMR guidelines.
- iv) Base of operation will be established at less crowded area.
- Rescuers will be very careful while giving PHT to the victims because there is a
 possibility that victims may be infected with COVID-19.
- vi) Each team will carry an Infra-red Thermomter for screening and sufficient number of Biological PPEs with accessories for all their rescuers.
- vii) Every rescuer will be provided with adequate quantity of hand sanitizer.
- viii) Each team will carry spray machine for proper decontamination of man and materials.
- ix) Every rescuer will maintain social distancing among the rescuers and civilians during the operation.
- x) Every rescuer must carry their COVID-19 kit during the time of response.
- xi) Rescuers should wear appropriate PPE as per task. Rotation of rescuers should also be ensured. Regular health checkup of each and every rescuer should be carried out.
- xii) PPEs should be provided to the victims to avoid infection from COVID -19; if PPEs are not available, they should be covered with plastic sheets.
- xiii) All the rescuers must have "Arogya Setu App" in their mobiles.

- xiv) Every rescuer must strictly maintain his personal hygine.
- xv) Rescuer must restrict himself to the incident site only and eat nothing from the local market.
- xvi) Rescuers will maintain proper hydration during the Operation.
- xvii) If rescuers show any symptoms of COVID-19, they must be quickly shifted to predesignated hospital on priority.
- xviii) At the time of arrival at BN HQ proper decontamination and health checkup will be done for all rescuers.
- xix) All rescuers will be kept under quarantine for a period of minimum 14 days at predesignated quarantine centre and daily health check-up must be done by medical team.
- xx) Decontamination of all vehicles and equipments will be done at BN HQ on arrival.

10. ADMINISTRATION AND LOGISTIC ARRANGEMENTS:

Following administrative and logistics arrangement will be ensured by the responding Battalions:

10.1 Contingency Amount:

Each SAR team should take following amount:

- i) Rs. 10,000/- for unforeseen expenses
- ii) Rs. 30,000/- for fresh purchase
- iii) Rs. 10,000/- for MT

10.2 Mode of Conveyance: (Road/ Rail/ Air):-

Mobilization shall be undertaken by following means:

- i) By road : For each team:
 - a. Light Vehicle -01
 - b. Medium vehicle -01
 - c. Heavy vehicle -01
 - d. Bus/Mini bus -01
- ii) By Rail: As per requirement of SAR team:
 - a. One coach per team.
 - b. One SLR coach for two teams.
- iii) By Air: As per requirement of SAR team(s).

Note:- Packing and load table should be prepared in advance.

10.3 Equipment, Tools and Stores:

Equipment, Tools and Stores related to MFR, CSSR & Rope Rescue required for a SAR team are suggested in the list mentioned as Appendix-A & Appendix-B.

10.4 Ration Stores:

Minimum 15 days ration may be carried by a SAR team as mentioned as **Appendix-C**, in case of earthquake generated multiple large area collapses.

10.5 Communication Stores:

Communication stores to be carried by a SAR team are mentioned as Appendix- D.

10.6 Adm. Stores:

Adm. Stores including utensils to be carried by a SAR team are mentioned as Appendix- E.

10.7 Weapons for Security:

Weapons which are required to be carried by a SAR team are mentioned as Appendix- F.

10.8 Personal Belongings of Responders:

The personal belongings which are required to be carried by the members of the SAR team are mentioned as **Appendix-G**.

11. CONCLUSION:

This SOP has been prepared with the objective that all the required and correct procedures in CSSR operation should be adopted so that the entire task is completed in prescribed schedule. This SOP also aims at fixation of accountability at each stage. This SOP should be reviewed as and when the procedures and guidelines mentioned here become obsolete with time and as the situation demands.

12. DISCLAIMER

The SOP is not intended to be exhaustive/final and is subject to modification from time to time as per the requirement/exigencies.

Appendix-A

LIST OF DM EQUIPMENT FOR CSSR OPERATION

SL NO	PARTICULARS	A/U	QTY	WEIGHT (KG)	TOTAL WEIGHT
CSSI	R ITEMS				S. Al
1.	Carbide tipped chain saw	NOS	2	13.50	27.00
2.	Bolt cutter hydraulic	NOS	1	2.50	2.50
3.	Circular saw	NOS	3	12.50	37.50
4.	Smoke ventilator	NOS	1	40.00	40.00
5.	Chipping hammer heavy	NOS	1	29.00	29.00
6.	Chipping hammer medium	NOS	2	15.00	30.00
7.	Angle cutter	NOS	3	12.00	36.00
8.	Reciprocating saw	NOS	2	5.00	10.00
9.	Rotary hammer drill	NOS	2	4.00	8.00
10.	Cordless hammer drill	NOS	1	4.00	4.00
11.	Electric drill machine	NOS	2	2.50	5.00
12.	Airlifting bag with Accy (Bag-04)	SET	1	75.00	75.00
13.	Rotary rescue saw with accy.	NOS	3	13.60	40.80
14.	Hydraulic ram set with box	NOS	1	40.00	40.00
15.	Inflatable lighting tower with box	NOS	1	50.00	50.00
16.	Generator 2.4 kva	NOS	1	105.00	105.00
17.	Generator 5.5 kva	NOS	2	130.00	260.00
18.	Come along	SET	1	60.00	60.00
19.	Base light 420X	NOS	01	40.00	40.00
20.	Plasma cutter with accessories	NOS	01	115.00	115.00
21.	Steel tube	NOS	5	10.00	50.00
22.	Shovel round	NOS	4	2.50	10.00
23.	Spade	NOS	4	3.00	12.00
24.	Pick mattock (Gaity)	NOS	4	3.00	12.00
25.	Pry bar 6"	NOS	4	5.00	20.00
26.	Sledge hammer	NOS	2	7.00	14.00

27.	Pliers	NOS	2	0.20	0.40
28.	Vice grip	NOS	2	0.30	0.60
29.	Bolt cutter big	NOS	4	3.00	12.00
30.	Bolt cutter small	NOS	4	2.00	8.00
31.	Chisel big	NOS	2	0.50	1.00
32.	Chisel small	NOS	2	0.25	0.50
33.	Screw driver	SET	2	0.10	0.20
34.	Framing square	NOS	2	0.50	1.00
35.	Fire axe	NOS	2	1.00	2.00
36.	Crowbar 24"	NOS	2	2.00	4.00
37.	Crowbar 36"	NOS	2	3.00	6.00
38.	Hack saw with blade	NOS	2	0.55	1.10
39.	Tin snips	NOS	2	0.25	0.50
40.	Claw hammer	NOS	4	0.40	1.60
41.	Level	NOS	2	0.30	0.60
42.	File	NOS	2	0.30	0.60
43.	Carpenter hammer	NOS	2	0.20	0.40
44.	Brick hammer	NOS	2	0.30	0.60
45.	Guardian angle	NOS	1	0.15	0.15
46.	Paint brush	NOS	4	0.10	0.40
47.	Spray paint orange	NOS	2	0.50	1.00
48.	Hand saw	NOS	2	0.40	0.80
49.	Axe mat kit	NOS	2	3.00	6.00
50.	Traffic cone	NOS	5	1.5.	7.50
51.	Bucket small/large	NOS	2	3.00	6.00
52.	Tarpaulin(4X4)	NOS	4	8.00	32.00
53.	Tarpaulin(6X6)	NOS	4	12.00	48.00
54.	Fire extinguisher	NOS	2	12.00	24.00
55.	Safety goggle	NOS	45	0.10	4.50
56.	Rope nylon	NOS	3	5.00	15.00
57.	Knee pad	PAIR	45	0.15	6.750
58.	Heavy duty working gloves	PAIR	45	0.10	4.50

	TOTAL WEIGHT IN KG				1575.40
77.	Extension cord white	NOS	2	1.00	2.00
76.	Dust mask	NOS	100	0.025	2.50
75.	M/oil	LTR	1	1.00	1.00
74.	2T Oil	LTR	1	1.00	1.00
73.	Ear plug corded	NOS	100	0.01	1.00
72.	Distress signal unit	NOS	12	0.25	3.00
71.	USA torch	NOS	6	0.50	3.00
70.	Head light torch	NOS	45	0.20	9.00
69.	Safety vest	NOS	2	0.20	0.40
68.	Scene tape	ROLL	2	1.50	3.00
67.	Banner	NOS	6	1.50	9.00
66.	Extension cord big	NOS	4	3.00	12.00
65.	Kerosene (Jerkin -20 ltr)	NOS	1	0.50	0.50
64.	Mega phone with cell	NOS	2	4.00	8.00
63.	White cloth for dead body	MTR	10	2.00	2.00
62.	Plastic sheet for dead body	MTR	10	1.50	1.50
61.	Body bag	MTR	6	1.00	6.00
60.	Safety helmet	NOS	45	0.50	22.50
59.	Hard toe boot	PAIR	45	3.50	157.50

MFR ITEMS

1.	Case Stiff neck (regular)	NOS	2	0.15	0.30
2.	Cervical collar (regular)	NOS	2	0.10	0.20
3.	Collar stiff neck regular (L)	NOS	2	0.15	0.30
4.	Collar stiff neck 'No neck	NOS	4	0.135	0.54
5.	Collar stiff neck Tall	NOS	2	0.16	0.32
6.	Pocket mask CPR	NOS	2	0.10	0.20
7.	Dressing Abdominal	NOS	8	0.01	0.08
8.	Gauze Dressing Vaseline	NOS	2	0.015	0.03
9.	Glass eye protection	NOS	40	0.02	0.80

10.	Dressing multi Trauma	NOS	6	0.10	0.60
11.	Pen light	NOS	2	0.04	0.08
12.	02 cylinder with regulator	NOS	2	1.50	3.00
13.	Stethoscope	NOS	2	0.245	0.49
14.	Sponge sterile	NOS	40	0.008	0.32
15.	Kit Carrying Bag Nylon	NOS	2	0.50	1.00
16.	Roller Bandage 6"	NOS	20	0.16	3.20
17.	Roller Bandage 3"	NOS	20	0.08	1.60
18.	Bandage triangular	NOS	10	0.01	0.10
19.	Cup paper hot/cold	NOS	20	0.003	0.06
20.	Depressor tongue	NOS	02	0.02	0.04
21.	Gloves latex sterile	PKTS	4	0.10	0.40
22.	Triage Ribbon all colour	NOS	8	0.10	0.80
23.	Bandage elastic 3"	NOS	2	0.05	0.10
24.	Bandage elastic 6"	NOS	2	0.10	0.20
25.	Face shield	PKT	2	0.50	1.00
26.	Face mask	PKT	4	0.10	0.40
27.	Air way oral	SET	2	0.20	0.40
28.	Bag valve mask adult	NOS	2	0.60	1.20
29.	Bag valve mask child	NOS	2	0.30	0.60
30.	Flexible splint	SET	2	0.50	1.00
31.	Pneumatic splint	SET	2	1.00	2.00
32.	Blanket	NOS	2	3.00	6.00
33.	Scissor Straight	NOS	2	0.20	0.40
34.	Scissor Curved	NOS	2	0.10	0.20
35.	Scissor Stitch cutting	NOS	2	0.05	0.10
36.	Digital Thermometer	NOS	2	0.03	0.08
37.	Kidney tray	NOS	2	0.10	0.20
38.	Glucometer	NOS	1	0.10	0.10

47.	Emergency rescue stretcher	NOS	1	6.00	6.00
46.	Stretcher small	NOS	2	3.00	6.00
45.	Stretcher medium	NOS	2	5.00	10.00
44.	Stretcher large	NOS	2	7.00	14.00
43.	Padded board splint large	NOS	4	0.30	1.20
42.	Padded board splint medium	NOS	4	0.20	0.80
41.	Padded board splint short	NOS	4	0.10	0.40
40.	laryngoscope	NOS	1	0.50	0.50
39.	Auto scope	NOS	1	0.30	0.30

LIST OF MFR ITEMS FOR PROTECTION AGAINST COVID-19

SL NO	PARTICULARS	QTY	REMARKS
1.	Bty. Operated spray man pack machine	04	For four sub teams
2.	Portable automatic sanitizer box	03	
3.	Biological PPE for COVID-19	45	For all team members
4.	Hand wash	45	
5.	Liquid hand Soap with dispenser	04	250 ml
6.	Gloves	We sale	As per requirements
7.	Hand sanitizer	05 ltr	04
8.	Tissue paper		As per requirements
9.	Soap solution spray bottle		As per requirements
10.	Face shield	45	SALUM EN
11.	Shoe cover		For every individual
12.	Infrared thermometer	02	
13.	Nebulizer	01	
14.	Steam inhaler	01	

Appendix-B

LIST OF ROPE RESCUE EQUIPMENTS

SL NO	PARTICULARS	A/U	QTY (NOS)	WEIGHT (KG)	TOTAL WEIGHT
1.	Rope Ker Mantel	NOS	6	5.00	30.00
2.	Carabineers	NOS	20	0.066	1.32
3.	Jummer	NOS	4	0.30	1.20
4.	Half body Harness	NOS	6	0.50	3.00
5.	Single pulley	NOS	2	0.15	0.30
6.	Double Pulley	NOS	2	0.30	0.60
7.	Full body harness	NOS	2	1.20	2.40
8.	Discender	NOS	3	0.10	0.30
9.	Mitten	PAIRS	6	0.30	1.80
10.	Rappelling gloves	PAIRS	2	0.20	0.40
11.	Capture pulley	NOS	1	0.20	0.20
12.	Sling	NOS	10	0.10	1.00
13.	Megaphone with cell	NOS	1	4.00	4.00
14.	Scene tape	ROLL	1	3.00	3.00
15.	Tape sling	NOS	4	0.25	1.00
16.	Blanket	NOS	3	4.00	12.00
17.	Box weight	NOS	1	10.00	10.00
TOTAL	WEIGHT				72.52

Appendix-C

LIST OF DRY RATION FOR MINIMUM 15 DAYS

SL NO	PARTICULARS	A/U	QTY	WEIGHT (KG)	TOTAL WEIGHT	REMARKS
1.	Atta	BAG	7	30.00	210.00	
2.	Rice	BAG	4	25.00	100.00	
3.	Sugar	BAG	1	50.00	50.00	
4.	Dal chana	KG	1	10.00	10.00	
5.	Dal arhar	KG	1	10.00	10.00	
6.	Dal mung chilka	KG	1	15.00	15.00	
7.	Dal Masoor	KG	1	10.00	10.00	
8.	Tea	PKT	10	0.50	5.00	
9.	Kaju	PKT	1	1.00	1.00	
10.	Badam	PKT	1	1.00	1.00	
11.	Kismis	PKT	1	1.00	1.00	MAN E
12.	R/ OIL	TIN	2	15.00	30.00	
13.	Semeya	PKT	4	0.50	2.00	ALES ANASO
14.	Salt	PKT	15	1.00	15.00	
15.	Haldi Pdr	PKT	10	0.10	1.00	
16.	Mirchi Pdr	PKT	10	0.10	1.00	
17.	Dhania PDR	PKT	10	0.10	1.00	
18.	Samber Masala	PKT	2	0.02	0.04	
19.	Garam Masala	PKT	4	0.02	0.08	
20.	Meat masala	PKT	4	0.02	0.08	

21.	Jeera	KG	1	1.00	1.00	
22.	Papad	PKT	3	0.20	0.60	
23.	Coconut	KG	1	1.000	1.00	
24.	Achar	PKT	1	1.00	1.00	
25.	Kasuri methi	PKT	1	1.00	1.00	
26.	Nutri	PKT	5	1.00	5.00	
27.	Imli	KG	1	1.00	1.00	
28.	White Chana	KG	5	5.00	5.00	
29.	Sujee	PKT	5	1.00	5.00	
30.	Rajma	KG	1	5.00	5.00	
31	Basan	PKT	5	1.00	5.00	
32	Milk powder	PKT	10	1.00	10.00	
33	Onion	KG	1	20.00	20.00	
34	Potato	KG	1	20.00	20.00	
35	LPG cylinder	CYL	3	14.20	42.60	
TOTAL WEIGHT					586.40	

Appendix-D

LIST OF COMMUNICATION STORES

SL NO	PARTICULARS	ОТУ	NO. OF BOXES & BOX SIZE	WEIGHT (KG)	TOTAL WEIGHT
1.	TX/RX HF LHP 265D	1	Box No.01	6.50	6.50
2.	AC Adopter LHP 256D	1		1.00	1.00
3.	Hand set LHP 265D	1	# I De	0.20	0.20
4.	Main lead LHP 265D	1		0.10	0.10
5.	Battery lead LHP 265D	1		0.10	0.10
6.	Co-xail cable for LHP 265-D	1	inti e	3.00	3.00
7.	Broad band antenna LHP 265D	1		3.00	3.00
8.	TX/RX VHF I-COM set 20 watt	1	ante in	2.00	2.00
9.	Hand set for I-COM	1		0.10	0.10
10.	Battery lead for I-COM	1		0.10	0.10
11.	GPA with 4 roads	2		1.00	2.00
12.	Feeder for I-COM set	1		3.00	3.00
13.	TX/RX H/H I-COM	7		0.30	2.10
14.	Helical antenna for H/Held I-COM	7		0.50	3.50
15.	NI-CD Bty Charger for I-COM	4	PER A	0.50	2.00
16.	NI-CD Bty for I-COM	21		0.35	7.35
17.	Screw driver set	1		0.25	0.25
18.	Combination plier 8/6"	2		0.20	0.40
19.	Nose plier	1		0.10	0.10
20.	Empty box iron	1		9.30	9.30

21.	Secondary Battery 100 AHC	2	Box No.02	20.00	40.00
22.	Sec. Battery Charger Sintech	1		19.71	19.71
23.	Extension board	2		1.00	1.00
24.	Floating balloon	4		0.50	2.00
25.	Gen. set Sri Ram Honda	1		24.10	24.10
26.	Empty box small	1		14.82	14.82
27.	Satellite phone	1		5.00	5.00
28.	Satellite phone charger	1		14.82	14.82
29.	QDA with Accessory	1		106.00	106.0
30.	VOIP Phone	1	- 1 (19)	0.300	0.300
31.	Steel box	1	<u> </u>	25.00	25.00
32.	Tubular mast 36 feet consisting	1	Canvas kit	40.00	40.00
33.	MS pipe-06 nos		bag (big & small)		
34.	Coupling 05 nos				
35.	Base plate with not bolt-01 nos			Ta i	
36.	Nails-04 nos			1 _ 01	
37.	Picket-03 n0			-1	
38.	Round plate-02 N0				
39.	Pully-01 N0				
40.	Antarrangement-01 n0				
41.	Guy rope-06 N0				
42.	Canvas kit bag-01 N0				
тот	AL WEIGHT				338.85

Appendix-E

LIST OF ADM STORES

SL NO	PARTICULARS	A/U	QTY	WEIGHT (KG)	TOTAL WEIGHT	REMARKS
1.	Tent extendable complete set	NOS	6	50.00	300.00	
2.	Shelter	NOS	1	50.00	50.00	
3.	Jerri cane (20 Ltr.)	NOS	10	0.50	5.00	12-5 1 AE
4.	Hammer	NOS	03	7.00	21.00	
5.	Tarpaulin (6x6)	NOS	03	12.00	36.00	18 P.
6.	Tarpaulin (4x4)	NOS	03	8.00	24.00	CHING NE
7.	Iron Coat	NOS	5	25.00	125.00	
8.	Short pickets	NOS	10	2.50	25.00	W 48 2 11 5
9.	Picket Iron 6'	NOS	4	5.00	20.00	PICTURE PAR
10.	Syntax 200 Ltr	NOS	1	15.00	15.00	
11.	Table Plastic	NOS	1	4.00	4.00	1860 1 12
12.	Plastic Chair	NOS	4	1.50	6.00	WILLIAM HE
13.	Patila	NOS	3	5.00	15.00	populi i
14.	Karahi	NOS	1	8.00	8.00	De/ () 11/30
15.	Palta	NOS	1	3.50	3.50	No. of the Control of
16.	Jharna	NOS	1	3.00	3.00	4.04.14
17.	Gas Bhatti	NOS	2	25.00	50.00	
18.	Domestic Chula	NOS	1	8.00	8.00	الواق الأ السيا
19.	Chakla belana	NOS	1	0.50	0.50	1934
20.	Parat	NOS	1	2.50	2.50	Sield Stell
21.	Mug Plastic	NOS	1	0.20	0.20	I NE SEE
22.	Tawa	NOS	1	12.00	12.00	e Id Via
23.	Tea Container	NOS	1	4.00	4.00	MET A TO
24.	Water Filter Plastic	NOS	1	5.00	5.00	
25.	Steel Tiffin carrier	NOS	1	2.50	2.50	
26.	Case Roll	NOS	2	1.00	2.00	

	TOTAL WEIGHT				799.28	
54.	Vegetable Trey	NOS	01	1.00	1.00	
53.	Steel Spoon Set	SET	01	0.10	0.10	
52.	Steel Katori	NOS	06	0.05	0.30	
51.	Steel Glass	NOS	06	0.05	0.30	
50.	Steel plate	NOS	06	0.30	1.20	
49.	Thermos steel	NOS	01	0.20	0.20	
48.	Glass set	SET	01	0.30	0.30	
47.	Crockery set	SET	01	3.00	3.00	
46.	Gas Chula for Chapathi	NOS	01	.07	.07	
45.	Chakla Belna	NOS	01	0.50	0.50	
44.	Bucket (Steel)	NOS	03	0.60	1.80	
43.	Ketli	NOS	1	0.50	0.50	
42.	Cooker (10 ltr.)	NOS	1	3.00	3.00	
41.	Cooker (15 ltr)	NOS	1	4.00	4.00	
40.	Hamam dasta	NOS	1	5.00	5.00	
39.	Table cloth	NOS	1	0.20	0.20	
38.	Plastic Carat	NOS	1	2.00	2.00	
37.	Rice spoon	NOS	1	0.05	0.05	
36.	Potato Chilni	NOS	1	0.02	0.02	
35.	Mug Steel	NOS	1	0.10	0.10	
34.	Dallu	NOS	1	0.05	0.05	
33.	Fry pen	NOS	1	0.50	0.50	
32.	Knife	NOS	1	0.05	0.05	
32.	Karchi Steel	NOS	3	0.30	0.90	
30.	Tea Chalni	NOS	1	0.01	0.01	
29.	Bucket Iron	NOS	3	4.00	12.00	
27. 28.	Hot Case Water jerrican	NOS	2	2.00	4.00	

LIST OF WEAPONS FOR SECURITY

SL. NO.	PARTICULARS	QTY	REMARKS
1.	INSAS Rifle	04 Nos.	
2.	Magazine	12 Nos.	
3.	Ammunition	240 Nos.	

Appendix-G

LIST OF PERSONAL BELONGINGS OF NDRF RESCUERS

SL NO	PARTICULARS	aty	REMARKS
1.	NDRF Uniforms with shoes	1 set	
2.	Rescue Uniforms with shoes (one CSSR & one flood rescue)	1 set each	
3.	PT Dress complete	2 set	
4.	Rain coat/ water proof jackets	1 No.	C-STUDIA
5.	Slippers	1 pair	L-MAKET
6.	Undergarments	4 set	D. Harris
7.	Civil dress/ shoes	1 set	P. Balti
8.	Track suit	1 set	DATE:
9.	Torch with battery	1 No.	Text series
10.	Shaving set complete	1 set	
11.	Ruck sack/ trolley bag/ suit case	1 No.	
12.	Bed roll as per climate	1 set	
13.	Whistle	1 No.	I TO THE PARTY
14.	Self sufficient amount/ ATM Card		- all
15.	Soap and shampoos	2 set	
16.	Socks	3 pairs	
17.	Dry fruits		
18.	Mosquito net	1 No.	
19.	Identity Card	individual	

COMPOSITION OF NDRF SAR TEAM

TEAM COMMANDER (INSPECTOR)

2IC/OPERATION OFFICER (SUB INSPECTOR)

SUB TEAM A

SI : 01 CONST : 05

TOTAL: 06

SUB TEAM B

HC : 01 CONST : 05

TOTAL: 06

SUB TEAM C

SI

: 01

TOTAL : 06

CONST: 05

SUB TEAM

D

HC : 01 CONST : 05

TOTAL: 06

TECHNICAL SUPPORT SUB TEAM

SI/HC (COMN) : 01 EACH

SI(STRUC)ENG: 02 HC/ELEC: 01

HC/ELEC : 01 HC/TECH : 01

TOTAL : 06

ADM SUPPORTSECURITY

HC : 01 CT : 03

HC/ADM : 01

CT : 01 HC/DVR : 01 CT/DVR : 02

FOLL(COOK) : 02 TOTAL : 10 MEDICAL SUPPORT TEAM

HC (Paramedic): 02

TOTAL : 02

DOG SQUAD

DOG : 02 CONST : 03

TOTAL : 03

INSP GD	SI GD		SI							FOLL COOK			TOTAL
01	03	02	01	04	01	01	01	27	02	01	01	02	47

FORM TO REQUISITION NDRF TEAM(S)

1.	Date of requisition	
2.	Nature of Disaster/purpose of requisitioning NDRF team	
3.	Date & time of occurrence	
4.	Details of affected Area & population	
5.	No. of teams being requisitioned	
6.	Nearest Railhead	:
7.	Nearest Airport (In case NDRF teams are to be airlifted, it is requested to place the requisition to Indian Air Force with copy to DM Div. MHA, NDMA & HQ NDRF)	
8.	Agencies already involved in rescue operation	
	i) Central agencies (Please also provide nodal person's contact)	
	ii) State agencies (Please also provide nodal person's contact)	
9.	Trapped/ rescued/ evacuated & missing persons	
	i) No. of persons trapped	
	ii) No. of persons Rescued/ Evacuated	
	iii) No. of persons Missing	
10.	Nodal Officer of State/Distt.	
	i) Name	
	ii) Contact No.	
	iii) Address	
11.	Any other relevant information	

Signature of	f requisitioning	authority
--------------	------------------	-----------

Name

Phone no.:

Address :

MARCHING OUT STATEMENT IN RESPECT OF SAR TEAM

ID	0F	BN NDRF	
Data :	Time of Departure	9	
Jale	Time of Departure		

S. No	Team ID	S	treng	th					E.W.					
		s,09	SO's	Others	Officer In charge & Contact No	Name & Contact Details of Team Cdr.	Contact No. of Team Cdr.	Details of CSSR Items With Load table	Details of MFR Items With Load table	Details of Misc. Items With Load table	Details Of Ration Items With Load table	No. of ISAT Phone With No.	No. of QDA	Details of Vehicles
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

Note :- Any important information which needs to be passed to HQ NDRF may also be included.

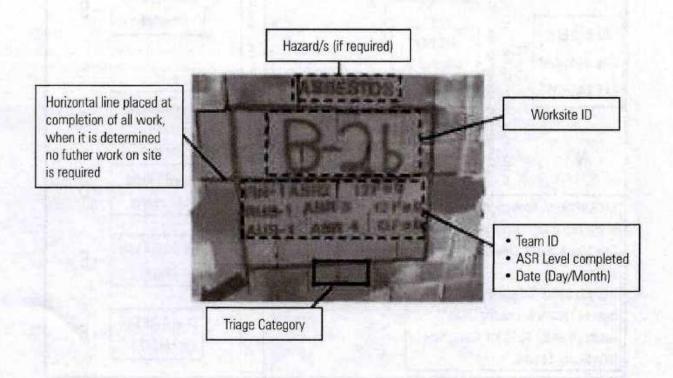
NOMINAL ROLL OF SAR TEAM ID: OF...... BN

SL. NO	REGT. NO	RANK	NAME	I CARD NO.	CONTACT NO.	BLOOD GROUP

INSARAG MARKING SYSTEM

BASIC DECISION- MAKING PROCESS

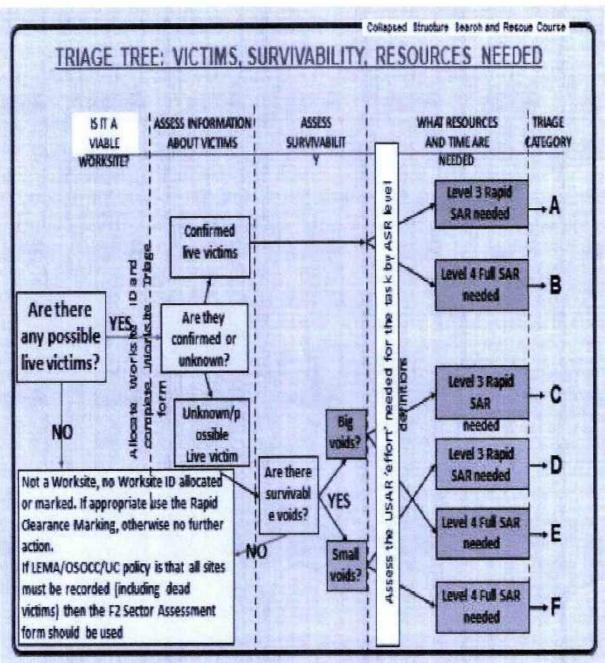
- Draw a rectangular box (1.2m x 1m). Place the mark at the primary access point into the structure.
- Inside the box
 Worksite ID (Upper half the box, size of the letter Approx. 40 cm)
 Team ID, ASR Level and Date (Lower half the box, size of the letter Approx. 10 cm)
- Outside the box Hazard (Top of the box, letter size Approx. 10 cm)
 Triage category (Bottom of the box, letter size Approx. 10 cm)



NOTE: Always marking by specialized team.

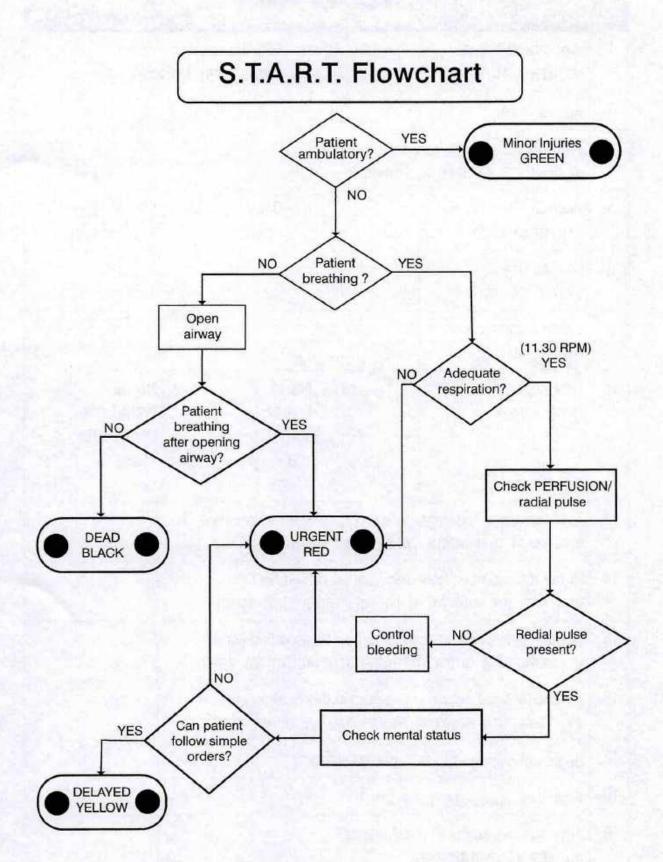
The colour should be highly visible and contrasting to the back ground.

Material can be spray paint and water proof.



Structural Triage and the IN SARAG Marking System

VICTIM TRIAGE FLOWCHART



	ND	RF WORK	SITE	REF	ORT	FORM			
	रा०	आ0मो0बर	न का	र्य क्षे	त्र रि	पोर्ट प्रपत्र			
1.	Worksite ID/Name कार्यक्षेत्र पहचान सं0	-0/8	2.			Coordina पी०एस०		शांक	
3.	Address पता								
4.	Worksite boundary descr कार्यक्षेत्र की सीमाओं क								
5.	Team ID टीम पहचान सं0			6.	Date दिन)		7.	Time समय
8.	Building Use इमारत का प्रयोग			A:-					
9.	Construction type निर्माण का प्रकार								
10.	Floor area भूतल वर्गक्षेत्र		11.	floo ऊप तल	गरी		12.	No. of baseme निचली संख्या	
13.	Total number of missing/ कार्यक्षेत्र में कुल अज्ञात					Worksite			
14.	Of the total number, how कुल फंसे हुए व्यक्तियों								
15.	Number of live rescues c इस समीक्षाधीन अवधि मे								
16.	Number of dead persons इस समीक्षाधीन अवधि मे				Island .	A TOTAL STREET			
17.	Degree of damage (%) ਜੁ	कसान क	प्रति	शित		S			
18.	Type of collapse: ध्वसन	का प्रकार							
19.	Any unusual hazards at t कार्यक्षेत्र में संभावित खत		te?						

20.	Assess the main USAR operations likely to be needed at this Worksite as well as SAR level: कार्यक्षेत्र में आवश्यक खोज एवं बचाव कार्य का स्तर निर्धारण एवं SAR लेवल
21.	Indicate main work needed: मुख्य कार्यों की पहचान :
	a. Canine/Technical search श्वान / उपकरणों द्वारा खोज
	g. Give an estimate of the time, personnel and equipment needed बचाव कार्य के लिये संभावित समय, बचावकर्ता व उपकरणों की आवश्यकता
22.	Local safety / Security situation: स्थानीय सुरक्षा की स्थिति
23.	Other information (e.g. Number of dead bodies at the worksite): अन्य सूचनायें (कार्यक्षेत्र में मृतकों की संख्या इत्यादि)
फार्म	ucompleted by भरने वालाः aure/हस्ताक्षर
Nam	e/नाम
	/Position in team/पद / टीम में स्थान
Date	/दिनांकBn/वाहिनी
	10

VICTIM EXTRICATION FORM पीड़ित निस्तार प्रपत्र

Form used to collect basic information of all victims extricated to be handed to Local Authorities.

वह फार्म जिसको उन सभी पीड़ितों के विषय में मूल जानकारी के एकत्रित करने के लिए किया जाता है जिनको निकाल कर स्थानीय प्राधिकारियों को सौंपा गया।

1	लए कि	या	जात	ा ह जिनक	ा निव	गल कर स्थानाय	प्राधिकारि	या क	। सापा गया।
ID	< site स्थल ान		47		2.	Victim Number पीड़ित सं0			
				rksite पीoएसo					
Three occurs.	ess of P न का प		e/	NT.		The state of			
Tean	ı ID/टीम	र्क	ो पह	चान					
Infor	mation a	abou	ut the	e Victim/पी।	ड़ेत व	हे विषय में जानक	गरी		
Α.	25 1 272033 800		В	B Father Husband पिता / पा नाम			Gender लिंग	D.	Age उम्र
Е	Location of the victim	on							
Floor मंजि स्तर	Level ল				8.	Identification mark of victim/ पीडित का पहचान का निशान			
	& time								
निक	लने की	ति	थ ट	समय					

	needed to extricate victim (mark with√)/ नए कार्य के स्तर की जरूरत (√ का निशान लगायें)
Assist Only/ 🗌 Light debris केवल सहायता हल्के मलबे	
Total time taken for extraction निकालने में लगा कुल समय	Hrs Mins
Condition of the victim पीड़ित की अवस्था	Live/जीवित 🗌 Deceased/मृत 🗌
Injuries of the victim पीड़ित की चोट	None/कोई नहीं 🗆 Stable/स्थिर 🗆 Critical/गंभीर 🗆
14. Other information about vid पीड़ित के बारे में अन्य ज	
Victim handed over to: पीड़ित को सौंपा गयाः	Locals/family
16. Name and contact details handed over to: पीड़ित को जिसको सौंपा विवरणः	
Form completed by फार्म भरने वालाः Signaure/हस्ताक्षर	
Name/नाम	
Rank/Position in team/पद / टीम	में स्थान
Date/दिनांक	Bn/वाहिनी

					Y RECOVERY FORM द्रा रिकवरी प्रपत्र		
1.	Type of Item	a.	Currency (मुङ	दा)			
	वस्तु का प्रकार	b.	Valuable Ite	ms (मूल्य	वान वस्तु)		
		C.	Other items	(अन्य वर	নু)		
2.	Description of re रिकवरी की गई			Т			
3.	Approximate Co वस्तु का संभावि						
4.							
5.							
6.	Coordinate or Ad Name of place/S स्थान का निर्देश	Site	s of Place or				
7.	Handed Over To	(कि	सको सौंपा गर	या)			
	a.	Nar नाम	771/E	b.	Time of Handed Over सौंपने का समय		
	C.	Add पता	lress	d.	Signature हस्ताक्षर		
8.	Handed Over By	(कि	सके द्वारा सौंप	ग गया)			
	a.		Name नाम	b.	Time of Handed Over सौंपने का समय		
	C.		Address पता	d.	Signature हस्ताक्षर		
फार्म	completed by भरने वालाः ure/हस्ताक्षर	*****					
Name	/नाम			***********			

	NDRF TEAM रा०आ०मो०				
Team	n Information				
1.	NDRF Team-ID /Name with Bn टीम पहचान संo / नाम				
2.	Number of persons व्यक्तियों की संख्या			3.	Number of Canine श्वानों की संख्या
4.	Responding elements: कार्यवाही करने वाले तत्व				
b. 0	Technical Search तकनीकी खोज Canine search श्वानों द्वारा खोज Rescued. बचाव कार्यवाही	d. e. f.	चि Ha ख Str	edical. कित्सा zmat dete तरनाक स ructural en रचना अभि	ामग्री की पहचान gineers
-	Other capabilities अन्य क्षमतायें				
5.	Expected date & Time of arrival पहुँचने का अपेक्षित दिनांक एवं समय				
6.	Place of arrival पहुँचने का स्थान		7.	Road Ra	nce with distance Air il साधन हवाई सडक रेल दुरी
8.	Total Load of Equipment & misc i पूरी टीम के उपकरण और अन्य				

9.	Logistic Requirements साजो सामान सम्बन्धी आवश्यकतायें										
	1.	I. Transport (परिवहन)									12
	1000		pers of vehicles req क वाहनों की संख्य	Bus/बस							
	II.	Su	pplies (आपूर्तियाँ)								
		Petrol (liters per day) a. पेट्रोल (लीटर प्रतिदिन)		1.1.7	Diesel (liters per day) डीजल (लीटर प्रतिदिन)		e.	02 Cylinder			
		C.	LPG (Kg per day) एल.पी. जी. (किलो. प्रतिदिन)		Kerosene (liters per da d केरोसिन (लीटर प्रतिदिन)		er day) र	f.	Cutting Gas Cylinder		
	III.	co बेर	pace for BoO, addre ordinate स ऑफ ऑपरेश्न ता एवं कोआरडीने	के लिये र	થાન						
	IV.	945-99	ny other need न्य आवश्यकतायें								
10.	Cor	Contacts (सम्पर्क)									
	а		Contact 1 Name (सम्पर्क 1 नाम)				а	Contact 2 Name सम्पर्क 2 नाम			
	b		Mobile No. (मोबा	ईल नं0)			b	Mobile	e No.	(मोबाईल नं०)	
	С		Sat phone (सैट	फोन)			С	Sat ph	one(ISV फोन)	
	d		E-Mail (ई—मेल)				d	E-Mail	(ई−	मेल)	
फार्म Signa		वार इस्ता	गः ['] क्षर								
			Rank								
Date,	/दिना	Ф	Bn/वार्र	हनी			Te	eam 10			

DAILY SITREP FROM DISASTER SITE

1.	Team No				
2.	Team Commande	er			
	Rank	Name		Mob. No.	
3.	Type of Incident/	Place			
4.	Deployment of S	ub Team if any			
5.	Local/ Incident (
6.	Weather				
7.	Present situation				
8.	() () () () () () () () () ()				
9.	Rescued /Evacua	ated Persons			
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
10.	Details of Dead /	Victims			
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place	Male	Female	Child	Total
	Place		Female	Child	Total
11.	Relief materials of	distributed			
	a. Place			Test Head	
	b. Total No of p	persons to who	om relief materia	I distributed	
	Problem faced			Harris Broken	
	Loss/ damage of				
14.	Remarks			the all value	INSTERNATION OF THE REAL PROPERTY.
Tear	n commander				
Tear	n No.				
Incid	dent Commander				
Plac	е	: "			

PROFORMA FOR INCIDENT REPORT

S. NO.	NOMENCLATURE	REMARKS
1.	Date/time of receiving information	
2.	Information/requisition given by with contact no.	
3.	Information received by	
4.	Type of incident	
5.	Location of incident	
6.	Brief details of incident	
7.	Distance from of BN HQ/RRC	
8.	Strength of response team	
9.	Departure date & time	
10.	Arrival date & time at incident site	
11.	Operation starting date & time	
12.	Equipment carried	
13.	Team Comdr. & Team 2IC name & contact No.	
14.	Ops. Called off, date & time	
15.	Departure for BN HQ/RRC date & time	
16.	Arrival date & time at BN HQ/RRC	
17.	Outcome of operation	
18.	Loss/damage of equipment if any	
19.	Injury/casualty to NDRF personnel, if any	

	NDRF DEMOBILI रा.आ.मो.बल वियोज	
1.	Team ID/टीम की पहचान	
2.	Team Name with comdr /टीम व टीम कमांडर का नाम	
Depa	arture information/प्रस्थान की जानकारी	
3.	Date /दिनांक	
4.	Time/समय	
5.	Mode of Departure प्रस्थान करने का माध्यम	Air □ Road □ Train □ हवाई रोड़ रेल
6.	Place of Departure प्रस्थान का स्थान	
Tean	n Information/ टीम की सूचना	ALTER THE PERSON OF THE PERSON
7.	Number of persons पदाधिकारियों की संख्या	
8.	Number of Canine/श्वान की संख्या	
9.	Equipments (ton) उपकरणों का वजन (टन में)	
10.	Volume of Equipment (m3) उपकरणों का आयतन	
11.	Numbers of vehicles required आवश्यक वाहनो की संख्या	Bus/बस HV(5x ton/7x ton) MV/मध्यम वाहन LV/हल्का वाहन
12.	When traveling by railway जब रेलवे द्वारा यात्रा करते समय	Nos.of Passenger Coach पैसेजंर कोच की संख्या Nos. of Luggage Coach मालवाहक कोच की संख्या

13.	Required of Cargo Aircraft	
Spec	cial Requests/विशेष अनुरोध	
14.	Need of loading/ unloading/लोडिंग / अनलोडिंग की आवश्यकता	
15.	Need for accommodation during transit आवागमन के स्थानों पर आवास की आवश्यकता	
16.	Other information अन्य जानकारी	
फार्म Signa Nam Rank Date,	completed by भरने वालाः aure/हस्ताक्षर e/नाम /Position in team/पद / टीम में स्थान /दिनांकBn/	

PROFORMA FOR POST-OPS REPORT

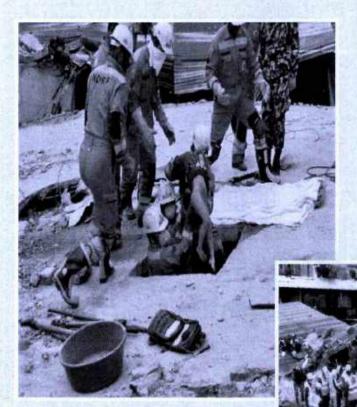
S. NO.	DETAILS	REMARKS
1	Date and time of receiving information	•
2	Information and requisition given by	
3	Information received by	k ka Madana da ka a
4	Location of the incident	: 75
5	Type of incident	A SHORT OF
6	Brief details of incident	
7	Distance from BN HQ/ Coy HQ	
8	Strength of response team	
9	Departure date & time	
10	Arrival date and time at incident site	
11	Operation starting date and time	
12	Equipment carried	
13	Team Comdr. & 2 IC Name and Contact No.	1
14	Ops called off date & Time	1
15	Departure for Bn. HQ/ Coy HQ and Time	
16	Arrival date & Time at Bn./ Coy HQ	
17	Outcome of operation	: -
18	Loss, damage of equipment, if any	1
19	Injury casualty to NDRF personal, if any	
20	Introduction (Incl. previous disaster history if any	
21	Topography	¥
22	Disaster vulnerability of the affected area	
23	Impact and damage assessment sequence of events	:

24	The disaster and immediate response (local bodies and special response)	3
25	Rescue and relief (SOS call of state /UT)	;
26	Mobilization of NDRF	1:
27	Deployment of NDRF	
28	Planning and execution of rescue ops	
29	Relief Ops	
30	Medical camp	
31	Media coverage	1
32	Challenges faced	:
33	New initiatives	
34	De- induction from ops	1 - 2
35	Gaps in Ops	:
36	Lesson learned	:
37	Suggestion to increase Ops efficiency	

"Hollow foundations can never sustain tall buildings, if you move out with low preparation then you are creating a building that will someday collapse for sure..."

Sujit Lalwani





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