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Read more MODERNIZATION OF DISASTER MANAGEMENT 8.1 A high-level committee was booked in September 2002 to review disaster management across the Indian railways. The committee presented its recommendations in an April 2003 report, which has been accepted. The implementation of the recommendations would require an estimated Rs.400 crores. The detailed accepted recommendations, and broad costs are specified in the report, to be implemented within the next three years. However, this estimate does not include any recommendations for which the cost implications are considered 8.2 The main focus areas on disaster management in the next decade will be: Faster response!-trainer self-sufficient accident relief train (SPART) that can run at 140 km/h, for faster initial response will be introduced. Rationalization of existing sites by Accident Relief Trains (ART) and Accident Relief Medical Vans (ARMV) would be implemented for faster on-site availability. For rescue operations, getting the police clearance would be obviated. Better facilities and equipment!Team cranes will be including those on the MG system. Existing ARTs will be faster up to 100 kmph and ARMV to the highest speed in the sections. Expand resources to meet the demands of major accidents!pool teams at each Zonal Railway HQ with containerized equipment to be introduced. Standby ART/ARMV threads will be organized when necessary. Assistance from armed forces and para-military forces in the rescue effort will be obtained, when necessary. Better customer focus and better communication facilities would be provided to care for the injured and dead. Training and emergency full scale mock drill exercises for each ART. ART Management will undergo major changes covering rolling stock management, status of equipment, monitoring of asset utilization and availability and consumption of stores etc.8.3 It is proposed to review targets for the following activities:-ARMVs and ARTs will be knocked out within the appointed time, and ensure that they take precedence over all other trains. ARMVs will be prioritised in the return direction as well, as they may be necessary in other places as well. Reliable and efficient communication channels would be established at the accident site to be in contact with division and zone headquarters upon arrival of THE ARMV on site. Reloading unaffected passengers and their clearance from the accident site would be organized quickly. Even in the event of the worst possible accident with adverse and extreme circumstances, all injured passengers would be rescued on priority. In rescue operations, a top priority will be given to all passengers in critical condition for immediate medical attention. Even in the case of the worst possible accident, dead bodies would be wiped out at the fastest possible rate. Ex-gratia to all injured passengers and relatives of all deceased passengers (after identification) should be arranged quickly. Complete medical treatment will be taken, by all injured passengers, including payment of medical bills, to their final discharge from hospital. Claims compensation booklets containing forms and other instructions will be distributed to all injured passengers and relatives of all deceased passengers.8.4 Strategy to be adopted!Each Zonal Railway and each division will prepare its Disaster Management Plan. These disaster management plans will be dovetailed with the State/District Disaster Management Plan. SAVED (Self Propelled Accident Relief Train) consisting of 3 coach units will be deployed one in each division. Possibility to enter into an association with reputable private/civilian hospitals and with state authorities to be explored for quick relief and assistance. Rescue ambulances will be placed in hospitals in wards with good road networks. Airlifting of needy, seriously injured passengers to nearby hospitals would be explored. Armed forces will be contacted for help during disasters, when necessary. Possibility to introduce emergency path-cum-road vehicle Explored. Each zone is proposed to have a professionally trained Crack team of railway rescue experts and containerized equipment, based at headquarters, to be rushed to a major accident site by air or land route. The possibility of providing road access to bridges, tunnels, high embankments and deep cuttings will be explored by divisions. Two skylights and a hatch under the floor, for emergency escape is suggested to be provided in all trainers. Emergency automatic lights in coaches would be provided. Adequate financial powers for DRMs and affected branch officers will be provided to ensure faster rescue operations. The Special Disaster Management Team of RPF is proposed to be set up on each division to provide support for relief and restoration. Foldable coffins will be held at each division hospital and transported to the accident site. All ARTs will be equipped with Air brake bearings. At least one 140-ton break-down crane will be provided in each BG division. Disaster Management Training Modules, with a particular focus on rescue, extermination, medical relief and restoration techniques etc., will be launched at four nominated training centers. HUMAN RESOURCE MANAGEMENT & DEVELOPMENT 7.1 Human Resource!Manpower is the most valuable asset in any organization, more in IR that is highly labor intensive. The Indian railways with a workforce of almost 1.5 million are one of the largest employers in the world. In order to obtain optimal production from the workforce, higher motivational levels and stress-free environments must be ensured. To suit job requirements, the skills of the workforce must be developed appropriately that require adequate attention in their training facilities.7.2 New challenges!The challenges and pressures of the coming decades will require the development of railway staff in a different way than has been done so far. Technological advances, including those in IT and communication along with rapidly changing expectations of the new generations, will force all rail employees to think and act differently to produce matching results. Not only new management system and expertise would be needed, but also a completely different organizational culture and management ethos would be called to maintain competitive advantage. Railway employees had to take advantage of the explosion of knowledge, acquire and assimilate new skills in rapidly changing technology in their respective workspaces.7.3 Human error!Under optimal field conditions and with the best intentions, a man is likely to make a mistake from time to time, that is, from one in a hundred (10_2) to one in a thousand (10_3). This is why operating rules include many redundancy in safety procedures and operating practices involve the number of checks and balances. Equipment is used to prevent human error and automation is resorted to. By providing all such technical controls, it is sought to reduce the chances of probable errors to one in millions The cause of high incidence of human error is the fact that technical security measures and backups do not necessarily replace the human effort. Direct responsibility for preventing an accident must be properly attributed. Staff become complacent with the knowledge that technical support is available to them to check their mistakes. Repeated failures in technical support such as just an overlay create a situation, which is worse. Although an accident occurs only when both fail, but it is usually logged as human error with a tendency to gloss over technical failure. With an increase in the number of failures in such security support systems, the technical backup is not really available.7.4 Maintenance Staff!A key aspect is the staff failure of other than frontline employees. Derailments account for around 75% of the ir. Although it is an undisputed fact that frontline employees should be properly trained and their work closely monitored, the focus must now gradually shift to employees working in production and maintenance activities, since they are responsible for most accidents, which occur due to the failure of railway staff. Necessary infrastructure and staff would be created to maintain new trains as it is done in the case of running staff.7.5 To improve the quality of human resources, the multi-pronged strategy would have to be adopted.7.6 Recruitment!The focus will be on appropriate capability while choosing personnel. A review and update of the minimum qualifications prescribed for each category will be conducted with regard to the necessary knowledge, skill and availability of trained labor. To improve the quality of recruitment of security category employees, job qualification standards will be raised for general as well as reserved category candidates. Increases in the proportion of lateral induction at specified levels for critical safety categories will be considered. A review of recruitment rules will be carried out for the induction of officers and staff for multi-skilled jobs. The initiative taken to reorganise the Railway Recruitment Board (RRBs) and improve the quality of recruitment will be maintained. Walkers and drivers over the age of 50 and up to 57 years will have the opportunity to apply for voluntary pension, and one of their departments will be given an agreement, if eligible. A suitable computerized test program would be developed and standardized to determine the physical characteristics such as alertness, reaction time, endurance and ability to withstand frequent changes. Ability tests!The psychological tests given to new entrants as well as department candidates for Station Masters and Drivers etc. will be upgraded and revalidated through competent external professional agencies. These tests are suggested to be converted into computer-based packages for their behavior and evaluation. An interdisciplinary team is proposed to be sent to advanced railway systems to approve themselves of the latest techniques for tests.7.7 Training!Modernization and upgrade of training centers!As the main training centers have already received Rs.73.5 crores out of the SRSF for upgrade, remaining training centers, including basic training centers spread throughout the Indian railway, are also proposed to be modernized with the provision of necessary infrastructure by a total outlay of Rs. 220 crores (including allocation under the SRSF). Modernization of training centers would cover institutions that provide training of different disciplines. Civil, Mechanical, Signalling and Electrical Engineering etc. Particular emphasis is placed on the training of bridge engineers and supervisors regularly and continuously, at least for the next 5 to 6 years to adapt the technology correctly. ISO certification In the long run, it is desirable that all training centers and work centers will receive ISO_9002 certification and the concept will be extended to all division control offices and stations and other work centers. Competence-based training for maintenance personnel To improve training methods and switch to multimedia packages. It is proposed to expand competence-based training, and the employees working in Workshops and Open Line will be given the necessary certification. It will be necessary to have the certificate of competence to work with the identified critical security activities such as TXR depots, Workshops and Flash Butt Welding Plants Apart from conventional methods, interactive training with personal computers will be introduced on the lines of modern training methods. Training modules A central training cell, consisting of multidisciplinary teams of specially selected staff and officers, would be started. It will be assigned the responsibility for designing courses and preparing quality training materials. The selection of coaches would be based on suitability and skill. The training cabinets for drivers and assistant drivers would be thoroughly reviewed and greater emphasis would be placed on practical training. It is proposed to delegate more powers to field units to make liberal and extensive use of external training facilities in IT and technology areas. Refresher courses for each category will have adequate case studies of accidents caused due to human failure in that category of employees. Training modules will provide stress on know-why and show how instead of know-how to emphasize on the practical aspects of the training system. Training at the workplace via RAILNET will be made available. 7.8 Exam system - Promotional rules and procedures!Over a period of time, a question bank will be built containing objective questions with multiple choice answers covering the entire curriculum. Data bank containing questions covering the entire curriculum will be made available to trainees. At training centres, written exams/test assignments will contain objective type questions covering the entire curriculum in random order multiple choice answers. When any staff belonging to a safety category is delayed for periodic medical examination, refresher course or security camp, he would not be allowed to continue on duty until he completes the scheduled training/examination. After recruitment, for initial training on ZTCs/STCs, passing marks can be upgraded. For promotional course training, passing grades can also be revised.7.9 Strength of staff and vacancies!Staff requirement is proposed to be reassessed for zero-based assessment of labor. Based on the exercise, sanctioned strength of employees can be revised and made uniform. The term multi-skilling would be adopted. Categories that are having trouble filling up campaign posts can be audited. All vacancies in the security category will be filled up in urgent terms. Accountability for filling vacancies into security categories will be clearly assigned at the appropriate level.7.10 Changing rules!With changes in operating system and pattern of work, modernization and technology upgrade, rulebooks and manuals will be taken up for reconsideration and make them easier for compliance. A comprehensive accident manual that is universally applicable to all Zonal Railways would be framed and circulated. Departments/zone paths that do not have a specific manual will be prepared within the next 2 years. Separate modules would be prepared, categorically, containing do and not to ensure safety and prevent errors and accidents. All instructions in consonance with existing manuals will be issued through correction notes to manuals and rule books. Manuals containing relevant rules, framed in single languages, for different categories of employees would be issued. Compendium of establishment rules related to running employees, and operating staff will be made available to employees directly. 7.11 Inspections!To improve the quality of inspections, detailed checklist of various types of inspections would be made out and circulated. The quality and compliance of inspections will be made an important plank of the management tools. Special security audits from interdisciplinary teams would be intensified. A database would be prepared at division and zonal headquarters to assess the effectiveness of field inspections. Security critical checks will be carried out by all inspecting officials. Safety test checks will be intensified as vigilantly-like powers are given to the safety organisation. As the element of surprise and the ability to observe the performance of employees during actual working conditions in the field is of paramount importance, surprising inspections provide an accurate indication of the health of the device in question. Surprising inspections would be intensified, especially between 0 hours, and 4 hours, at night. Test control of inspections of subordinate officers. Maintenance depots and other activity centers will also be covered by night inspection. 7.12 Periodic Safety activities in railway work, which are seasonal by nature, are neither required to be carried out by employees nor required to be checked by supervisors during normal work for most of the year. It is for these types of activities that security stations are generally targeted. Security stations would be launched to correct a system error, when detected. In the safety stations, all equipment that will participate will undergo a cyclical inspection before a particular season. The number, duration and content of specific security stations will selectively be determined to retain focus and value. 7.13 Safety audits!Typically designate individual errors, security audits are expected to identify system errors and generic deficiencies. Periodic safety audits will be conducted at various levels to conduct a thorough assessment of safety systems. These safety audits can be of many types of viz, interdisciplinary team from railway board, inter-railway, interdisciplinary headquarters team, inter-division, etc. The main purpose of conducting security audits is to check only safety critical elements and identify system errors or generic deficiencies. Railways will identify the worst parts of the divisions with unsatisfactory safety records. The teams would thoroughly revise various devices that find deficiencies, including auxiliary viz. training of employees, material supply, availability of funds, defective guidelines / rules etc. Safety audits will be conducted at a number of installations within the target area.7.14 To promote devotion, dedication and sincerity towards duties, Human Resource Development (HRD) Cells are proposed to be made up at Zonal, Divisional Headquarters involving dynamic and knowledgeable supervisors to study working habits of ground level staff Factors that lead to short cuts To reduce fatigue, minimize monotony and improve safety awareness.7.15 Review of working hours!To reduce stress, working hours for identified critical categories of employees would be reviewed, where necessary.7.16 Simulators!Training!More and multiple simulators would be procured for the training of drivers to equip them with better capability and reflexes.7.17 Crew Management!To assess the actual problems facing the ongoing crews, proper registration would be maintained on crew lobbies and follow-up measures taken within 24 hours of observations made by drivers. The deficiencies mentioned during crew races would be identified and corrected quickly.7.18 Breathalyzer Tests to be strengthened!Division officers and supervisors would be equipped with mobile breathalyzers for testing ongoing employees on the footplate with an element of surprise.7.19 Crew friendly cab for locomotives!A ergonomic design of loco cab has been developed to provide easy approach to various control handles / buttons. Provides new features will ensure fatigue-free driving for long hours.7.20 Running Rooms!Upgrade that the runner room should be equipped with certain basic facilities such as proper hygienic toilet facilities, clean drinking water, proper ventilation, desert coolers, subsidized meals, etc. All the new running rooms would be built with improved layout and proper amenities. The existing running rooms are upgraded on an urgent basis.7.21 Upgrading of crew lobbies!Crew lobbies also need to be upgraded by providing basic facilities, facilities for proper display of various instructions, computer and software package for proper ordering of crew and ensized adequate rest to run staff.7.22 Guard-friendly brake vans!5000 Goods brake cars will be equipped with several new functions to make them Guardable and easing stress for freight train guards.7.23 Strengthening the Railway Protection Force!To combat external interference with rail installations such as track and signalling equipment etc., it is proposed to equip the Railway Protection Force / Railway Protection Special Force with specialized training, weapons, vehicles and wireless communication and necessary backup support in the form of labor and barracks. These personnel will also help guard railway bridges, microwave towers, route relay cabins and tracks in identified vulnerable sections. INVESTMENTS IN SAFETY-RELATED WORKS 9.1 The Indian railways have long had a system for financing the replacement/renewal of their over-the-top assets. This is done through the Depreciation Reserve Fund (DRF), created for this specific purpose with effect from 1.4.1924 as recommended by the Depreciation Fund. Annual needs-based contributions are given to this fund from Rail Revenues. Currently, the depreciation is about Rs.2000 crores per year. In addition, the rental costs paid to the Indian Railway Finance Corporation include an element of capital recovery of more than Rs.1000 crore per year, which is analogous to the provision for the depreciation of Rolling Stock assets. While an exercise to review the codal life of different categories of assets is separately underway, duty considering technological changes, assets must be replaced occasionally before they have completed their codal life because their use in the form of traffic tails so guarantees and necessitates compensation.9.2 Investments of developmental nature, which also on safety-related projects have been made through the Development Fund. Both of these funds are derived from the internal generation of resources. While DRF is mainly for replacement and renewals, The Development Fund will meet the expenses of safety-related other works such as track circuits, interlocking level crossings, delivery of lifting barriers, Foot-over Bridges etc.9.3 Railway Safety Fund - Safety at Level Crossings!A Railway Safety fund has been created from 1.4.2001 for financing works related to staffing of unmanned level crossings and for the construction of ROB/RUBs on busy level crossings. This fund is financed mainly through payments from Central The fund, which is financed by collecting cess of Rs. 1 per liter on diesel and gasoline. The railway gets 12.5% off the whole gasoline cess and 6.25% of the entire diesel cess. Two separate plane heads, viz. Road safety works - L-Cs and Road Safety Works-ROBs/RUBs have been created in 2000-01 to carry out these works.9.4 Special Railway Safety Fund (SRSF)!According to the RSRC's recommendation, a nonlapsable Special Railway Safety Fund of Rs.17000 cr was created in October 2001 to remove arrears of replacement/renewal of overaged safety-related assets viz., tracks, bridges, S&M&M, T gears and rolling stock and to accommodate certain safety improvement works. Out of this, rs.5000 cr will be the railway's contribution through safety supplement on passenger price and balance Rs.12000 cr in the form of dividend-free budget support. Until the end of March 2003, Rs. 3920 cr has been used through this fund.9.5 Corporate Safety Plan has outlined the role of technology, maintenance practices, modernization and upgrade. There are also important security policy issues to be decided, which have implications for the investment profile. Attempts have been made to assess the scenario for approximate fund requirements for broad security-related items during the relevant company planning period (See Appendix A1 to A10). Also, some of the measures proposed constitute various options available to achieve the same goal, and therefore the best and most cost-effective option must be tested before a management decision is taken to adopt the same.9.6 While clearing arrears of trace replacement, bridges, signal gears and rolling stock will be added through the SRSF, annually as a result of these elements will be taken care of by normal preparation under dr. In addition, during the planning period, safety improvement work as identified and described in Annexes A-1 to A-9 will be provided. The total expense involved for these safety improvement works will be Rs. 31,835 cr. (See Appendix A-10). Out of this Rs.13,000 cr is available under the SRSF for sanctioned works in the Green Book. Furthermore, the claim under the Rail Safety Fund works out to Rs. 8900 cr, which implies an expense of Rs. 890 cr per year. Currently, the availability under this fund is of the order of Rs. 430 cr per year. Experience shows that the expenses under the Railway Safety Fund have been below Rs. 200 cr per year due to delay from the state government to sponsor ROB/RUB works on a cost-sharing basis and also the implementation of its part of the work. Thus, the additional requirement to fulfill the plan will be in order from Rs.10,000 cr.9.7 In conclusion, in order to achieve corporate safety plan goals, Native American railways will have to initiate a variety of business reengineering measures and efficiency enhancement steps. Non-budget measures to meet project-related expenses must be stepped up so that matching funds become available for security outlined in this business plan. In addition, a security-oriented scheme to meet the expected requirement for funds may also have to be resorted to, where assistance from the Planning Commission and the Ministry of Finance would be sought. ABBREVIATIONS AC!Alternating Power. Air Conditioning ACC!Anti-Collision Unit ACP!Alarm Chain Pull ARMV!Accident Relief Medical Van ART!Accident Relief Train AT!Welding!Alumino-Thermit Welding AVCs!Avenue Diagrams BG!Wide Gauge Gauge BPAC!Block Proving of Axle Counter BOBYN!Hopper Wagon CAP!Capital CBC!Centre Buffer Coupler CC!Closed Circuit CR!Crosses DF!Development Fund DMU/DEMU!Diesel Multiple Unit. Diesel Electric Multiple Unit DRF!Depreciation Reserve Fund DRM!Division!Railway Manager EMU!Electric Multiple Unit FB!Welding Flash Butt Welding FVU!Four-Wheeler Devices GB!Green Book GM!General Manager GPS!Global Positioning System GTKMs!Gross Tons Hods Head of Departments Hq. Headquarters ICF!Integral Coach Factory IPS!Petroleum Power Supply IR!Indian Railway IT!Information Technology LC!Gate Crossing Gate LWR!Long Welded Rails M&M; P!Machinery & Plant MACLS!Multiple Aspect Color Light Signaling MG!Meter Gauge MMU!Mobile Mechanized Devices NCR!North Central Railway NG!Narrow Gauge OFC!Optical Fiber Cable OHE!Over-Head Equipment PB!Pink Book POL!Petrolium Ppm Parts Per Million PSC!Sleeps One And One Pre-Stressed Concrete Swallows R&M;D!Research & Research Development RCF!Rail Coach Factory RDSO!Research Design and Standards Organization ROB/RUB!Road over bridge/ROH!Routine Overhaul RPF!Railway Protection Force RRB!Railway Recruitment Board RSF!Railway Safety Fund RSP!Rolling Stock Program RSRC!Railway Safety Review Committee RKMs!Route Kilometers!Rev!Revenue!SLR!Guard's Brake Van SPART!Self-propelled Accident Relief SPURT!Train car self-propelled ultrasonic rail testing car SRSF!special railway safety fund STC!Systems Training Centre TAWD!Train activated warning device TRC!Track recording car TMT!Tie Tamping Machines!TVUs!traffic vehicle devices USFD!Ultra Sonic fault detector UTS!Ultimate tensile strength VCD!vigilance control unit w.r.t with respect to ZISTUS!Zonal integrated signal and telecom devices. ZTC!Zonal Fitness Centre

PC full form in railway

