

Maharashtra Fire Services WE SERVE TO SAVE

'There is a dire need of life saving services across the state'

M V Deshmukh, Director, Maharashtra Fire Services, Government of Maharashtra, shares the four-pillar approach to fire safety

Vijay Pandya & Aarti Kalra

Maharashtra is in an advanced state of urbanisation. In such a scenario, there is a dire need of life saving services. One of those is fire services. Now that we have gained 65 years of independence, along with the other verticals of infrastructure there is a dire need of this particular segment of infrastructure to which Maharashtra is not an exception. Therefore, augmentation of the fire services in the state is being seriously looked upon by the state government.

The first thing the state government has done is enactment of very unique legislation, 'Fire Prevention and Life Safety Measures Act - 2006.' Today, our legislation is unique in comparison to other States, where we have covered the buildings by laws of different municipal bodies and planning authorities. We also cover the National Building Code of India published Bureau of Indian standards as far as fire safety is concerned. It's an effort to optimise but of the best possible standards without compromising the paramount importance of the objective of fire and life safety.

To implement this law, we need very robust and strong machinery. We have taken strategic steps that we should augment our existing infrastructure, which is the second pillar that is capacity building. Under capacity building there are two subsets. Firstly, it is the capacity building of the brick and mortar infrastructure, you require building of fire station, equipments, etc. vis-a-vis you require a good trained manpower. For any service sector the most critical is the human resource that is people and quality of people on which any industry depends. Therefore, the state government has taken two steps. One is revamping the recruitment rules for the fire services, which determines the quality of manpower at the induction level. Secondly, we are giving lot of emphasis on good training facilities. For this we have set up the Maharashtra State Fire Academy of which 95% work is finished. Once the work is completely done this facility will be formally dedicated for the cause.

While revamping Fire Service, we have two challenges, urbanisation and industrialisation. Maharashtra has more than 232 industrial areas. We are initially planning to provide the service to those are very sensitive from potential fire hazard view point.

Mumbai city's significance is known to the entire world and we have seen different catastrophes when it comes to major fires. Mumbai Fire Department has a long history of 125 years and it has now become substantially matured. We need to go in paradigm shift, drive the chain management process and elevate the standard of this particular fire service at par with any international fire service. There are other challenges as well, Maharashtra has a very long coast; it also has a huge railway network. The recent train fire in Chennai where people died; Maharashtra cannot be an exception to such kind of contingencies and we need to be prepared for it.

With the new scheme of government known as Maharashtra Agni Suraksha Abhiyaan, we are setting up around 100 new fire stations in Maharashtra with the support from the state government. The work of these new fire stations has already commenced. We are going for advanced fire academy where we looking out for live simulators. Another



By: Poojit Chhabra

challenge before us is that we want women to enter fire services, the way they are joining police and defence services. That is where the advanced fire academy will help with proper training facilities. For this advanced fire academy the state government has already sanctioned Rs 50 crore, which is part of Maharashtra Agni Suraksha Abhiyan.

Technology adaptation

Technology begins where every building has to have the fire prevention and life safety measures provided in-built as a part of the facility of the building like the sprinkler systems, detection system and smoke management system. Smoke is the main killer. People hardly die of fire; most of them die of suffocation. Hence all these systems should be integrated and this integration is where the technology begins.

Use of technology is required for proper dispatch, logistic management, support. We have set up the state command centre, which will be inaugurated with new facility where we will have 24/7 state-of-art communication system. So from anywhere in the state we will be ready, may it be railway accident, drowning casualty, fire, industrial fire or explosion or terrorist attack where our services are required.

The call can go to that toll free number and from there we can dispatch our resources in close proximity. We need to have the database of the resources that we have, so we have started that data capturing. We are setting up our proper data centre. We also want to make each and every fire station IT enabled, so there the use of technology comes in. We want our control rooms and watch rooms working under CCTV cameras, so that we can track the movement of the people who are working in the local sites.

Beyond that you need sophisticated rescue tool. Today we have the contract of international brands and we are getting the rescue tools of various fire services in Maharashtra. Then we have the challenge of high rise buildings, there we use two types of machinery; aerial ladder platform and the other is turn table ladder. Aerial ladder platform's primary job is fire fighting and secondary job is the rescue. Turn table ladders are primarily for rescue purposes and secondary is fire fighting. We have signed the contract for this.

Also to use this technology you have to develop that skill set and for that we have started the urban

search and rescue training. This is Government of India granted aid program under which we have trained over 60 people in Maharashtra.

Lastly we come to the fourth pillar which is public awareness or mass education of the public. Schools and colleges are our target where we have covered 400 schools last year and given them demonstration and basic information about fire. Children are more receptive and inquisitive, this has been our experience. If we can sensitize them then we are preparing the future of country. Fire safety can be a part of vocational guidance to them, which can be available as a career option. This profession will definitely be more renowned in a decade because if you see cities abroad, people cheer for the fire personnel at public functions and even when they pass by on a normal day.

Guidelines

As per the Maharashtra Fire Prevention And Life Safety Measures Act it is mandatory that all new buildings are provided with basic requirements such as the fire sprinkler systems, detection system, whatever is necessary for the building as per the National building code is mandatory. However for old buildings our fire officer can do the inspection of the building and certain things which are feasible and required that they can prescribe and it's mandatory to follow.

Owner of the building or the occupier of the building has to get his own building inspected twice in a year in the month of January and July by the licensed agencies and submit the certificate to the fire department that their building's fire systems are intact and functional.

The experience that we got on Mantralaya fire, the government has issued the fresh circular over and above the statutory provisions. Based on that, we are asking people to get their fire safety inspected and get systems in place.

See next page

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City scope

Since the last few years, Mumbai has been identified as the city of skyscrapers, and fire safety in such high rise buildings is a serious issue since last few years for fire services. Most of the time fire fighting is hampered by improper maintenance of fire fighting arrangement or inadequate knowledge about fire fighting and detection systems by the occupant. Most people choose flats or offices in high rise building considering amenities and facilities; they overlook fire safety as dead investment. Buildings having active systems like fire detection and fixed fire fighting arrangements can be changed or updated in future; but passive systems such as road width, open spaces, staircases, corridors, refuse areas etc are difficult to change and update after construction of the building.

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Maharashtra Fire Services WE SERVE TO SAVE

History of Maharashtra Fire Services

Started as a part-time function of Police under the Government in the erstwhile Bombay Presidency, Fire Protection passed on to the Municipality on 1st April 1887. The Bombay Fire Brigade as it was known then was commanded by an officer on deputation from the London Fire Brigade between 1890 and 1948.

Since 1948, the Brigade is completely manned and commanded by Indians. This year, the Mumbai Fire Brigade is observing its quinquacentennial (125 years) Year rendering Service and Sacrifice.

In Marathwada region, which hitherto was ruled by the Nizam of Hyderabad, Fire Service was established at Aurangabad.

After the establishment of Maharashtra State in 1960, for almost a decade fire brigade services were in the charge of independent Municipalities. With increasing population, industrialization & urbanization, Maharashtra Government decided to bring in uniformity of rules and set up a post of Fire Advisor to the Government in 1954.

The subject of Fire Services in the State of Maharashtra is vested with the Urban Local Bodies. Accordingly the provisions exist in the Bombay Municipal Corporation Act, 1888, Maharashtra Provincial Municipal Corporation Act, 1949 maintained in the Maharashtra Regional and Industrial Township Planning Act 1966. In addition to this, as per the directives of the State Government, other Special Planning Authorities like MIDC & CIDCO manage the Fire Services for their areas.

Out of 30 States, 24 States have a State Fire Service. Maharashtra, Gujarat, Madhya Pradesh, Rajasthan, Punjab & Haryana do not have a State Fire Service and Services are provided by Urban Local bodies (ULB) i.e. Municipal Corporations / Councils and Special Planning Authorities (e.g. MIDC / CIDCO).

After the promulgation of Maharashtra Fire Prevention & Life Safety Measures Act 2006 the Post of a Director Maharashtra Fire Service was created.

The present Director Maharashtra Fire Services is M.V. Deshmukh, whose office is located at Directorate of Maharashtra Fire Services, Santacruz West, Mumbai.

An exciting and challenging career awaits

For careers across the globe offer prospects that are as exciting and challenging at the same time. In the fire safety service no two days are alike. Each sunrise has the potential of bringing with it a whole new challenge that will make great demands on your mental agility, physical ability and technical prowess.

Of course, there's much to look forward to: adventure, a knowledge-driven work environment, testing of your physical endurance and most of all an opportunity to make a difference to society. Equally, there's much that will be expected of you: confidence, problem solving skills, resilience, adaptability and integrity. So if you've got a raging fire in your belly for the unconventional, then this is an opportunity tailor-made for you.

The fire and emergency services are not for the weak or faint hearted. It is for razor sharp minds with nerves of steel. For those who let adversity bring out the very best in them. It calls for a mix of man management, rigorous training, skill development, constant practice and teamwork. It takes desire, discipline and dedication.

Being part of the fire and emergency services force isn't just about fighting fire. It's about fire safety and fire prevention too. It's about driving home the message of safety first; advising businesses on preventive measures, educating communities on their role and responsibilities, creating new safeguards, and finding innovative means to make the world a safer place.

According to the 13th Finance Commission of India, there's a yawning gap between the demand and availability of fire personnel across the country - a whopping 96% to be precise. To address the shortfall, at the macro level the Government of India has announced substantial financial outlays to modernise and augment the fire services infrastructure across the nation.

At the micro-level, the Government of Maharashtra is following through by putting in place several measures to reinforce, upgrade and supplement its fire forces and regional fire service centres across the state.

To make optimum use of the expanding infrastructure, the Directorate of Maharashtra Fire Services, Government of Maharashtra, was quickly off the blocks in leading the way. It set up a world class facility at Kalina, Vidyapeeth-Nagar, Mumbai, for creating a resource pool of high quality talent for the nation's fire force and industrial safety divisions in the public and private sector. The academy expects to contribute significantly to the growing demand for skilled professionals across the organisational spectrum. From junior officers to high ranking officials who will provide leadership in the field of fire and rescue to their respective organizations such as Urban Local Bodies (ULBs), Municipal Corporations, Municipal Councils, Nagar Panchayats, Special Planning Authorities (SPAs) like MIDC, CIDCO, MMRDA, other small medium & heavy industries and corporate, etc.

Maharashtra Fire Services Academy's stringent selection process (including a Competitive Criteria Test and Physical Test) is designed to draw the finest. Only those candidates who display leadership potential and an ability to thrive in a stimulating academic environment will make the grade.

Maharashtra Fire Services Academy has been conceived as a world-class learning centre. The courses, far-reaching in their scope, are a combination of a rigorous curriculum, in-depth practical training and extensive exposure to real-world challenges. Guided by a team of highly qualified and dedicated faculty, the period of stay, for students at the Academy, turns into an experience of personal and professional transformation.

As the springboard to a career dealing in complexities related to fire safety and emergency services, the Maharashtra Fire Services Academy (MFSA) offers students an opportunity that is one of its kind. The sheer diversity of environments available in Mumbai - be it airports, sea ports, petroleum refineries, high-rises, buildings, hospitals, educational institutions, malls, atomic energy research centres, hotels, fun fairs, amusement parks, theatres, slum areas, high density residential complexes - enables the MFSA to provide what no other academy in the country can. It opens numerous avenues to study and research from close quarters a variety of potential fire hazards and emergency handling methodologies. The added advantage of being able to mobilise experts in every related speciality places the Academy in an enviable position. What it offers is no ordinary short-term, quick fix training, but experiential learning of a level unlike any other.

From access control systems to well-appointed classrooms to sophisticated technologies installed in various sections, it is every inch what a premier international management institute ought to be. The quality education imparted at the Government of Maharashtra initiated Maharashtra Fire Services Academy, which is also a statutory authority, is your gateway to a bright, meaningful future. Being a Government of Maharashtra recognised MFSA certified professional earns you a place among a select group of high-calibre talent. You become the preferred choice for filling up significant positions in government fire departments, urban local bodies or companies in the corporate domain in India and abroad.

Being a successful MFSA student puts an upward slant to your growth curve. You start with an enviable advantage. You stand more than a fighting chance to make the rapid rise from a Sub-Fire Officer to Chief Fire Officer in the government department, or from Supervisor to Vice President - Safety in the corporate sector. The opportunities just unfold.

There's a great demand for high-quality trained professionals within Urban Local Bodies (ULBs), Special Planning Authorities (SPAs), the Airports, Seaports, Electricity Boards, Mines, Refineries, Petrochemical complexes, corporates and industries situated across India. There's much scope for landing key positions in the safety divisions of industrial heavyweights in Private & Public Sector India's Petroleum & Oil majors, automobile engineering, manufacturing units, fire equipment manufacturers and fire system contracting firms. There are even avenues for self-employment in specialized fields like being a fire surveyor for the insurance sector, a fire consultant for industries and commercial enterprises. Or even becoming an entrepreneur in the business of fire protection, fire equipment and safety equipment manufacturing or fire detection and suppression systems installation.

Students can stay ahead of the pack of job seekers by investing their time in this emerging field and creating a great career path for themselves.



The comprehensively designed, well-equipped Maharashtra Fire Services Academy at Kalina will be inaugurated shortly



The Library is well stocked with informative books and periodicals



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There is a dire need of life saving services across the state

Throughout the year we do many campaigns, demonstrations, seminars where we have architects, consulting engineers, MEP consultants and try to educate them. Our fire fighters go to buildings and try and spread awareness to the masses. We want to request the education department to bring some fire safety related things in the syllabus. We want basic do's and don'ts of fire safety to be inculcated among students. We have requested our education minister Rajendra Dada and he was very positive on this subject where we presented our idea. We have our website mahafireservice.gov.in where we have given various do's and don'ts while handling kitchen, bursting crackers during festivals, while using electricity, etc. Some children who take interest in this subject can be encouraged with an interactive portal where they will seek guidance from family members to solve quizzes and spread awareness that way.

Plus, very soon we will be bringing out a handbook for conducting the evacuation drill so people can have a look at it and know how they can be helpful and what they need to when they are an occupant of the building which is on fire, etc. We are offering two types of courses, basic and officer level. Fire prevention officers' course is of one year. For this we are looking at fresh graduates and they will be trained here and also will have placement in the fire services. In fire services there's a reasonably good career at two levels. Level one is the actual fire fighters, for that we have the basic course of six months after a person has finished matriculation or tenth standard. When they do the course they have the prospects of getting a job into the fire services either in the municipal fire department, state directorate or the special planning authority services like the MIDC, CIDCO. Level two is the officer entry course, which will start soon. That is called the

fire prevention officers course, which is a one year course. After passing this they have the prospects to join at least as an assistant station officer in fire services. Then it depends on the career growth, continuous education but once they mature to certain level some cadres we are creating lateral entry. On a higher level we are trying to create a lateral entry in some percentile terms. The main advantage of it is to get the fresh knowledge, fresh information, fresh ideas, and also to maintain the age of the services. Thus, you have the youngsters coming on higher levels directly, also that no one will be stuck in the line and can apply for higher posts. We are doing the cadrenisation of fire services, so the entire services except Mumbai will be officers of the state government and not of the respective municipal body or MIDC. Once they are seamless cadre, naturally there is career growth.



Maharashtra Fire Services WE SERVE TO SAVE



Safe evacuation of high-rise buildings in case of fire

Panic of occupants of high-rise buildings during the early stages of a fire is a danger that can contribute to high casualty. Smoke, gases, and super-heated air make it imperative that an emergency evacuation program be established for all high-rise buildings. Successful and efficient evacuation depends on complete preplanning, organization, and supervision. Planning should include at least these basic principles:

1. Building evacuation organization;
2. Evacuation policy and plans;
3. Detection and reporting (of fire or hazard);
4. Evacuation program coordination (of movement and evacuation);
5. Communication to direct movement and evacuation;
6. Inspection and evaluation.

Building evacuation organization

Written plan - As soon as building occupancy begins, a written plan of fire and other emergency procedures should be agreed upon by building management and responsible representatives of each building occupant. However, before this, it is important to understand the aspects of evacuation that need to be coordinated, understood and organized. Consider the following:

- a) Identify the fire-detection, fire-fighting, emergency warning systems, and reporting procedures for fire and other hazards.
- b) An outline of the emergency evacuation organization plan with agreed-upon priorities, including responsibilities and authorities.
- c) Coordination of central building emergency evacuation, with assigned floor emergency evacuation teams, should provide for the orderly movement of persons.
- d) Pre-planning and "fire in progress", chain-of-command instructions, should be detailed, and each occupant should be required to acknowledge and comply.
- e) In addition to a suitable and effective fire-detection / fire-fighting system, an adequate and effective system for two-way communications should be provided for every floor. The communication system will be used to direct the work assigned to floor evacuation teams and to assist in communications between buildings, communication control centre and fire department personnel using the system during fire-fighting and evacuation emergencies.
- f) Building management and tenants should cooperate in an education and training program for all emergency floor-evacuation teams, employees, and building visitors. This should include a system of personal instructions for all building inhabitants and proper posting of instructions, placards, and evacuation diagrams at strategic locations on every floor. Emergency fire procedure information should be prominently posted in corridors.

g) One individual should be designated to establish a program, including proper documentation for regular inspections and follow-up to maintain the detection and communication systems in the best operating condition.

h) An evacuation drill program should be established that will include periodic practice of movement of occupants to refuge areas. The frequency of these drills - monthly, quarterly, etc. - would depend upon the employee turnover in the area. The schedule should be maintained and documented. The drill should include the progressive movement of personnel to areas of safety. The purpose of "progressive movement" should be explained to the tenants at this time - to keep all tenants at a safe distance from the fire hazard without evacuating the building all at once.

Evacuation drills conducted with the help of local fire brigade authorities will give more success and confidence to the occupants. Evacuation drills carefully conducted at hospital buildings (Dama patients) or in school buildings will have a positive impact and add seriousness among participants.

1. Evacuation policy and plans

When agreements are signed with the occupants of high-rise buildings, a document describing the building's emergency evacuation policy and plans should be provided by the building management and agreed upon by the occupant. It should describe fire-detection, fire-fighting and fire reporting systems and the emergency evacuation plans and communication system provided by the building. Occupants should agree to furnish assigned emergency evacuation teams and a responsible representative to act for them in all matters of fire control and personal evacuation. In the event that two or more occupants occupy a floor, the occupants should designate a floor evacuation representative and alternate who would report to the building coordinator.

Evacuation routes - Drawings, diagrams, evacuation routes, and similar information should be included in the building's emergency evacuation plans. Care should be taken for unobstructed evacuation routes, passages, and protected lobbies. Furthermore, the document should include those elements of this data sheet adopted as standard procedures. Floor numbering and direction of travel should be indicated in stairwells.

The emergency evacuation plan should:

Define "imminent danger" situations and provide for immediate temporary action by responsible persons assigned to emergency floor evacuation teams. Indicate how central control will function in the event of fire and the need to move and evacuate persons.



Include the duties and responsibilities of emergency floor evacuation teams. Refuge area should be clearly and prominently marked on the specific floors as prescribed by the National Building code. This area should be easily accessible for fire fighters. Rescue ladders, Provisions of illumination strips and Glow sign indicators in case of Fire and dense smoke is very much essential. Describe evacuation training to be provided and copies of written information furnished to occupants. Fire and emergency evacuation information should be posted at strategic locations on every floor and elevator. Include a schedule of programmed fire and evacuation drills. (Partial building skill drills and full-dress "rehearsal for survival" should be planned.)

2. Detection and reporting

This aspect of evacuation, though small, requires a separate section, due to its sheer importance. Reporting by telephone or personal contact should be discouraged when faster means are available, i.e. use the systems in place and as detailed in the evacuation plans; as it is important for the correct people to know about the fire, for safe evacuation and not just "someone". Emergency telephone numbers like Police, Fire Brigade, Hospitals, Doctors and responsible persons of the building / company should be displayed in the security cabin. Delays in reporting fires because of heroic but ineffective fire-fighting can result in needless time loss and allow a simple fire to get out of control.

Fire- Call reporting systems must be handy, direct and not subject to any delay. If fire is detected or the start of a fire is witnessed, it should be reported immediately. Display Boards regarding do's & don'ts in case of fire should be clearly displayed on the prominent locations of the building.

3. Evacuation Program Coordination

Movements of occupants to a refuge location, as well as total evacuation, require the utmost coordination of assigned emergency evacuation floor teams and central evacuation control. Chain-of-command, preplanning should determine those vested with authority to move persons and evacuate emergency areas. Movement and evacuation should be controlled through communication.

Evacuation priorities

Generally, immediate evacuation will be from the floor where a fire or explosion emergency occurs and the two floors immediately above, and the two floors immediately below the emergency floor. These occupants will be directed to a refuge area and will be given movement priority. Thereafter, movement and evacuation priorities will be determined on the basis of particular fire and smoke conditions reported by emergency evacuation floor control teams and fire department personnel. These persons will direct evacuation disciplines, assisted (as necessary) by trained building evacuation control teams.

Pre-Planning and evacuation - Preplanning, evacuation priorities and proper skill drills help eliminate mistakes and misunderstanding. Plans should include possible alternate routes when particular circumstances warrant rerouting of occupants because of hazards (such as smoke, heat, and gases) in the evacuation route.

Means of evacuation - Building central evacuation control should determine the safest and most efficient means of evacuation, depending upon the nature of the emergency and scope of damage. This decision should be made known to floor evacuation control teams and personnel on those floors affected, based on the order of priority.

Evacuation priorities - There should be a positive means of selectively notifying occupants to evacuate. Priority must be given to those floors directly involved and floors immediately adjacent to the emergency. On the emergency involved floor, evacuation should be to the nearest available exit to a safe area three floors below or street level.

Exiting - Provisions should be made, and direction provided by assigned floor evacuation control teams, to make sure that traffic flows out and away from the building at all exit terminal points. Use of stairwells - During fire emergencies,

evacuation must be by means of fire stairwells. Specific information of this nature should be conveyed by the building control to individually selected floors, or to all floors, depending on the extent of the emergency and the need for evacuation at specific areas. (Local police and fire departments should be consulted.)

Elevator control - Immediately upon recognition of fire emergency, all elevators should return to the lobby floor. Automatic devices should be installed to allow elevator cars to bypass all fire-involved floors. Under no circumstances should elevators stop at the fire-involved floors. All occupants of the building, including visitors, must be informed that there will be no elevator service to or from emergency floors, and they must evacuate by way of fire stairwells to refuge areas or beyond.

Physically handicapped - Occupants should be moved down the fire stairwell to the upper most floor served by an uninvolved elevator bank, and then be moved by elevator under the direction of fire officials. Seriously handicapped persons should be assisted by assigned floor evacuation team members. Elevators should be programmed to return non-stop to the lobby level during fire emergency.

Bomb-threat emergencies - Generally, a bomb threat emergency will follow procedures established for fire emergency movement and evacuation. Elevator evacuation may be considered.

4. Communication to direct movement and evacuation

Proper movement of persons to refuge areas or evacuation depends on complete and accurate communications between central control (building and fire authorities) and all assigned floor-evacuation control teams. Communications channels must be available at all times when the building is occupied by any tenant, security, or cleaning people. When the building is not occupied, direct signalling to the fire department should be established. Several communication systems are available to ensure full service communications at all times. Whatever system of communication used should be backed up by at least one alternate, independent communication system in the event the primary system becomes inoperative.

5. Inspection and Evaluation

A complete inspection of building and occupant premises should be made to ascertain regular and special needs of the building and its occupants before establishing an emergency evacuation program. Fire prevention specialists should be consulted, and the program evaluated. This is also necessary whenever changes are made to physical structures in the building, and/or re-modelling or renovating of occupant premises.

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Our sincere thanks to Mumbai Fire Brigade on successful completion of 125 years of dedicated service and to Maharashtra Fire Service for their continued efforts in modernization of fire-fighting, rescue and safety equipment.

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