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DETAILED REPORT INSIDE...**

# FSAI Journal

November-December 2020 | [www.fsai.in/journals](http://www.fsai.in/journals)

# FIRE SAFETY & SECURITY DURING FESTIVITIES & ROAD SAFETY

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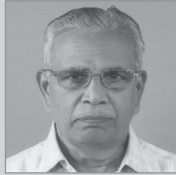
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NOV-DEC 2020

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# Great Quality

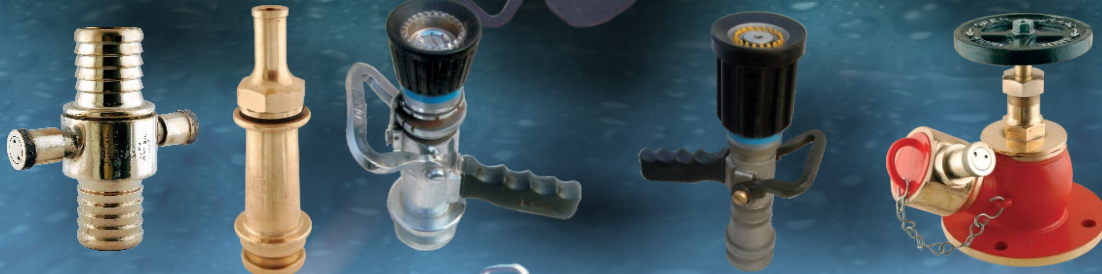
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- FSAI Journal is the official bi-monthly magazine of Fire & Security Association of India (FSAI) and known for excellent technical articles on Fire and Security written by the experts. FSAI Journal typically features a collection of select technical articles besides FSAI Chapter activities, Article from NFPA, Fire Safety Practices, Quiz and covering a wide range of news and industry information like New Products, Industry News and Updates, Events & Shows, Student Corner, Interviews etc.
- FSAI Journal is circulated within FSAI fraternity all over India to members of FSAI through 24 Chapters spread throughout the Country at free of cost towards membership benefits. It also been circulated among industry partners, manufacturers, suppliers, consultants, architects, educational institutes, corporates, fire and police departments etc. The Journal digital version is circulated to more than 7500 professionals.



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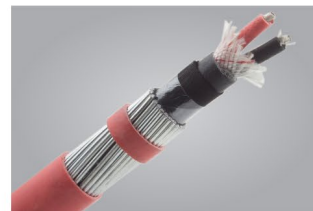
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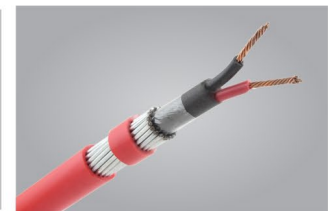
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# From the President

My warm greetings for this festive season!

Our launch of Surakshit Naari coincides with the celebration of Navarathri festival symbolising the empowerment of women in our society.

The main objective of Surakshit Naari program in broad perspective is to focus on systemic issues pertaining to "Women Safety and Security". Keeping this aspect in view our Association has committed it's domain expertise for this cause.

Her excellency, Lt. Governor of Puducherry, Dr. Kiran Bedi chaired the event as chief guest at a virtual function to mark the launching of Surakshit Naari. Her gracious presence and eloquent inaugural address, followed by her elucidated response to Q & A session has provided adequate impetus for our program.

Leading this movement, will be a startup team of over 100 'women warriors' who have joined us at regional chapters of FSAI functioning across the country. These leaders in turn will be inducting more women volunteers which we hope will build a strong team of around 1000 women warriors

We have introduced on the Shakti and Raksha Membership and the need & Objective of introducing Women Oriented Membership is to create more space for women in FSAI, To Encourage Women Participation, To reach at the grass root level and make them part of our mission "Surakshit Bharat" and also to increase women oriented events and programs.

Despite the slowdown due to pandemic I am sure everybody is waiting enthusiastically for the upcoming Diwali festival. My greetings and best wishes to you in advance and also would wish to remind you to take all precautions to ensure a safe and accident free celebrations.

We are proud to inform you that we have tied up with two international associations Fire Industry Association (FIA) and International Water Mist Association (IWMA).

The FIA is the largest fire protection trade association in the UK with 900+ members. FIA not-for-profit organisation and is a major provider of fire safety training. For FSAI corporate members we intend to have B2B meetings and also special training programs.

We are also closely working with International Water Mist Association (IWMA). FSAI members were given free access to all their three webinars which were concluded recently.

We have signed an MOU with NFPA where in FSAI members will be given access to NFPA 13 training for which FSAI members will be given special discount.

I am happy to announce that we have so far conducted 140 webinars which attracted over 34000 plus participants in total. Our team continues to look for opportunities to produce more such quality webinars which will have not only educational value but also shall cover topics of social importance.

I once again urge our members to pro-actively engage and partake in our association activities and help strengthen and grow our organisation.

The covid alert still exists and I request all members to diligently follow prescribed safety precautions.

Yours sincerely,



**Suresh Menon**  
President - FSAI







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# FROM THE CHAIRMAN'S DESK

Dear Friends,

Greetings to all

First things first.,

At the aftermath of few serious hospital related fire incidents in the month of August this year, lot of water has already flown under. Here I specially refer to the common and repeated aspects which came to limelight from the independent investigation agencies' findings based on few past (immediate and distant) including the recent ones as cited above. There is enough food for thought within those documents – design, technical as well as operational parts of fire safety with reg. to buildings and other facilities buildings in addition to Emergency preparedness cum response plan. Besides there are glaringly reflected and totally preventable hurdles/ anomalies related to general administration and totally **lackadaisical approach** with regard to issue (even non-issue) of NOC's, other regulatory compliance etc., Alas, here comes the “**non-technical**” **ignition source** in the guise of rampant corruption and convenience - based compromise on fire safety. I have included this aspect at least twice in the past through this page. Unfortunately, it warrants more repetitions since listeners and abiders are yet to be seen around!! If required, our journal is always prepared for a rejuvenated discussion on this significant element of life safety by engaging all stakeholders and experts. Readers can join the debates and raise the issues with us

The bottom line: “Let not fires of this nature be permitted to recur”.

Two editions before, I mentioned about “makeover” process of Journal in the offing.

**Few baby steps have already been taken as listed below:**

- Readers' feedback quotes
- Commencement of “Question/ Answer sessions”
- Beginning of a “Know your National Team” series.
- FSAI Suraksha Index update
- Honoring the efforts of authors with mementos
- Awarding winners and participants of Quizzing exercise which appear in every issue.

**This edition Includes the launching of two new 'feature columns' as mentioned below:**

- i) Exclusive and dedicated “Student chapter” It is marked by the publishing an excellent and must - read article contributed by three brilliant students of S.P.I.T, Mumbai under the able guidance of their dean who represent our Mumbai based student chapter
- ii) **Case studies.**

Considering the special significance of safety under the prevailing shadow of pandemic, few nice articles on 'Festivities related safety concerns' appear as thematic jewels. In addition, another contemporary attribute is also paired under Road safety segment.

Our **Membership core group** has done an excellent restructuring work on various segments and categories including the most sought-after reformation of **women chapter**. Please look at the special write-up and fliers on this aspect which appear on page number 85. You will definitely find some mouth watery, discount driven and highly palatable schemes among them for grab.

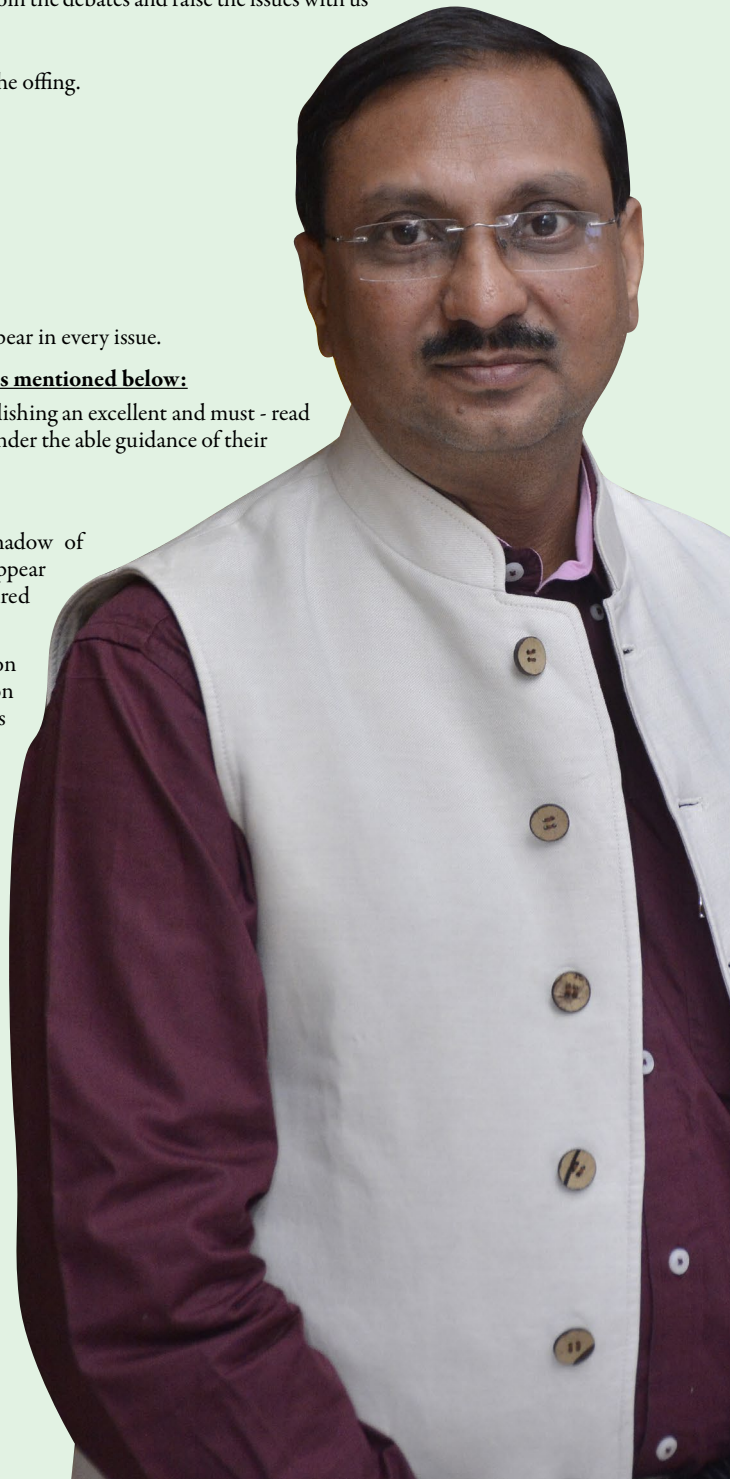
Before penning down let me reiterate the appeal to offer candid opinions, cryptic views and critical analysis on all aspects of the Journal along with suggestions for continual improvement. You will definitely receive our positive feedback with a road map on how respective suggestions will be addressed in due course.

Come on, register as a member (if not already done) and participate actively in FSAI's activities. Kindly help support the association to grow taller with you and create an ever cherishing imprint among society.

With warm regards,



Dipen Mehta  
Chairman – FSAI Journal





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0007



## EDITOR'S PAGE



Dear readers,

Welcome back.

Another year – but unusual as compared to the previous ones as felt by most of us who are living through 20th and 21st centuries is inching towards the finishing line. The sudden onslaught of Covid19 hit hard on humanity across the world causing millions of infections and lacs of deaths. Indians fought very well in preventing the spread of pandemic and enhancing the recovery rate, which has mostly reached 90% +Citizens across the country demonstrated tremendous zeal, restraint, will power at amazingly faster pace. Human behavior, life style, adherence to stricter health care and proactive compliance of rules and regulations have improved. However, complacency needs to be kept at bay. Hon. PM's latest cautionary signal while addressing the nation – “lock down may be out but not the virus” said it all.

Coming to your beloved Journal definitely there has been something to cheer about in 2020 in terms of:

- ◆ Uninterrupted and timely release of all editions despite the genuine COVID adversity. The printing which was suspended for a couple of issues has been restored.
- ◆ Collection and publication of enough contents -thematic and others – In fact the plate is full with good number of reading materials.
- ◆ Thanks to the increasing number of WEBINARS, most of the presenters have turned authors and had been exceptionally kind, sincere and willing to convert the proceedings to 'article' format and share with us.
- ◆ Addition of more regular columns – without affecting any of the existing ones (like Student chapter, Questions/Answers, Collection and compilation of readers' feedback, introduction of poetic contents, FSAI Surksha index update etc.,
- ◆ Honoring of authors with appreciation mementos.
- ◆ Introduction of special award schemes for quiz contestants.
- ◆ Last but not the least revival of bi-monthly FSAI Newsletter Buzz.

The specialty of this year end edition is:

- ◆ Coverage of the FSAI “Surakshit Naari Warrior” initiative launched by Her Excellency, Lt. Governor of Pondicherry, Dr. Kiran Bedi, (IAS).
- ◆ Release of \*6 articles on Safety concerns/ remedies related Festivities and Road Transportation which constitute the thematic pair.
- ◆ Rest deal with \*\*Gas Geyser Safety, Use of Modern technologies by Fire service departments, Chemical industry fire case study etc.

\*One is an abstracted article from NFPA specifically dealing with the road safety vows of Fire brigade and associated remedies.

\*\*Inclusion and nice coauthored opening article by three young brains of Sardar Patel Institute of Technology, Mumbai with guidance from their professor cum chair of FSAI student chapter over there.

- ◆ Publication of five prize winning entries of the National level contest organized by our Chandigarh Chapter.
- ◆ There is yet another abstracted article on “Water Mist Extinguishing technology” from International Water Mist Association (IWMA).

Yours sincerely,

**KNK Murthy**  
Executive Editor



# KNOW YOUR NATIONAL TEAM



**N.S. Narendra**

Advisory Council Member, FSAI

Mr. N.S. Narendra is the Chairman and Managing Director of FirePro Systems. He founded Firepro in 1992 with the intent of providing a professional platform in the Fire Solutions and Security space. He is a first-generation entrepreneur and has scaled up Firepro Systems to a leadership position in the Fire Safety and Security industry in less than decades. Narendra was an Electronics engineering graduate from Mysore University's National Institute of Engineering in the year 1990, specializing in electronics. Narendra had been selected to join the army but he chose not to join at the last moment. ■



**Rajan Luthra**

Advisory Council Member, FSAI

Mr Rajan Luthra heads Special Projects in the Chairman's Office at Reliance Industries Ltd. (RIL), a Fortune 100 company, and India's largest private sector corporation. Being engaged in Reliance's hydrocarbon and consumer businesses during start-up and growth phases for over two decades, he has unique experience in envisioning, planning, and executing large-scale technology, innovation, and digital transformation initiatives.

As part of the founding team at Reliance Retail, he helped design the business strategy, technology architecture, and helmed the loss prevention function. At Jio, he delivered a unified operations and intelligence centre built on a defining Industry 4.0 platform as well as initiated the smart cities foray. Across the RIL group, he has led the adoption of advanced IoT solutions, benchmarking of risk management protocols and launch of REFERS – a unique employee engagement and exigency support initiative. He leads one of the core Platform teams delivering digital-physical services.

Rajan is deeply engaged with the global innovation and start-up ecosystems. He represents RIL at Labs/02 incubator sponsored by Israel Innovation Authority for frontier-technologies in Jerusalem. He is a Director on the Board of Videonetics Technologies - India's leading video computing platform. Having a keen interest in drones since 2008 when he spear-headed Reliance Aerospace Technologies, he was instrumental in RIL's investment in Asteria Aerospace, a leading Indian UAV start-up.

An engineer with an executive MBA in national security & counter terrorism, Rajan has led multiple public policy initiatives. He is a member of FICCI's National Executive Council and currently chairs the national FICCI Committee on Drones. As co-chair of FICCI Homeland Security committee for 3 years, he steered smart border, counter-drone, predictive-policing, and cyber-crime management programs. He is a member of the advisory council of Fire and Security Association of India, having previously served as its National President. He was also on the Board of Trustees at Observer Research Foundation, a leading global policy think-tank. ■



## Suresh Menon

National President, FSAI

Mr. Suresh Menon is currently the National President of Fire & Security Association of India. He has been associated with FSAI for long holding various posts.

- General Secretary, Fire & Security Association of India.
- Vice Chair - Branding, Marketing & Events, Fire & Security Association of India.
- Earlier Secretary - FSAI Mumbai Chapter.

Mr. Suresh Menon is an Electronics Engineer from Manipal Institute of Technology. He also holds a degree in Marketing Management from Jamnalal Bajaj Institute of Management Studies.

He started his career in the engineering division of Rallis India. He worked in various Tata Group Companies like Forbes, Eureka Forbes, etc. His involvement in the Fire & Security Industry goes way back to 1988, when he was a part of the team which set up the India's most modern Electronic Security Systems manufacturing plant for the Tata's. As the head of the security division he was responsible in establishing India's first chain of Central Monitoring Stations across the country in Eureka Forbes way back in 1998-99 starting the concept of providing real time security to the consumers. Later he was a leading System Integrator of Fire, Security and Building Automation and also a winner of Frost & Sullivan Award. Currently he is President of Feurmann.



## Rakhi Deepak

National Secretary, FSAI

Management: Indian School of Business. Hyderabad, Goldman Sachs Scholarship For Entrepreneurship Development Program.

Post Graduation: M.Sc. (Physics)

Administration: NABET Accredited Auditor Certification.

Professional Experience:

- Started the career as a Lecturer in Physics
- Diners Club
- ITC
- Swiss International Airlines
- Started SagTaur Universal in 2001 and are in the Business of Supply, Installation & Servicing of Fire, Safety & Building Management Systems.

Social Activities:

Currently National Secretary, FIRE & SECURITY ASSOCIATION OF INDIA. Involved in Rotary / Y's Men International Activities. Interested in any form of arts.



## Venkatesu C.

National Treasurer, FSAI

Mr. Venkatesu C. is a B.Tech. – Electrical and Electronics Engineer. Working as Associate Vice President – Electrical and IBMS at C.R. Narayana Rao Consultant. He has an overall work experience of 29 years including 26 years with CRN Consultants.

His area of expertise includes Design of Electrical System, Safety and Security System for various buildings like Shopping Complex, Industries...

Other Positions & Memberships:

- National Treasurer – Fire & Security Association of India (FSAI)
- Member in IEEE
- Member in FSAI
- Member in ISHRAE
- Executive Committee Member in Electrical Consultant Association (ECA), Tamilnadu





**Ajit Raghavan**  
President Elect, FSAI

Mr. Ajit Raghavan has spent more than 30 years in the Fire, Security & Engineering Industry in the Asia & Middle East Regions. Mr. Ajit Raghavan started off as an entrepreneur with Stenco Engineering Company Pvt Ltd in 1988, Mumbai - India which was later acquired by Tyco Fire & Security, he was the Managing Director for Tyco Fire & Security in India from 1995 till 2001, after which he moved to Tyco Thermal Controls as Director–Marketing for Asia, Middle East & Africa. He was responsible for setting up Tyco in India & was the 1st employee of Tyco when they started operations in India.

From 2001 to 2012 he has worked in various positions at Tyco Thermal Controls like Director Sales, Director Marketing & Director Business Development. In all his roles he was responsible for Asia, Middle East & Africa. He was responsible to position Tyco Thermal Controls brands, products and services in markets and sales channels. He also established Tyco Thermal Controls policies and standards for Marketing, Product Management, Marketing Communications, and e-Business in the region. From October 2012, he was Director Business Development/ Public Affairs for Tyco Fire and Security. He is responsible for Corporate Affairs, Business Development with includes Key Account Management. He was also responsible for driving Codes & Standards in S. Asia. In August 2014, he was associated with Nohmi Bosai as Jt. Managing Director. Nohmi is a 100 year old Japanese Fire Protection company with revenues close to a billion dollars. He was responsible for distribution & EPC business of Nohmi in India. In Sept 2020, he has joined Ramcro in India as Director Sales (S. Asia), Ramcro was founded in 1979, as family Company producing Special Cables. Family Croci owns 100% of Ramcro S.p.a. In over 35 years Ramcro expanded successfully its presences in different Countries and in few different but important segments: Oil & Gas, Fire, Signal & Control, BMS and Optical Cables. At Ramcro he will be responsible for setting up the India business for Ramcro and setting up distributors in unrepresented region around Asia.

He was the National Secretary of Fire & Security Association of India (FSAI) in 2007-08 & 2015-2016. He was earlier the Chairperson of the Codes & Standards Committee. He is also on the Bureau of Indian Standards committee CED 22 : Fire Fighting Sectional Committee & CED 36: Fire Safety Sectional Committee. Currently he is the President Elect of FSAI.

He had a Post Graduation from IIM Kozhikode with specialization in Strategy & Marketing. ■■■



**Ashish Rakheja**  
International President, FSAI

Managing Director of AEON Consultants, completed his graduation from REC Allahabad in Mechanical Engineering followed by M. Tech in Thermal Engineering from Indian Institute of Technology, New Delhi.

He has worked with AECOM (Erstwhile Spectral) as Vice President & Managing Director for over twenty three years. He is involved in imparting training to budding architects in the field of Building Services as a Visiting Faculty at School of Planning & Architecture (SPA), Guru Gobind Singh University and Vastu Kala Academy, New Delhi for last several years.

He has worked on writing Codes & Standards with various Governmental Agencies like: Panel Member - Revision of National Building Code (NBC) on HVAC System, Panel Member - New Chapter on Sustainability in National Building Code of India, Member Core Committee & Chairman- Sub Committee (HVAC System) for BEE-IGBC initiative on Developing Guidelines for Green Data Centers, and alternate member - Panel for revision of Ducting System set-up by Bureau of Indian Standard. He is the person, who has been actively involved in leading design activities of services for forty LEED/IGBC Platinum Rated Green Building Projects in India. He is spearheading the green building movement in India in capacity of role as Chairman, Technical Committee Of Indian Green Building Council (IGBC) and Certified LEED India Trainer. He has also been head of the Sustainability Division at AECOM erstwhile Spectral.

He is member of American Society of Heating Refrigeration & Air Conditioning Engineers (ASHRAE, USA), National Fire Protection Agency (NFPA), Past National President ISHRAE (Indian Society of Heating, Refrigerating & Air Conditioning Engineers), Immediate Past President ASHRAE India Chapter, Past President of Delhi Chapter of ISHRAE, Chairman-Green Building Committee at Fire & Security Association of India (FSAI) and Chairman Environment Committee at PHD Chamber.

He has presented several papers (over 400) at the various International & Domestic forums. He has contributed to ASHRAE activities in India & abroad by serving on various positions like Electronics Communications Committee, publications Committee, regional Electronic Communication Chair, Technical Committee etc. ■■■





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# LISTENING TO LUMINARY

EXCERPTS OF AN EXCITING CONVERSATION BETWEEN

## **MR. SHREEGOPAL KABRA**

M.D. & Group President of RR Global  
and **K.N.K. Murthy**, Journal Executive Editor

*Dear Readers, We feel highly proud and elated to introduce yet another visionary who has been kind enough grace this column. He is none other than Mr. Shreegopal Kabra, M.D. & Group President of RR Global.*

*Apart from being a business leader, Shri. Kabraji is often being referred to as 'trend setter' among industry circle.*

*He is also the Chairman of the International Copper Association (Wire & Cable Division), Executive council member of SAARC Chamber of Commerce, associating on at the highest capacity with IEEMA as its Past President. He shoulders the responsibility as the Chairman of Winding Wire Manufacturers Association of India for the last fourteen years. Coupled with that Saheb shoulders a number of ex officio responsibilities in pursuit of serving society at large.*

*Apart from his corporate lineage, Shreegopalji is an active promoter of Environmental Conservation, Health & Education. In this context he continues to adorn the position of President at "Friends of Tribal Society" (Mumbai).*

*Above all he is a true philanthropist besides being passionately associated with many social groups, educational institutions, sports councils, NGO's etc.,*

*The pivotal role played in setting up the Ram Ratna Vidya Mandir near Mumbai illustrates the keen interest through which Shri. Kabra Saheb charioted a movement to protect Indian cultural heritage. It has been inferred that the Mandir per se imparts knowledge by integrating its influence with modern education towards the noble mission of developing a stronger nation.*

*Shreegopalji's basic Management mantra has always been of getting the right people and the right products in the market at the right time. Thereby RR Global is contributing sizably towards national growth through business development aimed at manufacturing of quality products. In the process they are being made available at public and household levels thereby becoming instrumental in improving the quality of life and creating wellbeing cum prosperity among society and the*

*nation at large. Proactively he has been able to garner the good will as well as support from different segments of society. Thanks to excellent liaison as well as rapport with the government agencies, his company has been able to raise appropriately certain specific concerns of industrial society. Acting as a 'voice' of stakeholders, his organization has extended inspirational assistance in enhancing capacity build up and encouraging them to remain more export competitive and growth oriented.*

*Beginning as a small trading company, RR Global has grown up to the status of a leading business entity with strong footing in both Indian and International markets. The organization had begun the journey as a robust USD 850 million corporation set up in 1986, with its first winding wires manufacturing unit at Vadodara, Gujarat. Head Quartered in Mumbai, now there are 10 operating companies and 28 marketing offices in India.*

*The company has been into the manufacturing of products ranging from Electrical cables & wires to magnet wires, copper tubes, electromechanical parking solutions and many more in its kitty with a current turnover of Rs.6, 500 crores.*

*The organization deals with a number of products (core and end user) type like:*

- > Winding wires.
- > Wires and cables.
- > Wiring Devices
- > Lights and lighting fixtures.
- > Air circulators (fans)
- > Kitchen and other household appliances

*Under Kabra Sabe's able leadership, RR Global could set up various pioneering ventures. He spearheaded the efforts and developed it as first company to build a "RR Parkon" range of electromechanical car parking systems in India. This feat came out to be a novel venture that earned it the much sought-after recognition in the arena. Incidentally this is a pet and passionate project since he values the significance of rendering support service to the society at any given opportunity.*

*Following are the excerpts of the conversation between Mr. Shreegopal and KNK Murthy, Journal Executive Editor. We are pretty sure that the comprehensive and detailed response from the esteemed guest to the attributes which have been covered in the interview shall benefit a wider spectrum of people from beloved readers' fraternity.*

**Q1: Respected Sir, how is it that you could conceive an effective "winning spree" strategy to convert a small trading organization to a multi - national corporate giant? Kindly share the views in the form of practical guidelines or trips for the new generation who bubble with enthusiasm and higher energy quotients**

A1: At the outset I am highly grateful to FSAI for the honour being extended and feel humbled. Hence, it is my privilege to be on this Journal platform. Responding to this important kick off query, there is a significant need for the creation of a brand which is being talked about widely in all business circles. In my opinion, branding of people associated with any establishment is as important (if not more) as a product or the service it provides. In fact, this quality should be induced in our DNA. In parallel, a 'win-win' situation for both - the person concerned and the organization he

or she represents - shall evolve. The reason is quite simple and straight forward. Products and services are basically physical by nature. In reality, efforts of mortals are instrumental in creating, developing and promoting those materialistic entities. The brand community could belong to founders/trustees, experts, advisors, consultants, managers, marketeers, employees, service providers of various categories, traders, end users etc., Branding is not meant exclusively for sales and profit generation. Those aspects get manifested naturally in the process. More importantly branding, depicts the mirror image of a company and the people around it. Therefore, it is my advice to the youngsters is to explore better functional capability, professionalism, competence and skill within them. Citing a simple example, Dr. Narayana Murthy of Infosys is virtually synonymous for a brand just like the branded company of his own creation. Always remember, there are innumerable organizations in our country which started modestly

and became the brands of their work domain. But also remember success always has to be complemented through sustainability as everything has its own limited shelf life in this world once attained.

**Q2: Sir, it has been known that you are a firm believer in the theosophy that "Happiness does not always come from success in business. It comes when you satisfactorily strike the perfect balance among business, social responsibility and personal life". Kindly explain the success story part of it as experienced all along in your domestic, social and professional life citing live examples for the benefit of elite readers.**

A2 (a): First let us take up the aspect of primary segment of "Business activity execution" (specifically in personal/ entrepreneur life)

Learning vis-à-vis earning and vice versa:

In a democratic set up every individual has a right to earn his livelihood by way



of carrying out any business, profession or occupation. Initially comes the selection of an appropriate academic career of own choice mostly with help of others – parents, other elders in family as well as society, teachers etc., Subsequently on entering into a given walk of life, he or she learns the tricks of the trade from professional trainers – either within or from outside. While moving on to higher echelons, there is paradigm shift in learning as well as earning. Acquiring of additional professionalism, competency as well as exploring the possibility for more earning and getting settled down to take up higher responsibility at workplace and family circle come up now. In the process we have to opt for teachers (rather trainers) who are intelligently more sharper when it comes to imparting adult learning. Here in the career opportunity expands to endless limits and show goes on.

While remaining extremely busy with the profession, health and fitness factor (physical and mental) come to the fore. Yes, many of us are quite rigid and particular to ensure that the body wellness quotient does not get affected adversely. But in the workaholic schedules which are part of the rat race for progress, we tend to take care of the 'visible (rather external) segment' of health care – limited to face, limbs, trunk, sensory organs etc., which constitute only 20% of overall human health profile segment. Remaining like lungs, heart, brain, liver, intestines, arteries etc., which add up to the remaining 80% goes un noticed or un nurtured. It is desirable that for own as well as family cum society's sake the 'invisibles' must receive adequate attention and care.

A2 (b): Second comes the next important phase of our life – i.e., the onus on giving back to society a little of whatever we could achieve for us. The above manifestation in life cycle is very important with reg. to a simple and a most logical reason. While pragmatically looking within, most of us will accept the fact that nature has been very kind and exceptionally

generous to bestow much more on us than we were actually deserved to have or even expected to get. Besides, there was no obligation or riders attached wherein we should return something back to same nature! But here comes a moral responsibility to do so to the society as a whole where we belong to and grow up successfully all along. Also remember giving back need not be restricted to alms (money or material). Other avenues are also there. For example, while looking around we find there are people who look forward to our physical presence, attention, empathy, counsel, emotional support, motivational guidance etc., to come out of some trauma or stress/ strain inflicted on them by circumstances. What is expected of us is to spare some valuable time, thoughts, proximity and counsel with sustainability. This way we shall fulfil the most significant part of leading a life driven by higher values and commitments.

**Q3: We are well aware about how much hard pressed is a corporate CEO like you when it comes to time management and conservation. Despite that the profile is clearly indicative of the fact that you genuinely and adequately devote time and engage actively with multifarious Ex. Officio responsibilities among many professional organizations. The list includes those associated with very prominent entities like SAARC, EEMA, WMA, FTS, ICA etc., just to name a very few. Please elaborate on the time management mantra you could effectively evolve in this regard.**

A3: Frankly admitting, after spending fairly large part of life fully for the business, I started detaching gradually from routine work schedules by way of entrusting a number of higher key tasks to the second and third line youngsters. Thereby they started growing up leaving me with more time to serve the society in a different manner as hinted in previous column. Now those who took over the baton from me not only perform well but excel.

As you can see, with reg. to SAARC to ICA above, the tasks are equally challenging, with different but more noble insights. Besides there are also other organizations like Friends of Tribal Society, Ram Ratna International and a couple of other entities exclusively associated with Environmental Conservation, Health & Education with which I am able to spend more time and energy. Since they are all passionate choices with a volunteering spirit, I should do justice to those assignments devoting more time. Fortunately, the journey appears to be smooth though at time the sailing is against the currents.

**Q4: Now let us take the aspect of the prevailing Covid19 pandemic scenario at global level. What are the most important new lessons learnt and old unlearnt? This could be in relation to our approach., What is your take based on practical experience and data collection over the last 6 months. Where does a large democracy like India stand now and what could be the better way forward.**

A4: You know despite truly being associated initially with lot of adversities, I genuinely feel that the pandemic 'lock down' turned out to be a 'lock open' situation. Actually, we started getting more time to work with lesser number of hassles associated with regular and highly stressful travels, getting rid of frequent inconclusive meetings and discussions etc., We also moved faster by learning and working on intelligent and tech-savvy equipment - not by choice, but necessity. In a lighter vein, now people may not mind braving more such calamities with less interval periods. Newer options became available to enhance productivity management through virtual intervention as compared to physical. Behavioural improvement has been phenomenal with reg. to compliance of personal safeguards like PPE usage, upkeep of body through highest level of cleaning, sanitation, health and hygiene habits etc., just to name a



view. All will definitely fetch long term results like immunity build-up, better physical strength, mental stamina and happiness.

In this context let me also vouch that RR Global did not press any panic button looking at the initial shut down or slow down which might have considerably reduced the productivity and customer supply chain. The logic behind is we knew it is manageable and the situation will definitely improve – later if not sooner! There was no retrenchment (even temporary), withholding of employees' or strategic external service providers' remuneration as well associated benefits. This is based on the in- depth knowledge on dealing with such difficult situations in business. Above all we have a traditional, proven and time - tested conviction that service providers from all segments are our real assets. If we are bit more liberal and less conservative in approach they will demonstrate their belongingness to our organization through more hard work at the altar of service relevant entity. Experience gained in this way bears testimony to the fact that little reduction in short term productivity and profits will definitely get corrected in the long term because all service providers are on your side since you took care of them when needed at the most difficult situation.

**Q5: Can we now take on the attributes of Fire, Life Safety, Personal security and Loss prevention of hard earned assets? These are in the domain of FSAI's main agenda**

**First: Fire and Life Safety**

Despite all good intentions, awareness as well as physical cum psychological fear complexion about fire, is it not a paradox that society still at large let preventable and avoidable incidents to erupt, spread, escalate and go scot free? The fires could be in industries, residential zones, commercial establishments, other public locations, educational institutions hospitals etc., According to you, how far poor behavioural aspects and inadequate safety

**preparedness account for it and what could be more palatable prevention/ control/ mitigation which can still be considered, implemented or enforced at national level. Just like the country which always fully prepared for a war even in times of assured peace?**

A5: Controlled fire as an inevitable source of energy which needs to duly appreciated and applied. In sequel taming of fires before it becomes uncontrollable is equally important. According to me any amount of resources/capabilities will be found wanting during serious fire incidents. At RR we have a fairly good fire prevention road map, capacity build up cum resource mobilization strategy to fight fires at our end or in the neighbourhood should an eventuality stare at any given time or unexpectedly based on the local work area situation.

**Q6: Another important aspect being observed, talked about or highlighted in most of the fire incidents is that 'Electrical short circuit' is being talked about – even by default - as cause of any fire, anywhere or any time! Situation being not likely to change further, being the head of an electrical appliances manufacturing organization what are the checks and balances being taken up seriously at RR Global to ensure that 'short circuit' prevention by design, engineering, assembly and workmanship is ensured as an important chain link throughout the production cycle? Please elaborate with examples.**

A6: The question being truly specific let me try out a focussed and feasible answer. First of all, we must be bold enough to frankly admit (not confess or deny) that 'short-circuits' do not manifest with a fully known and always preventable causation factors. The reason is they are just too many and always likely to multiply either at the incipient or later stages of fires such as:

- Non-standard/ unapproved quality

of wires, cables, fittings, fixtures and accessories.

- Poor installation and quality check/ workmanship laxity.
- Irregular or in adequate maintenance – periodical checking/ inspection/ servicing/ certification/ upkeep and maintenance including timely replacement of items which are beyond repair.
- Overloading, Other misuse, abuse or wilful tampering
- Inclement weather and other environment conditions, - exposure to humidity, high temperature or corrosive materials.
- Lack of knowledge or poor understanding including individual behavioural concerns.

Accordingly, a sincere and committed attempt to verify few or all the above aspects and willingness to undertake maximum safeguards at owner level can facilitate the prevention strategy to a great extent.”

Coming to the extrapolated question about what we as a premier electrical equipment organization (especially cables) contribute is diligently taking the “responsible care” route. All our products undergo a through quality checking, certification and approval before they are shipped to respective customers. This duly covers all the aspects in our domain many of which are listed against the pointers mentioned above. This also includes ‘after sales customer care’.

**Q7: Sir, during our telephonic interaction you mentioned about the most important necessity to protect against vapor emission and related health factors arising out of inhalation of hazardous fumes which include chronic illnesses/ including fatality to people at the location as well as firemen and other emergency responders. What are your specific warning and cautionary advise to readers?**

A7: Very simple, provided the views are well understood and taken care of. There are a number of halogenated chemical ingredients which get compounded in different

concentrations and proportions in the making of cables and insulations. They are susceptible to the release of harmful vapours at the time of fires and that too in closed as well as poorly ventilated buildings.

Now a days there are safer and branded products being certified in "Fire Retardant Low Smoke (FRLS) and Zero Halogen Fire Retardant (ZHFR) categories. However, despite India being a fast - developing nation, the compliance part is par below – whether it is modern high risers (in Govt., Public or Private sectors) or other structural works. Still there is a factor of compromise, Surprisingly, there is a so called – budgetary electrical product known as "Class V Conductors" which unfortunately gets a walkover against safer/ easily available brands under the guise of L1 pricing during procurement for use in buildings meant for public. My straight forward question is "Will same decision makers take such a view in case they are considering a building for use by own family, relatives or friends? Won't it be an 'emphatic NO?"

It is being inferred that the planning for electrical installation for the new Parliament house in Delhi is under way. Let us hope concerned authorities will not shy away and make compromise on safety. Let the decision makers/ takers demonstrate through their actions that "Charity begins at home"

**Q8: What is the existing level of public responsibility and commitment with reg. to fire prevention and protection. Can you kindly share some feasible advisory on this for the benefit of esteem readers representing different segments of society and holding business, occupational or social responsibilities?**

A8: Cutting it short and simple, the onus on ensuring fire prevention (by adhering appropriate design/ good engineering construction/ installation practices (as advised by architects/ consultants/ project engineers) and

first aid firefighting preparedness come under the direct responsibility of owner.

• Accordingly, proactive prevention approach (technical and administrative) coupled with seeking and obtaining all clearances and fire NOC's must be diligently adhered to. For any major firefighting and rescue/evacuation, services of professional fire brigades are readily available on call (24x7) Owners' responsibility also encompasses the aspect of ensuring that training and practical drills (at regular intervals) including mock-up simulation exercises are imparted to all stakeholders. Society at large also must consider such initiatives as part of their duties/ responsibilities as responsible citizens.

**Q9: Ours is country of exceptionally large number of festivals and celebrations pertaining to different faiths and occasions – Domestic, Social and political. Usage of firework has become integral part of every festivity irrespective of its nature. How can we instil stricter safety discipline in this regard? Please share your valuable thoughts.**

A9: Considering the prevailing economic slowdown at the aftermath of pandemic, I am of the firm opinion that the celebrations of all types depicting wealth, prosperity and social stature need to be restrained and contained. Let us make a beginning during the upcoming Diwali that instead of creating external pomp and show, the celebrations are done by illustrating the feelings of faith with more serenity and restraint from the bottom of our heart and instead the money allocated in family, social or administrative (Govt. as well as private) or political budgets for purchase of fire crackers can be better utilized for serving the needy and under privileged to the extent possible. Let us not wait for Govt. to enact any special law to this effect; but get ready to do it ourselves!

**Q10: Second Personal and asset security risks are multiplying every day with population rise, higher**

**living standards, dissatisfaction among have nots or under privileged, physical strife, political enmity, terrorism, national level defence threat from external foes etc., How can modern society be better trained, motivated, strengthened and made capable to do their bit as individuals or groups – with regard to attainment of more vigil, friendliness, unity and leadership quality? Kindly share your candid opinions and views on this.**

A10: As already covered in my answer to Q 8 above, let this also become a movement by the people, of the people and for the people irrespective of whether support is forthcoming from Govt. machinery or not.

**Q11: Coming to the last lap of conversation let us go into yet another highly significant attribute on effective utilization of advanced automation in all facets of Fire safety and security. What are your observations on not only the enhancement of knowledge level; but the creation of better mindset to apply the same at our own level and encourage others also to follow suit. Please throw some additional light on cyber security and crime detection/ prevention methods which can work as effective deterrent before an undesirable and catastrophic incident occurs.**

A11: Application of modern technology and highly automated communication system is definitely the need of the hour. But alas the possession of a variety of appliances and gadgets at cheaper and affordable prices has opened up flood gates for mischief mongers and anti-social elements. Like penalty/restriction such as clearance from film censor board, stricter checks and balances are required on the rampant use of IT. I am for a total disconnection Wi-fi from late night to next day morning. This will indirectly tempt people to sleep in time, enjoy better while curtailing misuse/abuse of technology to some extent.



**Q12:** Before drawing the curtain please share your specific thoughts on the prevention/control of security threats being faced by the vulnerable sections of society – children, women, senior citizens, physically or mentally challenged as well as differently abled. Other than govt/ private intelligence agencies, how far social media can play assertive

and inclusive roles in this matter. All of us know how much agony and trauma the affected personnel are forced to sustain and how much the county's image gets tarnished after each occurrence of child abuse or gender based harassments and atrocities.

**A12:** Yes, society at large, TV channels, press, WhatsApp groups and other social media must start taking up assertive campaign and help weed out the menace as highlighted in your question. Let Cyber security become a nation level social movement in addition to the strict implementation of all automatic crime detection laws and safeguards.

*Shri. Kabra Sahab, Thanks for obliging the Journal through an enlightening interview. We wish to sincerely and gratefully acknowledge your candid opinions, cryptic views and critic analysis on few of the significant aspects which came up during the discussions. We are optimistic that beloved readers will be able to reap maximum benefits out the same as well as find them in a better and more competent position to take on higher responsibilities, thereby climb higher pedestals in whatever occupation, career, business or entrepreneurship they deal with.*



**Mr. Shreegopal Kabra,**  
M.D. & Group President of  
RR Global.



# TAMING OF UNWANTED FIRES

- Professor K.R. Janardhanan

## Preface

This article is focussed on the inherent fire hazards associated with many (if not all) types of festivities in the country and especially the Deepavali and New year celebrations. It is delighting to note that FSAI Journal has deservedly opted this attribute as theme for its Nov-Dec. edition

Fire Works display (sparklers, sound producing crackers, animated higher decibel 'bombs' etc.,) is one among the most sought - after entertainment aspects in a number of celebrations.

Considering the heavy risk potentials to life and asset safety arising out of crackers, public at large need to get prepared for a major mindset and behavioural correction. It is all the more significant today, when every organization, group, society or individuals want to vie amongst themselves while 'playing' with fires. In fact, unfortunately to say the least, we are not footed on creating a safer culture while celebrating any event of National, Regional or State level heritage.

## Introduction

Watching hundreds of designs of multi coloured open flames/sparkles blossoming at different levels below the dark sky is a truly

fascinating feast to our eyes. But yet another shocking truth is that the real artisans engaged behind the screen in this high hazard activity could be the poorest of poor 'barefoot scientists'. They make the sound shells of almost identical sizes which are closely knit and inter woven (like a bird nest). Just a single fire work can produce successive propulsion of sound from the shell 'invading' up to 100 meters above the ground.

At time the intensity of such a noise could be virtually deafening and the frequencies at an interval of less than 2 seconds!! The propellant being used is gun powder. The creation of those shells requires great expertise, competence and skill.

However, there is yet another alarming fact in this regard. Artisans as mentioned above are ordinary people including those at their tender childhood (even infancy) with bare minimum or no education. It has been observed that even people of great IQ on the fundamental principles of Physics and Chemistry can come nowhere near to these workers mostly belonging to few locations of "God's own Country"(where the author belongs to) other places like Sivakasi in Tamil Nadu and few more isolated pockets around the country.

Like any other activity making good use fires as an excellent thermal energy, fireworks too have their own demerits. They are susceptible to the generation of ignition sources which can lead to undesirable spread of fire or damaging explosive effects. Accordingly, the provisions of Indian Explosive rules are highly relevant and applicable with regard to the "Manufacture, Storage, Possession, Use & Display of Fireworks". Till date, Kerala itself has witnessed about 150 serious accidents involving such explosives ever since the enactment and enforcement of the above statutes in 1981!! Think of the multiplication factor if extrapolated to what all happen to other states of this large nation as well.

There also exists in Kerala a pyro tech firework device encapsulated in a "Coconut palm leaf shell" (of late it is getting replaced by paper); an innovative invitation to uncontrollable fire risk. Most of the investigation reports of accidents carried out by the empowered committees of Explosives' department {rechristened as "Petroleum and Explosives' Safety Organization (PESO) since the year 2000} have highlighted the following major causation factors:

Many of them are identical irrespective of the locations, varying frequency/ severity factors etc.,

- (i) Indiscriminate use of Sulphur – Potassium Chlorate (KClO<sub>3</sub>) mixture which is already in the “prohibited category”.
- (ii) Unauthorized, Un approved, Non- licensed and Unsafe work premises.
- (iii) Deployment of Child labour (which again is a legal offence) especially from the poor and most uneducated/ vulnerable strata of society.
- (iv) Inadequacy / total lack of Safety training.
- (v) Sheer negligence with reg. to supervision and safety enforcement strategy.
- (vi) Non or poor availability of adequate injury and Fire prevention/ Control facilities such as Personal Protective Equipment (PPE), in-built Fire protection system, extinguishers, emergency shower cum eye fountains, first aid boxes and deployment of trained first aiders among the staff etc.,

#### **Roadmap and Course correction:**

- (i) Awareness creation about the inherent high hazard potential of Sulphur - KClO<sub>3</sub> mixture {refer point No. (i) -above} and opting for safer substitutes (like Potassium Nitrate-Aluminium powder mixture)
- (ii) Stricter punitive actions and control over the clandestine manufacturing facilities by concerned law enforcement authorities.
- (iii) Replacement of deafening High decibel noise production devices by safer ones.
- (iv) Going for more of low sound emitting, aesthetic colour displays which are soothing to the ears and eyes as compared to the high sound generating/ very powerful light beaming items inflicting high glare effects (ultraviolet/ infrared radiation).

**Other contributory causation factors – especially after the**

**study on the outbreak of such cracker triggered fires:**

i) Few Fire service personnel (with whom I have developed an excellent rapport) also shared certain glaring information on the above. Those are highly alarming and true but who bothers? Firefighters usually observe falling of incandescent sparks on the close by, but inevitable combustible materials. They include accumulated wastes lying all around the landscape in any part of the country (as we all know extremely well) and they catch fire instantaneously. The items could be Solid/ Liquid/ Slurries, Cut grass/ Fallen Tree leaves and Bushes in the open. These are known bonfire potentials. Accordingly serious fire risks are waiting in the wings to erupt any time - especially during festivity seasons, The events could be most common irrespective of whether they are affiliated to different faiths, specific social/ public activities and congregations You name any one occasion- Diwali, New year eve, Wedding galas, Periodical festivals in places of worship, Felicitations to honor politicians or celebrities, Demonstration of joy after electoral success, Sports related victory marches etc., - Blatant use of fire crackers flouting all imaginable safety precautions always come first in our country.

How many of us are aware (or averse, despite being aware!) that burning materials like plastic wastes especially materials like PVC can even cause serious breathing problem or even death due to the generation of toxic/ poisonous vapours (e.g., Vinyl Chloride Monomer - VCM). India has lovely green belts or even small forest reserves around many human occupancies. Any spread of fire to those locations can create havoc in terms of life and valuable asset safety.

ii) Letting children play with fire crackers can lead to major accidents including emergency situations.

#### **Role of Civil society:**

Recently while returning from a nearby fire station after an hour's chat, I could visualize the enormity of their task and the limitations they face in terms of man power crunch, infrastructural support, availability and functional reliability of fire fighting/ rescue/ first aid/ medical assistance equipment, mobile fire tenders (most which are obsolete). This situation can easily come to limelight when we compare their plight as compared to the most modern/ highly sophisticated/ air conditioned/ fully equipped individual owned vehicles, public transport system like Volvo/ Mercedes brands (both government and private agency owned etc.,). It is always easy to criticise others for the sake of it standing outside. But we can segregate hype from truth only by looking from within. Another most important lesson one can learn from such an exposure is that all aspects of dealing with Fire risks cannot be (and should not be) left to the best available wisdom, prudence, competence, judgement and expertise of professional Fire service personnel only.

We all as responsible citizens must play a complementary/ supportive role such that that fire brigades get motivated and feel at ease to perform their more crucial and tougher assignments. Here comes the role of an enlightened civil society.

**Let us start viewing the following nuances and decide What we can do to facilitate and improve the system:**

1. Enhancing the knowledge base and gauging of awareness levels on fire hazards among masses along with the available and practicable solutions and their application.
2. Creating a consensus and not confrontation..
3. There is a political will which already exists to take on both 1 & 2 above; but it needs more concerted efforts and compliance to ensure better enforcement.



4. Prioritization of safety as compared to all other facets of productivity such as higher investment prospects, profitability, business enhancement, comforts, improvement in quality of life etc., Once I read a quotation which owes its origin to an internationally acclaimed UK based safety wizard (Dr. Trevor Kletz): *“If you really feel safety is a costlier affair and not always affordable, then try out an accident”*.

The real civil society is spread out from Panchayat to Prime minister; no one is in the excluded category. Civil society encompasses most of the following and we must rope in the services of all of them:

- (i) Students
- (ii) Teachers
- (iii) Citizens' councils.
- (iv) Educational institutions.
- (v) Trade Unions.
- (vi) Real estate agencies, architects, engineers and residential associations.
- (vii) Spiritual and religious intellectuals/groups who command highest level of respect and have large following.
- (viii) Social leaders/ workers with mass appeal.
- (ix) NGO's with knowledge, expertise, acumen and unselfish/ assertive behaviour
- (x) Scientific/Research Organizations.
- (xi) Business tycoons
- (xii) Medical professionals.
- (xiii) Celebrities {Writers, noted journalists, Artists, Cine stars, Musicians/other fine art wizards, Sports legends etc.,
- (xiv) Elected/Nominated representatives of parliament/state assemblies, local self govt. bodies (municipal/ panchayat level etc.,).
- (xv) Women's organizations

(xvi) Administrative heads (bureaucrats known for their good work culture, ethics, honesty, integrity and efficient/ quick task delivery etc.,

(xvii) Defence and Police personnel who have won laurels for their bravery, heroism, sacrifices, leadership etc.,

#### Conclusion:

Let us get to know of certain basic things if not known so far:

- 1.(a) How does a fire originate?
- (b) Basics of fire Chemistry.
- © Being well aware of the Commonly available flammable materials and ignition sources associated with
  - (i) Homes.
  - (ii) Workplaces.
  - (iii) Commercial establishments (like malls, multiplexes, eateries etc.,)
  - (iv) Automobiles.
  - (v) Public places (places of gathering or worship, town halls, sports grounds etc., just to name a few)
  - (vi) Road sides.
  - (vii) Dedicated or make-shift storages of materials having fire hazards.
2. Prevention/ Control/ Combat/ Mitigation/ Notification/ Development campaign Strategies:
  - (i) Cooling, Smothering, Starvation, Inhibition, Attenuation
  - (ii) Stop, Drop and Roll drills.
  - (iii) Execution of mock-up exercises.
  - (iv) Prohibition or banning (as deemed fit), on smoking and strict control/restriction/ authorization for on all types of spark production works in areas/ processes/ operations having presence of flammable materials and/or vulnerability to fire (limited to the smooth operation of units or during exigencies/ emergencies).
  - (v) Identification/ Detection/ Scale up of fires.
  - (vi) Use of fire protection devices/

extinguishers (installed and portable)

(vii) Rescue/ Evacuation/ First aid for affected personnel.

(viii) Strict Control/ restraint over unsafe practices such as avoidance of preventable overcrowding at accident spots, dissuading from creating traffic blockade, spreading of rumours etc.,

(ix) With massive impact of internet among society for the good, there is also the 'other side' of fake news generation and mischief mongering. Society must stand as 'one' to tackle this hazard and help the law enforcement agencies without any bias.

(x) Compilation/ distribution of leaflets/ pamphlets in vernacular with more of illustrative/ pictorial notations. They can also aesthetically displayed at conspicuous locations.

(xi) Application of audio/ video techniques for mass education.

(xii) Display of safety banners, Big cut outs, Billboards, Wall posters, Bulletin notifications, Pedestal mountings on table tops etc.,

Let us start the fire safety campaign though baby steps and build it up. I wish to sign off with a quote from great Louis Pasteur – “The only thing that can bring joy is work”. Deepavali symbolizes “brightness” with reg. to all facets of life. Accordingly, let/colourful/dazzling/soothing lamps, lighting fixtures and fireworks create that inspirational effect.

*May the upcoming national festival of lights become a smooth, serene, enjoyable & safer event from all angles*

Besides the whole world also should come out victorious in its battle against the prevailing Corona pandemic situation. ■



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Author of a number of Popular Science books and articles in Malayalam and English.

# FIRE SAFETY DURING FESTIVITIES

- Mr. M. M. Bhuskute

**Festival is an occasion to celebrate-** something in a joyful and exuberant way. India is one among largest nations in the world. Besides it has a diverse entity and heritage. The population consists of people of different faiths and culture (state, region and nation wise) . They live in total harmony with a bonding of brotherhood and friendship. Every faith has its own duly inherited festivity occasions to mark different ethical attributes, values, traditions and practices. Last quarter of the year and that too Nov-Dec. spell is very popular for being decked up for Diwali to be followed by the New year eve. In fact over the years a number festivals including,

- Diwali,
- New year,
- Nav ratri,
- Ganesh Mahotsav,
- Gokulashtami
- Durgshtami & Dasami,
- Onam,
- Pongal,
- Utrayan (associated with kite flying)
- Gudi padva,
- Baishakhi.
- 'Xmas etc., (just to name a few) have come out of the regional identity and attained the status of National festivity considering the regional/ interstate movement and settlement of people much far away from their 'home states'. In addition there are also occasions where state and National level celebrations pertaining to days or occasions are widely celebrated like:

## Days of

- Independence
- Republic
- Birth days of national leaders/ heroes (including decorated defence personnel)
- Victory matches during sporting events

- Wedding and other social functions
- Political rallies.
- Religious discourses
- Book festivals etc.,

This article is aimed at exploring concerns associated with the safety quotient of all the above and finding out best ways and means available for smooth, peaceful and accident free solemnization of all such events.

Specific Safety concerns could be attributed to the following:

- Large gathering of people of all ages,
- Assembly of crowd and road shows.
- Congested locations which can be instrumental to stampedes.
- Overcrowded and overloaded staircases, cross over bridges etc.,
- Late night functions
- Installation of temporary and weak structures like Pandals.
- Handling of makeshift and nonstandard electrical cables, fittings, fixtures and accessories for lighting, sound system, videography etc.,
- Use of open flames, Grills, Tandoors. Open hearth furnaces etc., for cooking and water boiling involving fire wood, coal etc.,

Such gathering could be from morning to evening or late night.

**Are we adequately prepared to remain safe and fire risk conscious?**

**Hope the following basic guidelines would improve the situation if duly adhered to**

## Inside

- When setting up fairy lights and other electrical displays use only one item per power socket and don't overload



power boards or piggy back double adaptors. Never use multi socket pins.

- For maximum safety while using a power board, ensure it has both overload protection and earth leakage protection devices incorporated.
- Use decorative lights of Standards make only and follow manufacturer's instructions on setting up and operating.
- Check lights and electronic decorations (like series lamps) for faults, worn plugs and frayed cords.
- Inspect the plugs and leads of used decorative lights to ensure they are in good working order. If in doubt, replace the lights.
- Decorative lights may become very hot and therefore install them beyond the reach of children and away from flammable materials such as wrapping paper, decorations or curtains etc., Do not leave burning candles unattended.
- Candles should be used in a safe position away from Christmas Trees or like installations, other combustible flammable material and out of reach of children.
- Switch off all electrical displays and decorative lights before going to bed or leaving the area.

### Outside

- If you have a gas, electric or wood/coal BBQ always check that it is in safe working order before lighting and that it is always in the care of a responsible adult when in use.
- Always keep lighters and matches away from children and educate that they are "tools not toys" only to be used by responsible adults.
- If you have a garage or shed remember to take extra care with any stored chemicals.e open.
- If you live in a bushfire prone area keep the ground around your home clear of leaves and other litter and remember to clean your gutters regularly.
- Fire work should be undertaken by elderly or Children should be given only selected fire works and duly attended by elders.

### Fire safety tips

- Remember that smoke from a fire will make you confused since that can mask the visibility of flames when it actually rages inside!
- When asleep you will not smell smoke and it sensitivity to odour may disappear and you may go to deeper slumber.
- Always use fuses of recommended rating and install an electrical safety switch
- Home fire safety is important for the whole family and preparation can prevent a tragedy

With lot of events, festivals and concerts happening around it is important to keep this in mind and you can now check out our blog about fire safety at festivals below!

When cooking, make fire safety a priority by keeping these tips in mind:

- Be alert; if you are sleepy or have consumed alcohol, don't use the oven or stovetop
- Stay in the kitchen while you are frying, grilling, boiling

or broiling food

- When simmering, baking or roasting, check the food regularly, remain in the kitchen while cooking and use a timer
- Keep anything that can catch fire away from your stovetop

Heat build up is the second leading cause of home fires. Follow the tips as listed below

- Keep all flammables, like paper, clothing, bedding, drapes or rugs, at least 3 feet from a space heater, stove or fireplace
- Never leave portable heaters and fireplaces unattended; turn off heaters and make sure fireplace embers are extinguished before leaving the room
- If you must use a space heater, place it on a level, nonflammable surface, like ceramic tile, not on a rug or carpet
- Keep children and pets away from space heaters
- When buying a space heater, look for models that shut off automatically if the heater falls over

In addition to cooking, other top causes of fire include smoking, electrical problems and Burning of lanterns/ candles. To minimize risks:

- Establish a "no smoking" policy/ practice in the house
- Check all cords and replace any that are frayed or have bare wires
- Install candles with proper base before lighting
- Keep matches and Lighters at higher level and out of children's reach in a locked cabins

### Establish and Practice Your Home Fire Escape Plan

Fire can spread quickly, leaving only a minute or two to escape. Once the smoke/fire is detected it's so important to have a home escape plan.

Start by drawing a map for your home and follow these guidelines -

- Plan two ways to escape from each room
- Make sure all doors and windows leading outside open easily
- If you live in a multi-story building, plan to use the stairs – never the elevator
- Designate an outside meeting place a safe distance from the house where everyone should meet
- Everyone – even children – need to know your family escape plan in case of a fire.

Remember to:

- Practice getting out with your eyes closed, crawling low to the floor and keeping your mouth covered
- Practice closing doors behind you
- Practice how to "stop, drop and roll" if your clothes catch on fire
- Practice testing door handles to see if they are hot before opening them
- Teach children never to hide during a fire, and how to escape on their own in case you can't help them

### Learn When and How to Use Fire Extinguisher

Always put your safety first; if you are not confident in your ability to use a fire extinguisher, please care to evaluate the situation and ensure:

- Everyone has left or is leaving the home
- The fire department has been called
- The fire is small, not spreading, and there is not much smoke
- Ensure that during escape, you are facing the safer out let path from fire zone and the exit opening is behind you.

Learn about the different types of fire extinguishers; not all will work on every fire. For home use, it is better to a multi-purpose device large enough to put out a small fire but not so heavy that it will be difficult to handle. Review the instructions once a year. If you need to use a fire extinguisher, there won't be time to learn how to do it.

### How to prevent home fires

- Install and maintain smoke alarms on every floor of your home and within every bedroom. Roughly 50% of home fire deaths occur during the night while people are sleeping.
- Never leave cooking devices unattended, especially deep fryers and other frying equipment.
- Avoid using portable and fixed space heaters, as heating equipment is the second leading cause of home fire deaths.
- Have a fire plan that gets you out of your home in less than two minutes and practice it.
- Avoid smoking in the house.

### Electrical safety & home fire prevention

- Electrical malfunctions are one of the leading causes of home fires.
- Make sure that you hire a qualified electrician to make any changes in your home.
- In addition, be sure to check electrical cords regularly, and make sure cords do not run across doorways or under carpets where they could be damaged.
- Remember to limit the number of plugs you have in an electrical outlet or power strip.
- Overloading an electrical outlet can not only trip a breaker, but it could also start a fire. Additionally, only use light bulbs that match the recommended wattage for each lamp.
- Your lamps and light fixtures should have a sticker that indicates the maximum wattage light bulb you may use.

### Important Fire Safety Precautions To Be Observed For Diwali

The festival of lights, Diwali, is among the most awaited and the most widely celebrated festival in India. Diwali is rightly synonymous with bright fireworks lighting the night sky.

While this celebration certainly fills everyone's spirit with joy, if not handled with care, candles and firecrackers can become dangerous tools. Improper handling of fireworks accounts for hundreds of injuries every year. The second-

most commonly affected part of the body is the eye, a delicate organ.

Even minor damage to the eye can cause permanent injury and even impair one's vision.

Children are at high risk of injury, but those most likely to be wounded in the eye are the bystanders. Nonetheless, children should only be allowed to use firecrackers under adult supervision.

The fireworks must also be stored very carefully, away from excessive heat or fire.

Small firecrackers can cause minor burns in the eyelashes, eyelids or the skin while accidents due to more heavy pyrotechnics can severely damage the eye.

Sparklers are extremely dangerous as they burn at very high temperatures. Debris left after the extensive use of fireworks could also become a cause of worry because of trace chemicals that are left on people's fingers when they handle the firecracker

Diwali is around the corner and with the festival of lights gets the sky illuminated with firecrackers. Bursting firecrackers is a ritual that has been observed during Diwali for a long time. However, firecrackers can be dangerous when not handled properly, and firecrackers can cause serious injuries. Therefore, it is important to follow certain measures in order to make sure that you and your family members are safe around firecrackers.

We would advise you to observe the following precautions while bursting crackers this Diwali.

### The Do's:

- Always buy branded fireworks and only from a government licensed shop.
- Always keep the fireworks in a closed safety box.
- Store crackers away from sources of fire.
- Keep crackers away from small kids, toddlers and infants.
- Follow the instructions written on the crackers box and follow all the safety precautions.
- Burst crackers only in open spaces, like playgrounds and fields.
- While igniting aerial fire works like rockets ensure that they are not facing any opening like an open window, door or an open building which may cause fire accidents
- Light the crackers from an arm's length distance and not any closer.
- Discard the used crackers in a bucket of water.
- Always keep buckets of water and blankets ready in case of an accident.
- Always keep a fire extinguisher nearby to ensure safety during Diwali.
- Keep a first aid kit handy when bursting firecrackers to treat minor injuries at home.
- Make sure that kids are wearing appropriate footwear



while lighting fireworks..

- Make your kids wear light and fitting cotton clothes while bursting crackers.
- Before bursting fire crackers, look for an open space and ensure there are no combustible and inflammatory things around. If so remove them at once.
- Keep small children away from the bursting area - Use a sparkler, agarbatti (incense stick) or a long fire wood to light a cracker as they keep you at a safe distance and do not possess a naked flame
- Read the label on the crackers and follow the instructions carefully
- Be prepared for emergency
- Organize a community display of fireworks rather than individuals handling crackers
- Light only one firework at a time, by one person. Others should watch from a safe distance
- In case of burns, pour large quantity of water on the affected area In case of major burns, after extinguishing the fire, remove all smouldering clothes. Wrap the victim in a clean bed sheet.

The patient should be taken to a burns specialist or a major hospital. Don't panic

In case of eye burns, wash the eye with tap water for 10 minutes and take the victim to a hospital

- Follow the instructions written on the crackers box and follow all the safety precautions.
- Light the crackers from an arm's length distance and not any closer.
- Park your vehicles in garages.

#### The Don'ts:

- Don't burn fireworks and crackers in crowded places, narrow lanes, near sources of ignition or inside the house.
- Don't let your kids burst crackers in your absence.
- Don't keep fireworks in pockets or bags.
- Do not examine crackers that were lit but did not burst. Let it go and light a new one.
- Don't light crackers while holding them in your hands. Always keep a safe distance from the cracker while lighting. Exercise daredevilry in more secure and productive activities.
- Avoid loose clothes as they can catch fire quickly. Do not wear clothes made of silk and synthetic material.
- Do not keep light lanterns or candles near curtains or other inflammable materials.

- Do not light multiple firecrackers at once as it can lead to an accident.
- Do not use matches or lighters to light up the crackers.
- Do not experiment with firecrackers or make your own crackers.
- Do not burst crackers on roads as it can cause accidents.
- Do not give your younger children crackers that can explode, instead let them light sparklers and other gentler and safer fireworks.
- Strictly avoid using matches and lighters for bursting crackers as they have open flames that can be dangerous
- Never ignite aerial fireworks (like rockets) if there is any overhead obstruction present like trees and wires
- Never ever leave a lit match, agarbathi (incense stick) or sparkler near unused crackers
- Never experiment with crackers or make your own fire works
- Never ever light a cracker in your hand. See to it that you put it down and ignite it
- Don't keep your face close to the cracker while trying to light it
- Do not throw fireworks at people
- Never give any firework item to small children
- Never try to burst crackers indoors or from inside a vehicle
- Do not have fireworks in your pocket while igniting another
- Do not tend to burst crackers when some one else is trying to ignite one
- When crackers take time or do not ignite immediately, do not indulge in trying to burst Rush to a safe place immediately. Throw some water to diffuse them
- Never try to light used fireworks
- Do not ignite fireworks in any container
- Do not approach the misfired fireworks immediately
- Do not tamper with misfired fireworks
- Do not wear loose, hanging clothes. Secure all clothes properly
- Do not apply any cream or ointment or oil on burnt area

*With a few safety tips for Diwali celebrations, you and your kids can have a happy time with a few precautionary measures. Better still, you can also consider going for an eco-friendly Diwali with no crackers, to teach your kids that the festive season can be fun and environment-friendly too.*

**Let us celebrate and enjoy accident free Diwali** ■



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**SAFETY  
FIRST**

# FESTIVITIES AND SAFETY!

- Ms. Nidhi Jagtap

In view of upcoming festivals, we all need to ensure that in the coming months, we celebrate mask wali puja, mask wali Chhath, mask wali Diwali, mask wala Dussehra in order to curb the spread of COVID-19.

Dussehra is a festival which basically tells the story of how good triumphed over evil. It's that time of the year when garba revellers are busy preparing for the nine nights of Navratri. However, the pandemic has cast a spell of doubt about whether Navratri will be celebrated with less grandeur and fanfare this year.

**Protect yourself and others from COVID-19 by following some basic tips:**

- Avoid public gathering and going to crowded places
- Maintain at least 1 metre (3 feet) distance between yourself and others.
- Regularly and thoroughly clean your hands with an alcohol-based hand rub or wash them with soap and water.
- Always cover your nose with a mask.
- Stay home and self-isolate even with minor symptoms such as cough, headache, mild fever, until you recover.
- If you have a fever, cough and difficulty breathing, seek medical attention, but call by telephone in advance if possible and follow the directions of your local health authority.



Diwali, the festival of lights, brings with it a spirit of happiness and prosperity. It is the time when friends and families throw a bash and celebrate the victory of light over darkness, good over evil and knowledge over ignorance. Sweets, new clothes, and delightful crackers make this festival

worth waiting for throughout the year – but only if you stay safe!

The war against Covid is ongoing and on the flip side, Diwali is also the time when many fire accidents and injuries occur. Though it is a holiday for most people, fire departments and hospitals are on constant alert on Diwali. As beautiful as it looks, fireworks account for

thousands of emergency room visits each year during the festival. As expected, the leading cause of injuries on Diwali is the lack of appropriate safety measures while lighting fireworks.

Due to serious issues like health, environment, and safety risks involved, medical experts strongly discourage firework play of any kind. But if you still want to use fireworks as part of your celebrations, please ensure you take the following safety precautions at all times:

- Keep a first aid kit handy when bursting firecrackers to treat minor injuries at home.
- Store fireworks in a closed box in a safe location, away from the reach of children
- Avoid sparklers that reach temperatures as high as 1000°C – high enough to melt gold and cause serious injury
- Do not burst crackers on roads as it can cause accidents.
- Follow the instructions written on the crackers box and follow all the safety precautions
- Keep fireworks away from the face, hair and clothing
- Maintain a distance of an arm's length while lighting firecrackers, and at least five metres while watching
- Avoid wearing synthetic fabrics as they are easy and quick to catch fire.
- Defuse used fireworks properly by soaking them in a bucket of water before disposal
- Wear protective eye gear to help prevent entry of particles into the eye and irritation by fumes.
- Try to have a fire extinguisher around, if not possible have a bucket of sand or water.
- Lighting crackers and fireworks when pets or strays are around can cause them to suffer from accidental burns as they are unable to gauge what would be a safe distance for them from the crackers.
- Don't burn crackers in crowded, congested places or near sources of fire or inside the house.

While keeping these tips in mind, we encourage you to celebrate a cracker-free and smoke-free and socially-distanced Dassera and Diwali for a healthier and happier life!

But the battle against novel coronavirus is still going on. We must comprehend the impact of our actions of ignoring basic safety on our family, our society and at our workplace. Also understanding the pressure frontline healthcare workers are going through, the



availability of beds, medicines and ventilators is scarce. Hence, we should take precautionary measure to avoid mishap.

Looking at our country's Economic situation and the GDP rate falling. We need to find innovative ways of celebrations by hosting virtual parties, small gatherings, etc.

For creating ATMANIRBHAR BHARAT we must take responsibility of our own safety independently, we should take necessary precautions from time to time. And Creating Safety as a habit, as a culture, as a way of life!

Together we can create SURAKSHIT BHARAT!  
JAI HIND! ■■■



Nidhi Jagtap, Business Head- Rajhans Safetech Pvt Ltd- 1.7 years

We are regarded as a Premium Quality and Assured Delivery Supplier offering highest quality solutions in Safety, Fire Protection, Wiping Solutions, EHS consultancy & Training Services.

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# ROAD SAFETY - INDIAN CONTEXT

- Mr. Vinodchandra Bhatt

It is very heartening to note that Fire & Security Association of India (FSAI) has chosen “Road Safety” as one of the topics in the ‘thematic series’ to adorn the pages of this Journal edition. This is truly a noble outlook worth emulating by all such periodicals in the country considering the humanitarian significance of this attribute.

India is on the faster path of progress, as is known to all the readers. Infrastructure is the spine of growth. Developing safe roads which inter connect destinations is the key foundation to infrastructural development in a country where the population is more than 1 billion.

Globalization has brought the country into the forefront of progress. This development has provided a substantial economic stimulus to enhance progress at pan India level which includes enabling people to travel across various locations, using ROAD. These days, number of people find it affordable to use own vehicles so as to enhance mobility, comfort, time conservation and thereby work efficiency as well as desired output. Logistics is an important chain link in productivity. Various branded motor vehicle manufacturers have invested lavishly in India. Against this background time is more than ripe to consider and review all nuances of life cum asset safety aspects of road travel. This is all the more pertinent to heavily occupied and very busy roads around developed / developing cities, suburbs and villages all around the nation. In those locations, motor vehicle trauma also have created a modern epidemic type situation (more or less like the prevailing COVID19 menace)

Traffic related deaths and injuries are a global problem of massive proportion. Of all the systems that people have to deal with on a daily basis, road transport is the most complex and the highly vulnerable. In recent years, some important and major studies on the subject of road accidents and fatalities carried out by World Bank, World Health Organization (WHO), Transport Research Laboratory (TRL), and others. All of them have

highlighted the increasing trend of road crashes as the most important causation factors of death particularly in developing and transitional countries, cities and villages.



The Global status report on road safety 2013 estimates that more than 231,000 people are killed in road traffic crashes in India every year. Approximately among half of all deaths on the country's roads, motorcyclists, pedestrians and cyclists happen to be the most affected. As per media statistics, in India one person is killed in a road accident every four minutes. The causes for India's exceptionally high number of on road casualties include – badly maintained roads, careless user behavior, defective road design and engineering, poor enforcement of traffic rules and the lack of rapid trauma care.

The Motor Vehicles Act of 1988 (MVA), the only act that governs the road safety in India, has been still found wanting in addressing effectively all significant attributes covered above. The road safety is still not getting the priority it duly deserves as viewed by majority of countrymen.

Following a major campaign led by Save LIFE Foundation including written appeals from Members of Parliament to the Hon. Prime Minister, the Government of India introduced the Motor Vehicles (Amendment) Bill 2016 in the Parliament on August 9, 2016, to address the issue of road safety in India.

A comprehensive national road safety law will be able to improve the situation in the country. The ministry of surface transport has recently amended the MVA to provide stringent penalty and punishment provision in case of flouting rules of driving. The insurance backup to a victim is



is also being reviewed and corrected to a major extent.

Union Minister of Road Transport, Highways and Shipping Sh. Nitin Gadkari said, in February 2020 that his ministry would give a grant of Rs 2 lakh to NGO's to take up road safety activities. Soon after it, COVID-19 pandemic has grabbed the globe, including India. This has impacted many fronts and caused delay. However G.O.I. is committed and will surely take it up, soon.

Stating that participation of citizens is most essential for making roads safe, the minister called upon people to help the local members of Parliament in identifying accident black spots in their constituencies and take steps to rectify them.

Road & Transport Ministry convened a meeting of the NGO's working in the sector of road safety, where about 170 NGO's from all over the country participated. Ministry also declared about a grant -in-aid up to Rs 2 lakh to NGO's to initiate and execute road safety promotional activities..

Practicing Road Safety measures is most essential part of life. It is an essential requirement like, inhaling oxygen rich fresh air for human.

### *SELF DISCIPLINE IS THE KEY. CHANGE YOUR BEHAVIOUR ON ROAD & SEE THE IMPROVEMENT*

A safe and good behavioral pattern on the road is a must for the entire life span of the citizens. Everyone must respect others while driving, walking or crossing the street, on the road and take care of their own as well as others safety. People's safety on the road is one of the most important aspects in order to avoid accidents, injury, and life loss.

The traffic rules must be clearly understood, appreciated and followed strictly while driving. Others' rights on road shall be respected as much as we expect with reg. to ours.. One must avoid rash driving and jumping red lights. Wearing helmets and seat belts could highly reduce the number of casualties during an accident. Stated all these are also required by local – state and national authorities are also required to device a most appropriate mechanism to enforce the rules. Added to it there is a need for overall awareness creation at every level, starting with individuals, societies, schools, local bodies, district centers etc. through deliberations and discussions on the subject.

It is worth mentioning about India, that handling of COVID-19 Pandemic, with macro & micro management at every level, starting with the first citizen of India has been acclaimed within India and by many

other countries.. Similar priority is to be accorded for ROAD SAFETY. With the right commitment, there is a huge room to improve.

It is very important to be aware that road traffic injuries remain an important public health problem. When road safety products are utilized correctly or efficiently, they can help save lives, prevent accidents and injuries, and keep a society functioning in the most optimal way.



*Learn yourself and teach your children, the right way to walk and play leaving roads free for traffic. Like any good parents, teach and preach the toddlers and nurture them up while growing. Take it up as your own vision.*

Keeping your kids safe at all times can be tricky when you cannot be with them always. Parents ensure the safety of their child at home, and teachers or caretakers are responsible for the kid's safety at school. But who keeps them safe on the road? Whether your children walk to school or take the bus, they should be taught about the rules to stay safe on roads.

MomJunction has put together the most important road safety and traffic rules for kids that can help them to learn. ([https://www.momjunction.com/articles/important-road-safety-rulestips-to-teach-your-children\\_0077932/?display=wide](https://www.momjunction.com/articles/important-road-safety-rulestips-to-teach-your-children_0077932/?display=wide))

Unlike adults, children do not have the maturity to know what to do and what not, when walking on the roads. Without adult supervision and proper knowledge of road safety rules, children can put themselves at risk.

According to a National Highway Traffic Safety Administration report for 2014, 3% of the people who died due to road accidents were children (<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812271>). Statistics also show that 480 kids were injured every day due to road accidents in the same year.

What's more disturbing is that of the 4,884 pedestrians who were killed in road accidents, 207 were kids. When it comes to the safety of your children, you should not compromise. Teach about road safety for children as soon as they are old enough to step out of the house. Ensure that they understand what you are saying by practicing it with them.

Keep reading for more road and traffic safety rules and information for your kids.

[Read: Bicycle Safety Rules For Kids (<https://www.momjunction.com/articles/bicycle>)]

1. Know Your Signals

2. Help your kid learn about the traffic lights, signs and symbols and what each colour codes depicts. Safety-rules-for-kids\_00366430/)]

3. Sometimes a hand symbol is used instead of the notations of a walking man. Tell your kid about that too. If there are other symbols for pedestrians, you should make it a point to let them know. Gradually, teach your children about the other essential traffic signals they should know

4. Stop, Look, And Cross.

Your child may have to walk to school or the bus stop and back. They may only have to cross the street after the school bus drops them off. Even if they don't, they may have to cross the street to get to a friend's house or a neighbour's. Whatever the case is, you should teach your kids to cross the road safely. Here's how you can help them learn.

Always look for signals and use the pedestrian crossing to cross the road. In the absence of such markings, here is what you should do:

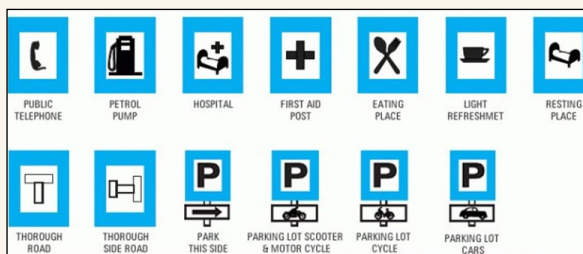
Look to your right and then to the left to see if there are any approaching vehicles. If yes, wait for the vehicle to pass and then cross the road.

Never cross at bends.

Never cross between stationary vehicles.

Adults should always accompany children aged less than six and hold their hands when crossing the street.

### Informatory Signages



### 3. Pay Attention – Listen

Teach your kids that they may not always be able to see an oncoming vehicle, especially if they are standing near a bend. Therefore, they should listen to know if a vehicle is approaching. Cars and other vehicles on the road often use the "horn" at bends and at unmanned intersections to indicate that they are nearing.

Tell your children:

If they hear a horn, stop and look to the left and right to see if any vehicle is approaching. They should also listen to engine sounds nearby to know if there is a moving vehicle – explain how loud noise indicates the vehicle is nearby, and a faint sound means it is away.

### 4. Don't Run On Roads

Children may not always have patience and try to run across the street to get to the other side. They may also run

along the road in your neighborhood while playing. Tell them kids never to run across or along the road. Children can get distracted easily and leave their guardians' hands to run or sprint away.

Teach your kids to stay calm on the road and never to run or sprint.

### 5. Always Use Sidewalks

Teach your kids to use the sidewalk when moving on the road. Set example to them by through own actions. Whether it is a busy street or not, encourage your kids to use the sidewalk to stay safe on the road.

Crossroads and Pedestrian Crossing Kids have a tendency just to sprint across the street, anywhere they like. That can be dangerous as passing vehicles normally do not slow down unless there is a signal or a crossroad.

Tell your kids to cross only at an intersection and use the pedestrian crossing. If the location is a small township, where there no such cross road or marking, children must be cautioned to remain extra conscious.

Lessons on pedestrian safety for kids are important and should be included in school curriculum as well.

### 7. Never Stick Hands Outside Vehicle while moving or halting on signal points along junctions.

Kids tend to put their hands out of the school bus even when it is moving. Some of them may even put their head out to look back and wave. This is common with students taking the school bus. For their age, it could be found a fun idea but sticking hands or head out of a moving vehicle can proved to be highly dangerous including fatal, If children are not careful, they could be hit by vehicles approaching from the opposite direction from sides.

### 8. Never Cross Road at Bends

Bends are the blind spots for motorists. When you cross at a bend, you do not give the vehicle drivers enough time to spot you and stop the car. Tell your kid never to cross at a bend as that can increase the chances of them getting hurt.

### 9. Staying Safe on A Bicycle

If you have an older kid who rides his bike to school or around the neighbourhood, make sure he is aware of and follows the safe cycling rules to stay safe on the road.

- Always wear a helmet when riding a bike.
- Check if the bicycle is roadworthy and in good condition before using it – check for breaks and light, especially before venturing on night trips.
- Always use the bicycle lane. In its absence, ride the bike on extreme right or left side (as per the law of the land at respective countries) of the road and move along with traffic. Keep your eyes and ears open to make way for larger and faster vehicles behind you.
- Always use a light in areas with poor visibility and at night, to be easily noticed by motorists.



- Do not allow kids to ride a cycle on busy streets without parental supervision.

### Staying Safe inside a Moving Vehicle

In a moving car, you can make sure that your kid is safe with the help of a cradle seat or seatbelts. To ensure that they are safe sitting independently on their seats (without being attended), make them learn and follow the simple rules:

Never stand inside a moving vehicle, especially a school bus or van.

Students should not move around inside a moving school bus.

Stay seated and hold on to the hand rail inside the bus for support, until the vehicle comes to a stop. Do not put any part of the body outside the window of a moving vehicle.

Always Get Out at The Curb Side

If your kid takes the school bus every day, help them remember these safety tips.

Start on time from home (sufficiently early) and be on time to avoid running and catching a moving bus.

Always stand in the queue when boarding and alighting the bus.

Always get off the curb side when getting off a car or the bus to prevent being an obstruction to the other vehicles on the road.

### 12. Be Seen, Stay Safe

Dressing in black may be a bad idea when you want to walk at night. It is important that vehicle drivers notice you if you want to stay safe. To be seen:

Wear light (rather white shaded) colour clothes or reflective material when walking or biking at night.

Wear white/ shining clothes during the day (this will repel heat from sun rays).

Wave your hand if you want to indicate your presence to an incoming vehicle.

### 13. Don't Rush

Children can get excited and rush in an attempt to get to a place or meet some close friends and sit near them. That can be dangerous. Teach your kids to:

- Do not allow them to rush when getting into or off a vehicle as it can be hazardous.
- Let them neither get distracted nor suddenly drag the parent or guardian in a particular direction as this can throw the adult off guard.
- Stay calm and do not rush when walking on the street.
- Do Not open the car doors suddenly while remaining halted on busy road sides and nurture habit for opening the doors only after being allowed to do so.
- Do not play in the bus bay or on the roads.

### 7 Tips to Keep Your Child Safe On Roads

Besides teaching about road safety rules for kids, parents should also keep in mind the following tips to ensure that their children stay safe on the road.

1. Buckle up! – Ensure that your child always wears the seat belt, or is secured in a car seat.
2. Use the child lock feature to prevent your kids from opening car doors by themselves.
3. Teach them about the rules practically – take them for walks and cycling, and teach them how to do it right.
4. Exhibit patience when driving – set an example for your kids to be calm and not rush on the road.
5. Be punctual and disciplined to avoid speeding and rash driving.
6. Do not use mobile phones or other gadgets distract the concentration while driving.
7. Never leave your kids alone in the car.

### Road Safety Games & Activities

One of the best ways to teach your kids something important is play. Here are a few road safety activities you can rely on to help your child learn about road safety.

1. Have a discussion – give your child a scenario and ask them what they should do. For example, ask “You are playing, and your ball rolls into the middle of the road. What would you do?” Or, you can ask “You are getting late to school, so you should run to the school bus bay, correct?” and see what they say.

### Some basic rules

- 1) Control the speed
- 2) Wear a seat belt
- 3) Follow the signals
- 4) Ensure indicating direction, while turning
- 5) Ensure child safety seats
- 6) Wear Helmet
- 7) The Importance of Education, Information and Publicity
- 8) Raise Awareness
- 9) Increase visibility
- 10) Enforce Non drink driving Laws

### Traffic lights – Traffic signs help

Traffic lights and Traffic signs, facilitates shared road space by separating conflicting movements and by using delays for various drivers and pedestrians. They are most often used at busy intersections for operational reasons and sometimes represent a trade-off between mobility and safety.

### In all, there are 6 types of signals:

1. Traffic Control Signals,
2. Fixed time signals,
3. Manually operated signals,
4. Traffic actuated (automatic) signals,
5. Pedestrian signals,
6. Special traffic signals.

### Traffic Signage

For immediate reference, following are the approved color codes in our country.

Mandatory Signage - RED Colour

Regulatory Signage – BLUE Colour  
 Cautionary Signage - RED Colour  
 Warning Signage - RED Colour

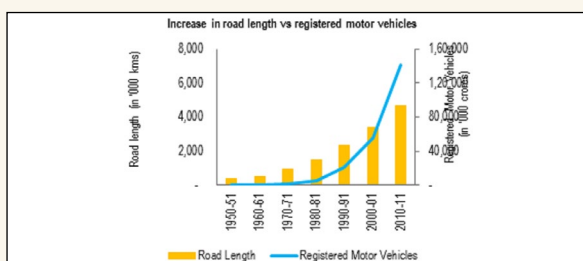
For additional information, Reader can refer link given below.  
[https://en.wikipedia.org/wiki/Road\\_signs\\_in\\_India](https://en.wikipedia.org/wiki/Road_signs_in_India)  
 for deeper details on Signage.

**Mandatory Signage**


Here are some important and illustrative Statistical are: Knowing them would be very useful.

India is one of the busiest countries in the world in terms of road traffic. However, it accounted for about six percent of the total global road accidents. ... In 2018, there were around 151 thousand deaths due to road accidents in India.

The Indian road network, spanning over five million kilometers, carried almost 90 percent of the country's passenger traffic and about 65 percent of the goods. With the rapid increase in the number of cars and the mercilessly congested Indian roads, road safety has turned into a factor of utmost importance for the country's citizens.

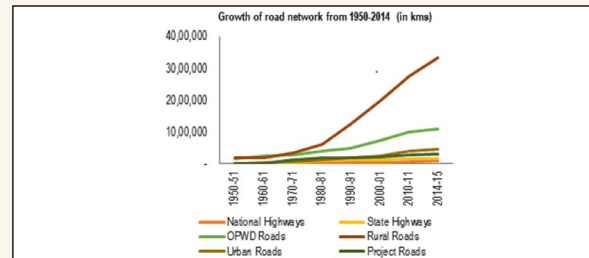


Since 2000, while road length has increased by 39%, number of motor vehicles has increased by 158%!



Bachelor of Engineering (B.E.), Mechanical Gujarat University - L D College of Engineering.

- 42+ years, experienced, hands on rotating and static equipment professional with basic background of design and engineering.
- Worked on large Engineering Projects in Oil & Gas – Petrochemical – Refinery and Fertilizers, with concept to commissioning mind set, demonstrating capability of leading the project till commissioning and handling internal team, site contractor & client. Strong engineering professional.
- Handled industrial Safety aspect in related fields
- Life time Fellow from Institute of Engineers India
- Chartered Engineer
- Recognized Certified -ZED assessor and ZED Master Trainer by QCI - Quality Council of India- A Government of India enterprise for Zero Defect – Zero Effect initiative.



Basis National Crime Records Bureau, Ministry of Road Transport & Highway, Law commission of India, Global status report on road safety:

- One serious road accident in the country occurs every minute and 16 die on Indian roads every hour.
- 1214 road crashes occur every day in India.
- Two wheelers account for 25% of total road crash deaths.
- 20 children under the age of 14 die every day due to road crashes in in the country.
- 377 people die every day, equivalent to a jumbo jet crashing every day.
- Two people die every hour in Uttar Pradesh – State with maximum number of road crash deaths.
- Tamil Nadu is the state with the maximum number of road crash injuries.
- Top 10 Cities with the highest number of Road Crash Deaths (Rank –Wise):
  - o Delhi (City), Chennai, Jaipur, Bengaluru, Mumbai, Kanpur, Lucknow, Agra, Hyderabad, Pune.

IIT – New Delhi conducted a study on subject in 2018. Readers can review same using link:-[http://trippi.iitd.ac.in/assets/publication/Road\\_Safety\\_in\\_India2018](http://trippi.iitd.ac.in/assets/publication/Road_Safety_in_India2018)

Finally, the bottom line of Safety  
*Safety is more a value as compared to mere Common sense, Culture, Commitment, Compulsion or Compliance*

*Respect our Highways, Roads, Lanes & By- lanes as symbols of manmade civilization just like the Oceans, Seas, Back waters, Rivers, Streams and Estuaries which have been respected as spots of Nature's gift towards growth of human civilization from ancient times.*

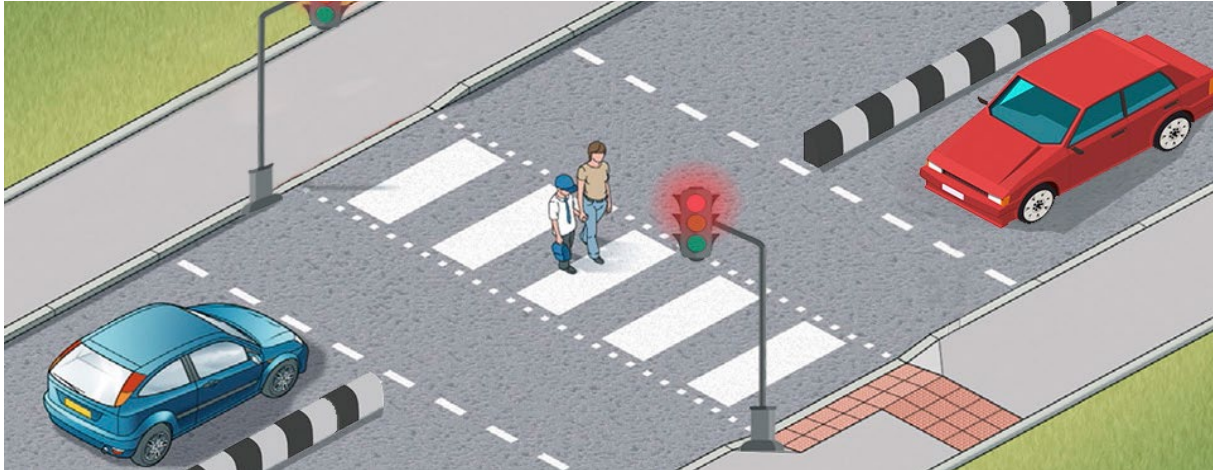
Demonstrate your driving skill on roads and not the flying skills, Remember Highways are not Runways.

***Start timely and walk or ride/ drive safely***  
*Always remember Safety is the best road to reach your destination.*



# IMPORTANCE OF ROAD SAFETY

- Mr. Shreyash Sarmalkar



India! Alarmed by the increasing death toll due to road accidents, it's time to take cognizance that Road Safety & Precautions needs to take a centre stage. Massive growth in real estate sector in metro cities with extensive expansion in infrastructure like roads, highways, etc. is seen. Proper infrastructure & the road network has played a crucial role in India's economic development. This has attracted many foreign companies, brands - car manufacturers, industries, etc. to have their setup here in India. With the ever increasing road network, hike in road accidents is observed too. In all possibility government is likely to continue to invest resources in making road safety a vital component of citizen's daily commute.

Road accidents have been a major cause for concern across the Indian subcontinent. In 2018 alone, the country reported around 151 thousand fatalities due to road accidents. Each year, about three to five percent of the country's GDP was invested in road accidents. Notably, while India has about one percent of the world's vehicle population, it also accounted for about six percent of the global road traffic incidents. Almost 70 percent of the accidents involved young Indians.

## Cases and Causes:

Two-wheelers had the maximum involvement in fatal road accidents across the country in 2018. A major portion of the accidents that year occurred at T-junctions. Over speeding has been a cause for concern throughout the country regardless of day or night-time. Moreover, fast and risky manoeuvres and illegal street races on roads and highways not designed for the purpose created significant trouble for the police. Over 65 percent of the accidents occurred on straight roads. Additionally, state highways had a

share of about 25 percent of the total road accidents in 2018.

## Number of deaths due to road accidents across India from 2005 to 2018 (in unit of 1,000's - "Thousands"):

2018	151.42
2017	147.91
2016	150.79
2015	146.13
2014	139.67
2013	137.57
2012	138.26
2011	142.49
2010	134.51
2009	125.66
2008	119.86
2007	114.44
2006	105.75
2005	94.97

## Number of fatalities in thousands

Source: [www.statista.com](http://www.statista.com) [Number of deaths due to road accidents in India 2005-2018, Published by Vaibhav Asher, Feb 27, 2020]

India ranks first in the number of road accident deaths across the 199 countries reported in the World Road Statistics, 2018 followed by China and US. As per the WHO Global Report on Road Safety 2018, India accounts for almost 11% of the accident related deaths in the World. Nov 19, 2019. Road accidents in India claimed over 1.5 lakh lives in the country in 2018, with over-speeding of vehicles being the biggest reason for casualties, a government report said.

"A total of 4,67,044 road accidents have been reported by States and Union Territories (UTs) in the calendar

year 2018, claiming 1,51,417 lives and causing injuries to 4,69,418 persons,” the report said. Over-speeding accounted for 64.4% of the persons killed. Road accident severity measured by the number of persons killed per 100 accidents, has seen an increase of 0.6 percentage points in 2018 over the previous year.

Tamil Nadu and Uttar Pradesh remain accounted for the highest number of road accidents and death on account of road accidents respectively in 2018, the report revealed. For three consecutive years now, young adults in the age group of 18-45 years accounted for nearly 69.6 percent of road accident victims. The working age group of 18 – 60 accounted for a share of 84.7 percent in the total road accident deaths. Traffic violations related to driving on the wrong side of the road accounted for 5.8% of the accident related deaths. Use of mobile phones accounted for 2.4% of the deaths with drunken driving accounting for 2.8% of the persons killed.

*Source: economictimes.indiatimes.com [By Nishtha Saluja ET Bureau, Nov 19, 2019.]*

According to the statistics, Uttar Pradesh ranks the highest when it comes to deaths due to road accidents. In 2018, 22,256 people lost their lives in the state where 42,568 road accidents were reported. Nov. 19, 2019

*Source: www.financialexpress.com*

Whilst San Marino and the Maldives still top the list, their low populations aid this. It's fair to say that some of the safest roads in the world can be found in Norway, Switzerland, Singapore, Sweden and the UK.

*Source: www.rhinocarhire.com*

Each year, 1.35 million people are killed on roadways around the world. Every day, almost 3,700 people are killed globally in road traffic crashes involving cars, buses, motorcycles, bicycles, trucks, or pedestrians. More than half of those killed are pedestrians, motorcyclists, and cyclists. Road traffic injuries are estimated to be the eighth leading cause of death globally for all age groups and the leading cause of death for children and young people 5–29 years of age. More people now die in road traffic crashes than from HIV/ AIDS.

*Source: www.cdc.gov [Road Traffic Injuries & Deaths: A Global Problem | CDC]*

On an average, every second road crash claimed at least one person's life during the lockdown - a time when a vast majority of the population was restricted to the confines of their home. In fact, 750 deaths in 1461 road crashes were recorded across the country,

between the months of March & May.

According to a World Bank Report, India can add 14% to its Gross Domestic Product per capita if it successfully halves the number of road accidents crashes and injuries by 2038. With 69% of the fatalities involving road users between the age of 18 to 45 years - the economically productive segment - road casualties hurt GDP growth rates by increasing productivity costs. The Central Government has created a framework - notably the Motor Vehicle (Amendment) Act - for reducing the number of casualties. Notified in 2019, the Act envisages various enabling provisions that will lay the solid foundation for road safety and traffic management.

The Zero Fatality Corridor Project started by Save LIFE Foundation in partnership with Maharashtra government on Mumbai Pune Expressway in 2016. In 2016, the Expressway saw an Auraiya-like crash where 16 people died when the bus they were travelling in fell 20 feet into a ditch. By 2019, the project had already delivered a 43% reduction in fatalities and showcased a replicable model ready to be institutionalised and implemented by other state governments. The model addresses the 16 most common road engineering issues through an eight-point approach, optimises enforcement by implementing a six-point protocol, ensures commuter behaviour change through five key messages & optimises trauma care through five replicable practices. The model is backed by forensic crash investigation & crash data analysis across India. Taking a cue from this initiative, it can be said that states can leverage the potential of data analytics to prevent any loss of lives in road accidents. The vast volumes of data generated by the traffic management system can be stored on cloud & used by the local police administration to map out accident hotspots under their jurisdiction. Ambulances can then be put on standby at these hotspots for speedy medical care. Additionally, this data can be used by the authorities to increase police patrol presence in selected areas to prevent cases of speeding.

*Source: www.scroll.in [Road Safety Pays, Piyush Tewari, 30th Sept. 2020]*

#### **Accident Insurance Policy:**

An injury, loss, damage, casualty, harm, mishap which occurs unintentionally due to an unfortunate or unforeseen happening of an incident can be termed as an Accident.

A Personal Accident Insurance Policy provides complete financial protection to the insured



members against uncertainties such as accidental death, accidental bodily injuries, and partial/ total disabilities, permanent as well as temporary disabilities resulting from an accident.

Source: [www.policybazaar.com](http://www.policybazaar.com) Jun. 4, 2020



This policy is needed on an indemnity basis as it provides lump-sum cash benefits that are paid directly to the insurer & not the doctors or hospital. Benefits which a personal accidental insurance policy covers are, Cover against Accidental Death, Permanent total Disability & Partial Disability on account of an accident.

Accident insurance offers a one-time payout that can help insurer afford medical care. This policy cover is a must to have for all concerned citizens who frequently travel for work.

Insurance companies define accidental death as an event that strictly occurs as a result of an accident. Deaths from car crashes, slips, choking, drowning, machinery, and any other situations that can't be controlled are deemed accidental.

Source: [www.investopedia.com](http://www.investopedia.com), Jul. 4, 2020

An accidental damage means an unintentional incident that damages or harms the insurer's property. As per the Motor Vehicles Act, third-party insurance is mandatory. Also comprehensive insurance which covers theft & damage to the vehicle can also be an excellent option to opt for! A No-claim Bonus is a discount given in yearly premium by the insurance company, if the insurer/car owner has not claimed insurance for a year.

Age limit for taking this policy is 18 years & maximum is 65 years. In absence of a claim there is lifelong Renewability under the policy.

Special thanks to Mr. Sandeep D. Mule [Director, Sudarshan Insurance and Investment] for providing insurance related insights.

The measures taken to prevent road users from being

killed or seriously injured is referred as Road Traffic Safety. These injuries & deaths are one of the highest public health hazards which are preventable. We as citizens of Surakshit Bharat should be well aware of the road safety rules thereby leading to bringing down the mishaps. Whether you are a driver, passenger, motorbike rider, cyclist, or pedestrian, take the following steps to stay safe on the road.

**Some basic road safety steps/ rules & precautions are:**

1. Understand Traffic signals & road signs on signages. (Refer Image. 1)
2. Stop, Look, And Cross the road. (CROSS)
3. Don't run on roads.
4. Always use footpaths.
5. Never cross road at bends.
6. Use pedestrian crossing for walking across road.
7. Pay attention to vehicular movement around you.
8. Always wear a helmet when riding on motorcycles, scooters, or bicycles.
9. Always maintain your vehicle in a good condition.
10. Always wear seat belt while you drive & insist all passengers to do the same.
11. Never Break Red Signal.
12. Do not use mobile phones or other gadgets when driving. (Refer Image. 2)
13. Always follow lane manners.
14. Always drive within speed limit.
15. Always exhibit patience when driving.
16. Never leave your kids alone in the car.
17. Avoid drowsiness while driving.
18. Controlling or reducing the speed can reduce the chances of an injury during an accident.
19. Never stick hands/ head outside the vehicle.
20. Don't overtake on turns, when roads ascend/ descend & also when sight is unclear.
21. Always avoid driving in Bad Weather or Poor Driving Conditions.
22. Always carry a fire extinguisher, torch, battery charger, necessary car kits, etc. in your car.
23. Always attempt to study your travel route if venturing in unknown locations.
24. Always prefer daytime driving.
25. Always focus on driving & avoid distractions.
26. Always avoid driving continuously without or with minimal breaks. It Is very taxing.
27. Never Drink & Drive or even let the driver or rider be impaired by drugs or alcohol. (Refer Image. 3)
28. Always keep a Safe Distance from the vehicle ahead.
29. Dressing in black may be a bad idea when you want to walk at night. To be seen & be safe, it is important that vehicle drivers notice you. Wear light coloured clothes or reflective material when walking or biking

at night. Whereas wear bright clothes during the day.

30. Always be punctual and disciplined to avoid speeding and rash driving.

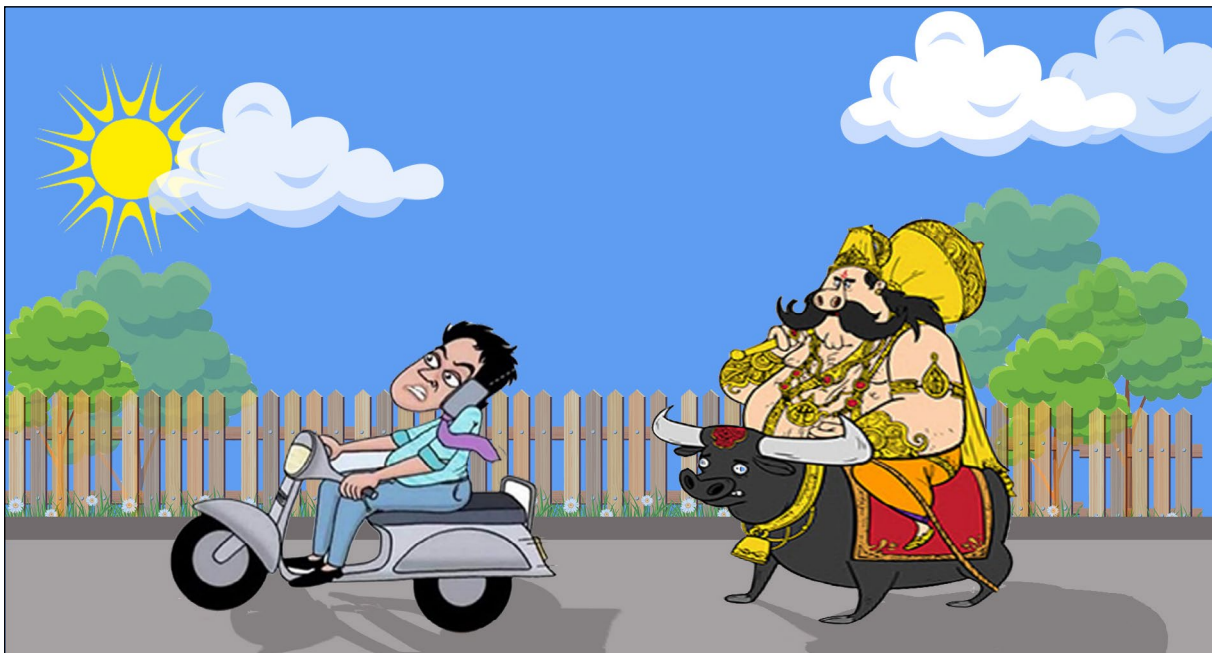
31. Ride only in marked taxis, and try to ride in taxis that have seat belts.

32. Avoid riding in overcrowded, overweight, or top-heavy buses.

A cohesive focussed targeted multi-pronged approach having safer infrastructure facilities (including design, engineering design and construction of quality roads - highways, flyovers, etc. & periodic maintenance of the

same), law enforcement, rendering emergency services post-crash care with hi-tech medical facilities at large & much closer from accident prone areas (for treating the casualties within the golden period) and affordable too all are the need of the hour for implementing Road Safety Measures at the institutional level for a positive desired aimed change within set timelines and for a better tomorrow.

Accidents never happen with a prior Notice. It's all about the choices we make. Make the best choice by choosing SAFETY as a precautionary measure. ■



Mr. Shreyash Sarmalkar,  
Architect, Interior & Textile Designer,  
Project Management & Safety Professional



# First Responder

by John Montes

DISPATCHES FROM THE EMERGENCY RESPONDER COMMUNITY



## FACING A SCOURGE OF DISTRACTED DRIVERS, FIRST RESPONDERS HAVE A NEW REASON TO MAKE ROADWAY SAFETY A PRIORITY

In February, the International Association of Fire Chiefs (IAFC) urged fire officials to immediately issue a safety and survival alert in their departments. Personnel were asked to postpone nonemergency tasks for several days to focus on survival training when working on roadways.

The alert, issued by the IAFC's Safety, Health and Survival Section in cooperation with the Emergency Responder Safety Institute, was created in part to remember the firefighters who had been killed when they or the apparatus they were driving were struck by other vehicles. Responders being struck on our roadways has become an almost daily occurrence, the groups said.

Roadway hazards are a problem for all first responders. With the prevalence of texting and other uses of smart devices, drivers are more distracted than ever, and pose an even greater threat to first responders on roadways trying to do their jobs. According to NFPA's research and data team, 10 firefighters were struck and killed by vehicles in 2017, a large uptick from the 30-year annual average of four deaths. In addition, eight firefighters died in vehicle crashes in 2017. Similar spikes have occurred in both law enforcement and non-fire-based EMS, according to industry data. Historically, both groups average about four deaths in roadside accidents annually, but in 2017 six law enforcement officers and eight non-fire-based EMS providers were killed after being struck by vehicles.

A lot has changed with roadway safety since my time in the field. In the early 2000s, when I worked as a private EMS provider in the Boston area, wearing high-visibility garments on roadways was becoming the norm, but we lacked safety measures in other areas. For instance, where and how we parked our emergency vehicles was more a matter of convenience for us and for traffic flow than it was a safety precaution—I rarely thought about roadway safety when I positioned my ambulance.

My eyes were opened when I joined an EMS crew in California in 2011. Agencies there strictly followed roadway safety protocols, in large part because a culture of safety had been nurtured for generations. Instead of prioritizing traffic flow and keeping the roadway as open as possible, emergency vehicles were used to block lanes or were angled to deflect impacts away from responders, creating distance and impact zones around event locations. Vehicle positioning and safety markers were utilized for roadway incidents because responder safety, not the convenience of motorists, was the first priority. These practices should be the norm across the world, but too many agencies still don't do them properly.

There are other steps we can take to improve roadway safety for responders. Department leaders need to encourage personnel to review vital safety procedures and practice them in the field daily. The IAFC's safety bulletin, the Federal Highway Administration's traffic incident management tool, and its National Traffic Incident Management Responder Training Program are all valuable resources. There are also many NFPA resources, including NFPA 1500, Standard on Fire Department Occupational Safety, Health, and Wellness Program, which includes an updated chapter on traffic incident management requiring training for roadway-incident safety. In addition, NFPA 1091, Standard for Traffic Control Incident Management Personnel Professional Qualifications, identifies the minimum job performance requirements for traffic incident management personnel.

Finally, we need to address the consolidated tracking of all emergency response line-of-duty deaths, which is currently uneven at best. More data collection across the board will assist NFPA and others develop additional effective safety strategies to help prevent another spike in preventable roadside deaths. ■

*"Published with kind permission from NFPA"*

# WATER MIST

## HOW DOES IT WORK? WHAT CAN IT PROTECT?

An important narrative from International Water Mist Association (IWMA)

Punctuated with specific inputs from Ms. Bettina McDowell



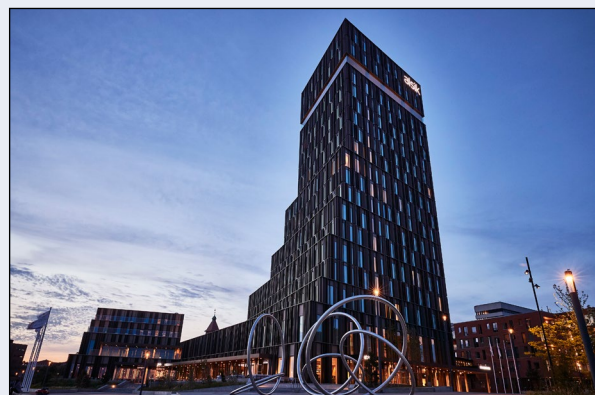
Fixed water mist firefighting systems are well established and have been in use for nearly 30 years in their present stage of technology. However, there are still people involved in fire protection who are unaware of the many beneficial advantages this technology has to offer.

To explain how water mist works is easy. A fire needs three elements to add up to a fire triangle: the combustible material or fuel, the heat and the oxygen. Water mist reduces two of these elements: the heat and the oxygen. It interacts with the flames in a way that suffocates the fire. If a fire breaks out water mist attacks it by spraying water through nozzles especially designed for this purpose. The higher the system pressure, the smaller the droplets. And the smaller the droplets the larger the overall surface.

The mist is pulled into the fire where the droplets – due to the heat – evaporate and due to the enormous increase in the volume of the water droplets (as they evaporate) the oxygen is displaced at the source of the fire and the fire is extinguished. During this process, the oxygen content around the fire (and only there) is below 21 %. It is in fact this low oxygen content that suffocates the fire. This is called the local inerting effect. Further away from the fire, the oxygen content

is above 21 % which means that there is enough oxygen available for humans. A bonus is the additional cooling effect that prevents re-ignition. Yet another bonus is the fact that water mist is a performance-based technology and a system is always a bespoke system based on a real-scale fire test.

When it comes to the definition of the different kinds of water mist systems two approaches exist. NFPA 750 and FM 5560 argue that there are three categories, VdS 3188 suggest that there are merely two.



The NFPA 750 and FM 5560 approach says: low pressure systems work with a pressure below 12.5 bar (or approx. 181 psi). High-pressure systems work



with a pressure above 35 bar (or approx. 507 psi). Systems ranging between these two figures are defined as intermediate pressure systems.

The VdS guidelines 3188, on the other hand, divides the technology into merely two categories: low pressure systems that remain below 16 bar (or approx. 232 psi) and high-pressure systems that exceed 16 bar.

Once the first question is out of the way the next question usually is: where can water mist be applied? The answer to this question is just as easy: water mist should not be used when burning metals, e.g. magnesium, are involved. And some people are of the opinion that water mist is not suitable for warehouses and storage areas. But what other applications are there? The answer: tunnels, offices, car parks, saunas, hospitals, care homes, atriums, churches, museums, archives, libraries, cable tunnels, power stations, machinery spaces, escalators, data centres, hotels, aircraft hangars, car parks, schools, high-rise buildings. When it comes to the marine and offshore sector, water mist protects amongst others passenger ferries, container ships and oil rigs. Over the years, speakers at the International Water Mist Conference have talked about the protection of concert halls, train stations, the printing and food industry, historical buildings, government buildings, department stores, laboratories. Water mist systems have been installed in the Hungarian Parliament in Budapest, the Clock Tower in Mecca, the “Elbphilharmonie” in Hamburg, Germany, and La Scala in Milan, Italy, as well as St. Patrick’s Cathedral in New York and the Eurotunnel which connects the UK to the continent. They protect old wooden churches in Scandinavia and modern buildings made from brick, glass and steel all over the world. Even NASA have chosen water mist. The International Space Station (ISS) is equipped with portable water mist extinguishers.

As less water is needed the technology is a good choice for regions like the Middle East where water is scarce and therefore precious. Using less water also reduces the danger of extensive water damage. In case of a fire, valuable paintings in museums must of course be protected from fire but also from water which makes clear: Water mist is not a compromise but the solution.

Less water also makes water mist systems cost effective. Apart from that, water mist systems are reliable, environmentally friendly, they do not cause ozone depletion and they do not contribute to global warming. \*Ms. Bettina McDowell, IWMA’s general manager explains: “On top of this, they do not harm

human lives. They can be activated directly unlike gaseous systems, there is no fear factor. People do not have to be evacuated from hospitals, care homes, residential buildings, workplaces before activating the system.”



Furthermore, water mist systems give architects the freedom to be creative. Especially high-pressure systems are often applied in special purposes and unusual hazards. The core is the engineering approach. There are no prescriptive standards. The solution lies in the performance-based approach for completely new and out of the ordinary projects. And these kinds of projects exist all over the world. There is for example the Credit Valley Hospital in Mississauga, Canada, or the Isala Clinics in Zwolle, The Netherlands, where high-pressure water mist systems have been installed. And with high-pressure water mist this usually incorporates the development and production of special components. On the other hand, there are low pressure water mist systems. \*Bettina opines further “With low pressure water mist it is possible to use more conventional system components which can be sourced locally and which in the end reduces costs and saves time.”

Apart from fixed water mist systems there are also mobile systems such as lances or nails and of course, as already mentioned, fire extinguishers. With lances and nails, one field of action is the marine sector. In 2013, it has become mandatory to carry water mist lances on board of new container ships constructed after 1st January 2016.

The forum which unites manufacturers, distributors, insurance companies, independent institutes, installers, architects, fire consultants etc. is the International Water Mist Association (IWMA). The organization was founded on 4th April 1998. The first two years were a phase of initiation during which the then few members merely worked together on joint research projects and established a first working group which collected

existing guidelines for standardization worldwide. It was a time of casual exchange of thoughts and ideas, but as time went on the plans became more palpable.

At the beginning of the century, things started moving and in April 2001 the 1st International Water Mist Conference (IWMC) was organized in cooperation with Factory Mutual Research from the USA, the Norwegian Fire Research Laboratory SINTEF (now RISE Norway), the Swedish Testing and Research Institute SP (now RISE Sweden) and the Finish Institute VTT.

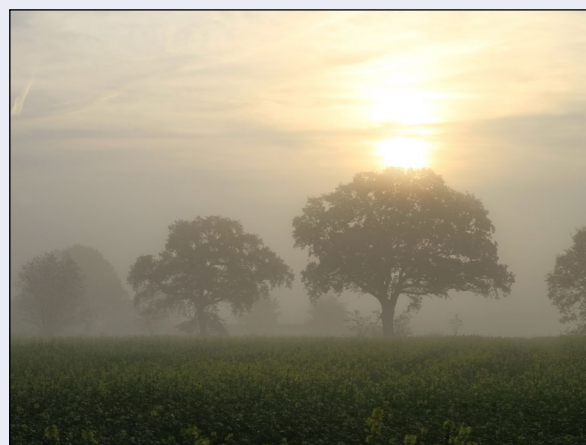
**\*Ms. McDowell** goes on to mention that

“The purpose of the event, which took place in Vienna, Austria, was to introduce IWMA and to put water mist on the map of the firefighting market. The aim was also to show that the technology is not an auxiliary technology but a sufficient and completely independent method to extinguish fires or to keep them under control.”

At first, water mist and consequently IWMA were met with scepticism and even open opposition. Many things have changed since then mainly due to learning processes and turning points. One of these turning points was a research project sponsored and organized by IWMA on “The Scaling of Fire Suppression Characteristics in Machinery Spaces” carried out by SINTEF on behalf of IMO (International Maritime Organization). The presentation of the outcome at IMO in London in February 2009 was a key event for IWMA. Another important milestone was and still is the opportunity to support the European Committee for Standardization, thus to contribute to the CEN-guidelines. Nowadays, IWMA hold a liaison with CEN and also support the European Commission (Expert Group on Marine Safety). With IMO IWMA hold a consultative status. IWMA representatives also support amongst others the work on NFPA 750, NFPA 25 and the VdS guideline 3188.

All this has happened and is still happening over one hundred years after the idea about smaller droplets fighting fires first emerged. Back then, in 1880, the US-American company F.E. Myers manufactured a backpack system incorporating a lance to fight small forest fires. Nearly 40 years ago, the ban of halon paved the way for water mist. Halon left a gap that

water mist filled. Another event which levelled the way was a devastating fire on the “Scandinavian Star” in 1990 that killed 158 people, nearly 50 per cent of all passengers on board. The fire led to an improvement of IMO’s fire safety requirements and installation guidelines as well as to the development of fire test procedures for alternative sprinkler systems. There had already been a good deal of development on high-pressure water mist in Sweden since 1975. Two objectives had been the protection of hotels rooms and passenger cabins. After the fire on the Scandinavian Star the results of this work were presented and resulted in the founding of the first two water mist companies: Ultra Fog and shortly after that of Marioff. Both companies are members of IWMA.



The two Swedish researchers that have developed water mist as we know it today are Krister Giselsson and Mats Rosander wrote in their book ‘Fundamentals of Fire’: “In future, a liquid, e.g. water, atomized to drops smaller than powder grains will be the most important extinguishing agent against flames indoors, so-called fine mist.”

Water mist has come a long way. Many sprinkler companies have added water mist to their portfolio. The next big step will be the publication of the European Standard EN 14972 which can also be adopted and used in countries outside of Europe.

The next International Water Mist Conference (edition 21) will take place on 21st and 22nd April 2021 in Warsaw, Poland.

*”Published with kind permission from IWMA”*



Bettina McDowell, General Manger - International Water Mist Association (IWMA)

Bettina has been working for IWMA since 2012 and determines – together with the IWMA board of directors – the overall strategy of the organization. Many of her articles on water mist have been published in journals worldwide. Bettina also gives presentations to educate interested parties about the advantages of the water mist technology.

# GAS GEYSER SYNDROME: A CAUSE THAT NEEDS TO BE ADDRESSED IMMEDIATELY

- Dr. S.S. Rathod, Ms. Manaswi Rananavare, Ms. Mansi Makwana, Ms. Ria Shah,  
Sardar Patel Institute of Technology, Mumbai

**Preface:** This article is a modest attempt to bring into limelight all probable hazardous characteristics associated with gas geysers especially to be used for domestic purpose and keeping in mind the safety and security of the user. It also lists out different aspects of Gas Geyser related health Syndrome and how technological advancements can be used to provide effective solutions to this problem.

## Introduction

There exists a dire necessity to create awareness on Carbon monoxide poisoning as well as associated neurological diseases arising out of accidental leak of vapors during the use of Gas based Geysers (water heaters) in bathrooms. They could prove to be fatal also as reported in recent times.

A resident of Borivali died on January 5, 2020. Prior to that (a week ago), he suffered severe neurological symptoms due to inhalation of carbon monoxide emanating from the gas geyser in the bathroom. Another case was found where a 25yr old person was rushed to the Emergency Room at Fortis Hospital, Mulund after experiencing dizziness and blackouts, Dr Sandeep Gore, Consultant and Head, Department of Emergency Medicine, Fortis Hospital, Mulund, signals that there has been a rise in cases of similar symptoms and nature, which is known as the 'Gas Geyser Syndrome'

## What exactly is Gas Geyser Syndrome?

Liquefied petroleum gas (LPG) geysers are used very frequently for heating water in domestic holds. LPG gas is a combination of butane and propane. During the combustion of LPG gas, carbon dioxide and water are formed as byproducts. When the geyser is placed in an environment where there is no proper ventilation and the supply of oxygen is exiguous, incomplete combustion of gases inside the chamber occurs that releases hazardous carbon monoxide(CO).

## Symptoms:

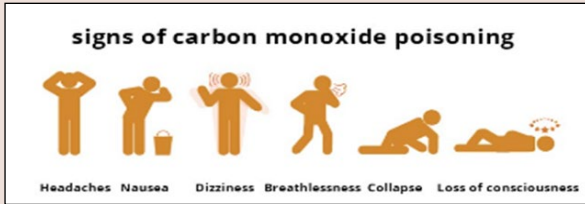
The symptoms include headache, nausea and fatigue. At higher concentration of CO, unconsciousness and death are possible.

What percentage of CO is harmful?

PPM	EFFECTS
0-125	No major symptoms observed.
200	Dizziness, nausea, fatigue & headache
400	Crucial 3 hours.
800	Unconscious, death within 2-3 hours.
1600	Death within 1-2 hours.
6400	Death within 30 mins.
12800	Death within 1-3 mins.

If a person feels unconscious, then First Aid: The victims should be immediately brought to a well-ventilated place and immediately seek medical help.





**Main Hazards of Uncontrolled fire involving LPG & PNG**

**1. Fire caused due to Leakage**

Fire from accidental leakage from gas tubes is one of the leading causes of fire accidents.

What causes leakage of LPG?

Punctured or worn out tubes connecting LPG bottle and the stove. To overcome this condition one must use the right and standard types of tubes as recommended by the service provider. The expiry date of the tube should also be known and if the date has appeared they should... immediately. Normally a distinctive odor is added to the gas for easy identification (by blending ethyl mercaptan) Also, if there is a hissing sound near a pipeline, it could as well be indicative of gas leakage. When one is out of the house, the gas cylinders should be turned off to prevent accidental leakage by closing all the valves that supply gas. This prevents accumulation of gas in your house in your absence.

**2. Asphyxiation:**

Prolonged exposure to natural gas may lead to carbon monoxide poisoning and eventually death by asphyxiation. If there is a yellow, large and unsteady flame in your gas burner or if there is a pungent odour (of mercaptan) when you are using the gas, then there could be a presence of carbon monoxide. In such cases, contact your supplier immediately. It is also advisable to install carbon monoxide indicators in your kitchen

**3. No proper usage or poor handling**

If combustible materials like wood, paper, oil etc., are available nearby, LPG related fires can spread faster. LPG should be stored in upright position on the ground level also two cylinders also should not be stored in the same place.

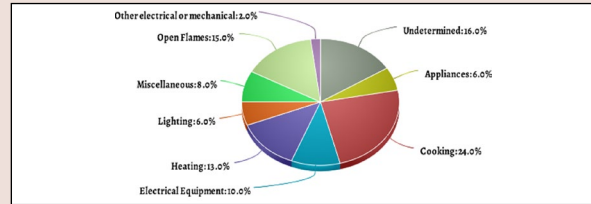


**Inevitable ignition sources around bath rooms**

Along with the gas geyser which already has the electrical igniter relevant ignition source, there are other inevitable ignition sources in the bathroom such as Exhaust fan, Hair

dryer, light switches etc.

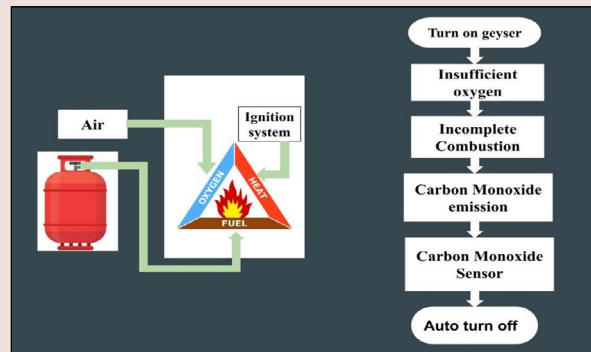
The exhaust fans are very common in bathrooms nowadays which helps in proper air circulation in the bathroom. An exhaust fan relies on air moving through the fan to cool it down. When the blades of exhaust fans are clogged with dust and lint, the air which is flowing through the fan is blocked. Due to this reason the motor of the exhaust fan becomes hot. If this hot fan motor comes in contact with lint and dust, there is a fire hazard.



**Safety tips:**

Clean dust and lint from the fan with a vacuum cleaner at least once a year.

- Run the fan for only short periods, and never leave it on overnight or while no one is home.
- Check the fan periodically to ensure that the blades spin when the motor is running.



*System Block Diagram*

**How Technology can be used to overcome this cause?**

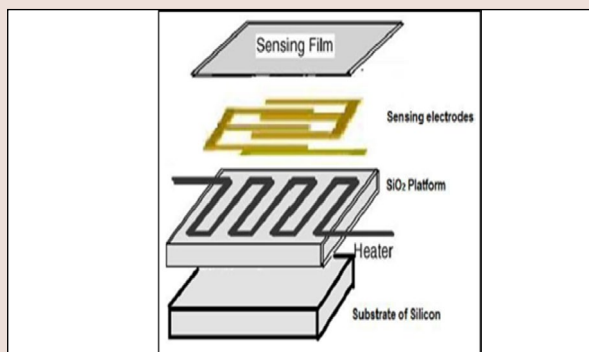
Industrial automation has seen vast enhancements in technologies and automated systems have become an integral part of our lives making it easier and better. As an effective solution to this problem, we are doing research on designing and development of micro sensing devices that are cost-effective and efficient in these environments and can detect even the slightest change in the concentration of gas. Also, there is a need for an automated system that will sense the level of carbon monoxide emitted by the gas geyser and raise an alarm and then automatically turn off the geyser when the carbon monoxide level goes beyond some threshold, this will ensure the safety of the user if such a condition occurs.

**Why Microfluidic Sensor?**

Micro-sensors have lower manufacturing costs (mass-production, fewer materials) and wider exploitation of IC technology (integration) lower weight greater portability). Microfluidic Sensor comprises of a microchannel with a micro heater.

This micro-heater is needed for proper detection of desired

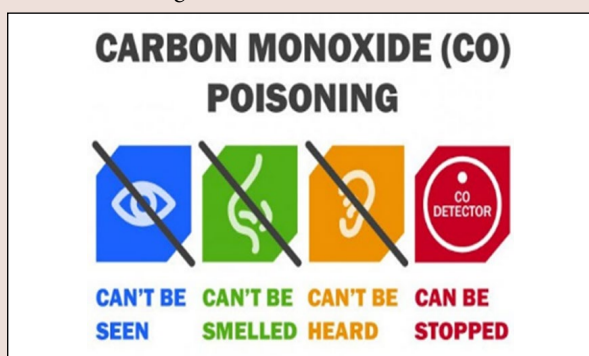
gases and it is a very crucial component of the microfluidic gas sensor. These micro heaters have the ability to generate very high temperatures at low power consumption and they also exhibit fast response time. Because of all the advantages and functionalities, microfluidic sensors are best suited for the detection of gases and provide better sensitivity and selectivity.



*The layers of Metal Oxide based Gas Sensor*

In any metal oxide based gas sensor structure there are five main layers as shown in fig 2.

Substrate is the base on which the remaining 4 layers are mounted. The material of the substrate should be such that it can survive in harsh conditions. Insulating platform is to avoid direct damage to the substrate due to the high temperature generated from the heating of the micro heater. Micro heater is a critical component of metal oxide gas sensors to detect the desired gas properly. The electrodes are used to measure the resistance when a gas is present on the sensitive coating. Sensing Layer is the main component as it will sense the presence of respective gases in its surrounding.



*Source: HealthyChildren.org*

The structure and working mechanism of the microfluidic sensor makes it the best choice for sensing hazardous gases as for a very less input voltage we can attain high temperature.

Also, microfluidic sensors have many advantages such as high selectivity and sensitivity. They are miniature in size due to which the power consumption is very less.

#### **Need for installing Microfluidic CO Sensors**

The rise in the number of cases due to carbon monoxide poisoning has increased the need for the formulation of various health and safety regulations across the globe. The adaption of gas sensors in domestic and industrial areas

would provide additional security and ensure the safety of the user. These are the major factors driving the growth of gas sensors and hence there is a need for upgradation by installing gas sensors which can detect CO released due to incomplete combustion of gases and sense the concentration of gas so that the geyser is turned off as soon the level of CO reaches the permissible limit.

#### **Growth of the Global Gas Sensor Market in the Upcoming Years**

The global gas sensor market size was valued at USD 2.19 billion in 2019 and is expected to expand at a CAGR of 8.3% from 2020 to 2027. According to the report by Mordor Intelligence, India accounted for about 16% of the Asia-Pacific market in 2014, and is expected to be the third largest segment by the end of the forecast period, mainly due to advancements in sensor technologies in the region. Many industries use gas sensors and alarms for their process-related works. The medical sector also plays a major role as there is an increasing use of gas sensors in breath analysis to check the health of patients. In residential areas also the demand for real time monitoring of air quality and pollution has become high. This has directly impacted the increase in demand for gas sensors. In industries where automation has reached its peak, sensors that are wireless could be a great product as they can detect the gas and the updates are obtained in real time.

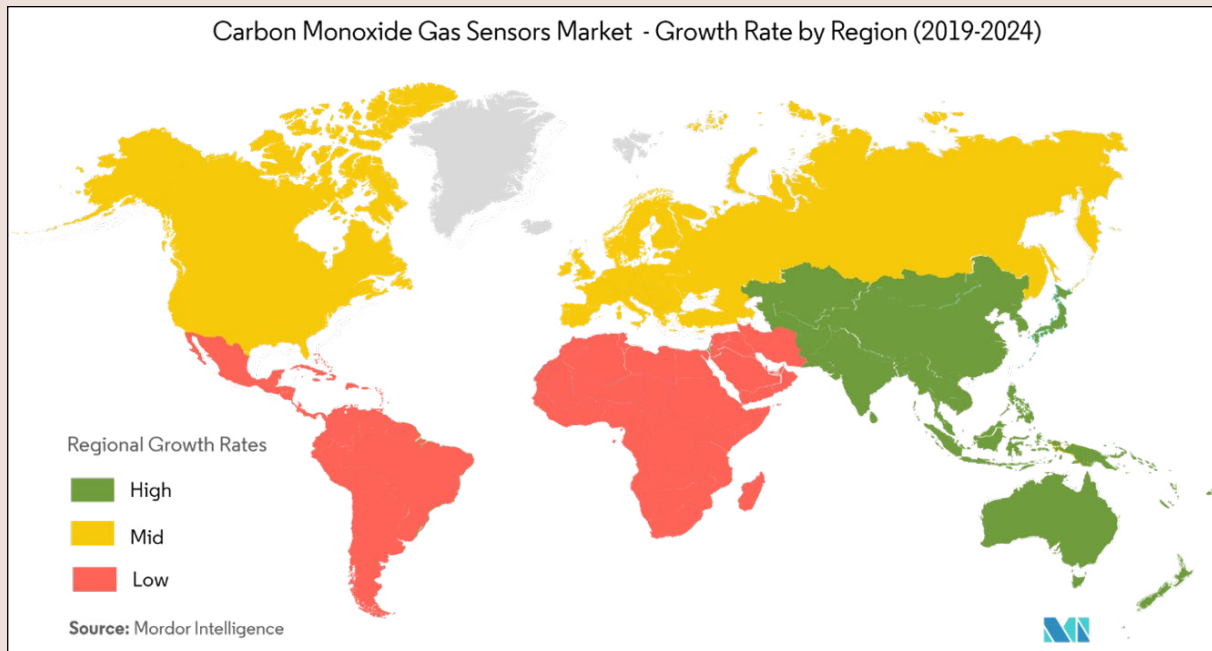
#### **Safety Guidelines:**

- The Gas geyser should be placed in a properly ventilated area.
- Ensure there are no ignition sources nearby.
- Always check the LPG pipeline connection to the geyser, if you smell the gas then open the doors and windows immediately for the ventilation purpose.
- Get your gas geyser checked on a regular basis.
- Switch off the gas geyser when not required.
- Install the Geyser from Authorized service center.

#### **Conclusion:**

We at S.P.I.T wish to undertake some sincere effort to develop appropriate automated systems. In this context we also love to dwell upon those areas where safety related concerns are addressed on priority. This could be by way of containing the hazards and controlling the risks that are associated with them in any walk of life. It shall be equally important offer right type of safeguards with proper guidelines. They must also be such that any one could be able to understand them and tempted apply considering their simplicity and ease of practice. While doing so the main purpose for which they are created is duly achieved - safety and security of the user.

Also, we plan to expand the scope of research work on better design and development of technologies. Like the microfluidic sensors covered in this article. In sequel, this would not only help provide an effective solution to a real - life problem but also support the MAKE IN INDIA initiative that would boost our economy. ■■■



Source: Mordor Intelligence

## *Install CO Sensors, before it's too late...*

### About Project Mentor:



Dr. Surendra Rathod is a professor in the Electronics Engineering Department at Sardar Patel Institute of Technology, Mumbai. He has 22 years of teaching experience. He is the FSAI student development chair of the FSAI Mumbai Chapter. He is actively involved in many social and FSAI activities.

### About Team Members:



Ms. Manaswi Rananavare is a final year Electronics Engineering student at Sardar Patel Institute of Technology, Mumbai. She is an active FSAI Student member since 2018 and currently holds the position of Hospitality Head in FSAI, S.P.I.T Student Chapter. She is a multitasker and very particular about completing any work assigned to her. In her spare time, she is fond of reading novels.



Ms. Ria Shah is a Final Year Electronics Engineering Student at Sardar Patel Institute of Technology, Mumbai. She is keen on learning new technologies and has strong management skills. She was the Vice-Chairperson of Women In Engineering IEEE SPIT for the year 2019-20. Apart from academics, she is allured by the world of novels and is also passionate about painting.



Ms. Mansi Makwana is a Final Year Electronics Engineering Student at Sardar Patel Institute of Technology, Mumbai. During the course of Engineering, she has worked on various projects that help solve real life problems. She likes to keep herself updated about emerging trends in technology and spends any of her free time sketching and enhancing her creativity.



# THE SILENT KILLER

## Gas Geysers: Critical Safety Information One Needs to Know



**Ar. Shreyash Sarmalkar**  
Architect, Interior & Textile Designer,  
Project Management & Safety Professional

Rural or urban, consumers are always looking out for a great bargain & means of operational cost savers. With the ever increasing tariff rates, electrical power supply, an alternative cheaper option could be installing a gas geysers. However there is a darker side of it in case adequate safeguards are not available.. Incidents of poisoning from gas geyser in bathrooms have occurred over the past few years and in recent times too. Risk management, switching over to alternate sources & its adoption is low. Also lack of knowledge of repercussions by use of this system is also a matter of serious concern. It's time for us to take cognizance of the fact that installing gas geysers saves money. However, the story does not seem to end for the good if safety factors are not adequately taken care of. Life is of paramount importance which money cannot substitute ever.

It's been an alarming few years with the many gas leakage incidences that have occurred in urban areas due to use of LPG run gas geysers inside bathrooms with minimal or no ventilation. Creating awareness of safety and need for educating consumers about the hazards of gas geyser is a must. Unexpected serious consequences result from small events when safety is ignored. Knowledge is power. Let us arm ourselves with the know-how of few facts with regard to gas geysers, factors favouring them, safety- preventive measures & first aid remedies to be taken. One of the mottos in every ones life, should aim at creating a larger impact towards awareness creation on safety & security among common man.

### Few facts one should know:

- How does a gas geyser work?

The gas geyser has a simple mechanism to heat water for bathing purposes – the LPG gas outlet is connected to an enclosed burner which heats the inlet water, giving hot water

in few minutes.

- Is gas geyser safe to use in bathroom?

Gas geyser can be quite dangerous, can even be fatal if not maintained properly. If the gas is not burning properly lot of poisonous vapors can

be generated inside confined space, spread around, cause suffocation to the bather. Adequate floor area, and cross ventilation are vital factors. If not the situation can become riskier.

- Are gas geysers economical?

Gas Geysers are very cost and energy efficient because they consume gas only when hot water is actually being used. Thus they pay for themselves in a relatively short span of time & Helps in cost reduction overall household budget.

- Does service provider permits consumers to connect Gas Geyser?

An official told TOI that piped gas connection is only for kitchen use, the scope of which extends from the meter to the hot-plate/ hob. "Just like a domestic LPG cylinder cannot be used to run geysers, piped natural gas provided for kitchens at subsidized or cheaper rates cannot be used to run geysers," the official said. Source: TOI, May 29, 2015

### Factors which work in favour of Gas Geysers:

- Consumers in urban locations prefer gas geysers as they are operational irrespective of power failure.
- During rainy season or even when cloudy the solar heaters are ineffective, thereby attracting consumers to use gas geysers.
- They prove to be an economic alternative to heating water as compared to geysers run on electric supply.
- According to research, Bangalore is the city where highest number of gas geysers are sold. Perhaps it is because of the weather, which makes a hot water bath in the morning indispensable. Source: Citizen Matters (Bangalore) January 19, 2009

It is need of the time to make common man aware of the hazards associated with the instant gas geysers can cause due to leakage of gas or due to poor ventilation systems in the bathrooms as well as less cross sectional area around bath rooms in urban areas.



#### Consequences incase of gas leakage:

- Using gas geysers connected to Liquefied Petroleum Gas (LPG) cylinders. The gas inside is a combination of butane and propane. Usually on combustion, it produces carbon dioxide and water. But when placed inside a stuffy bathroom, with little oxygen, it results in release of some amount of carbon monoxide also. This leads to lack of oxygen supply to the body and an increased intake of carbon monoxide.
- Altering the temperature frequently while the geyser is on can lead to incomplete combustion thus emitting poisonous gases and it may cause severe gas poisoning including carbon monoxide poisoning that may lead one to death.
- In case of Liquefied Petroleum Gas leakage, Propane or Butane poisoning causes paralysis that is reversible in many cases but with timely rescue, evacuation and medical aid, recovery is possible.
- In case of excessive amount of leakage of these gases, the symptoms start by double vision,

blurred visual fields, headache and dizziness that are later followed by sudden progressive paralysis. If the patient is not rescued in time, he or she can go into autonomic dysreflexia causing sudden increase in heart rate and blood pressure. Dysreflexia is a life threatening condition and is considered as medical emergency.

- In case of gas leakage coupled with longer period of stay inside in a bathroom which is also not well ventilated, Carbon dioxide gas is retained in the body and Oxygen concentration levels go down to dangerous levels which can lead to even permanent brain disability (paralysis) or even death.
- Inhaling of carbon monoxide causes heart rhythm disorders, fits, loss of vision, brain swelling and multi-organ failure if the victim is not given medical aid in time. Source: International, The News, Islamabad. January 09, 2017. Excerpts from Dr. Muhammad Haroon's interview.
- The chances of such incidents are higher, when a gas geyser is installed in a Confined location like the bathroom.

Gas geyser syndrome has emerged as a health hazard in India in the last decade, with many hospitals reporting cases of patients with neurological disorders. "We get a cases every month," said a doctor attached to a public hospital. Neurologist Dr. Pravina Shah said gas geysers should ideally be placed outside bathrooms, which by and large smaller in most of the Mumbai residences in Mumbai. "Safety devices need to be used while using gas geysers or care must be taken to ensure good ventilation as carbon dioxide and CO get accumulated in the bathroom," she said. Source: TOI, January 12, 2020.

#### Safety & Preventive measures if Gas Geyser is already installed & switching over to alternate source may take time:

Urban area bathroom sizes are smaller, thereby one should not install gas geysers inside but in a well ventilated area. Ideally one should promptly avoid use of gas geysers connected by LPG or PNG. However incase of some constraints the following preventive measures to be taken. These precautions can decrease the incidence, mortality, and morbidity rates due to accidental CO poisoning.

- Shift the facility immediately outside the bathroom in a well ventilated space with a hose of hot water going inside the bathroom.
- It is desirable not to keep the device switched on with bath room door latched from inside.

It is ok with a caution board “bath room is engaged; please do not disturb” After all it is your private residence- not a public facility are poorly ventilated.

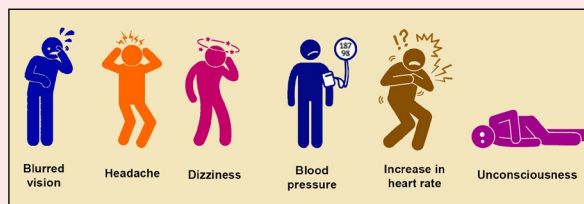
- An ideal & best approach is to let the bucket fill with hot water, turn off the geyser switch, and only then close the door.
- If the gas is not burning properly lot of poisonous vapours can be generated and accumulated within the bathroom. This can cause suffocation bather. Therefore user needs to keep a vigil on the colour of the flame in the gas geyser unit (desirable light blue is safer being indicative of complete combustion).
- Need of safety devices (especially leak detector instrument) is highly desirable despite LPG and CNG are being blended with a foul smelling “Mercaptan” This is because some people could be insensitive to the odour especially because any higher concentration level can cause giddiness affecting the nasal sensitivity.
- Geyser operational switch to be installed at accessible height so that it can be operated easily.
- Proper periodic maintenance of gas geyser is a must. The burner and the whole unit needs to be checked regularly for any leaks or blocks.
- Proper ventilation is a must. Window should be kept open/ exhaust fan should be operational so that there is adequate circulation of air.
- Adequate time gap should be maintained between two people taking bath one after the other. The gas geyser to be switched off when not in use to avoid increase in the carbon monoxide density, which may be fatal to the last member going for bath.

#### First Aid Remedies:

- First & foremost please check if the victim

has sustained any injuries before you move them.

- Such victim should be removed immediately from the source of incident to open air or well ventilated area.
- If the source of leakage is identifiable, on priority one needs to turn it off without causing any harm to yourself.
- Do not attempt any mouth-to-mouth resuscitation even if the person appears to be unconscious. It could prove dangerous.
- Water or food should not be given to such victims for at least 12 to 24 hours.
- Please do not do any home remedies, waste of time in such a case can risk the patient's recovery chances.
- Without any delay such victim should be taken to the nearest hospital as early as possible rather on war footing.
- Some of the victims need artificial assisted breathing by means of mechanical ventilator so a victim must be moved to emergency department immediately. Source: International, The News, Islamabad. January 09, 2017. Excerpts from Dr. Muhammad Haroon's interview.



Although utmost care is taken in putting this article together with research one needs to read more, and suggest readers to follow your doctor's advice in case an untoward incident occurs. My message for all is "SAFETY FIRST". As a responsible and alert citizen, we all need to be vigilant & more responsible in our actions & decisions. Stay Safe. ■





# FIRE IN A CHEMICAL PROCESSING PLANT

(Case study Column)

- Mr. N.N. Parekh

There was a fire in one plant, handling flammable liquids. In the late evening of the first day of investigation, director of the company was shocked to hear the preliminary findings. He in fact confessed to the investigation team that most of the time a rosy picture is presented by shop level (supervisors and above) to higher management that everything is ok with reg. to safety!! Based on that, a false sense of security gets ingrained into our mindset that “just because some untoward incident does not occur or get reported, the safety system works very well on its own! Accordingly, in this case, he himself became a victim of this mythical illusion.

Let us see how the story unfolded.

### First hand information

- Fire in on operational rea – GF of building handling flammable liquids (Refer fig.1)
- Fire occurrence Time 17:25 (as per Plant employees)
- 17:45 (As per FIR Details)
- Time by which it got totally extinguished 19:30 Hrs (i.e, tenders returned to Fire station)

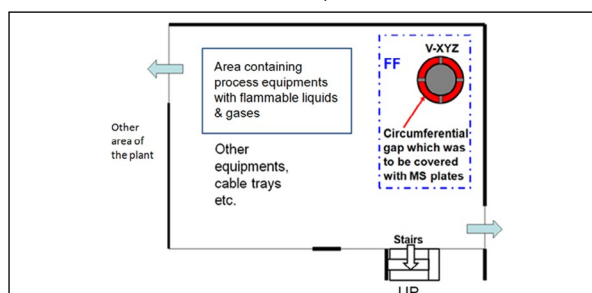


Fig. 1 G.F. Plan of the building

- Equipment involved (Two tanks, one column and other smaller vessels – all containing fuels and situated at higher elevation – building top)
- In the morning hours, one Hot Work Permit was issued for cutting & welding jobs around the Vessel V- XYZ, hence this section of plant was kept under shutdown. The job was on the first floor. (Refer Fig.2)

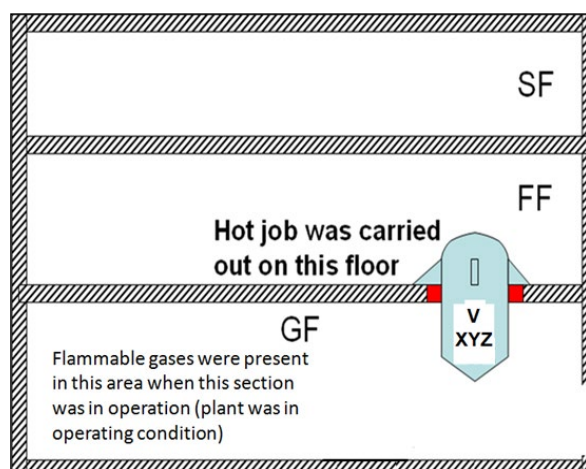


Fig.2 C.S. side view of the GF, FF & SF of the building  
Only showing physical location of V-XYZ

- There was a fire due to ignition of flammable gases, which had caused burn injuries on the face, hands/ forearms and legs/feet of a helper who was spraying water on the GF area below V-XYZ.
- Victim was under treatment in the hospital for about 10 days. Fire was in the GF area handling flammable liquids. On GF, Electrical/Instrument



cables (running on the trays), lighting fixtures etc. of the same floor were also badly affected. FRP roofing on the terrace got totally damaged. This was due to the upward spread of flames from GF which got re-fueled by hexane (solvent) vapors present around the tanks on the terrace. Couple of process Columns on GF (where fire had started) were also damaged.

#### 4.0 Sequence of Events leading to the incident

(a) **0930 Hrs.** - Hot job permit was requisitioned (by Mechanical Maintenance wing) for the job to be carried out on the FF of Separation Area Building. (Refer Fig.1 & 2 showing the plan and elevation.)

The hot job was for gas cutting and welding around the vessel V- XYZ on the first floor. Major portion of the vessel is below the flooring of first floor. There is a circumferential gap of around 150 mm between RCC floor and the vessel. This is kept for stuffing insulation material. Circular sector shape plates (popularly known as “cutout plates”) were to seal the gap (between vessel and floor), from all four sides of the vessel.

(b) **0945 Hrs.** – On first floor, a hydrocarbon recovery section was in operation. Hence, this was stopped. Also, Hexane column manhole and valve were also open. Valve was closed, manhole boxed up and bolts were tightened.

- Using a ‘combustible gas leak detector, surrounding area was checked. The concentration was in safe level (Zero % of Lower flammable limit). All vent valves around ground floor were closed.

- Column bottom valve also was now closed. As told by Dy. Manager –EHS, very clear instruction was written by him in the Hot job permit that,

- \* No plant /Recovery operation will be done.

- \* Solvent transfer not to be carried out in any mode

- \* Column and tanks valves not to be opened during the hot job

- \* The permit was valid up to 1730 Hrs.

The above remarks though reported to have been conveyed verbally also could not be verified because none of the copies or original of permit were available.

- During the hot job, water spraying on the ground floor was arranged on continuous basis. One contract worker was doing this job. He did this, all along when the fire was razing in the area.

- Below the vessel V-XYZ (on which welding job was to be done, a PE tarpaulin (not asbestos cloth) sheet was tied to contain sparks falling from first floor side; however sealing was inadequate.

- After ensuring no HC in the area, permit was finally released by Safety Department.

This was signed by Shift-In-Charge accepting the conditions mentioned on the permit. (no physical verification was possible in absence of HW permit.)

(c) **1130 Hrs.** - The contractor received the permit and started the job after getting power supply. Job continued all through the afternoon till late evening.

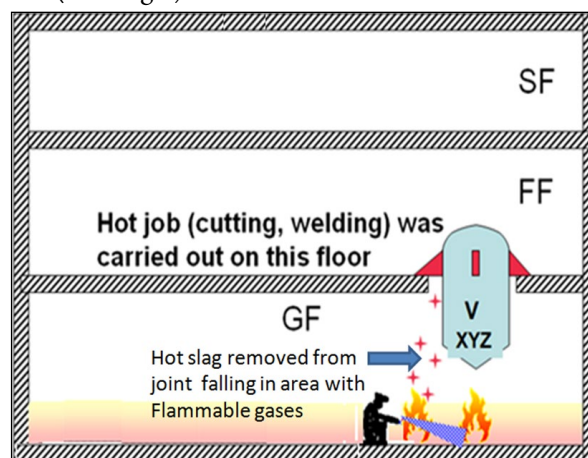
(d) **1600 Hrs.** – Major job of plate cutting was over. But

(as stated by the contractor), the discussions for permit renewal (up to 1830 hrs) was being envisaged because tack welding work was still pending. By 1700 hrs major cutting / welding job was over and spot welding job was started.

(e) **1730 Hrs.** - Last job of spot welding was done. One person was spraying water continuously on the ground floor.

(f) **1745 Hrs.**- As reported by some persons present in that area, they heard heavy metallic sound (chattering type) was heard and the very next moment, unexpected event took place....

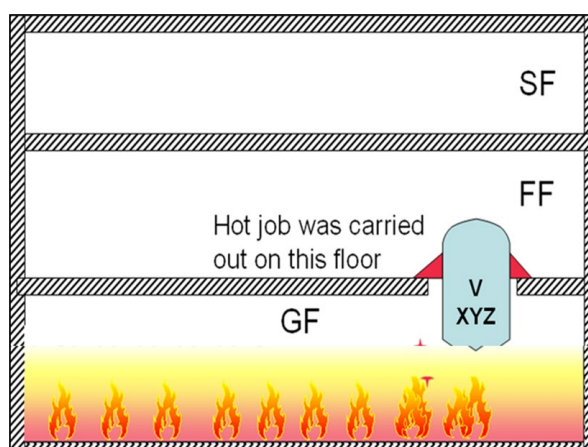
(g) All of a sudden, in the area where the person was spraying water (below V-XYZ), was engulfed in a flash of fire. (Refer fig-3).



*Fig.3 Initiation of fire*

(h) The flash caused sudden burn injury on his face directed towards V-XYZ with water pipe held by left hand, fire on his face with direct flame contact. He also sustained injuries on forearms and front side of both forelegs. ((In fact, he also turned to be the first witness) Within seconds, the victim dropped the water hose and ran away towards the exit that was visible on his right hand side. He was shouting heavily due to burn injury. He was hospitalized immediately.

(g) In the hall, the only other person who was present was the fireman, He was standing on the rear side (quite far from the causal worker). On seeing the fire, he rushed back and fled through the nearest exit.



*Fig.4 Fire spreads on entire ground floor*

As shown in fig.4, now the fire had spread on entire floor area causing damage to equipment, cables etc. in the hall.  
(h) Fire station was immediately contacted by security staff.  
(I) In the GF hall, piping insulation, electric & instrument cables (on the overhead cable trays), light fittings etc., were also damaged. Some of the process equipment and elect. equipment had turned black (partially or fully, depending the location/size) due to heavy smoke in GF area. FRP roofing between this building & adjoining building was heavily damaged by fire. This was due to burning hexane (which had come out from one of the tanks on the terrace).

### 5.0 Investigation

(a) Starting from Hot work permit, checking of documents was commenced.

When asked about the original HWP (given to contractor), it was told that it got burnt in the fire!!!!!! As reported, permit was valid up to 1730 Hrs only. When asked for Control Room copy of Hot Work Permit (HWP), it was told that HWP was issued after taking all safety steps. But, their copy also had got burnt out in fire !!!!

(b) Dy. Manager –EHS, told that he had written very clear instructions {mentioned in 4(b)} in HWP. This statement could not be cross checked, as neither original nor copy, was available!!!

(c) The fireman had told that during Forenoon spell there was no odor of vapor (on GF). But around 1530 hrs, (before fire), it was distinctly felt all around this zone. When fire occurred, the fireman was on GF. He stated that while trying to run out through exit, he felt severe radiation heat on back.

(d) When asked why he had not reported about the odor, the reply was 'during any routine operational days, it used to smell like this and hence he did not feel like highlighting about the same. Others working in the plant area also agreed with his opinion.

(e) All these happenings indicated that fire initiated from the area below V-XYZ.

(f) Where from the flammable material had come there when all valves were closed? First shift and second field shift log sheets were checked.

It was revealed from these log sheets that second shift operators (on duty in other part of the same building) had opened the valves, because these valves were not chained/ locked. These were no caution tag (DO NOT OPERATE) on these valves. Shift change time was 1300 hrs.

(g) Statements of operators in B shift were also taken. Log sheets were also checked.

Both these showed that There as no Lockout/Tagout (LOTO) system or tag display being followed opened the valves when they had come on duty at 1300 hrs.

### 6.0 Arranging Jig-Saw-Puzzle

(a) On the major portion of the ground floor, heavy

smell of hydrocarbon (Hexane) was felt by all persons in the GF area (including fireman) in the afternoon hours. It must have occurred after opening the vent valves of the tanks (in that area) in the afternoon. Other valves of Hexane were also opened. This was also ascertained from the operation log sheet of 15th Nov '10. (Fuel- 1st element)

(b) Oxygen (2nd element) – was already present air continuously.

1st & 2nd elements - i.e., availability of fuel and formulation of fuel-air mixture at flammable concentration levels - ready to commence Chain reaction was already set.

(c) Heat or Spark / (3rd element) of sufficient energy to ignite the mixture – There could be any and/or combination of the two possibilities like:

- Falling of either Hot cutting globules or welding slags being removed by hammering on the welded portions.

- Welding or grinding spark fell from FF to GF, causing fire due to hexane in the atmosphere.

### 7.0 Causes:

(a) Spark or hot slag fell in the area containing Heptane & Air mixture within flammable range.

(b) The reason of vapor cloud was- B shift operators had opened the valves which were closed in the morning while issuing HWP.

(c) Before fire, around 1530 hrs when fireman had visited the area, there was a distinct odor of hydro carbon in this area. It was 'Take it easy' habit. i.e., even when situation looked abnormal. Reason could be that majority of personnel get accustomed to abnormality and do nothing about – "familiarity breeding contempt".

(d) The whole PTWS was "suspect to foolproof"; e.g., not adhering to the system of locking the valve (and provide CAUTION tag), when the HWP was issued.

(e) Lack of supervision for production wing. After coming in B shift, some supervisor should have visited the site, where HWP has been issued in previous shift

### 8.0 Root causes

(a) Complacency of the senior level management that, all safety procedures/systems are followed by the personnel working in the plant & control room.

(b) Loose ends in the Hot Work Permit system and its observance

(c) Poor field supervision of production personnel

(d) Poor communication among shift personnel in the field

(e) Absence of internal audit system.

(f) Lack of training to Operational, Maintenance and service personnel like fire fighters who are on "standby"



## 9.0 Recommendations:

- 1.0 Training to Operation & Maintenance personnel
- 2.0 Training of Fire / Safety personnel
- 3.0 Regular checks of plant equipment condition and taking corrective actions
- 4.0 Establish foolproof Hot Work Permit system and Electrical isolation system to be ensured by both issuer and receiver.
- 5.0 No agency or person must be allowed to work without required permit.
- 6.0 Random Safety Audits by senior officials.

## Author's inputs

1.0 For working in the plants handling flammable materials, lot of safety needs to be observed. There are lot of systems set to avoid fire and explosion in such plants. Many times, people working in the plant become complacent, when there is no accident. Tendency of the people in the plant, gradually changes to danger zone. Observing the set procedures for safe working is neglected or sidelined. During statutory audits, it should be observed by auditor and should be clearly spelt out. Such laxity in observing the set procedures like Hot Work Permit system, LOTO permit system etc. can cause enormous damage. ■■■



Mr. N.N. Parekh is an Electrical graduate (of 1965) from Birla Engineering College, Vallabh Vidyanagar. After working for Surat Electricity Co. Ltd for seven years, he joined IPCL, Vadodara in 1973, as Asst Engr(E). He worked in various capacities in polymer plants, Utilities, Gas Turbine & Steam turbine Power Plants, Projects, Engineering Services Dept, etc. He retired in 2004 as Vice President in RIL, Vadodara Div. Before retirement, he was head of Electrical Department for nine years.

He visited France, USA, UK, Switzerland, Spain, Iran etc. on various assignments. During 1993-94, he was on deputation (for 16 months) to Warri Refinery, Nigeria for technical back up.

As Electrical Safety Consultant, in last sixteen years, he has carried out more than one hundred twenty five Electrical Safety Audits. He has conducted more than 500 programs on various topics of electrical safety, Elect. maintenance, energy saving etc. in various industries and for PSUs like ONGC, GAIL, NTPC, IOC, BPCL, HPCL,....etc. and many other industries, shopping malls, cinema theatres, hospitals etc.

# USE OF TECHNOLOGY BY FIRE DEPARTMENT

- Mr. Vaibhav Sharma



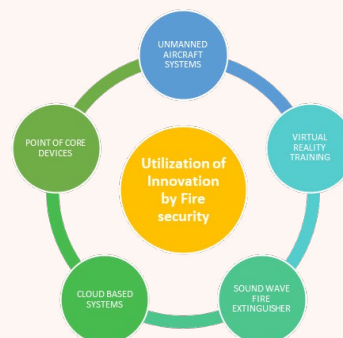
Firefighting has since a long time ago advanced from the crude long periods of pouring water onto a fire to soak seething blazes. Today the things are changing very rapidly as the firefighters rely on advanced technologies to extinguish. The quicker, the smarter technologies along with the most brilliant innovations make the fire security at another level where they are delivering services in the different areas. The essentials for fire wellbeing are from stocking the correct douser to realizing the fire classes however innovative advances expand the fundamentals, making firefighting quicker, simpler and more effective.

As of late, firefighters have embraced new strategies to extinguish flames and spare lives. Firefighting methods separating into a couple of classes as preemptive, suppressive and endurance. Preemptive technologies work to forestall a fire before they begin. Suppressive advances are procedures employed due to douse flames which have just started consuming. At long last, in the most pessimistic scenario circumstances, endurance innovations work to spare firemen and the regular people from the most exceedingly awful the showdown of flames, smoke and debris.

The fire assurance network has come to see fire identification and caution frameworks. The fire

protection engineers, fire officials, and building proprietors have increased another gratefulness for the cost-effective savvy job that fire alarm systems play in shielding buildings and their inhabitants from flames.

The viability of these frameworks is likewise expanded due to the competency of individuals engaged in the location and caution business. The level of competence of the individual who configures, introduce and keep up these frameworks and the authorities who inspects them to improve. Just as significant are the impacts on singular and in work explicit framework structure.



There are some truly astonishing innovations being created to battle fires in the 21st century. These advances make the most of sound waves, video and the detention technology to keep all of us more secure when a fire strike.

### Unmanned Aircraft Systems:

Unmanned Aircraft Systems technology is one of the strongest growths in the last decade. The aeronautical vehicles are associated with numerous mishaps during backwoods fire dousing and other putting out fire's exercises originating a high number of casualties every year. However, the utilization of unpiloted or the remote-controlled vehicles can assist with lessening the hazard additionally to the rest of the personnel associated with putting out fires exercises so the cost is another unmistakable bit of leeway. Every aircraft is getting outfitted with every single essential sensor and gadgets for the missions for which it has been planned. The utilization of little UAS rather than elite UAS is additionally advantageous as far as expenses and to lessen the potential harm if there should arise an occurrence of a mishap.

The perception of all the UAS is intertwined for empowering the forest fire monitoring with higher spatial and fleeting goals which can fundamentally improve security and productivity of putting out fires. Besides, this decentralized methodology has a pertinent point of interest as far as adaptability and robustness which are very exceptionally fascinating in forest fire fascinating scenarios, possibly risky and prone to disturbances and unpredictable changes. When the administrative edge of UAS is built up with this their utilization will explore an extraordinary blast improving viability and lessening costs in numerous applications and sector include putting out fires.

### Virtual reality training:

While numerous individuals despite everything consider virtual reality (VR) as a mechanism which is mainly for amusement as it is changing business with one of its useful capacities preparing. Virtual reality (VR) innovation in the fire administration training empowers the firemen to simulate actual scenarios as they're likely to encounter. The strategy can feature a lot of VR goggles that let users experience mimicked crises with a 360-degree see while utilizing the VR is preparing for firemen is a genuinely new idea as it's now being used. VR systems can be attached to a computer so indispensable measurements such as reaction time can be estimated.



"VR will never look genuine until they figure out how to place some dirt in it"  
-Vaibhav Sharma

Here is a portion of the key advantages of utilizing the virtual reality preparing for firemen where the augmented reality has many benefits for some kinds of preparing.

### • Benign training environment:

One of the key preferences of VR for the fire preparing is that it makes a reenacted crisis without putting trainees in any genuine peril. Firemen can get a feeling of being in a practical circumstance and test their abilities without incurring any risk.

### • Reduction of cost of training:

Early models of VR frameworks will, in general, be very expensive. However, as the innovation propels, it might turn out to be very progressively affordable. On account of firefighting, VR preparing like other web-based preparing items can diminish the fuel costs and the other expenses. It's conceivable that in the future VR preparing will be accessible to firemen in areas all around the globe.

### Sound wave fire quencher:

Fire security is a major worry in the greater part of the nations since it makes substantial harm in their environmental factors including people by imagination, smoke as well as gas that delivered from the fire. As a result, improving the efficiency of convenient and portable quenchers is of growing importance. With a little scope sound wave quenching bench, the dousing capacity of specific frequencies of sound waves are recognized and the response of the fire stature is observed and analysed.

The fire structure changes with aggravations due to low-frequency sound waves and quenches at an effective frequency. With a fixed frequency the flame height decreases with the sound pressure level where it would be utilized as prevention if the size of the fire is minimal. The fire stature diminishes indistinguishably with the unsettling influence of acoustic waves where the sound wave technology will be the most effective and helpful tool for the firefighters in fire security.

### Cloud-based systems:

Ordinary upkeep of the fire alarm frameworks and the convenient reaction to glitches is a piece of each installer's administration guarantee. In any case, looking after, maintaining, adjusting and checking the fire security hardware can demonstrate time and cost-escalated especially across different areas. Presently a complete cloud-based helps in to shield the frameworks remotely for improved support, quicker reaction times and significant cost savings. Each fire security installer and the frameworks integrator know the situation where a significant client requires the critical fix of alarm framework however, the expert is trapped in rush hour gridlock on the way to the site. Long stretches of significant work time go in gridlock traffic.



Additionally, when the specialist shows up and reviews the framework, he understands that the fix requires a critical part where it left-back at the workplace. These accurate capacities are at the core of an IP- based solution for remote diagnostics and remote maintenance of fire alarm systems. The cloud-based solution unlocks the various benefits of different levels:

- Rapid remote troubleshooting and robotized cautions increase service levels and consumer loyalty.
- Integration specialists can bolster experts remotely where they diminish the general sending costs and permits the organization to scale their business offering.
- Professionals can use framework status data to get ready for service visits optimally visit as it fosters up the efficiency.

These cloud-based systems assist with furnishing framework integrators and their clients with faultless remote help and improved execution while streamlining the day to day operations.

#### Point of care devices:

An alarm framework has various devices which are cooperating to recognize and warn the individuals through the visual and audio appliances when smoke, fire or different crisis are available. These alerts might be enacted consequently from smoke alarms and warmth indicators or may likewise be initiated via the manual alarm actuation gadgets such as manual call points or pull situations. Modern commercial alarm devices are perplexing and continually changing as innovation develops as this helps in to assist with the bettering see the entirety of the segments that go into alarm frameworks as in result devices guards each one

of us against a fire crisis. Most alarm frameworks are comprised of the accompanying devices:

#### • Alert Initiating Device:

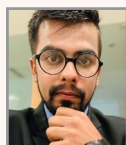
The alert initiating devices is the thing that illuminates the alarm frameworks that there is a type of risk or fire crisis. These gadgets can be manually notified to everyone where the systems installed via pull or gas stations yet they can likewise be programmed by using smoke alarms, fore indicators or in pipe indicators. Most business alarm frameworks have incorporated an assortment of initiating devices spaced throughout the building with a blend of manual and automatic gadgets.

#### • Alarm Notification Device:

The alarm warning gadget is ostensibly the most significant piece of your alarm framework as this is the thing that gets activated by the starting gadget and what makes the real commotions such as bells, horns or tolls when a fire crisis happens. Alarm notification devices notify the individuals who are inside the structure just for crisis workforce when an occasion is in progress when everything is all clear and when an upkeep issue is recognized.

#### Conclusion:

In rundown, technology in fire alarm systems keeps on advancing- and the technology developments are empowering costs savings and different advantages for both the manufacturing units and the end-user. Furthermore, with distant diagnostics driving more productivity in administration and machine self-testing leads to decreasing tenant disturbances where the end clients also understand the 'addressable-advantage'.It's very a success win situation driven by significant headways in the technology of fire system.

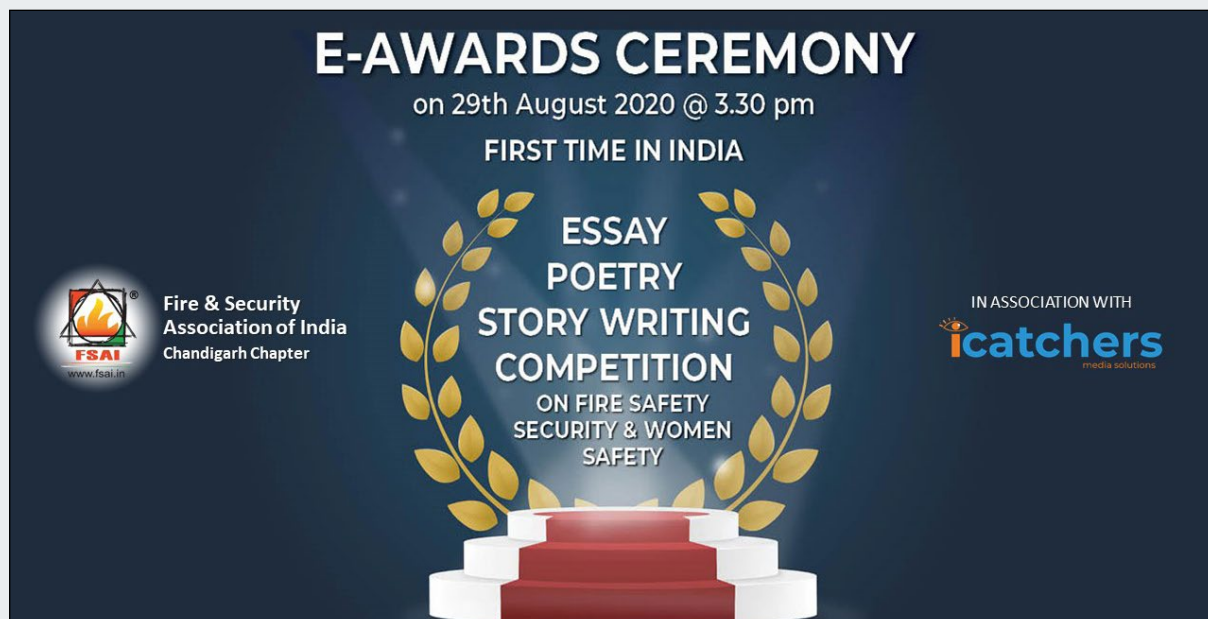


Mr Vaibhav Sharma is an education and career writer, where he works to educate professionals and students by grooming in their leadership, career, and self-education skills. He is a post-graduate from Guru Gobind Singh Indraprastha University, New Delhi. Mr Vaibhav holds a post-graduate degree in "Marketing" in combination with "International Marketing". He holds a Bachelors degree in Business Administration. When not hard at work, he enjoys reading, writing, and listening to music. He always tries to appraise his readers to "treat your day as your last day" and he loves to accept challenges as it comes in his life as he always said: "You won't be perfect through your entire life".

Find Vaibhav Sharma on his website: [www.suvasvaibhav.com](http://www.suvasvaibhav.com), Facebook handles [@vaibhavblogs](https://www.facebook.com/vaibhavblogs) and twitter page: [@vs376988](https://twitter.com/vs376988).

# NATIONAL LEVEL ESSAY WRITING CONTEST ORGANIZED BY FSAI CHANDIGARH CHAPTER

## PRIZE WINNING ARTICLES ON FIRE/LIFE SAFETY & SECURITY



### SECURITY CONCERNS

- Ms. Samandeep Kaur

**”Man is Born Free But Everywhere he is in chains”**  
This statement, made by Jean Jacques Rousseau, the famous philosopher of revolutionary France, is enough to move this essay forward.

Human life starts from mother’s womb where there is total safety with no worries attached. But when the vehicle of life begins to roll, the journey of anxiety in human life also begins. These worries come through many guises in different walks of life. Facing them wisely and valiantly is the real art life.

Living in society, man is not only chained to political ideologies, he is also over powered by religious dogmas, materialism, obligations and relationships that he can’t break from. These and many other concerns are pervasive in every chapter of the book of life. One of these is security concerns that bear witness to existence.

Here, the principal term ‘Security Concerns’ has different facets such as those associated with Family Personal, Group, Social, National, Global, Faith/Culture, Cyber etc., These forms affect different people’s lives in different ways.

Personal Security Concerns mean those related to prevention of illness and other unforeseen accidents. If we talk about the illness, in present times of Corona

Pandemic, individuals are suffering from internal and external sources (that is psychological and physical). Although the percentage of external sources is twenty and the remaining eighty percent is self-generated, it still gives rise to many cerebral imbalances such as anxiety, fear, depression, panic, loneliness, hopelessness, aggression, low self-esteem, insomnia and sometimes it even leads to death. On the other hand, at personal level, human beings are prone to think about accidents where there is a loss of assets against theft and burglary.

Family Security incorporates concern of protection plans for family members from unforeseen events. These concerns begin from parents’ concern about their children, their best upbringing and well-being, education, question of honour, marriages and finally culminating at separation from children.

Man is considered as a ‘Social and Intellectual animal’. He cannot live in isolation. He has to meet others and interact with them during the entire course of his life. With regard to being a social creature, social security concerns play a pivotal role in one’s life. Social Security includes all facilities such as wholesale and retail trade, watchman work, domestic services, management services, education, health services and modern services such as information technology. In today’s context, the elders of the country are anxious to maintain their social life and meet their daily needs. As a result, health is a big concern for the elderly people. In addition, acid attacks on women are

a matter of concern to civilized society. Maintaining child protection and equality in society is also becoming a matter of concern.

Group Security, on the one hand, refers to security concerns of a specific group as of Trade Unions or Labour Unions. These are the organisations formed by employees themselves who work for their common interest. These groups have to face problems of being paid. And their interests are trampled by politicians from time to time. On the other hand, this refers to the security concerns of minorities. Those who always see their existence in danger, be it the Muslim Community in India or the Sikh Community in Pakistan. They live at the mercy of God and majorities.

Let's shed some light on - What is culture before worrying about Cultural Security? Culture is a philosophy that tells us about the way of life. And it is the sum of all the rituals performed from birth to death. Now, when it comes to cultural security concerns, there are many factors that undermine it. As far as Punjabi Culture is concerned, we are getting rid of the rich heritage of many gifts. The end of the stories told by grandparents to grandchildren, the rise of provocation in singing, adoption of western culture indiscriminately is undermining Cultural Capitalism. As a result, values are disappearing from life and emptiness is on the rise.

In this era of technology, everyone is living within the realm of technology. From relationships to the commercial market, we rely on different technical gadgets and applications. Technology serves as the backbone of life. Everyone's access to mobile has brought humans closer to the world of internet explorer. But the closer it gets to us, the more it eliminates the monopoly on personal possessions. People have to enter passwords to give z-category security to their personal accounts. Yet they know that there is a mediator in all their dealings on network who can give a great punishment for a small mistake. Every days news of Cyber Crime lowers the morale of people. As recently in June 2020, Australian Prime Minister, Scott Morrison warns the Australians that someone is breaking into their privacy and thus they are under cyber attack. These invisible people cum viruses are pandemic in itself which are the concern of today's life.

The next concern is the security of a country. Attacks on a country's sovereignty destroy the peace of its citizens. The recent attack on India's border by China has hurt the country's independence and a matter of concern for the government. Concerns about internal security arise when the secrets of the home are demolished. Such as the demand of minority

segregation is worrisome for a nation state.

Topics that come under Global Security concerns include elements that undermine the security of the globe. Certainly, this security is of paramount importance to the well-being of humanity because the religion of humanity is higher than all religions. Just as the emergence of Coronavirus causes a lot of other worries such as mental, physical, economic or social anxieties on global stage. Moreover, its victims are not one or two but immense humanity living in different parts of the world.

In addition, depletion of the Ozone layer, increasing terrorism, global warming, environmental degradation and many other topics are worrying. Those which are making us realize that,

"we are in the same storm,  
but not in the same boat."

Finally, a question arises....Where is the mind free from fear, threat, poverty, weakness and danger? Is there any safe place or no where.....? ■■■■■



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## SAFE INDIA

- Ar. Karthick K.A.

### Happiness is safety.

Every living being finds them safe when they live happily. In addition, every human being dreams about living happily in a safe and secure environment but it mostly it turns out to be the other way. (We are not sure whether other living beings also get dreams like us !!

Before moving out to a new place we have a list of choices to fit into the locality. Here it is being observed that we tend to make specific choices pertaining to aspects like surroundings, amenities, resource availability and resources availability . In this process we mostly miss out a point about the people likely to be in neighborhood. Think for a while whether it is also not a segment to be considered as part of safe and happy living.

While we look back, people used to feel safe within their family and among the community, but now there is no safety within the community itself (why at times even in family!). So they depend on the gadgets, which they assume to provide them safety, but the attempts becomes a failure.



Every happening of human cannot always be materialized. It has people involved. Similarly a secured environment can also be created only with people not by materialistic things.

In my perspective people are the only solutions for creating and secured environment. The qualities that are to be incorporated in the built environment include

- Social neighboring
- Positive thinking
- Care, affection
- Healthy environment for future
- Gender education
- Gathering and celebrations

**SOCIAL NEIGHBOURING**

It is a natural connect between people with their neighbors irrespective of known or unknown. We always tend to talk to our neighbor socially. This leads to a certain percentage of confidence in us to feel safe. Whether we like or not them or not, we give them a smile, whenever we see them. The more we believe, the better bondage develops.

Fortunately or unfortunately we start respecting them initially, as that is a part of our culture. The first stage of social neighboring is always to welcome or greet your neighbor with a smile irrespective of what situation you are currently in. Never judge your neighbors though your ideologies don't match with theirs. Treat them with all due respect, understand their living, share their emotions, be a moral support, care them, love them unconditionally and most importantly never give up on them. All this eventually turn into strongest bond which will make you feel strong,



happy and safe.

Social neighboring is a basic nature of every huzman being which we fail to practice. This was prevailing in the earlier days, where we know our neighbors completely. Neighbors know neighbors. Say for instance, where they travel the most? When do they sleep? Who will be back home on what time? So if anything unusual happens to the neighbor the first person to come in support will be their neighbors. The neighbors watch and care their neighbors unknowingly without any expectations. This

established a unsaid security system.

This should be brought in practice by us. We might feel how is this going to make a safe environment? When human feel that the neighborhood is safe, they tend to get social with neighbor, try to follow their practice. Eventually the small change in people will be watched by the others and they start following them. There is no negative factor in this practice. Thus everyone who loves to be with you follow the same. This will lead to safe happy and secured Environment irrespective of your own community.

**Positive thinking**

“You reap what you sow”

Always a thoughtful work keeps us energetic. The act of Positive thinking is one such thing which has to be made the art of living. This has to be inculcated from the very beginning. This always keeps you energized; you will never feel low or sad. Consequently you will always be filled with happiness and eventually start



being safe.

We come across all phases of life when we live but these changes by time. This can be easily overcome by positive thinking.

Though every bit of our happenings are negative, when we have a power to change every negative factor into a positive. There lies the true happiness; this eventually will increase the value among you. This will eventually lead to a safe environment. This has to be developed by us right within. Eventually the next generation launches the live only with happiness among themselves.

**Care and affection**

It is the easy and costly thing that every human can give to any living being in this universe. When you start practicing social

neighboring, positive thinking is just another common practice that will eventually develop around you. This is the most required parity of



every human being that tends to develop a respect themselves and others. This practice creates an identity to every human which fits them responsibility to love and care the loved ones irrespective of known or unknown.

**Creating healthy environment**

Human safety needs a healthy environment. People tend to have a hectic schedule of life during the schooling , work and even to do household things

which intent turn out to be an concrete jungle where you don't even bother to have a breathing space for yourself. So we always tend to look for a place which is environment friendly.

The following factors can make a living more sustainable.

- Do not waste water try to store and recycle it
- Have practice of gardening- terrace gardening can an option.
- Plant as much as trees possible.
- Avoid chemical based liquids for cleaning.
- Do not waste food
- Disposal of waste properly by segregating.
- Keep your surrounding always clean.

If all the above is being followed people will love to live in such an environment. Social neighboring would happen with positive thinking where love and care multiplies, create beautiful environment for all.



**Gender education**

I usually nurture a debate within myself whether relevant education actually helps people to live safe and happy I always find an answer to be a NO. Children always tend to get everything by lack of knowledge in respecting their opposite gender.

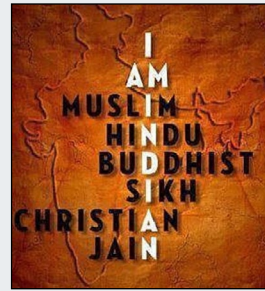


This is the first thing everyone should be taught at lower age itself. Every kid's first love is mom and dad, opposite gender of

what they are. The love towards them is unconditional and respectful. When this is been properly in planted in the mind making them to understand that every other human being is just another person like their mum or dad you have to be loved unconditionally no matter what, where, and how they are to be respected. Sex education is not only teaching but a biological factor but also the value of every living thing on the basis of why it has to be respected and why it has to be taken care off.

**Festival gathering and celebration**

We have diverse kinds of festival that is being celebrated around us. We like to avail leave for all the festivals but we tend to celebrate only our festival which is wrong practice of living. Though festivals are religion based still it is being celebrated by humans who have being created with



the same skin, bone, flesh and blood forming their body.

We need to overcome this and start respecting other festival religion and celebration as it is and this would definitely break the longest barrier between the neighbors and make

them feel themselves as one. Thereby every festival becomes everyone's and everyday seems to be a celebration. Then you start feeling that oneness in true love true religion or caste.



**Conclusion**

Thus I would like to conclude with a quote by an old Tamil poet.

To us all towns are our own, everyone our kin,  
 Life's good comes not from others' gifts, nor ill,  
 Pains and pain's relief are from within,  
 Death's no new thing, nor do our bosoms thrill  
 When joyous life seems like a luscious draught.  
 When grieved, we patient suffer; for, we deem  
 This much-praised life of ours a fragile raft  
 Borne down the waters of some mountain stream  
 That o'er huge boulders roaring seeks the plain  
 Tho' storms with lightning's flash from darkened skies.  
 Descend, the raft goes on as fates ordain.  
 Thus have we seen in visions of the wise!  
 We marvel not at the greatness of the great;  
 Still less despise we men of low estate.

**Kaniyan Poongundran, Purananuru - 192**

Thus only HUMANS can make a safe and secured environment for happy living



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 While Perusing post graduation, he got passionately associated number of field work and gained good experience as part of the study projects which were integral to the curriculum.  
 Currently he Karthick is an entrepreneur cum co-founder and principal architect of an organization titled "FOURSPACES" which is a cut above conventional architect business and serving the society as a platform for a strongly built chain link between technology. In nut shell, rooted in architecture, the author is also an Explorer, Entrepreneur and prolific writer always willing to share his views to society at large.

## WOMEN SECURITY

- Sakhi Diwale

### Welcome to 21st century...!!!

India has done a lot of progress in sectors of health, education, sports, aerospace, technology and many more. India has reached Mars and has been standing alone fearlessly in front of the whole world during this time of pandemic as well. Our country has done great progress in the last 15-20 years. A drastic change had happened in everyone's life in terms of education, health, etc. there are many philosophies, facts of which India has given solutions to the whole world. But in this 21st century as well one question still remains unanswered and that is "Why women are not safe?"

Women in India who constitute a significant segment of Indian society, are becoming the most vulnerable section as far as their safety and security is concerned. When we check our newsfeeds, we come across many headlines reporting cases of sexual assault/abuse, molestation, violence, harassment, rapes, trafficking, ill treatment at homes, etc., in many areas. And yes, we cannot ignore the pan India surveys which reveal that the No. of cases of domestic violence have increased rapidly in this pandemic period. What does all this indicate? This certainly implies that there has been an increasing trend of such sexual overdrives in the present generation.

When we think of the root cause of all these insecurities which women face, we came to know that the very basic root or the system which was responsible for all this was, "The Male Dominant Society" prevailing long ago in India about which everyone is well conversant. In this system, men had been given the feeling of chauvinism in every aspect of their acts & thoughts. Indian men have thus perceived themselves as physically and mentally superior to counter parts. Indian women also have accepted to consider males a cut above them., the society preferred male child over female. 'No Girl Child Policy' has been practised since years in India. Also, women have always got lesser importance as compared to men in every sector it may be education, health, defence, etc.

But then some social reformers like Raja Ram Mohan Roy, Mahatma Jyotiba Phule stood in support of women. They banned the 'Sati Pratha' and tried to educate women. Gradually women, they developed themselves as it is said that, "Where there is a will, there is a way". The women had a courage to learn, to succeed and thus they got a way to live their life and got an opportunity to reach new milestones. Now in this 21st century, we can really be proud of women in India, as they have not restricted themselves in any field and has proved and came out with excellent results. We have great examples of them like Mary

Kom, Kalpana Chawla, Sushma Swaraj, Indira Gandhi, Nirmala Sitaraman, Saina Nehwal and many more. They all have really brought glory to the nation.

But alas...!!! Along with all this glory, name & fame to these women we have a lot many examples where women have not been given what she actually deserves. Then it may be the Nirbhaya case or the Hyderabad case... Indians cannot forget such incidents as they these portray the actual situation within the society. And so, it becomes an important aspect in the 21st century. Women are climbing new heights but at the same time they possess a fear complex or sense of insecurity within. Could be at work place, on job, during shopping. Everywhere she has a small sense of doubt in her mind that whether it is safe to go out or not? These cases of humiliation have not only restricted to outside; at own homes as well!. They cannot easily trust anyone and forced to think 100 times before interacting with any person. The girls don't feel safe at their schools, colleges, or coaching classes, Cyber bullying is yet another menace on increase. Thus, women safety & security plays an important role in the overall development of the Indian society.

It is very well said that women safety is important, development of women is important but whether all these things actually receive due consideration when it comes to treating women with respect? Every now and then we hear some or the other news, lot of candle marches etc., after every incident but what is the use of all these things when we just can't give justice by punishing the criminal as soon as possible? Many a cases has been figured out effectively well till now in India. Why we cannot come to a conclusion? Our Indian Judiciary System have not been lacking in answering these questions and then this becomes the main reason why such molestation, rape cases etc., are increasing day by day. India is a country where women is worshipped like goddess but at the same time on the other hand she cannot get the utmost respect which she deserves. Many schemes are launched by the Government that "Beti Bachao, Beti Padhao". But what after she has educated herself and then she just can't step out of the house due to the fear and due to the illiterate behaviour of some men? What is the use of all the name, fame, glory, education, success where she bears a sense of insecurity within her....

The illiterate men in the society still feel that women are meant to do household work. They always want women to stay within limits. The society imposes judgemental about the clothes she must wear; the voice tone she has to maintain, the way she needs to move around.... They are not the real indicators to be assigned for better security. It totally depends



on the cultural reformation in society and people's behavioural pattern and overall perception among menfolk. If they consider women safety as too casual, then there is a sudden need to demolish these rusted mindsets. But if the men perceive women as equal partners rather than competitors, then India's progress won't stop for years, thereby men and women both jointly and collectively facilitate in India's progress.

Also, when it comes to being secure, women should train themselves in a way that no one should even try to disrespect them. They must become "AtmaNirbhar" – self-reliant – and should independently deal with such cruel minds prevailing in the society. Women should make herself strong enough to stand tall in any case of storm, tsunami created by the illogical mindset prevailing in the society. So women safety is primarily with the women only and she should independently excel in life while balancing all the other things. Also, at the same time, it is the duty of every individual to respect women in whichever form you can & should support them in every moment of her life. ■■■



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## WOMEN SAFETY & SECURITY

- Ms. Sana Paul

Here is one of the best among many famous quotes from the Shri. Pandit Jawaharlal Nehru  
"The awakening efforts by a woman can wake up a whole society.  
Once she is on the move, the family moves, the village moves, the nation moves"

Womenfolk around the democratic nations of today have been endowed with the privilege to seek and avail all the rights they genuinely and lawfully deserve. India is no exception and our constitution allows all women to enjoy the fruits of hard earned independence through the untiring efforts and sacrifices of great leaders like Mahatma Gandhi and his able team. They encompass humanitarian, personal, domestic, social or political – just like men. The attributes include dignity, equality and safety cum security from all angles. Still unfortunately there are hassles, aberrations or inconsistencies at ground zero as we observe on daily basis. This is indicative of the fact that men have to still grow up and become more resilient, compromising and accommodative. Let us admit that a large population of ordinary women still live under a fear complexion and mania in almost all

parts of the country. This is despite the 'so called' feel good factor, pride as well as honor while talking about a handful of ladies who could ascend the ladders and reach respectable echelons in different segments of society - Politics (ministers, M.P's/MLA's), Central and state level services as well as establishments (including defense and internal security), aviation sector, other public or private level occupational fields, academia, banking, medical care, hospitality journalism, sports, arts of different nature, business entrepreneurship (MSME's) etc., just to name a few. But alas, every day we read about awful wrongdoings being inflicted on women (more Nirbhayas staring at the gloom of evils that go unabated at every location – metro cities, urban dwellings or rural areas).

Against the above backdrop, it is very excruciating to watch the poor state of affairs with reg. to the status of women's security in India, particularly a nation where women are considered as incarnations of God symbolizing valor (Durga), wealth, health & prosperity (Lakshmi), sacrifice and chastity (Sita) or education, wisdom & culture (Saraswati)! Ethically we consider every other woman as mother, sister or daughter; extend highest level of respect, empathy and come forward voluntarily to inspire as well as support them (whenever need arises).

The rundown on cruelty/animal behavior against women has a long list. Worst incidents of assault by men (you guessed it right- sexual harassment / crime, physical overpowering, acid attack etc.,) are frequently occurring in every nook and corner of the nation. The miscreants shall not rest till they get their 'pound of flesh' (synonymous with the Shakespearean drama "Merchant of Venice") including wrecking of innocent lives at will. However, there is a ray of hope here and there. Many 'brave heart' survivors are bouncing back, commencing fresh lease of life with dignity and asking for direct answers from the 'devils' among society through Govt., their administrative machinery, courts and media.

Moreover, the venom of gender abuse within the four walls of own homes as well as outside need to be nipped in the bud by re-enacting laws to award severest of punishment to the wrong doers – irrespective of whether they are close or distant relatives or outsiders - elders or even juveniles.

Respectful and dignified dealings within the segment of parents, spouses, siblings and other relatives at each home are required to touch higher levels to tackle all the menaces cited so far. Time is more than ripe to dissuade the habit of singling out girls only to 'behave' and others getting scot-free for all their tantrums.

In India we also hear about 'honor' killing and female foetus related inhuman crimes which are among the worst ever social backwardness one can imagine. Superstition driven devilish acts cross all limits.

There is also a need to weed out the evils of child abuse and human trafficking. Unfortunately, those who commit such sins taste blood by exploiting the misery attributed to a poverty - stricken social environment.

Better use of advanced security intelligence techniques is required to track the crime and prevent/ reduce/ control the escalation rates. Quick track courts must be set so that the affected get solace at the earliest. "This type of administrative action can turn out to be model deterrent to other perpetrators.

Remember "**justice delayed is justice denied**".

Above all, men must come forward and openly demonstrate their feelings about 'equality for women' by thoughts, deeds and actions.

Summing up the first segment of my essay, violations against women are the real bottlenecks for wholesome national development. Let people stop accusing ladies for everything and remain extra cautious in words and deeds. Women must also become bold enough to stand up and question when wrong doings against go unnoticed or neglected. They must do good homework and come out with reasoning and justification for debating on this type of issues prevailing among their folk while staying rooted. Today's vibrant media and social networking can be effectively utilized for facilitation.

**II Fire safety:** Fire is one among the "Five elements gifted out to us by mother nature other four being, Earth, Water, Sky and Air (known in Sanskrit as Panch Bhooth)! It is their presence that sustains life in this universe. Among them Fire (in open flame format as we observe) is one of the most significant thermal energy sources which helps us in many forms heat transfer operations – through conduction, convection and/or radiation which are required in day today life and many occupations . Examples could be boiling water/milk and other liquids, cooking food, operating heaters/ furnaces, Boiler operations, electricity generation, conventional room heating needs, many a reaction processes – physical or chemical which have become highly essential in many walks of life. These are all just marginal examples and many more can be explored by looking all around us.

From ancient days all faiths also inspire us to look at fire or flame as a symbol of light, brightness and happiness. Doesn't the word "Deepavali" denotes 'festival of light and lit lanterns'?

Fortunately, when the use and application of fire is controlled, it is productive. However when the

generation of fire is uncontrolled or indiscriminate, the results are the opposite- totally dangerous and destructive.

Accordingly, it is something that we are being made aware from childhood itself and being advised not to play or meddle with matches. We are also being taught what to do in case a of situation which calls for an encounter with fire. I trust Fire safety culture is also to be imbibed in mind and not just the 'intelligent' brain and sustained all through life. Let us first admit how easily a fire can occur anywhere around. But we tend to overlook it most of the time. Being an undergraduate, I feel we have to keep a close watch on fire hazards from all quarters – simplest and most common example of inviting a fire could be striking a match stick and lighting a candle stick or lamp.

At homes, any location surrounded by embroidery, draperies, papers, haphazardly hanging or loosely dumped clothing is a sitting duck for fire. The chances of an embroidered artwork blasting into blaze are very thin. But in case of fire in close by vicinity, the woven artwork can go up in flames within a spell of few fractional seconds. This will enhance its spread. Even inferno related working models or animated images are not duly acknowledged and appreciated by many among general public. This is all the more reason why it is essential to be appraised, instructed and warned about fire risk through consistent training programs with sustainability.

After perusing a number of articles and viewing few heartbreaking video recordings of incidents or even effective Power Point Presentations, I comprehend why fire security is so much significant. One point of time while viewing a film I visualized how fast a fire can spread in a room where curtains with less fire - resistant characteristics are hanging all around our houses as a symbol of aesthetic sense, indoor decoration marvel or even an affluency attribute. It is high time ponder over and stop getting attracted towards this type of mania before fire takes its toll at will and that too rapidly. It is critical to ponder over, which I feel very few are willing to accept regardless of whether or not such incident has took place in their own residences. But fire does not who you are but you have enough wisdom to recognize fires of all types and damage potential. There is a significant certainty that some do realize, but unfortunately most do not!

The recordings which I mention about included a fake dormitory fire was an eye opener. If students like us can visualize the nature of fire and how rapidly it can escalate the purpose of viewing is duly justified. In one video, it took some time for the fire to start spreading, yet once the flames could lick the woven artwork

the dormitory went up in flames and got destroyed. Likewise, study on fire risk surveys narratives covered in a handbook is equally beneficial. There ought to be a segment educational curriculum about why the use of highly combustible materials are stocked up in large quantities especially when the domestic locations are ill- equipped to tackle emergencies of serious.

To conclude, I consider the following as the bottom line of Fire safety

**“Learn Not To Burn”**



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She works with ILF-CORE Team as a Operations Lead at Database Core Group and Cultural Researcher & Bibliographer. Also she works as a Editorial Intern with Rethinking The Future.

**PROTECTING BUILDINGS FROM FIRE**

-Ms. Vrinda Agrawal

Fire accidents have been a major issue of concern throughout the country. In 2015, India reported 18,450 fires resulting into 17,700 injuries and 1,193 deaths according to the survey of National Crime Records Bureau(NCRB). Cases of fire accidents in commercial buildings have risen to 716 cases in 2015 from 179 cases in 2014, accidents have also risen in government buildings. The Accidental Deaths and Suicide in India (ADSI) Report of 2015 shows that fire outbreaks are more prone to happen in residential buildings with 3757 increase in the cases from 2014 to 2015. Therefore, it necessary to ensure fire safety in the country. Fire Accidents not only take place in buildings, it has also destroyed forests of many countries with Amazon burning for over a month. Reports show that fire accidents in buildings in India take place due to improper implementation of Fire Safety Standards. To save a few pennies builders risk the innocent lives of many people. With the rise in construction of residential buildings the danger of fire damages has increased significantly, such buildings are complex in nature, also making the evacuation process difficult causing damage to life as well as the property.

First fire service department in India was established in Bombay in the year 1803 and was then followed by Calcutta(1822), Delhi(1867) and Madras(1908). Napoleon Bonaparte in France created the first professional firefighter known as Sapeurs-Pompiers.

Since fire services are mentioned in the Indian Constitution under 12th Schedule, the department comes under the domain of Municipalities, State Government and Union Territories. It is their

responsibility to prevent fire accidents to take place as well as protect people if fire accidents have taken place. The authority which looks after proper implementation of the standard requirements is under the Ministry of Home Affairs while in almost states they are directly governed by Municipal Corporations. The lawmakers of the country created a legislation that needs to be followed by the building developers so that no casualties happen due to non-implementation of standard norms. However, every state is required to formulate their own regulations for fire safety, prevention and protection. But it is very important that these regulations have to duly conform to the different provisions of National Building Code (NBC)

**The National Building Code of India, 2016** is one of the primary statutes formulated by the Bureau of Indian Standards(BIS) . It deals with the ways and means by which a building needs to be constructed keeping in mind the fire safety measures. These guidelines are not very expensive or unreasonable to be achieved, it is just by taking into consideration the requirements of the building that they can be protected from significant and probable fire hazards. This code provides all the basic guidelines which help prevent fire accidents, protect the buildings and occupants from inevitable consequences should they occur and also other related safety measures which need to be taken. Limitation to maximum height of the building, types of materials to be used in a building and the measures that need to be followed so that danger to life is reduced and the evacuation process can take place smoothly are broadly covered. More importantly focus is given on the safety of an individual, thus the evacuation process needs to be implemented properly.

Generally, the buildings are classified on the basis of occupancy like residential, educational, hazardous to name a few. Fire Zones must be demarcated and numbered according to the occupancy so that it is easily identified. The zones for the buildings come under two categories of occupancy are selected on the basis of the segments which need adequate fire safety coverage. Existing buildings don't require to be changed whenever a new fire safety provision is added, but if it is being altered/modified it must follow the guidelines. To prevent the spread of fire in the buildings, there are certain standards of materials and design that should be used by the builder.

All the exit points need to be clearly visible with proper signs to guide the occupant of the building and should be easily accessible. For buildings of 15m of height and 500m<sup>2</sup> of area, minimum two staircases should be made available - one on the external



side and the other inside. The route of the staircase should be clear and marked clearly. There have been various incidents where people could not evacuate the building smoothly as the staircase was blocked. So, from time to time the routes should be checked and cleared (in case any blockade). The inner staircase must be protected from smoke and toxic gases which can be done through a Pressurization Method. Special lifts can be used during the time of fire emergency but only with the presence of a lift man.

Equipment to protect the building from fire needs to be installed with proper guidelines like fire extinguishers, automatic fire detection alarm, water tanker on the basis of occupancy of the building.

Apart from all these measures that should be taken by the builder while constructing the building, the occupants also need to be aware and should have knowledge about the equipment. Drills and workshops should be conducted from time to time so that at the time of emergency occupants don't panic and evacuate smoothly.

Conducting audits is yet another way which has been proven to be an important tool to assess the safety standards of the building and the integrity of all structural work especially in case they get exposed to a serious fire. But the Code of NBC by itself does not define the scope, objective and methodology of the audit.

The second legislation that must be taken into consideration is The Model Building Bye-Laws, 2003. It holds the Chief Fire Officer responsible for ensuring all the fire related examinations and tests of the building. 'No Objection Certificate' needs to be issued by the officer after being satisfied by the safety norms and the means of evacuation. Buildings which are in regular use of the public like assembly, hospital, hotel, etc need to be cleared annually for the Fire Safety Tests.

Even after being provided with the provisions, fire accidents still take place, this is because these norms are not met by the builders, also the occupants are not bothered to keep a regular check on fire prevention equipment. To prevent such accidents there need to be strict implementation of all these laws and a third party should be appointed to have Fire Safety Audits of the assigned buildings on a regular basis. An force can be appointed to execute immediate response by reaching at the location of the accident within 5 minutes in Urban Areas and 20 minutes in Rural Areas. Societies, schools, offices, etcetera should conduct drills and workshops to train people on dealing with such incidents without creating havoc. If the authorities make sure that the guidelines are properly implemented, people are aware and know about the equipment's accidents of fire can be reduced.



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 1. Advanced Course on Enforcement of Fundamental Rights | 2020.  
 2. 1 month Internship at Forbes Legal | 2020.  
 3. 2nd Position in Article Writing Competition | Edu Nation Online | 2020.  
 4. Own website | [lexwithflex.wordpress.com](http://lexwithflex.wordpress.com) which is committed to provide a forum and help our audience discover the unexplored treasures of law by making them aware about the legal aspects entwined in our daily lives.  
 5. Under process of another website | [edumound.com](http://edumound.com)  
 6. Extra Curricular Activities 1) Participating in 1st Ram Jethmalani Moot Court Competition.

## FSAI STRATEGIC INITIATIVE FOR WOMEN SAFETY – SURAKSHIT NAARI

A virtual function to mark the launching of a unique, noble and strategic FSAI initiative towards Women Safety by Fire & Security Association of India (FSAI) christened as “Surakshit Naari” was held on Oct, 27, 2020 . This is an endeavor dedicated to facilitate the enhancement of women empowerment. The main objective is to focus and address a number of concerns pertaining to “women safety and security’ in overall perspective. Accordingly, Association has pledged its commitment to this aspect using its domain expertise. It will be channelized by way of considering all systemic issues (affecting the women fraternity with reg. to their safety and security).

For spearheading this movement, a startup team of 30 ‘women warriors’ has been identified from various regional chapters of FSAI functioning across the country. The more in number stronger we are. In this quest, the gracious presence and eloquent inaugural address followed by the lead response to a wonderful question/answer session by Her. Excellency, Lt. Governor of Pondicherry Dr. Kiran Bedi IPS provided the right impetus.

Her opening comments on Physical, Emotional and Psychological aspects affecting women security set the tone and tenor for the proceedings. She lucidly covered how voluntary institutions like FSAI can avail strategic partnership with a number of Govt and local administrative bodies by providing complementary support in the functioning of different security control rooms, crime monitoring centers, emergency help line wings, rescue/ shelter/ rehabilitation facilities etc., She also talked about the specially created and fool proof mobile apps as well as other facilities in this segment such that the duly identified/ listed “warrior teams” as mentioned can use them effectively. Humanitarian approach always comes first and therefore the service providers in this type of teams shall not be required to face much hassles or delays related to Legal formalities in this matter.

The question answer session touched newer heights. All the participants had focused queries and received appropriate and convincing answers from Dr. Kiran.

Through her opening talk, Ms. Rakhi Deepak, National Secretary of FSAI introduced the chief guest and welcomed her as well as all others.

Mr. Rajeev Mecheri of Association’s Governing council delivered the felicitation address to Dr. Bedi and she got enrolled as Honorary member of FSAI at the function.

Presidential address was given Mr. Suresh Menon, who appraised the chief guest about the overall functioning of FSAI as well the vision, mission and responsibility matrix of the specially constituted 16 member strong Working group among the “Warriors”. He also administered the oath of office to all of them.

Subsequently Ms. Kaveli Dutt, National Chair, Surakshit Naari aired views about this highly important branch on behalf of the whole “warrior team”. She was joined by Ms. Ami Sheth Joint Secretary, FSAI Strategic for Women Safety, Gujarat Chapter.

Mr. Ankur Gupta, Chair Membership, Training & Tek Talks gave a comprehensive presentation about the newly introduced membership schemes for women and the enrollment procedures.

Dr. Jenifer Lewis, President, FSAI Goa chapter gave a summation of the proceedings along with important takeaways followed by proposal of vote of thanks.

Report on the “Question Answer session” with Dr. Kiran Bedi shall also be duly covered in next edition for the benefit of readers.



## NATIONAL & CHAPTER LEVEL ACTIVITY REPORT, NOV-DEC 2020

All along, it has been the sincere endeavor of your Journal to adequately cover the excellent initiatives rendered both at National and Region/Chapter/Sub Chapter levels. We earnestly wish that this will leave an effective imprint in the minds of our esteemed stakeholders (in terms of membership delight – benefits, deliverables and social outreach). Yes, we were constrained to slow down a bit on few field activities (during the strict COVID lockdown time and post spells of restriction). Despite that, no stone was left unturned – in terms of responding to call of duty on urgent basis or executing any other specific assignments which were bestowed on us during this period. Those were with reg. to the rendering of immediate service to deserving segments of society during their fights to get safeguarded against the perils of Pandemic or related facilitation support. The specially constituted COVID19 task force and their ‘foot soldiers’ had rendered yeomen contributions at ground zero braving lot of stress and strain. In addition, the ‘non-stoppable’ virtual programs - Webinar training, Panel discussions and promotional events marked the last 6 months. Accordingly, this edition deals with the activities which were carried out after August.

In all there was

(A) One **Field activity** and

(B) **11 virtual functions** at National/ Chapter levels as listed below:

Both of them cover the post “August-Sept” Buzz and “Sept-Oct”. Journal spell

### A: Field activity: Chennai Chapter

Sequel to a number of noble outreaches duly demonstrated by FSAI in different locations of the country as part of Pandemic safeguard services – like Mumbai (including a number of slum dwellings), Ahmedabad, Pune, Nashik, Bengaluru etc., an important attribute - PPE distribution – could be fulfilled by our Chennai chapter to the delight of Tamil Nadu Fire & Rescue Services (TNFRS) directorate. This was at the latter’s request after hosting a meeting by them to senior officials of FSAI (National and Chennai). The specifications/ design aspects of the face masks (which were sought by the recipient) also duly conformed to the applicability factor. This was pertaining to adequate barrier against certain specific exposure hazards which the fire/ emergency rescue service personnel have to encounter on few occasions – i.e., harmful dusts, smoke and toxic gases/ vapors. 25 sets of such equipment could be mobilized and provided

In the first meeting held on 28th Sept’20. TNFRS team included:

- 1) Dr. C Sylendra Babu (IPS), Director, TNFRS and CRP
- 2) Mr. Shahul Hameed, Joint Director, State Training Centre
- 3) Ms. Priya Ravinchandran, Joint Director, Northern Region, TNFRS.

**FSAI was represented by.**

#### a) National

- 1) Ms. Rakhi Deepak General Secretary
- 2) Mr. Venkatesu Treasurer

#### b) Chennai Chapter

- 1) Abbas Lehry, President.
- 2) Rajesh, N. Secretary
- 3). Rajasekaran CWC member.

Begin with, all officials got formally introduced to each other.

Thereafter, an appraisal on the working of FSAI was jointly given by Ms. Rakhi and Mr. Rajesh. This was followed by a discussion on the need for organizing more FSAI sponsored fire safety awareness training to cover school children and student chapters. Felicitations message was also conveyed to a number of Firemen who regularly help conduct such programs were also felicitated at the occasion.

Mr. Venkatesu discussed about the modalities for conducting Fire Safety Audits at various installations in the state with the help of Certified Professionals.

Mr. Lehry expressed his desire to conduct a Marathon race in the city (at the behest of FSAI, TNFRS as well as any other like-minded institutions who wish to be part of the endeavour).

A sustainable and inspirational support from FSAI side was sought by the TNFRS to enhance their capacity build up.

On this aspect, following specific attributes were deliberated.

1) Tamil Nadu has 42 Main Fire Stations (including Chennai and all other district wise regions) with few sub stations attached to each such region. Current regional strength of Fire men is around 1, 200 It has been felt desirable to augment the number by enlisting equivalent number of “volunteers”. Once this is achieved, they can be trained inhouse. Subsequently a WhatsApp group can be formed for contacting each other and seeking help in times of Emergencies. In this context a ‘flier’ inviting applications from potential volunteers has been generated by FSAI and circulated (facsimile attached for ready refence of members and others from the readers’ fraternity..

2) TNFRS also look forward to the creation of a social awareness culture and formulation of a benevolent fund for helping the widows/other survivors of those



Firemen who sacrificed their lives at the altar of duty. Now they are in difficult plight. Organizing marathon type running or cycling events, music/ other entertainment programs at the aegis of FSAI and distributing the donations, sponsorship collections, ticket sales income etc., (as applicable) being received among the needy will prove to be a boon to them.

3) Help develop and upgrade the existing Fire service Museum of Chennai.

4) The Fire Department is looking for a special type

of respiratory protection (mask) considering the vulnerability of situation/ activity based specific hazards. Subsequently this task was duly executed as mentioned at the beginning of this report. Ms. Rakhi, M/S. Abbas Lehri and Ms. Rajasekaran, Chennai chapter had the honour of being part of the 'PPE handing over' event.

**Bottomline:** All the above efforts may turn out to be few more baby steps in FSAI's march towards the fulfilment of the "Surakshit Bharat agenda."





**Fire & Security Association of India**

FSAI

Join FSAI online @ [www.fsai.in](http://www.fsai.in)

**BE A WINNER...  
VOLUNTEER &  
MAKE THE NATION SAFE...**



**VOLUNTEERS REQUIRED FOR  
TAMIL NADU FIRE AND RESCUE SERVICE**




Dear Friends,  
FSAI is collaborating with the Government and as an Association spreading the awareness on how to mitigate Fire Accidents and make India a 'Surakshit Bharat/ Safe India'. In this connection we are looking for volunteers, who could help the Fire & Rescue Services Department at times of Emergencies.  
At present Chennai has about 42 Fire Stations and about 1200 Fire fighters and they are willing to take many Volunteers and train them as Fire responders especially during monsoon.  
So, for sure as members of Fire & Security Association of India, we would be having many, who would like to volunteer. Request those who are interested from all over Tamil Nadu to Volunteer for this cause to send us your details on or before 20th October 2020.  
Kindly register your Name, Mobile Number, Gender, Age, Email ID at:

**CLICK HERE TO REGISTER NOW!**  
[https://docs.google.com/forms/d/e/1FAIpQLSf3K9s8o4x7n2f2LPUmPGLUz2mvRwggQbItcaPLVJbBEv4A/viewform?usp=pp\\_url](https://docs.google.com/forms/d/e/1FAIpQLSf3K9s8o4x7n2f2LPUmPGLUz2mvRwggQbItcaPLVJbBEv4A/viewform?usp=pp_url)

Stay Safe... Yet Connected...

**Our Mission...**  
Surakshit Bharat...


  
Subscribe to FSAI social media...


## VIRTUAL PROGRAMS (NATIONAL & CHAPTERWISE)

### PANEL DISCUSSION ON FROM THREAT ANALYSIS TO SECURITY SYSTEMS DESIGN: UNDERSTANDING THE FRAMEWORK IN THE CHANGING BUSINESS ENVIRONMENT

Names of Panelists S/Shri.

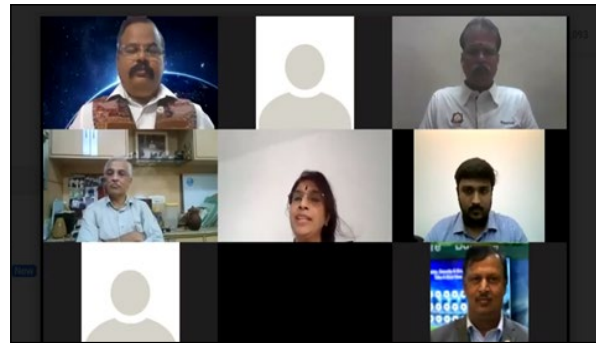
- a): Puneet Garkhel (Moderator)
- b) Retired Lt. Cdr. Pawan Desai.
- c) Retired Col. Deepak Kajla.

- f) Sandeep Sethu Madhawan
- g) Major Paul Devassy
- h) Sambhaji Naik

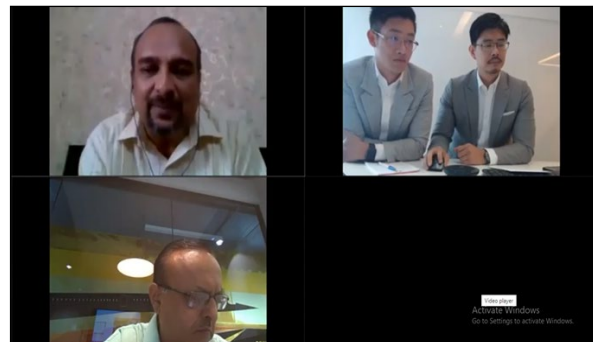




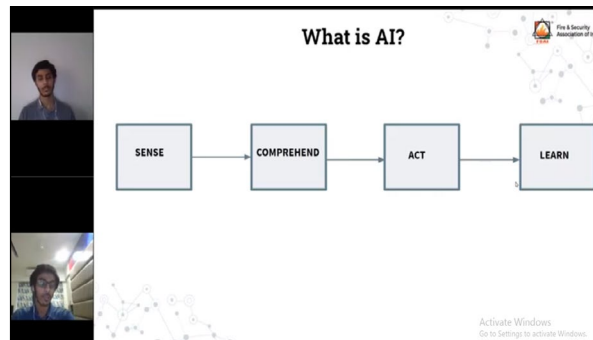
**WEBINAR ON VALVE SELECTION & MONITORING AS PER NFPA 25 & 13 FOR FPS**



**PRODUCT WEBINAR ON FIRESHIELD: A COMPLETE SOLUTION FOR PROXIMITY SUITS**



**WEBINAR ON APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN FIRE & SAFETY**

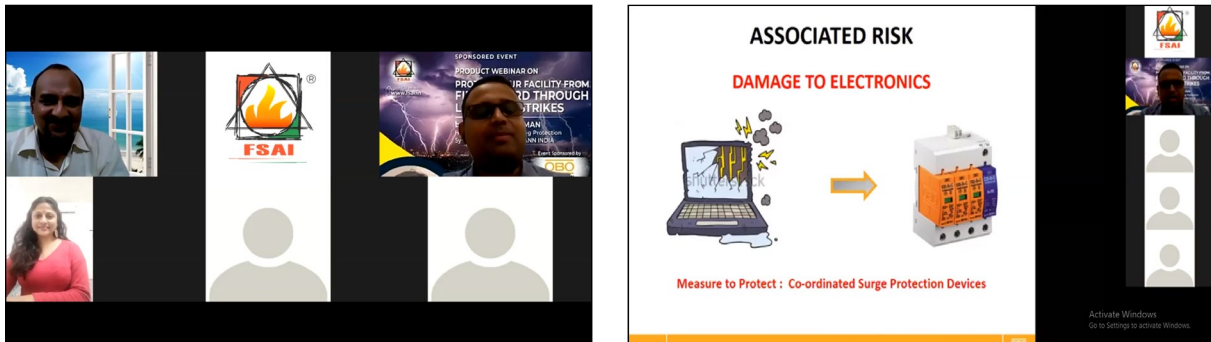


**WEBINAR ON FIRE SUPPRESSION SYSTEM**





## PRODUCT WEBINAR ON PROTECT YOUR FACILITY FROM FIRE HAZARD THROUGH LIGHTNING STRIKES



## WEBINAR ON HOSPITAL FIRE INCIDENTS IN INDIA IN THIS DECADE - REASONS & SOLUTIONS

Incidentally, this program tuned out to be a complementary one to the “Hospital Fire Safety” relevant National Panel discussion held on 14th August '20 immediately at the aftermath of two serious fire incidents which occurred in two Hospitals exclusively developed for COVID19 treatment in Ahmedabad and Vijayawada. Report of the same has also been included in the previous edition of the Journal.

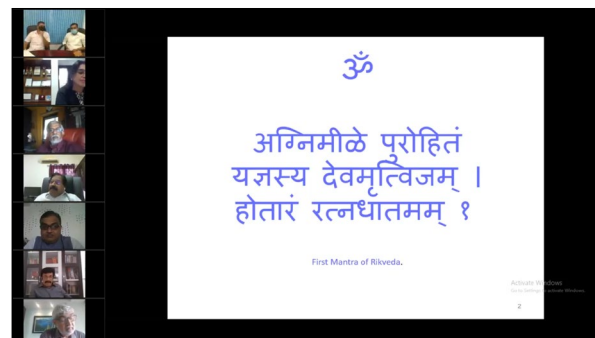
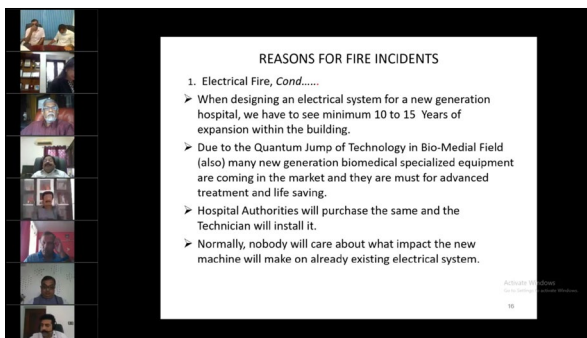
Mr. Gopa’s presentation lucidly covered the following significant aspects.

- i) 12 Major Fire incidents which had occurred across the country during the past decade including main causation factors and probable remedies for prevention of recurrence.
- ii) Specifics of electrical energy as a main source of

proven ignition (as being observed and ascertained through investigation).

- iii) Rescue and evacuation of affected people especially from high rise buildings (which are very common to modern hospitals as well).
- iv) Need for not only adequate compliance of National as well as State specific Building codes in India with ref. to Fire and life safety (followed by their changes/ amendments at more frequent intervals considering the impact of modernization and technology advancement in building design/ construction.
- v) Creation of Very practical and feasible evacuation
- vi) Installation of Detectors/ alarms etc.,

Mr. Kumar has been kind enough to share a detailed write-up on his presentation in an article format and the same shall appear in one of the immediate upcoming editions.



## FSAI GOA CHAPTER - INSTALLATION CEREMONY OF NEWLY ELECTED OFFICE BEARERS OF FSAI STUDENT CHAPTER AT GOA ENGINEERING COLLEGE (GEC)



### A: Introduction

A virtual function was held on 11th October 2020 at the aegis of FSAI Goa Chapter marking the installation function pertaining to the second team of office bearer elects of the Student Chapter at GEC. The main purpose of inducting exclusive Chapters by FSAI is to serve student fraternity at their door steps and inspire a special “Fire/Life safety and Security” instinct among youths who are pursuing higher studies in different branches of science, engineering and technology at professional institutions. This novel concept could become highly useful mainly in two ways.

- a) Creating, instilling, developing and promoting a specific as well as focused Fire safety cum Security culture and behaviour among them. This aspect is a truly value - added ingredient in any occupational activity, entrepreneurship or any other attribute they wish to pursue including a delightful domestic and social life all along.
- b) Opening out yet another opportunity for those who wish to choose Safety or Security as a dedicated professional career.

### Proceedings galore - Program Unveiling

The delighting opening remarks through a hearty welcome address by Dr. Jennifer Lewis Kamat, President, Goa Chapter (FSAI) set the tone for the upcoming program menu which was to be served on a silver platter.

According to madam, sequel to the successful execution of a Seminar on IoT, following activities have been envisaged. In this context maximum number of virtual programs have been planned. Road mapping of field level activities, would be done straightway for organizing them soon after restoration of normalcy in view of the prevailing Covid19 concerns

- Setting up of a Skill Development Center for Fire & Safety Equipment to create opportunity to students coming with new techniques and how to use existing techniques on safety
- Fire and safety testing and analysis Laboratory for the New Buildings/ facilities in GEC

- Fire safety/ security orientation as the first step while inducting new students

- Employment opportunity related guidance workshop for pass outs and 4th year students

- Imparting of Fire Safety awareness sessions related to different job sectors like Shipping Industry, Fire service profession etc., having high employment potential

### Introduction of special guests, speakers and other dignitaries followed by sessions’ moderation.

The anchoring expertise of Mr. Vinod Rodrigues, Secretary, Goa chapter was at its best while fulfilling the above task.

### Student Chapter (SC)specific Preview

Mr. K. Balasubramanian, Chair, SC, FSAI conducted the session with exceptional grace, clarity and audience rapport covering:

- The evolution of student chapter concept
- Amalgamation fire/life safety/security attributes with curricula.

- Appraisal on the working of FSAI, its organizational structure including different functional groups who can offer specific support to student fraternity as well.

- All deliverables available to student chapters.

- How students can take voluntary participation with FSAI activities and enhance their capability.

- Benefits of carrying out Fire Safety and Security (FSS) related project studies, training, research work, article writing for Journal, audit exercises, rendering of fire cum emergency response (whenever there is a need), people to people interaction etc.,

- Using the membership as a stepping stone to empower the search work attempts for employment, consultancy, development/ distribution of equipment or even entrepreneurship in FSS.

- Bottomline: Student chapter could prove to be an extended arm of FSAI at respective locations of programs and practices helping to create a win-win situation for both

- Sharing of reminiscences about his close association with many of the students by Mr. Kula Sekhar Kantipudi during his tenure as immediate past president of Goa chapter

Shri. Sekhar narrated a number of occasions/ episodes when he could interact with the students and faculties. Many of them were found highly passionate to work for the Chapter by burning midnight candles. He suggested few ways and means how even some alumni (who would also be real entrepreneurs) can come forward and render services thereby supporting the incumbent and future Goa chapter presidents and their colleagues.

#### Installation function

The enchanting presidential address by Mr. Suresh Menon, National president, FSAI provided the desired impetus for the colourful ceremony. Following were the salient points of his talk.

- Appraisal on the Vision, Mission as well as the service areas of FSAI domain and its vast reach out – at National, Regional and state levels.
- Areas of its function especially those where young and generous student groups can find convenient opportunity to perform better and prove their mettle.
- Additional scope for Career entry and further growth for new pass outs as well as others in any branch of science or engineering technology (thanks to their additional grip on Fire safety and security concerns) in a fast - growing economy like ours.
- Easy access to a number of training aids, literature, videos, membership kits etc.on which FSAI has a treasure.
- Getting privilege entry to PACC, FSIE and other national / international seminars and Expos.
- Participating in FIST awards under students’ innovation category.
- Platforms like FSAI Journal and other media where students’ entries can fetch appropriate recognitions and rewards especially for their creative articles and research papers.
- Availing the forums for exchange of ideas during seminars and conferences to their benefits.
- In this context, he cited the successful participation of a Chapter in Mumbai region, where college students successfully launching an App for conducting the preliminary auditing and short listing of around 500 Ganesh Utsav mandals for selecting the safest and best among them for honour.

Following newly elected office bearers were introduced, administered the oath of office by Mr. Suresh after reading out their duties, roles and responsibilities as bound by FSAI’s constitution charter. This was followed by presentation of digital accreditation and felicitation. Three of them – President, Secretary and a representative of CWC representative delivered acceptance talks while acknowledging the honour bestowed on.

S/Shri.

1. Aaditya Kamat- President
2. Viddeh Padiyar- Secretary
3. Ms. Sharvari Chanekar- Joint Secretary
4. Pranay Shirodkar – Treasurer
5. Shreyas Ambe- Joint Treasurer.

#### Special inspirational address by Mr. Pankaj Dharkar, Presidential member, FSAI

- Shri. Dharkar Saheb recollected the nostalgic memories of his visit to GEC as International President of FSAI during 2018 and quickly an MOU could be signed between the association and college
- He expressed confidence that the growth of chapter will be beneficial to FSAI and vice versa.
- Pankajji also gave a briefing about ongoing specific responsibilities being handled at his end with reg. to COVID19 Task force as well as FSAI Suraksha Index Rating (FSI) system and explained how noble and significant they are.
- As a concluding remark, he exuded confidence that one of the conceptualized project of creating a dedicated Skill development centre at GEC will be fulfilled by the student chapter with the guidance/ support from institute administration and the incumbent office bearers from both FSAI and college

#### Talk by Dr.Ganesh Hegde Professor, GEC

- In his signature mark energetic, lighter but exuberant vein punctuated with high sense of humour, Dr. Hegde gave an account of many viable projects which need to be speeded up. He mentioned any contribution by the chapter shall go much beyond the annals of FSAI membership activity considering the same as a national service.
- They include Creation of fire safety training ground, permanent exhibition, training ground, testing laboratory and workshop shall be taken up with additional zeal and priority
- He has high level of confidence in all students who are able to come out with good ideas and methods of implementation.
- Hosting a few premier events at Goa at the behest of FSAI
- This aspect itself will rejuvenate the managerial planning and execution strategies at all the faculties, principal and higher administration levels.

*The penultimate agenda in the proceedings was an important and mind blowing address by the guest of honour Dr.Krupashankar Mysore Sethurama , Principal of GEC and the man at helm of affairs as far is functioning of the student chapter*

As very rarely being felt and acted upon, except mostly in financial circle,

Dr.Sethurama talked about significance of investing a part of peoples’ valuable time for ensuring fire, safety and security every day - continually and consistently – in every walk of life. Taking this in right perspective, he assured FSAI on behalf of the student community at large that the chapter will invest adequate time for delivery and upliftment of services as envisaged. Following activities (few of them field level) will be executed with utmost safeguards and strict adherence to compliance system in the



midst of pandemic concerns. The list included:

- Safety induction of the first year's batch of all students entering the campus in the beginning of Nov'20. In this context, he emphasized the need for involvement by final year students as 'potential faculties'. They shall immediately start working for the preparation of a predetermined training module, schedule and presentation materials. The pattern for the same will immediately be issued by college
- Administration.
- Getting Govt. nod for all the schemes related to the Fire/ Safety/ Security skill development centre which will be of high tech design and installation
- Commencement of Risk assessment audits at all buildings and facilities including hostels of the campus (new and old).
- Time allocation for innovative research work, contribution of articles to Journal at student level followed by implementation as per target dates. Here he vehemently insisted for planning and execution.
- Commencement of Safety training to 'non-teaching officials, staff and their family members by the 'trained/ competent' students as part of a social mission. Attributes could be enhancement of awareness, imparting practical knowledge and understanding mechanical, electrical and other risks in day to day domestic/social life, firefighting, rescue, first aid administration etc.,

**Chief guest's address.**

Mr. Ashok Menon, Director, Fire & Emergency services. Goa and Advisor to Goa chapter of & Editorial member of FSAI Journal took the participants on a journey through history. Until a century ago, all Engineering studies centered around Class room lectures, Self- learning and Mentor Training. At the Worker level Apprenticeship, skill development included teaching of basic safety aspects like fencing/ guarding/ securing of machinery, administering of fire prevention tips, hazardous energy isolation before commencing work etc., just to name a very few. However, with the opening of more Technical Schools, Polytechnics and Engineering Colleges, examiners found it bit difficult to cope with the need of imparting advanced

knowledge on Safety as an 'inclusive' engineering attribute. They had to manage with limited number of questions from few selected (short listed) topics only. Accordingly, safety specific knowledge among 'pass outs' was not up to mark. Therefore, a revolutionary need was felt in academia circles to amalgamate Safety as an integral part of curriculum and now this aspect is being fairly addressed. However, there is great scope for further improvement.

Being a Professional and service - oriented organization, FSAI conceived the new idea of opening Student Chapters across the country through good liaison and rapport with Engineering Colleges. Students can take full advantage of this platform by getting more acquainted with current trends in the field of Safety engineering. In turn this will ignite their minds, make them curious to know about new things and learn more about safe design aspects associated with work areas/ machineries / equipment and products/protective equipment/ services which can extend additional safeguards against vulnerable hazards. Ashokji also suggested about the desirability of Student Chapters to play catalytic roles in the pursuit of direct employment in companies or creating external consultancy projects, self- employment schemes, training institutes or job contract cells.

Others who graced adorned the occasion by sparing their valuable time included S/Shri.

- \*Ms. Rakhi Deepak, National Secretary, FSAI
  - \* C. Venkatesu, National Treasurer
  - \*Dr. Rakesh Arya, Vice Chair, Student chapter.
- Outgoing office bearers of GEC student chapter
- 1).Mr.Sunay V. Dharwadkar - President
  - 2). Mr. Vardhan P. Kamat - Secretary
  - 3) Ms.Janhvi S. Athwale Jt. Secretary
  - 4). Mr. Miguel Costa - Treasurer
  - 5) Mr. Suhail Khan - Joint Treasurer

Curtains were drawn for the day with the proposal of a hearty and warm vote of thanks to all again by Mr. Vinod Rodrigues.



**Mr. Aaditya Kamat**  
President



**Mr. Viddesh Padiyar**  
Secretary



**Ms. Sharvari Chanekar**  
Jt. Secretary



**Mr. Pranay Shirodkar**  
Treasurer



**Mr. Shreyas Ambe**  
Jt. Treasurer



### Q1: Which functionalities to be used to avoid ‘Tailgating’?

Asked by:

- Name: Mr. Jitendra Mahnot
- FSAI Membership No.: BOM-C-0108-0092
- Chapter: Mumbai
- Company Name: Startech Engineers

A1: This is a major concern and monitoring a Single entry against a single swipe (either Card or Biometric) is difficult. One of the major feature used to have discipline among the employees to avoid tailgating is Anti-Pass back (Hard or Soft – Timed & Just log). However, features like Access Control & CCTV integration can also be used wherein, when an authentication is done, the Video clip is captured against a transaction to monitor it offline or for an Online functionality, Video analytics can also be deployed to have head count of entry against a transaction and then generate an alarm in case of violation.

One more solution is from the Physical & Logical Access Convergence perspective. If some does a tailgating and there is no entry of authentication, but there is an access to his / her network login, alarm can be raised and can be flagged as tailgating attempt.

### Q2: Does Access Control system have a globally accepted common Open platform like we have ONVIF for CCTV?

Asked by:

- Name: Mr. Mandar Sawant
- FSAI Membership No.: PNQ-I-0616-0063
- Chapter: Pune
- Company Name: Tech Controls

A2: Unfortunately No. This is still a disadvantage for Access Control domain. Due to lack of Globally accepted common platform for communication to the access controller hardware, all the systems have a closed protocol and both Hardware & the respective application is tightly integrated. This proves an disadvantage to the End User as they would not have a system which is hardware / OEM agnostic.

### Q3: What role does Card Format play when we can use CSN (Card Serial Number) for identification?

Asked by:

- Name: Mr. Nimit Sheth
- FSAI Membership No.: AMD-C-1109-002
- Chapter: Ahmedabad
- Company Name: Ramana Safety & Systems (I) Pvt. Ltd.

A3: CSN (Card Serial number) is not secured. As per ISO standards, the CSN (that is programmed during the manufacturing) should not be encrypted. SO if CSN is used, there is a huge chance of hacking the CSN & creating a duplicate card and in turn compromising the security. Card format is a specific number written on the card and this can be encrypted for communication thereby giving security against hacking. The End User can also have Card formats specifically designed for them to have higher security.

### Q4: What are the use cases for Access Control & CCTV Integrated solution?

Asked by:

- Name: Mr. Vivek Pai
- FSAI Membership No.: BOM-C-0718-0133
- Chapter: Mumbai
- Company Name: VL Astra Engineers Pvt. Ltd.

A4: Access Control & CCTV integration can also be used wherein, when an authentication is done, the Video clip is captured against a transaction to monitor it offline for Tailgating Violation or for an Online functionality, Video analytics can also be deployed to have head count of entry against a transaction and then generate an alarm in case of violation.

Also with Video analytics solutions getting matured, Access Control integration with CCTV VMS (Video Management System) will help to allow the employee only if the PPE (Personal Protection equipment) is complied. Like In today’s scenario, in hospitals wearing apron, cap, mask, gloves & goggles are mandatory while entering restricted / infected areas. In such cases PPE based access

would play an important role. Apart from Hospitals, Pharmaceutical & Manufacturing establishments also require such solutions for compliance.



Answered by:  
Mr. Mahesh Gavhane

**Q5: What is an EDGE device in IoT based open BMS system?**

Asked by:

- Name: Mr. Ajit Garve
- Company Name: Johnson Controls

A5: EDGE device in IoT based BMS system is the device ,where data is analysed at the Edge of the network rather than in CLOUD itself.



Answered by:  
Mr. Pankaj Tiwari





# Readers' Feedback

## Abstracts on FSAI Journal

01



1.FSAI as a as professional and voluntary organization is trying to generate more and more awareness on Fire cum Life safety, Personnel as well as asset security along with a number of automation attributes with reg. to cyber security surveillance, crime detection etc., The articles published in its Journal cover a number of concerns related to many occupations in addition to Hospital/ Hospitality segment, Commercial residential zones etc., As rightly pointed out by another reader about the previous edition, this publication conforms possesses very high standard as gauged against similar technical Journals - at National and International levels.

Mr. Mohan Mithagre,  
HSE Consultant

02



1.Dear Mr KNK Murthy, Thanks for sending me a sample issue of the FSAI Sep-Oct issue. All the articles in the issue were very relevant to the subject of Fire and Suraksha. The issue keeps up to date with current technology developments as can be seen with articles like Cyber Your Threat, Drones in Surveillance, Ingenious workplaces of Future, etc. Besides, the issue dwells with current topics such as Public Perception of Covid-19, Restart Safety review of chemical plants amid the pandemic, Fire and safety in Medicare facilities, etc. The issue has more than 13 articles and is by any standard is very high a number for any technical magazine and is a treat for anyone in the field of Fire and Suraksha. In fact, I would say, you should name this magazine, "Fire and Suraksha Journal". My best wishes for continuing your mission of enlightening the readers and making the world a safer place to live in.

Mr. R. Muthukrishnan,  
Process Safety consultant

# THEMATIC QUIZ?

## SERIES NO. 11

Top three scorers shall be awarded with "Certificates of Honour" in Gold, Silver & Bronze categories. Besides all other participants shall receive "Certificate of Appreciation" (digital - duly encrypted). Kindly look for the full answer keys in the next edition and compare where we stood.

### Segment I : Fire Safety

1 | Oxygen plays the role of ..... during fire.

- A) Fuel                                      C) Supporter  
B) Ignition source                      D) None of the above

2 | Alphabet A in PASS associated with some portable extinguishers indicate .....

- A) Actuate                                    C) Assess  
B) Approach                                D) Aim

3 | Fire is a Chemical reaction involving .....

- A) Oxidation                                C) Polymerization  
B) Reduction                                D) Condensation

4 | This symbol is popularly known as Fire .....



- A) Triathlon                                C) Pentagon  
B) Tetrahedron                            D) Hexagon

### Segment II : Security

5 | This symbol is indicative of a .....



- A) Luggage X-ray                        C) Magnetic Detector  
B) Lap top Scanner                      D) Face Imager

6 | Police helpline No. is .....

- A) 101                                        C) 100  
B) 108                                        D) 222

7 | While on long time travel it is desirable to keep ..... from security angle.

- A) More No. of Mobiles                C) Ear Phone  
B) Portable Charger pack              D) Photos of Relatives

8 | ..... habit during travel can become a security vulnerability.

- A) Loud Talking                            C) Listening to Songs  
B) Loose Talking                         D) Watching Movies

### Segment III : Automation

9 | This symbol is indicative of....



- A) Absolute Automation                C) Video Surveillance  
B) Password Protection                D) Scanner

10 | ..... commands support Secure Recording mode.

- A) Object Cloning                        C) QCR  
B) All commands in the                D) All Three  
Enterprise client

11 | What is the simplest way to stop brute-force cyber attacks dead in their tracks?

- A) Shred all paperwork                to all entryways.  
containing sensitive                    C) Add a few unique  
information.                              characters to any  
B) Add a deadbolt lock                password or PIN.

12 | What is the weakest link in Cyber Security?

- A) Weak Encryption                    C) Short Passwords  
B) Humans

Please select the most appropriate / correct choice from the multiple options and fill in the blanks.

You can send the answers by email ([murthy@fsai.in](mailto:murthy@fsai.in)) or WhatsApp (+91 98255 61699). While sharing the answers, please ensure to mention your Name, Profession, Company, Phone, Email & FSAI Membership Number.

### SERIES 10 ANSWER KEY:

1-A | 2-C | 3-C | 4-B | 5-A | 6-C | 7-D | 8-B | 9-B | 10-D | 11-C | 12-C

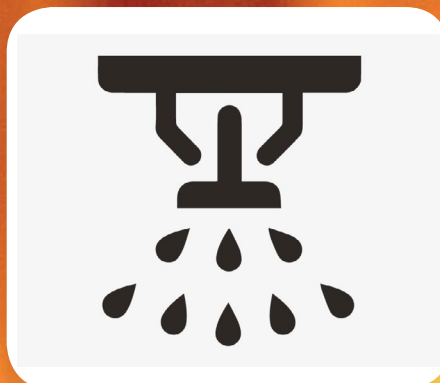
It is gratifying to note that the following readers have ticked on the 'right' options. Accordingly, they are eligible for the special Certificate of Honor in 'Gold' category. Mr.Praveen Kumar, S, Ms.Bhavani Raghunath, Ms.Chanchal, Ms.Juyanika Gunin, Ms. Vidyashree



# FIRE SAFETY PRACTICES



**DO NOT** use lift during  
fire situation in your  
premises



**Sprinkler Point**



# SECURITY & SAFETY PRACTICES



Escalator



Locations where information is shared and/or found children are reunited with parents



Symbol of password hacking probability



Hand wash/ Sanitation counter



Vehicle Tracking System for lost or forgotten parked location



Helpline for guarding against on-line theft of money



Cyber Insurance cover facility



# ROAD SAFETY: WE MAY KNOW... BUT.. DO WE PRACTICE..!!!!

सड़क हादसों में, न जाने कितने हो जाते है अपंग  
और कितने ही धो बैठते हैं हाथ, अपनी जान से  
इन हादसों से बचने को, लड़नी नहीं है कोई जंग  
सुरक्षित हो सकते हैं हम, रोड-सेफ्टी के संज्ञान से

Road Safety is not a Rocket Science. It is merely a small awareness & more of a common sense. We all are being told about it when we learn driving or when we go to get our Driving License. So many times we go through the “Do’s and Don’ts” of driving a four-wheeler, a two-wheeler, a cycle or even to walk on the roadside. Right from the beginning of the school days, road safety is taught to us either in form of Rhymes or as part of lessons in Hindi & English. In spite of knowing about the road-safety, we meet with accidents.

जागरुक हैं हम और जानकार भी हैं  
बातों में सुरक्षा समबंधी विचार भी हैं  
सुरक्षा सम्मेलनों में भी होते हैं शामिल  
फिर क्यूँ हम हादसों के शिकार भी हैं

Knowing about Safety is good but it does not help in avoiding the accidents till we follow and practice the Safety rules. Whenever we listen about somebody has met with an accident, we do the whole analysis of his short-falls while driving. At the same time, Should we not apply those points on ourselves to take precautions in the future? Despite of being completely aware about the safety tips, why do we sometimes meet with accidents? To get the answer of this question, we have to ask few more questions to ourselves:

मालूम है कि सीट-बेल्ट है कितनी जरूरी  
हर बार सीट-बेल्ट हम लगाते हैं क्या ?  
आगे चल रही गाड़ी से बनानी है पर्याप्त दूरी  
किन्तु हम वह फ़ासला बनाते हैं क्या ?  
महत्वपूर्ण है गाड़ी की स्पीड पर काबू रखना  
गति पे नियंत्रण सदैव रख पाते हैं क्या ?  
यूँ नहीं कि नियम-कायदों से हम वाकिफ़ नहीं  
आचरण में उन्हें हम अपनाते हैं क्या ?

The day we shall start replying to such questions to ourselves, the problem itself shall get resolved. Knowing rules will not help if they shall not be followed. The knowledge of Safety-tips will do nothing of those shall not be practised sincerely.

माना जानकारी जरूरी है पर सिर्फ जानकार होना अधूरा है  
सुरक्षा नियमों का हो पूर्णतः पालन, तभी सुरक्षा-चक्र पूरा है



Romil Agarwal

Mr. Romil is the Secretary of Indore Chapter of FSAI. Mr. Romil Agarwal, National Manager – Sales & Marketing, in KV Fire Chemicals (I) Pvt Ltd. A business professional with more than 27 years of overall experience including 20 years of devotion in the field of Fire & Safety. With an in-depth understanding of Foams & Powder applications, he is experienced in Business development, Customer Service, Liaison activities, Negotiations and dealings with Government, Private & Corporate customers. In addition to the flair in marketing, he is also fond of writing Poetry, Write-ups, Slogans and Rhymes in Hindi & English.



# FIRE & SECURITY ASSOCIATION OF INDIA

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Tel: 044-42128535. Email: administrator@fsai.in

www.fsai.in

## APPLICATION FORM FOR MEMBERSHIP

**CORPORATE / MSME / PROFESSIONAL / INDIVIDUAL / RAKSHA / SHAKTI / STUDENT**

I / We hereby make application for Membership in the **FIRE & SECURITY ASSOCIATION OF INDIA** and agree to be governed by its Constitution, By-Laws and Rules.

Member Name \_\_\_\_\_

**Corporate / MSME / Professional / Individual / Raksha / Shakti / Student** (strike which is not applicable)

I / We send herewith DD / Cheque of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) in favour of "**FIRE & SECURITY ASSOCIATION OF INDIA**". Alternatively wire transfer to: Fire & Security Association of India - ICICI Bank Ltd - West Mambalam, Chennai-33 - SB A/c No.602301184287 - NEFT / RTGS / IFSE Code: ICIC0006023.

FSAI Goods & Services Tax No: 33AAATF1715F1ZB - FSAI PAN No.: AAA TF 1715 F

	Corporate (1 year)	MSME* (1 year)	Professional (2 years)	Individual (3 years)	Raksha (1 year)	Shakti^ (3 years)	Student (3 years)
Please tick applicable Membership	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Admission Fee (one time)	Rs.17,250/-	Rs.10,750/-	-	-	-	-	-
Membership Fee	Rs.8,250/-	Rs.7,250/-	Rs.15,500/-	Rs.3,250/-	Rs.1,000/-	Rs.1,625/-	Rs.770/-
Total	Rs.25,500/-	Rs.18,000/-	-	-	-	-	-
Renewal Membership Fee	Rs.8,250/-	Rs.7,250/-	Rs.15,500/-	Rs.3,250/-	Rs.1,000/-	Rs.1,625/-	Rs.770/-
International Annual Membership Fee	<input type="checkbox"/>	USD 500/-					

\* Document proof of being an MSME (Micro, Small & Medium Enterprise) to be submitted along with the Application Form. Fees mentioned above are inclusive of Goods & Services Tax @ 18%. ^ Or till the validity of the spouse member.

Name : \_\_\_\_\_

Designation : \_\_\_\_\_

Address : \_\_\_\_\_

Telephone : \_\_\_\_\_ Mobile: \_\_\_\_\_

Email Address : \_\_\_\_\_ Website: \_\_\_\_\_

Signature of Applicant : \_\_\_\_\_ Date: \_\_\_\_\_

Names of other Directors : \_\_\_\_\_

Constitution of Firm : \_\_\_\_\_ Yr. of Est.: \_\_\_\_\_

Nature of Business : \_\_\_\_\_

Your Contribution to FSAI : \_\_\_\_\_

### DESIGNATED REPRESENTATIVES (only for Corporate Members / MSME):

Name 1 : \_\_\_\_\_ Mobile: \_\_\_\_\_

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Name 2 : \_\_\_\_\_ Mobile: \_\_\_\_\_

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Please indicate if you are a member of any other Association \_\_\_\_\_

### FOR OFFICE USE ONLY

1. Date of Receipt : \_\_\_\_\_

2. Bank Draft / Cheque No.: \_\_\_\_\_ for Rs. \_\_\_\_\_ drawn on \_\_\_\_\_

3. Membership No. : \_\_\_\_\_

4. Date of Joining : \_\_\_\_\_ Due date for Renewal: \_\_\_\_\_

APPROVED BY : \_\_\_\_\_

National President /  
Chapter President

National Secretary /  
Chapter Secretary

National Treasurer





# We are looking at YOU...



Alone we can do so little; together we can do so much – *Helen Keller*

This is such a great message and pins great hopes on every team effort. We at FSAI, carry this common passion of making our country safer from various fire and safety hazards.

We are looking at YOU to join us, holding hands together, and adding more vigor to this ceaseless journey! Of course, this is also a great knowledge platform which helps in skill up-gradation through sessions like Indian as well as International Codes Updates, Products Innovations, Project Management and so much more. This is also a great team of industry experts with whom YOU can connect to broaden professional network. Very important, YOU get a great opportunity to give it back to society through your area of expertise. In every way, it is a great prospect and we appeal YOU to join us to make this journey more exciting!

'How wonderful it is that nobody need wait a single moment before starting to improve the world.'  
- *Anne Frank*

***Come join us at FSAI and be the movement!***



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OR YOU CAN PAY THROUGH:





**Fire & Security Association of India**

# Launching New Memberships for WOMEN POWER...



Join FSAI online @ [www.fsai.in](http://www.fsai.in)

FIRE & SECURITY ASSOCIATION OF INDIA (FSAI) is a non-profit organization established in 2002. It represents the Fire Protection, Life Safety, Security, Building Automation, Loss Prevention and Risk Management domains.

**“The question isn't who is going to let me; it's who is going to stop me.” Ayn Rand**

The quote above wonderfully summarizes importance of women power. We at FSAI are also blessed with some such great examples who are shaping our efforts to make our country safer. We need more of such brilliant minds to gather more mass to this already rolling movement. You are important in every stage of life be it a home front or be it office front or be it your own stint, you have always outshined and worked like an anchor to our lives!

This is a call to invite you for much larger and better society cause to make homes and workplaces safer from fire and security hazards. So what's holding you back, do join us and help us to go miles with your force!

*Raksha*

*Shakti*

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<b>1 YEAR</b>
NO ADMISSION FEE
INR. 1,000/-
1 PARTICIPANT
YES
YES
PAID BASIS
YES
YES
YES
YES
PAID BASIS
NO
NO
NO
NO
NO
DIGITAL CERTIFICATE
NO
NO
NO

## SHAKTI MEMBERSHIP (FOR SPOUSES OF MEMBERS)

<b>3 YEARS*</b>
NO ADMISSION FEE
INR. 1,625/- (INDIVIDUALS)
1 PARTICIPANT
YES
YES
NO
YES
YES
YES
PAID BASIS
NO
NO
NO
NO
NO
DIGITAL CERTIFICATE
NO
NO
NO

\* OR TILL THE VALIDITY OF THE SPOUSE MEMBER



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# TIPS FOR SAFE DIWALI

Be Prepared...  
Be Safe...  
Be Responsible...



- Fire Crackers should be burst only outdoors.
- Buy Fire Crackers from quality Manufacturers only.
- Do not get closer to the misfired Cracker immediately.
- Always use long Incense stick / Candle.
- When lighting crackers. Ensure safe distance between the body and the crackers.
- Wear tight clothes when bursting Crackers.
- Avoid clothes made of synthetic material.
- While children are bursting crackers parental supervision is a must.
- Light crackers one at a time.
- Store fireworks in a closed box in a safe place away from kids.
- In case of any accident burns, pour large quantity of water / put under running tap.
- Always keep a first aid kit handy.
- Keep a Fire Extinguisher and a bucket of water as precautionary measure.



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**Fire & Security Association of India**

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