**Govt. of India, Ministry of Labour & Employment**
**Directorate General Factory Advice Service and Labour Institutes**

# USE OF DRONE TECHNOLOGY IN ASCERTAINING SAFETY & HEALTH AT WORKPLACES

## DRONES AT WORKPLACE

Drones are Unmanned Aerial Vehicles (UAVs) or Remotely Piloted Aerial Systems (RPAS) that are controlled either by a pilot on the ground or with the help of technology. Drones are capable of taking a payload along with sensor which can be used for sensing, image capturing.

Apart from generic uses, drones have latent use for industrial needs to increased productivity, workforce safety, access to hazardous & inaccessible environments/Area. Advancement in sensors technology, wireless communication, miniature power source has paved the way for numerous industrial applications for drones. Drones provide an effective alternative to manual work in terms of convenience, cost, efficiency and safety. Over the last decade, many industries have utilized drones in their projects/ operation by replacing manual labour with technology-based automation in industrial survey, remote monitoring, progress tracking, surveillance, and inspection.

## BENEFITS OF USING DRONES FOR WORKPLACE SAFETY

- Cost effective – No requirement for additional safety equipment, less manpower requirements
- Risk Mitigation – Risk of injury (Consequence) mitigated.
- Accurate Data – in the form of High-definition real-time images
- Fast and Effective – Covering a larger area in a shorter timeframe.
- Interiors and Exterior – Covering all aspects and areas.
- Data Availability – Data is immediately available via direct video link as well as immediate sharing over network for immediate review. The data collected can be stored in suitable storage media for reference.

## DRONE TECHNOLOGY FOR WORK PLACE SAFETY

- Inspection and assessment of workplaces.
- Surveillance for Compliance on safety and health.
- Fire Fighting and Risk Assessment
- Risks assessment in Working at Height before start of work
- Confined Space Entry
- Under Fluid Inspection/ Under water Inspection
- Thermal Modeling and Integrity Assessment
- Hazardous Material (HAZMAT) handling/ Computer aided Dispatch
- Ultrasonic Inspection/ Measurement; Mechanical Integrity Assessment
- Emergency Response/ Disaster Management.
- Enhancing legal compliances on safety and health
- Accident prevention and control

- Identification of Unsafe Acts and Conditions at Workplaces.
- Mapping Interiors Spillage or Accident
- Use of Personal protective Equipments
- Access control ; Supervision and Surveillance on Safety
- Traffic movement surveillance.
- Survey Power Lines in Industry Premises
- Reduce Human Exposure to Hazardous Conditions
- Fast Response Time, Reducing exposure of Hazardous Material.
- Cleaning and Decontamination of Area with Limited or Restrictive access.
- Transporting, Moving and Stacking Bio- Hazard material.
- Delivering tools and monitoring region with thermal view
- Using as a mobile autonomous IOT device to work with other equipment within a system.

## THE WAY FORWARD

The use of drone technology aligned with Artificial Intelligence and Machine Learning can change the entire safety and health deliverance mechanism and ease of compliances at workplaces thus resulting in safer and decent workplaces.

**For more information write to:**

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