



Interagency Aviation Safety Alert



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Subject: Risk Awareness and Mitigation of Hazards Caused by Human Factors

Area of Concern: Fire Suppression Operations

Distribution: Aviation and Safety Managers, Unit Aviation Officers, Pilots, Pilot Inspectors, Flight Crew Members and all Aviation Support Personnel.

Discussion: Aviation System Safety assessments recently identified 18 hazards that are common among all of the aviation missions studied, and which require National level mitigation. Inherent among the common hazards are several Human Factors concerns that need mitigation and demand a higher level of situation awareness. This Safety Alert should benefit all interagency aviation personnel, by defining the hazards and offering solutions for mitigation, especially during times of increased activity. It is strongly recommended that this Alert, as well as the completed program risk assessment package be utilized as a briefing tool and operational checklist by Incident Management Teams, FAST Teams and ASTAT Teams and local unit aviation personnel. Copies of the Risk Assessments are available from State Aviation Managers and Region Aviation Safety Managers.

The following human factors pose **significant hazards** to safe flight operations. Each situation should be mitigated to acceptable levels prior to accepting a mission. Mitigation measures are suggested or you may use any other means at your disposal to mitigate these hazards.

Task Saturation: Potential for human error is increased when personnel must multi-task as a result of the mission/ergonomic environment (human/machine interface), the organization, or the complexity of a tactical operation) thereby losing situational awareness. Ensure that flight crews and aviation managers are qualified in their assigned position and trained in techniques for workload management (i.e. delegate tasks, adjust tactics, reduce number of resources if necessary, get additional personnel to help with operation). It may be helpful to establish local/personal “trigger points” to identify when task saturation is at a critical level. When practical attend Crew Resource Management and/or simulator training.

Risk vs. Reward: Routine acceptance of high-risk assignments as a normal job expectation is a hazardous attitude. Assess the complexity, as well as the need/value for the mission, ask if it can be done another way, and ask if all personnel are essential to the flight/mission. Solicit input from the fire line and pilots as to the effectiveness of air operations. Risk Management courses are available at ACE.

Fatigue/burnout: Extended duration of incident assignments as well as year round incident support (i.e. hurricane relief, fire support, other all-risk) contribute to the cumulative effects of fatigue leading to poor decision making, risk taking and complacency. Ensure that aviation personnel are allowed adequate periods of rest between assignments. Monitor symptoms of cumulative job fatigue and be proactive to implement duty restrictions for affected flight crews. Emphasize restrictions on personnel that are in extended travel status vs. those operating from home base. Adhere to work/rest guidelines, if necessary implement a more restrictive rest policy based on personal/family needs.

Hazards Continued:

Pilot knowledge of equipment and emergency procedures. Flight crewmembers are often being assigned to new or unfamiliar aircraft, especially in call-when-needed contracts. Be on the alert for a lack of familiarity with avionics, performance calculations, and knowledge of emergency procedures. Alert pilot inspectors to assess and/or have pilots demonstrate knowledge of equipment and emergency procedures during the carding process. Aviation Managers and inspection teams (if correctly configured) should discuss and review these issues with flight crews. Request vendors to provide additional training for pilots that need to improve performance. Provide relief pilots adequate time to transition with outgoing pilots.

Lack of Crew Resource Management (CRM): Effective use of all crewmembers is vital for maintaining situational awareness and decision-making during high risk, high consequence missions. Provide briefing and de-briefing tools (i.e. after action reviews, current information, and situation status reports) to pilots and aviation managers. It's critical, to the extent possible, that we monitor the mental and physical well being of our pilots and support personnel, and curtail operations when necessary. Continue to emphasize classroom based CRM training.

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