RISK ASSESSMENT MATRIX

SEVERITY / Consequence if Mishap Occurs	PROBABILITY — Likelihood of Mishap if Hazard is Present: **Almost Certain** (Continuously experienced)	**Likely** (Will occur frequently)	**Possible** (Will occur several times)	**Unlikely** (Improbable; but has occurred in the past)	**Rare** (Remotely possible; but highly improbable)
Catastrophic (Death, Loss of Asset or Mission Capability or Unit Readiness)	Extremely High	Extremely High	Extremely High	High	Medium
Critical (Permanent Disabling Injury or Damage, Significantly Degraded Mission Capability or Unit Readiness)	Extremely High	Extremely High	High	Medium	Medium
Moderate (Non-Permanent Disabling Injury or Damage, Degraded Mission Capability or Unit Readiness)	High	High	Medium	Low	Low
Negligible (Minimal Injury or Damage, Little or No Impact to Mission Capability or Unit Readiness)	Medium	Medium	Low	Low	Low

Risk Assessment Codes (RAC)

Extremely High=1 High=2 Medium=3 Low=4

Risk Assessment Codes

RAC Value	Risk Category	Action Required
1	Extremely High	Stop, Mitigation Required
2	High	Mitigation Needed, Consider Stopping
3	Medium	Mitigation Recommended
4	Low	Possible Acceptance, Mitigation Optional

**Reference specific agency policy regarding action required based on risk category*

Risk Assessment Worksheet

SYSTEM: Single Engine Air-Tanker (SEAT) - (Aircraft, Base Facilities, Contracting, Government Personnel, Contracting Personnel, Maintenance, & Operations)		Pre-Mitigation				Post Mitigation							
Sub System	**Hazard(s)**	**Probability**	**Severity**	**Risk Level**	**Mitigation(s)**	**Probability**	**Severity**	**Risk Level**	**Additional Local Mitigation(s)**	**Probability**	**Severity**	**Overall Risk**	**Mitigation Achieved? Yes/No**
Capabilities	High density altitude affects the aircraft performance	*Almost Certain*	*Critical*	*Extremely High*	Assign appropriate SEAT aircraft for mission and typical DA. Conduct pre-mission performance planning. Reinforce high/hot/heavy training. Complete load calculation before flight.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Capabilities	Inappropriate aircraft for mission	*Possible*	*Critical*	*High*	Ensure SEAT is appropriate for temperatures, altitude, terrain, fuel type and mission. Receive feedback from pilots and aerial supervisor. If not effective, order different/additional aircraft.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Maintenance	Mechanical failure	*Possible*	*Catastrophic*	*Extremely High*	Pilot and SEMG monitor maintenance schedule. Vendor follows maintenance/overhaul schedule. Pilot reviews and understands emergency procedures.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Maintenance	Aircraft improperly maintained	*Possible*	*Catastrophic*	*Extremely High*	Follow contract/FAA requirements and aircraft maintenance manual. Aircraft inspectors check that FAA maintenance requirements are met. Pilot performs/ensures that daily pre- and post-flight inspections are complete and that all life and time limit maintenance items are completed per maintenance manual.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Collision Avoidance	Visibility	*Almost Certain*	*Catastrophic*	*Extremely High*	Keep windscreen clean. Aircraft will have high-visibility paint scheme. Pilot and ground resources must maintain situational awareness. Only fly during VFR conditions.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Collision Avoidance	Un-used or inoperable high visibility aircraft lighting systems	*Possible*	*Critical*	*High*	Landing and strobe lights need to be maintained and utilized as required by contract and aerial supervision guide. If lighting is inoperable, aircraft will return to base until repaired.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Collision Avoidance	Congested airspace, military airspace, uncontrolled airports	*Almost Certain*	*Catastrophic*	*Extremely High*	Aircraft will have operable collision avoidance system (TCAS), rate-of climb indicator, gyro and aeronautical charts for area of operations. Pilot will review known aerial hazards prior to flight. Practice see and avoid.	*Unlikely*	*Catastrophic*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Aircraft Carding and Pilot Inspection Process	Lack of standardization	*Possible*	*Moderate*	*Medium*	Ensure implementation of standardized SEAT aircraft and pilot inspection process. Train inspectors on new standards. Ensure SEMGs are knowledgeable on pre-use inspection process.	*Unlikely*	*Moderate*	*Medium*		Choose an	Choose an	*Medium*	*YES*

Equipment	Aviation maintenance inspectors unfamiliar with SEAT aircraft	*Possible*	*Critical*	*High*	Train and utilize more Interagency aviation maintenance inspectors (include all agencies) with past SEAT program experience and knowledge.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Equipment	Locations of cockpit controls and switches not consistent/standardized	*Possible*	*Moderate*	*Medium*	Establish standard configuration in SEATs. Allow relief pilots time for orientation in each aircraft prior to mission operations.	*Rare*	*Negligible*	*Low*		Choose an	Choose an	*Low*	*YES*
Equipment	Inadequate pre-flight/post-flight inspections	*Possible*	*Critical*	*High*	Agency reps and vendor personnel should ensure adequate revenue time for pre- and post-flight inspections. Document pre- and postflight inspections daily.	*Unlikely*	*Moderate*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Communications	Changing technology and lack of training	*Likely*	*Critical*	*Extremely High*	During the inspection and carding process ensure contractors (pilots) are skilled with equipment provided - GPS, VHF and UHF radios, AFF, etc.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Communications	Communication with non-federal fire departments--lack of radio equipment compatibility (narrow banding and frequencies)	*Possible*	*Critical*	*High*	Continue to work with state, city, and county fire departments to meet future federal standards and compatibility issues. Work with national agency/interagency radio program leaders to ensure the policies they develop are compatible with aviation requirements.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Communications	Inadequate frequency management	*Almost Certain*	*Catastrophic*	*Extremely High*	Conduct effective air base inbriefings, including relief pilots. Ensure pilot has adequate time for orientation/programming before mission flights. Conduct frequent AARs and/or specialized training simulation exercises. Perform periodic reviews of frequency lists and avionics equipment operations. Check radio systems following days off. Ensure that positive communications are established.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Communications	No communications between SEAT pilot and ground/air ops	*Possible*	*Catastrophic*	*Extremely High*	Follow appropriate checklists and procedures. Do not drop on fire line unless sure area is clear of ground personnel. If no contact can be established on incident return to base.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Communications	Radio frequency congestion	*Almost Certain*	*Critical*	*Extremely High*	Make alternative frequencies readily available and known. Order additional frequencies as needed. Utilize AFF when possible, to reduce congestion. Maintain effective working relationships with frequency coordinators. During high fire activity consider ordering standalone frequency coordinator.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Communications	Lack of flight following frequencies	*Likely*	*Critical*	*Extremely High*	Request local flight following frequencies whenever possible. Utilize standardized AFF procedures. Utilize national flight following if necessary. Utilize Air Guard as a last resort for initial contact for flight following.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Airport Configuration	Unfamiliar with runway and ramp space dimensions and condition	*Almost Certain*	*Critical*	*Extremely High*	Verify that length, width and surface conditions for type and number of equipment and aircraft are adequate.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Airport Configuration	Inadequate runway and ramp space minimums	*Almost Certain*	*Critical*	*Extremely High*	Utilize an alternate airport that meets minimums.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Contract Types	Unfamiliar with type of contract aircraft was hired on	*Almost*	*Moderate*	*High*	Become familiar with that specific aircraft contract. Communicate with SEAT Coordinator as needed for clarification.	*Rare*	*Moderate*	*Low*		Choose an	Choose an	*Low*	*YES*
Contract Types	Frequent movement of nationally contracted SEATs between bases creates lack of CRM between pilots, ground crews and SEMGs	*Almost Certain*	*Moderate*	*High*	Understand that SEATs can move locations at any time; utilize CRM training at beginning of and throughout assignments. Provide adequate orientation training to all crews. Utilize frequent AARs and debriefings. Fire management should provide adequate funding for periodic simulations and training.	*Rare*	*Moderate*	*Low*		Choose an item.	Choose an item.	*Low*	*YES*

Utilization	Span of control exceeded	*Almost Certain*	*Critical*	*Extremely High*	Ensure that base operations plans address contingency to handle events where span of control may be exceeded. Home units need to mitigate this issue by pre-training and recruitment of supplemental personnel. Order additional personnel as necessary. Comply with NWCG Standards for Airtanker Base Operations' staffing minimums.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Management	Ineffective use of SEATs on incidents	*Likely*	*Moderate*	*Medium*	Incident commanders, fire management, aerial supervision are provided training on use of SEATs in the fire environment. Utilize at least 2 SEATs in tandem. Follow wind/turbulence restrictions.	*Unlikely*	*Moderate*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Training	Lack of knowledge and experience in aviation contract administration and aviation program management for SEAT Manager trainees	*Almost*	*Moderate*	*Medium*	Recommend SEAT Managers attend aviation contract administration course.	*Unlikely*	*Moderate*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Training	Lack of available and trained agency SEMGs, ramp personnel	*Almost Certain*	*Critical*	*Extremely High*	Fire management should provide opportunities for training/ qualification of agency employees.	*Unlikely*	*Moderate*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Human Factors	Acceptance of high-risk missions as normal	*Likely*	*Critical*	*Extremely High*	Review risk assessment and existing policy/procedures. Brief/debrief with all personnel and utilize risk management tools to include Go/No-Go checklists. Educate personnel on the hazards of normalization of risk and complacency. Emphasize situational awareness with all personnel. Mission decisions are made at the appropriate level.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Human Factors	Changes in standard operating procedures not being accepted	*Likely*	*Moderate*	*High*	Clarify and confirm program changes. Provide training. Notify appropriate personnel, in a timely manner. Accept questions and seek out responses.	*Unlikely*	*Moderate*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Human Factors	Conflicting personalities resulting in hazardous attitudes	*Possible*	*Critical*	*High*	If individuals cannot professionally resolve differences, managers and supervisors must intervene immediately. Brief/debrief, employ CRM, provide and receive honest and objective feedback, maintain positive attitude. Maintain professionalism and mission focus at all times.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Experience	SEAT Manager-Agency vs AD	*Almost Certain*	*Moderate*	*High*	Provide program oversight (Local, State or National) to ensure that SEMG meets currency experience requirements and have completed triennial refresher as per NWCG Standards for Wildland Fire Position Qualifications. Provide FWPT/RAMP training. Encourage more Agency personnel train for SEMG qualification.	*Unlikely*	*Moderate*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Experience	Aerial supervision - lack of SEAT specific knowledge and experience	*Likely*	*Critical*	*Extremely High*	Provide thorough pre-mission briefings and conduct post-mission AARs, including SEAT pilots and ATGS. Include specific SEAT section for ATGS training.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Policy/ Procedure	Policy deviation	*Possible*	*Critical*	*High*	Re-enforce and emphasize SEMGs to communicate with local UAO, SECOs, COs, SAMs, etc. when questions and/or issues arise.	*Unlikely*	*Moderate*	*Medium*		Choose an	Choose an	*Medium*	*YES*

Policy/ Procedure	Multiple agencies - differing standards (state vs federal)	*Almost Certain*	*Critical*	*Extremely High*	Recommend continued development and implementation of interagency standardized SEAT program management and policy.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Human Factors	Ground support personnel fatigue and workload	*Likely*	*Critical*	*Extremely High*	Ensure contractor compliance with rest and duty limitations (DOT and contract) for ground support personnel so as not to overextend (company and agencies are both responsible to monitor closely). Utilize additional crew members as necessary. Monitor number of aircraft being loaded and mitigate additional workload per loader.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Human Factors	Pilot fatigue	*Almost Certain*	*Critical*	*Extremely High*	SEMGs work with vendor personnel to ensure adequate rest between shifts. Manage missions to be most effective for incident, with proper use of aircraft. Consider phase duty limitations as appropriate.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Human Factors	Pilot - poor decision making: multitasking, mission focus, sense of urgency, peer pressure	*Almost Certain*	*Critical*	*Extremely High*	Ensure that these items are addressed in the contract pre-work meeting and re-enforced in the daily air base briefings, post mission briefings or whenever the need is identified. All personnel involved in operations should recognize hazardous situations or behavior. Communicate issues or concerns. Recognize fatigue, hunger, illness or other issues that may be causing poor decision making and mitigate as needed.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Human Factors	Acceptance of high-risk missions and activities as normal	*Likely*	*Catastrophic*	*Extremely High*	Emphasize importance of situational awareness to recognizing risk. Consider providing risk management training for the pilot and crew. Readdress complacency and self-discipline in daily airbase briefings. Review risk management workbook and/or vendor SMS manual on a regular basis.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Human Factors	Poor CRM with crew rotations; crew rotation may affect aircraft/equipment knowledge inbrief	*Likely*	*Critical*	*Extremely High*	Make effort to ensure that contractor relief personnel arrive at base prior to relief cycle with sufficient overlap time to receive good in-brief from primary personnel.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Human Factors	Single pilot workload may be considered to be excessive based on demands that he/she be able to operate several cockpit equipment items during mission performance (i.e., multi-tasking overload.)	*Almost Certain*	*Critical*	*Extremely High*	Complete thorough pre-flight planning. Minimize radio traffic. Follow sterile cockpit rules. Utilize aerial supervision if available to reduce cockpit workload. Utilize AFF. Allow time to program frequencies prior to launch. Conduct AARs, sand table and on ground CRM Exercises, incorporating operations personnel.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Human Factors	Conflicting and/or difficult personalities	*Likely*	*Critical*	*Extremely High*	If individuals cannot professionally resolve differences, managers and supervisors must take immediate action. Brief/debrief, employ CRM, provide and receive honest and objective feedback, maintain positive attitude. Maintain professionalism and mission focus at all times.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*

Pilot Training and Experience	Lack of fire mission training and lack of proficiency flight time	*Likely*	*Catastrophic*	*Extremely High*	Vendors have instituted training programs such as CRM, risk management, and flight safety with the intent to standardize cockpit procedures. Develop training center for fire environment and make available for vendor use. Other training includes aircraft performance and limitations. Provide opportunities for new and experienced pilots to attend NAFA training.	*Possible*	*Catastrophic*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Pilot Training and Experience	High number of target fixation and tactical maneuvering errors	*Likely*	*Catastrophic*	*Extremely High*	Company training plans should address human factors including target fixation, situational awareness, task overload, and performance/tactical planning errors. Plan training simulations prior to and throughout fire season.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Pilot Training and Experience	Lack of training in firefighting strategy, tactics, terminology, basic ICS, frequency management, etc.	*Likely*	*Critical*	*Extremely High*	Establish training courses for pilots to meet basic level of firefighting knowledge for all contracts. Encourage contractors to take online basic wildland firefighting courses. Provide opportunities for attendance at NAFA. When available have a Level I pilot mentor a level II pilot.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Pilot Training and Experience	Inadequate flight experience	*Possible*	*Catastrophic*	*Extremely High*	Adhere to existing contract requirements requiring contractors to validate pilots' experience and training. SEMG must be familiar with the level of the pilot and their restrictions. Continue to provide opportunities for SEAT pilots to attend NAFA and other fire-specific aviation training. Develop, implement, and support a pilot mentoring program.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Ground Support Training	Not all mixers, loaders and fuelers are adequately trained and qualified	*Possible*	*Critical*	*High*	Ensure that contractors provide adequate training to ground personnel on mixing of fire chemicals and fueling of aircraft prior to fire assignment. Provide training documentation to agency aviation managers during pre-work meetings.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
New Technology	Lack of familiarity with technology, inability to utilize and operate equipment	*Possible*	*Critical*	*High*	Ensure all vendor personnel are trained in the function and operation of newer technology, equipment, and systems prior to implementation and utilization.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Documentatio n	Maintenance not tracked well	*Possible*	*Critical*	*High*	SEMG should be proactive during the pre-use inspection; proactively seek and document maintenance information when the aircraft and pilot reports for assignment. Vendor needs to share maintenance information as SEAT moves between bases.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Responsibiliti es	Experience and/or knowledge level of contractor personnel assigned to perform maintenance duties are unknown	*Possible*	*Critical*	*High*	Emphasis should be focused on verification of credentials by aviation maintenance inspectors. SEMG should verify ability of pilot to perform maintenance on aircraft through coordination with COTR and/or aviation maintenance inspector.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Responsibiliti es	Distractions created by collateral duties (A&P/driver/mixer etc.)	*Possible*	*Critical*	*High*	Avoid overloading support personnel with responsibilities and workload. Pilot only does maintenance/A&P duties they are approved for. Utilize additional crew members as necessary.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*

Mission	Inefficient use of SEATs may result in unnecessary risk exposure to SEAT pilot and ground personnel. (risk vs. gain)	*Almost Certain*	*Critical*	*Extremely High*	SEAT pilot, fire managers, dispatchers, line personnel, and aerial supervisors need proper education/training on use of SEATs. Use AAR as mitigation tool to prevent re-occurrence. Conduct pre- and post-mission briefings. Review How to Refuse Risk protocols.	*Possible*	*Moderate*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Mission	Flying low level at operational weights and air speeds in areas with hazards	*Almost Certain*	*Catastrophic*	*Extremely High*	Perform high-level reconnaissance prior to descending to work in the low-level environment. Utilize aerial supervision/lead planes when available. Utilize proper aircraft energy management techniques. Receive thorough in-briefing on area hazards.	*Unlikely*	*Catastrophic*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Mission	Inexperienced personnel-government and contractors	*Almost Certain*	*Critical*	*Extremely High*	Agency and contractors need to evaluate required training to determine if personnel are staying current with program needs. Provide training at beginning of season and exercises/simulations throughout season. During operations ensure there are adequately trained and experienced personnel to mentor trainees.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Mission	A sense of urgency may be placed on contractor personnel at various points in the mission	*Possible*	*Critical*	*High*	Address the safety vs. urgency issue as a special-emphasis item during inbriefing with contractor and agency employees. Reinforce this throughout the entire operational period. Utilize Go/No-Go checklists. Recognize pilot is final decision maker for whether flight occurs.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Mission	Drop height minimums	*Almost Certain*	*Catastrophic*	*Extremely High*	Maintain 60-ft. obstacle clearance as the minimum descent altitude for all fire operations except during takeoff and landing.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Mission	Poor fuel management	*Unlikely*	*Catastrophic*	*High*	Monitor fuel quantities. Monitor fuel flow vs time. Follow fuel transfer procedures. Allow enough time for pre-flight and flight planning. Know refueling locations. Query other pilots on fuel status and availability for planned route.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Mission	Single pilot cockpit workload	*Possible*	*Catastrophic*	*High*	Maintain sterile cockpit policy, minimize in-flight diversions and frequency changes. Utilize aerial supervision to decrease pilot workload.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Mission	Wake turbulence	*Possible*	*Critical*	*High*	Exercise caution when in congested airspace or trailing other aircraft. Allow enough space between larger airtankers in front of SEATs during operations, especially during drops.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*
Mission	Lack of standardized dispatch form	*Likely*	*Critical*	*Extremely High*	Ensure that SEMGs verify all dispatch information. Refer to the SABO for required minimum dispatch information. Implement utilization of national standard aircraft dispatch form.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Mission	Ramp/taxi operations and communications	*Almost Certain*	*Critical*	*High*	Establish local ramp/taxi protocols in cooperation with local airport operations prior to utilization. Ensure adequate ingress and egress to the ramp. Ensure thorough in-briefing and monitor assigned ramp frequency. Utilize FWPT/RAMP when loading multiple aircraft.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Environment	Conflicting airspace environment	*Possible*	*Critical*	*High*	Local agency must provide orientation and situational awareness overview to SEAT pilots on Special Use Airspace, MTRs, TFRs etc. Utilize updated electronic equipment if possible [e.g., Traffic Collision Avoidance System (TCAS), Automatic Dependent Surveillance-Broadcast in (ADS-B in)]. Assure that dispatch and aviation program personnel are trained in procedures for SUA and on local Airspace Boundary Plan. Use aerial supervision when available. Practice see and avoid.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Environment	Hazardous and extreme weather conditions	*Almost Certain*	*Critical*	*Extremely High*	Confirm updated weather information resources are available. Utilize updated electronic equipment if possible. Confirm that red-flag warnings are communicated. Ensure updates on changing weather conditions are shared between pilots, airbase mangers, dispatchers, etc. Delay flight or cancel if necessary. Go/No-Go is PIC decision. Ensure base operating plan identifies trigger points for extreme weather conditions.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Environment	Hazards and extreme terrain	*Almost Certain*	*Critical*	*Extremely High*	Get an adequate mission briefing and use performance planning to prevent CFIT events. Perform high level reconnaissance prior to descending to the low-level environment. Use aerial supervision when available. Utilize electronic map technology if possible.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*

Environment	Congested areas and urban interface	*Almost Certain*	*Critical*	*Extremely High*	Comply with congested area policies and ensure that aerial supervision is in place or has been requested.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Retardant Loading	Pilot fatigue during hot loading operations (less time out of cockpit)	*Almost Certain*	*Critical*	*Extremely High*	Ensure pilot has adequate hydration and food to sustain operations. Pilot should get out of aircraft during fueling operations (no hot fueling), at fuel cycle in between hot loading operations. Open window when loading for fresh air.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Retardant Loading	Overfilling and mixing errors	*Possible*	*Critical*	*High*	Utilize a mass flow meter when loading if possible. Vendor and agency personnel will review and follow mixing and loading procedures, including use of hand signals, listed in base operating plan. Pilot and base manager will be notified immediately if aircraft is overfilled.	*Unlikely*	*Moderate*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Communications	Lack of available frequencies	*Almost Certain*	*Critical*	*Extremely High*	Manage available frequencies as best as possible. Request additional frequencies as needed and release frequencies in a timely manner when no longer needed. Do not change frequencies in the middle of a shift without allowing adequate time for SEAT pilots to re-program radios. Train all users in radio discipline. Utilize AFF when possible.	*Possible*	*Critical*	*High*		Choose an item.	Choose an item.	*High*	*YES*
Communications	Inadequate clarification of chain of command (who is in charge)	*Possible*	*Critical*	*High*	Validate tactical (A/G and A/A) contacts identified on the aircraft dispatch form. Ensure the pilot has a copy and validate frequencies during pre-mission planning.	*Unlikely*	*Critical*	*Medium*		Choose an	Choose an	*Medium*	*YES*

Performance Planning	Lack of planning - incorrect calculation of allowable retardant load; weight and balance	*Possible*	*Critical*	*High*	Pilots need to ensure that proper weight and balance and performance planning is completed and shared with base personnel. Utilize appropriate aircraft performance charts for the area of operations. Base personnel should be aware of trigger points for downloading retardant, water, etc. PIC will inform ground personnel on need for downloads.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
Performance Planning	Lack of information on incident conditions	*Possible*	*Critical*	*High*	Brief utilizing the IAP for the daily objectives/assignments, frequencies, assigned aircraft, predicted fire behavior and weather. Utilize national standard aircraft dispatch form. Obtain as much information as possible from dispatch, other aerial and ground resources. Obtain information from pilot after initial load on necessary mitigation. Use aerial supervision when available. PIC has final authority on Go/No-Go. Monitor AFF.	*Unlikely*	*Critical*	*Medium*		Choose an item.	Choose an item.	*Medium*	*YES*
		Choose an	Choose an	Choose an		Choose an	Choose an	Choose an		Choose an	Choose an	Choose an	Choose an item.

**Final Risk Value is the overall risk of the mission/flight after all mitigations have been implemented. Overall risk cannot be lower than the highest risk after mitigations. One high risk rating will result in the overall risk being high. It is not an average.*		**Final Risk Value:**	*High*	
Prepared By:	Peter Loso	**Title:**	FAO	**Date:**
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PETER LOSO

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