

| System Safety Assessment - Single Engine Airtankers (SEAT) |                                                                                    |                |              |         |                                                                                                                                                                                                                                                                                                                               |                 |              |         |  | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|------------------------------------------------------------|------------------------------------------------------------------------------------|----------------|--------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|---------|--|-----------------------------------|-----------------------------|-----------------------|
| SEAT System - SEAT Aircraft                                |                                                                                    |                |              |         |                                                                                                                                                                                                                                                                                                                               |                 |              |         |  |                                   |                             |                       |
|                                                            |                                                                                    | Pre-Mitigation |              |         | Mitigation                                                                                                                                                                                                                                                                                                                    | Post-mitigation |              |         |  |                                   |                             |                       |
| Sub-System                                                 | Hazards                                                                            | Likelihood     | Severity     | Outcome |                                                                                                                                                                                                                                                                                                                               | Likelihood      | Severity     | Outcome |  |                                   |                             |                       |
| Capabilities                                               | High Density Altitude effects the aircraft quantity/performance                    | Frequent       | Critical     | High    | Assign appropriate SEAT aircraft for mission and typical DA. Conduct pre-mission performance planning. Reinforce HHH Training. Acquire incident altitude and route information when available.                                                                                                                                | Remote          | Critical     | Medium  |  |                                   |                             |                       |
|                                                            | Inappropriate Aircraft for Mission                                                 | Occasional     | Critical     | Serious | Ensure SEAT is appropriate for temperatures, altitude terrain and mission. Receive feedback from pilots and Aerial Supervisor. Utilize electronic map technology when possible.                                                                                                                                               | Remote          | Critical     | Medium  |  |                                   |                             |                       |
| Maintenance                                                | Mechanical Failure                                                                 | Occasional     | Catastrophic | High    | Pilot & SEMG monitor maintenance schedule. Pilot reviews & understands emergency procedures.                                                                                                                                                                                                                                  | Remote          | Catastrophic | Serious |  |                                   |                             |                       |
|                                                            | Aircraft Improperly Maintained                                                     | Occasional     | Catastrophic | High    | Follow Contract requirements and Aircraft Maintenance Manual. Aircraft inspectors check that FAA maintenance requirements are met. Pilot performs/ensures that daily pre-flight inspections are complete and that all life/time limit maintenance items are within limits. SEMG ensure pre/post flight inspections completed. | Remote          | Critical     | Medium  |  |                                   |                             |                       |
| Collision Avoidance                                        | Smoke/Lighting/Inversion - Inclement Weather conditions between Airbase & Incident | Frequent       | Catastrophic | High    | Maintain VMC. Practice See & Avoid. Establish Communications. Ensure sound mission planning is performed and weather briefing is received. Know and understand Fire Traffic Area (FTA). Keep windscreen clean. Pilot and ground resources must maintain Situational Awareness. Pilot should exercise go/no-go option.         | Remote          | Critical     | Medium  |  |                                   |                             |                       |
|                                                            | Un-used or inoperable High Visibility aircraft lighting systems                    | Occasional     | Critical     | Serious | Aircraft lighting systems need to be utilized and maintained.                                                                                                                                                                                                                                                                 | Remote          | Critical     | Medium  |  |                                   |                             |                       |
|                                                            | Congested Airspace, Military Airspace, Uncontrolled Airports,                      | Frequent       | Catastrophic | High    | Comply with Interagency Aerial Supervision guide. Ensure effective airspace coordination is conducted between Dispatch & FBOs & Military Units. Understand, review, and discuss the Fire Traffic Area (FTA) in briefings. Review known aerial hazards.                                                                        | Remote          | Catastrophic | Serious |  |                                   |                             |                       |

| SEAT System - SEAT Aircraft (continued)       |                                                                                                                    |                |              |         |                                                                                                                                                                                                                                                                                                                            |                 |              |         |  | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------|--------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|---------|--|-----------------------------------|-----------------------------|-----------------------|
|                                               |                                                                                                                    | Pre-Mitigation |              |         | Mitigation                                                                                                                                                                                                                                                                                                                 | Post-mitigation |              |         |  |                                   |                             |                       |
| Sub-System                                    | Hazards                                                                                                            | Likelihood     | Severity     | Outcome |                                                                                                                                                                                                                                                                                                                            | Likelihood      | Severity     | Outcome |  |                                   |                             |                       |
| Aircraft Carding and Pilot Inspection Process | Lack of Standardization                                                                                            | Occasional     | Marginal     | Medium  | Ensure implementation of standardized SEAT aircraft and pilot inspection process. Train inspectors on new standards.                                                                                                                                                                                                       | Remote          | Marginal     | Medium  |  |                                   |                             |                       |
| Equipment                                     | Not Enough Inspectors to consistently detect unsafe equipment, inadequate skills, etc.                             | Occasional     | Critical     | Serious | Train and utilize more Interagency Inspectors (include all agencies) with past SEAT program experience and knowledge.                                                                                                                                                                                                      | Remote          | Critical     | Medium  |  |                                   |                             |                       |
|                                               | Inadequate Pre-Flight/Post-Flight Inspections                                                                      | Occasional     | Critical     | Serious | Agency and vendor should ensure adequate time for Inspection. Encourage pilot to utilize time to complete Inspections. Document Pre/Post Flight Inspections daily.                                                                                                                                                         | Remote          | Marginal     | Medium  |  |                                   |                             |                       |
| Communications                                | Changing Technology & Lack of Training                                                                             | Probable       | Critical     | High    | Inspection & carding process ensure Contractors (Pilots) are skilled with equipment provided - GPS, VHF & UHF Radios, AFF, etc.                                                                                                                                                                                            | Remote          | Critical     | Medium  |  |                                   |                             |                       |
|                                               | Lack of Radio Equipment Compatibility (Narrow Banding & Frequencies). Future considerations: Digital requirements. | Occasional     | Critical     | Serious | Continue to work with State, City & County Fire Departments to meet future Federal Standards and compatibility issues. Work with national agency/interagency radio program leaders ensure the policies they develop are compatible with aviation requirements.                                                             | Remote          | Critical     | Medium  |  | Provide programming software      |                             |                       |
|                                               | Inadequate Frequency Management                                                                                    | Frequent       | Catastrophic | High    | Conduct effective air base in-briefings. Develop specialized training-simulations. Conduct frequent AARs and/or sand table exercises. Perform periodic reviews of frequency lists and avionics equipment operations. Check radio systems following relief pilot duty. Ensure that positive communications are established. | Remote          | Critical     | Medium  |  |                                   |                             |                       |
|                                               | No Communications between SEAT pilot and ground/air ops.                                                           | Occasional     | Catastrophic | High    | Follow appropriate checklists and procedures. If no contact can be established on incident return to base.                                                                                                                                                                                                                 | Occasional      | Catastrophic | Medium  |  |                                   |                             |                       |
|                                               | Radio Frequency Congestion                                                                                         | Frequent       | Critical     | High    | Make alternative frequencies readily available. Publish secondary frequencies. Utilize AFF when possible to reduce congestion. Maintain effective working relations with frequency coordinators. During high fire activity consider ordering stand alone frequency coordinator.                                            | Remote          | Critical     | Medium  |  |                                   |                             |                       |
|                                               | Lack of flight following frequencies                                                                               | Probable       | Critical     | High    | Assign discreet local flight following frequencies whenever possible. Utilize standardized AFF procedures. Utilize National Flight Following if necessary.                                                                                                                                                                 | Remote          | Critical     | Medium  |  |                                   |                             |                       |

| SEAT System - Maintenance                                  |                                                                                                              |                |          |         |                                                                                                                                                                                                                                                                |                 |          |         |                                   |                             |                       |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------|----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|---------|-----------------------------------|-----------------------------|-----------------------|
|                                                            |                                                                                                              | Pre-Mitigation |          |         | Mitigation                                                                                                                                                                                                                                                     | Post-mitigation |          |         | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
| Sub-System                                                 | Hazards                                                                                                      | Likelihood     | Severity | Outcome |                                                                                                                                                                                                                                                                | Likelihood      | Severity | Outcome |                                   |                             |                       |
| Documentation                                              | Maintenance not tracked well                                                                                 | Occasional     | Critical | Serious | SEMG should be proactive during the pre-use inspection. SEMG should proactively seek and document maintenance information when the aircraft and pilot reports for assignment. Vendor needs to share maintenance information as SEAT moves between assignments. | Remote          | Critical | Medium  |                                   |                             |                       |
| Responsibilities                                           | Experience and/or knowledge level of contractor personnel assigned to perform maintenance duties is unknown. | Occasional     | Critical | Serious | Emphasis should be focused on verification of credentials by Government Inspectors. SEMG/PI should coordinate with COTR.                                                                                                                                       | Remote          | Critical | Medium  |                                   |                             |                       |
|                                                            | Distractions created by Collateral Duties (A&P/driver/mixer etc).                                            | Occasional     | Critical | Serious | Avoid overloading support personnel with responsibilities and workload. Utilize additional crew members as necessary.                                                                                                                                          | Remote          | Marginal | Medium  |                                   |                             |                       |
| SEAT System - SEAT Base Facilities (Permanent & Temporary) |                                                                                                              |                |          |         |                                                                                                                                                                                                                                                                |                 |          |         |                                   |                             |                       |
|                                                            |                                                                                                              | Pre-mitigation |          |         | Mitigation                                                                                                                                                                                                                                                     | Post-mitigation |          |         | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
| Sub-System                                                 | Hazards                                                                                                      | Likelihood     | Severity | Outcome |                                                                                                                                                                                                                                                                | Likelihood      | Severity | Outcome |                                   |                             |                       |
| Communications                                             | Lack of Adequate Radio Equipment, Computers & IT Support                                                     | Occasional     | Critical | Serious | Continue efforts to upgrade/improve communications and IT equipment, and program support on an annual basis.                                                                                                                                                   | Remote          | Critical | Medium  |                                   |                             |                       |
| Security                                                   | Unsecured Air Base Facilities increase risk of sabotage.                                                     | Frequent       | Critical | High    | Comply with Contract requirements. Discuss and exercise after-hours options to provide security. Address security concerns during initial briefings. Ensure thorough pre-use inspections on all equipment and facilities.                                      | Remote          | Critical | Medium  |                                   |                             |                       |
| SEAT Base Standards                                        | Inadequate Runway Minimums.                                                                                  | Frequent       | Critical | High    | Verify that length, width and surface conditions, congested area and elevation for minimum operational use are adequate. (Make & Model of aircraft).                                                                                                           | Remote          | Critical | Medium  |                                   |                             |                       |
|                                                            | Inadequate Ramp Space Minimums                                                                               | Frequent       | Critical | High    | Verify that length, width and surface conditions for type and number of equipment and aircraft are adequate. Consider ordering qualified Ramp Manager with communications.                                                                                     | Remote          | Critical | Medium  |                                   |                             |                       |
| Haz Mat concerns/spills                                    | Lack of adequate spill prevention/mitigation equipment on site and the knowledge to use it.                  | Frequent       | Marginal | Serious | Provide SEAT base operations (both government/vendor) with approved Haz Mat storage and containment facilities/equipment. Solicit for National Contracts to provide portable haz mat storage facilities for incidents. Provide hands on training.              | Remote          | Marginal | Medium  |                                   |                             |                       |

| SEAT System - SEAT Contracts         |                                                                                                                                 |                |          |         |                                                                                                                                                                                                                                                                                                                   |            |          |         | Additional Local Mitigation | Post Mitigation Value |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------|----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|---------|-----------------------------|-----------------------|
|                                      |                                                                                                                                 | Pre-mitigation |          |         | Post-mitigation                                                                                                                                                                                                                                                                                                   |            |          |         |                             |                       |
| Sub-System                           | Hazards                                                                                                                         | Likelihood     | Severity | Outcome | Mitigation                                                                                                                                                                                                                                                                                                        | Likelihood | Severity | Outcome |                             |                       |
| On-Call vs. Variable Term            | Lack of Continuity, Efficiency, Proficiency, Training, Familiarization and CRM with Contractor Personnel and Local Operations.  | Frequent       | Critical | High    | Utilizing more Variable Term contracts will increase continuity between contractor and local unit which produces better CRM and reduces exposure/safety issues for managers and ground personnel. Both Government and Vendor should secure adequate funding to provide training and simulations.                  | Remote     | Critical | Medium  |                             |                       |
| SEAT System - Personnel (Government) |                                                                                                                                 |                |          |         |                                                                                                                                                                                                                                                                                                                   |            |          |         |                             |                       |
|                                      |                                                                                                                                 | Pre-mitigation |          |         | Post-mitigation                                                                                                                                                                                                                                                                                                   |            |          |         | Additional Local Mitigation | Post Mitigation Value |
| Sub-System                           | Hazards                                                                                                                         | Likelihood     | Severity | Outcome | Mitigation                                                                                                                                                                                                                                                                                                        | Likelihood | Severity |         |                             |                       |
| Utilization                          | Span of Control                                                                                                                 | Frequent       | Critical | 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. Comply with ISOG.                                                                                 | Occasional | Critical | Serious |                             |                       |
| Management                           | SEAT Managers & ATB Managers are not fully aware of Aircraft Maintenance Issues.                                                | Frequent       | Marginal | Serious | Agency personnel need to rely upon AMD Technical Service Maintenance Inspectors to determine proper maintenance procedures and authorization to return the aircraft to contract availability. SEMG notifies local UAO of any maintenance issues.                                                                  | Remote     | Marginal | Medium  |                             |                       |
| Training                             | Lack of knowledge and experience in Aviation Contract Administration and Aviation Program Management for SEAT Manager Trainees. | Frequent       | Marginal | Medium  | Recommend SEAT Manager attend aviation contract administration course. Also highly recommend a season of wildland fire line experience.                                                                                                                                                                           | Remote     | Marginal | Medium  |                             |                       |
|                                      | Lack of knowledge and experience in ramp operations                                                                             | Frequent       | Critical | High    | Develop standardized ramp management training for SEAT managers.                                                                                                                                                                                                                                                  | Remote     | Marginal | Medium  |                             |                       |
| Human Factors                        | Fatigue                                                                                                                         | Probable       | Critical | High    | Adhere to established work-rest policy/guidelines and promote additional off-time when possible. Request additional staffing and/or detailers during peaks of high fire activity. Ensure adequate facilities and supplies are available.                                                                          | Remote     | Critical | Medium  |                             |                       |
|                                      | Acceptance of Risk as Normal                                                                                                    | Probable       | Critical | High    | Emphasize importance of "situational awareness" as a means to recognizing risk. Consider utilization of the SEAT Coordinator, SEAT Program Manager positions as a method of mitigating risk. Provide Risk Management Training for the SEMG. Ensure SEAT Manager reviews Risk Management Workbook with the vendor. | Remote     | Critical | Medium  |                             |                       |
|                                      | Changes in standard operating procedures not known                                                                              | Probable       | Marginal | Serious | Clarify & Confirm Program changes. Notify appropriate personnel, in a timely manner. Accept questions and seek out responses.                                                                                                                                                                                     | Remote     | Marginal | Medium  |                             |                       |

| SEAT System - Personnel (Government continued) |                                                                     |                |          |         |                                                                                                                                                                                                                                                                                             |                 |          |         |  | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|------------------------------------------------|---------------------------------------------------------------------|----------------|----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|---------|--|-----------------------------------|-----------------------------|-----------------------|
|                                                |                                                                     | Pre-mitigation |          |         | Mitigation                                                                                                                                                                                                                                                                                  | Post-mitigation |          |         |  |                                   |                             |                       |
| Sub-System                                     | Hazards                                                             | Likelihood     | Severity | Outcome |                                                                                                                                                                                                                                                                                             | Likelihood      | Severity | Outcome |  |                                   |                             |                       |
| Human Factors (continued)                      | Conflicting personalities resulting in hazardous attitudes          | Occasional     | Critical | Serious | If individuals cannot professionally resolve differences, managers and supervisors must intervene immediately. Brief/debrief, employ CRM, provide honest and objective feedback, maintain positive attitude. Maintain professionalism and mission focus at all times.                       | Remote          | Critical | Medium  |  |                                   |                             |                       |
| Experience                                     | Variable Term vs. On-Call SEAT Manager.                             | Frequent       | Marginal | Serious | Provide program oversight (Local, State or Natl., IQCS) to ensure that SEMG meet currency experience requirements and have completed tri-annual refresher as per ISOG.                                                                                                                      | Remote          | Marginal | Medium  |  |                                   |                             |                       |
|                                                | Aerial Supervision - Lack of SEAT specific knowledge and experience | Probable       | Critical | High    | Provide thorough pre-mission briefing, conduct post-mission AARs and have an experienced ATGS ride-along if available. Include specific SEAT section for ATGS.                                                                                                                              | Remote          | Critical | Medium  |  |                                   |                             |                       |
| Policy/ Procedure                              | Policy Deviation                                                    | Occasional     | Marginal | Medium  | Re-enforce and emphasize to SEMGs to communicate with local UAO, SECOS, Contracting Officers, SAMs, etc. when questions and issues arise.                                                                                                                                                   | Remote          | Marginal | Medium  |  |                                   |                             |                       |
|                                                | Multiple Agencies - Differing Standards (State vs Fed)              | Frequent       | Critical | High    | Recommend continued development & implementation of Interagency standardized SEAT program management and policy.                                                                                                                                                                            | Occasional      | Critical | Serious |  |                                   |                             |                       |
| Utilization                                    | Drivers not understanding/following DOT Policy/Regulations          | Occasional     | Marginal | Medium  | Stronger emphasis by agency to contractor regarding their responsibility to comply with policies and regulations (rest, driving and duty).                                                                                                                                                  | Remote          | Marginal | Medium  |  |                                   |                             |                       |
| Training - Pilot                               | Potential for Inadequate SEAT Pilot Training                        | Occasional     | Critical | Serious | Continue with further development of contractor SEAT Pilot training program opportunities and/or BLM/FS NAFA & SEAT Pilot Academy.                                                                                                                                                          | Remote          | Critical | Medium  |  |                                   |                             |                       |
| Training - Mixers & Loaders                    | Not all Mixers & Loaders are adequately trained and qualified.      | Occasional     | Critical | Serious | Ensure that those bases using agency personnel for loading operations provide adequate training to ground personnel prior to fire assignment. Provide training documentation to agency aviation managers on the mixing and loading of fire chemical retardant products.                     | Remote          | Critical | Medium  |  |                                   |                             |                       |
| SEAT System-Personnel (Contractor)             |                                                                     |                |          |         |                                                                                                                                                                                                                                                                                             |                 |          |         |  |                                   |                             |                       |
|                                                |                                                                     | Pre-mitigation |          |         | Mitigation                                                                                                                                                                                                                                                                                  | Post-mitigation |          |         |  |                                   |                             |                       |
| Sub-System                                     | Hazards                                                             | Likelihood     | Severity | Outcome |                                                                                                                                                                                                                                                                                             | Likelihood      | Severity | Outcome |  |                                   |                             |                       |
| Human Factors                                  | Ground support personnel fatigue and workload                       | Probable       | Critical | High    | Ensure contractor compliance with rest and duty limitations for ground support personnel so as not to overextend. (Company and agencies are responsible to monitor closely). Utilize additional crew members as necessary. Monitor number of aircraft being loaded and additional workload. | Remote          | Critical | Medium  |  |                                   |                             |                       |

| SEAT System-Personnel (Contractor) |                                                                                                                                                                                                    |                |              |         |                                                                                                                                                                                                                                                                                                            |                 |              |         |                                   |                             |                       |
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| Sub-System                         | Hazards                                                                                                                                                                                            | Pre-mitigation |              |         | Mitigation                                                                                                                                                                                                                                                                                                 | Post-mitigation |              |         | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|                                    |                                                                                                                                                                                                    | Likelihood     | Severity     | Outcome |                                                                                                                                                                                                                                                                                                            | Likelihood      | Severity     | Outcome |                                   |                             |                       |
| Human Factors (continued)          | Pilot - poor decision making: multi tasking, mission focus, sense of urgency, peer pressure                                                                                                        | Frequent       | Critical     | 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. | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                    | Acceptance of Risk as Normal                                                                                                                                                                       | Probable       | Catastrophic | High    | Emphasize importance of "situational awareness" as a means to recognizing risk. Consider providing Risk Management Training for the Pilot. Re-address complacency and self discipline in daily air base briefings. Review Risk Management Workbook and/or Vendor SMS Manual on a regular basis.            | Occasional      | Critical     | Serious |                                   |                             |                       |
|                                    | Poor CRM with crew rotations; Crew rotation may affect aircraft/equipment knowledge transfer.                                                                                                      | Probable       | Critical     | 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.                                                                                                                                  | Occasional      | Critical     | Serious |                                   |                             |                       |
|                                    | 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.). | Frequent       | Critical     | High    | Utilize Aerial Supervision if available to reduce cockpit workload. Utilize newer technology such as AFF to minimize radio traffic. Conduct AAR's, sand table exercises and on ground CRM Exercises. Incorporate Operations personnel in simulations and exercises, as well as AAR's.                      | Occasional      | Critical     | Serious |                                   |                             |                       |
|                                    | Conflicting and/or Difficult Personalities                                                                                                                                                         | Probable       | Critical     | High    | If individuals cannot professionally resolve differences, managers and supervisors must intervene immediately. Brief/debrief, employ CRM, provide honest and objective feedback, maintain positive attitude. Maintain professionalism and mission focus at all times.                                      | Occasional      | Critical     | Serious |                                   |                             |                       |
| Pilot Training and Experience      | Lack of fire mission training and lack of proficiency flight time.                                                                                                                                 | Probable       | Catastrophic | High    | Vendors have instituted training programs such as CRM, risk management, and flight safety with the intent to standardize cockpit procedures. Develop the McClellan training center for fire environment and make available for vendor use. Other training includes aircraft performance and limitations.   | Occasional      | Catastrophic | Serious |                                   |                             |                       |
|                                    | High number of target fixation and tactical maneuvering errors.                                                                                                                                    | Probable       | Catastrophic | High    | Company training plans should address human factors including target fixation, situational awareness, task overload, and performance/tactical planning errors.                                                                                                                                             | Occasional      | Critical     | Serious |                                   |                             |                       |
|                                    | Inadequate flight experience                                                                                                                                                                       | Occasional     | Catastrophic | High    | Adhere to existing contract requirements requiring contractors to validate pilots' experience and training.                                                                                                                                                                                                | Remote          | Catastrophic | Serious |                                   |                             |                       |
| Training - Mixers & Loaders        | Not all Mixers & Loaders are adequately trained and qualified.                                                                                                                                     | Occasional     | Critical     | Serious | Ensure that contractors provide adequate training to ground personnel prior to fire assignment. Provide training documentation to agency aviation managers on the mixing and loading of fire chemical retardant products.                                                                                  | Remote          | Critical     | Medium  |                                   |                             |                       |

| SEAT System-Personnel (Contractor continued) |                                                                                                                        |                |              |         |                                                                                                                                                                                                                                                                                                                                                                      |                 |              |         |                                   |                             |                       |
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| Sub-System                                   | Hazards                                                                                                                | Pre-mitigation |              |         | Mitigation                                                                                                                                                                                                                                                                                                                                                           | Post-mitigation |              |         | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|                                              |                                                                                                                        | Likelihood     | Severity     | Outcome |                                                                                                                                                                                                                                                                                                                                                                      | Likelihood      | Severity     | Outcome |                                   |                             |                       |
| New Technology                               | Lack of familiarity with technology, inability to utilize and operate equipment.                                       | Occasional     | Critical     | Serious | Take a stronger approach with all Vendor personnel to ensure that they are trained in the function and operation of newer tech-equipment and systems prior to implementation and utilization.                                                                                                                                                                        | Remote          | Critical     | Medium  |                                   |                             |                       |
| Standardization                              | Lack of standardized aircraft, support equipment, and communications equipment.                                        | Occasional     | Critical     | Serious | Standardize equipment specifications through the procurement process and mandate within the contract solicitation.                                                                                                                                                                                                                                                   | Remote          | Critical     | Medium  |                                   |                             |                       |
| Agency Radio System                          | Lack of technical support/inadequate support system.                                                                   | Frequent       | Critical     | High    | Agency radio system needs to be replaced, re-designed and upgraded to accommodate current demand and volume of use for current Fire & Aviation programs, as well as those of the future. (Standardize and buy user friendly equipment.) Maintain close working relations with agency radio program leaders and manufacturers to ensure aviation needs are addressed. | Occasional      | Critical     | Serious |                                   |                             |                       |
| SEAT System - SEAT Operations                |                                                                                                                        |                |              |         |                                                                                                                                                                                                                                                                                                                                                                      |                 |              |         |                                   |                             |                       |
| Sub-System                                   | Hazards                                                                                                                | Pre-mitigation |              |         | Mitigation                                                                                                                                                                                                                                                                                                                                                           | Post-mitigation |              |         | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|                                              |                                                                                                                        | Likelihood     | Severity     | Outcome |                                                                                                                                                                                                                                                                                                                                                                      | Likelihood      | Severity     | Outcome |                                   |                             |                       |
| Missions                                     | Inefficient use of SEATs may result in unnecessary risk exposure to SEAT Pilot and ground personnel. (Risk vs. Reward) | Frequent       | Critical     | High    | SEAT Pilot, Fire Managers, Dispatchers, line personnel, and aerial supervisors need proper education on use of SEATs. Use AAR as mitigation tool to prevent re-occurrence. Conduct pre and post -mission briefings.                                                                                                                                                  | Occasional      | Marginal     | Medium  |                                   |                             |                       |
|                                              | Jurisdiction & Border Issues                                                                                           | Occasional     | Critical     | Serious | Agency and Contractor should provide training and orientation. Local unit to brief and initiate utilization of the local Airspace Boundary Plan.                                                                                                                                                                                                                     | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                              | Defined standard Lead Plane profiles for SEATs                                                                         | Probable       | Critical     | High    | Re-enforce local Interagency Lead Plane SOP's for SEAT aircraft tactical operations. Contractors need to also address SEAT/Lead Plane SOPs during annual training.                                                                                                                                                                                                   | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                              | Flying low level at operational weights and airspeeds in areas with hazards.                                           | Frequent       | Catastrophic | High    | Perform high level reconnaissance prior to descending to work in the low-level environment. Utilize aerial supervision when available. Utilize proper aircraft energy management techniques.                                                                                                                                                                         | Remote          | Catastrophic | Serious |                                   |                             |                       |
|                                              | Inexperienced Personnel-Government & Contractors                                                                       | Frequent       | Critical     | High    | Agency & Contractors need to evaluate required training to determine if personnel are staying current with program needs.                                                                                                                                                                                                                                            | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                              | A Sense of urgency may be placed on Contractor personnel at various points in the mission.                             | Occasional     | Critical     | Serious | Address the SAFETY vs. URGENCY issue as a special-emphasis item during in-briefing with contractor and agency employees. Reinforce this throughout the entire operational period.                                                                                                                                                                                    | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                              | Drop Height Minimums                                                                                                   | Frequent       | Catastrophic | High    | Maintain 60 ft. obstacle clearance as the minimum decent altitude for all fire operations except during takeoff and landing.                                                                                                                                                                                                                                         | Remote          | Catastrophic | Serious |                                   |                             |                       |

| SEAT System - SEAT Operations (continued) |                                           |                |              |         |                                                                                                                                                                                                                                                                                                                             |                 |              |         | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|-------------------------------------------|-------------------------------------------|----------------|--------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|---------|-----------------------------------|-----------------------------|-----------------------|
|                                           |                                           | Pre-mitigation |              |         | Mitigation                                                                                                                                                                                                                                                                                                                  | Post-mitigation |              |         |                                   |                             |                       |
| Sub-System                                | Hazards                                   | Likelihood     | Severity     | Outcome |                                                                                                                                                                                                                                                                                                                             | Likelihood      | Severity     | Outcome |                                   |                             |                       |
| Mission (continued)                       | Poor fuel management                      | Remote         | Catastrophic | Serious | Monitor fuel quantities. Monitor fuel flow vs time. Follow fuel transfer procedures. Pre-flight the aircraft and plan the flight. Know refueling locations. Query other aircraft - fuel status and availability.                                                                                                            | Remote          | Catastrophic | Serious |                                   |                             |                       |
|                                           | Single Pilot cockpit workload             | Occasional     | Catastrophic | Serious | Maintain sterile cockpit policy, minimize in-flight diversions and frequency changes.                                                                                                                                                                                                                                       | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                           | Wake Turbulence                           | Occasional     | Critical     | Serious | Exercise "CAUTION" when in congested airspace or in trail.                                                                                                                                                                                                                                                                  | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                           | Lack of standardized dispatch form        | Probable       | Critical     | High    | Implement utilization of National standard Aircraft Dispatch Form.                                                                                                                                                                                                                                                          | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                           | Ramp/Taxi operations and communications   | Frequent       | Critical     | Serious | Establish local ramp/taxi protocols in cooperation with local airport operations. Ensure thorough in-briefing and monitor assigned ramp frequency.                                                                                                                                                                          | Remote          | Critical     | Medium  |                                   |                             |                       |
| Environment                               | Conflicting Airspace Environment          | Occasional     | Critical     | Serious | 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. Assure that Dispatch and aviation program personnel are trained in Dispatch procedures for SUA. Use aerial supervision when available. | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                           | Hazardous and Extreme Weather Conditions. | Frequent       | Critical     | High    | Confirm weather information resources are available. Utilize updated electronic equipment if possible. Confirm that red-flag warnings are distributed. Ensure there are continual updates on changing weather conditions shared between pilots, air base managers, dispatchers, etc. Go-No-Go is PIC decision.              | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                           | Hazards and Extreme Terrain               | Frequent       | Critical     | 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.                                                             | Remote          | Critical     | Medium  |                                   |                             |                       |
|                                           | Congested areas and Urban Interface.      | Frequent       | Critical     | High    | Comply with congested area policies and ensure that aerial supervision is in place or has been requested.                                                                                                                                                                                                                   | Remote          | Critical     | Medium  |                                   |                             |                       |



| SEAT System - SEAT Operations (continued) |                                                                                        |                |          |         |                                                                                                                                                                                                                                                                                                                    |                 |          |         | Mitigation Achieved?<br>Yes or No | Additional Local Mitigation | Post Mitigation Value |
|-------------------------------------------|----------------------------------------------------------------------------------------|----------------|----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------|---------|-----------------------------------|-----------------------------|-----------------------|
|                                           |                                                                                        | Pre-mitigation |          |         | Mitigation                                                                                                                                                                                                                                                                                                         | Post-mitigation |          |         |                                   |                             |                       |
| Sub-System                                | Hazards                                                                                | Likelihood     | Severity | Outcome |                                                                                                                                                                                                                                                                                                                    | Likelihood      | Severity | Outcome |                                   |                             |                       |
| Communications                            | Lack of Available Frequencies                                                          | Frequent       | Critical | High    | Manage available frequencies as best as possible. Request additional frequencies as needed and release frequencies in a timely manner when no longer needed. Train all users in radio discipline. Utilize AFF when possible.                                                                                       | Occasional      | Critical | Serious |                                   |                             |                       |
|                                           | Inadequate clarification of Chain of Command-Who is in charge.                         | Occasional     | Critical | Serious | Validate tactical (A-G & A-A) contacts identified on the Aircraft Dispatch form. Ensure the pilot has a copy and validate frequencies.                                                                                                                                                                             | Remote          | Critical | Medium  |                                   |                             |                       |
| Performance Planning                      | Lack of Planning - incorrect calculation of allowable retardant load; weight & balance | Occasional     | Critical | Serious | 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 designated base and area of operations. Base personnel should be aware of trigger points for downloading retardant, water, etc. | Remote          | Critical | Medium  |                                   |                             |                       |
|                                           | Inadequate runway lengths and/or surface conditions                                    | Occasional     | Critical | Serious | Specify length, width and surface conditions, congested areas and elevations for minimum operational use for each make and model of aircraft. This information must be validated by performance planning.                                                                                                          | Remote          | Critical | Medium  |                                   |                             |                       |
|                                           | Lack of information on incident conditions                                             | Occasional     | Critical | Serious | Utilize (National standard) A/C dispatch form, obtain as much information as possible from other aerial and ground resources. Obtain information from Pilot after initial load on additional downloads . Use Aerial Supervision when available. PIC has final authority on go/no go. Monitor AFF if possible.      | Remote          | Critical | Medium  |                                   |                             |                       |