

# **U.S. Forest Service**



## **SD3-60 Sherpa Operations Plan**

**Version 2.0**

**April 2017**

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov). USDA is an equal opportunity provider, employer, and lender.

## Preparation, Review, and Approval (Signatures)

The following signatures designate leadership roles in preparing, reviewing, and approving the SD3-60 Sherpa Operations Plan 2.0, March 2017.

### Prepared By:

*/S/ Roger Staats* 4/3/2017  
Roger Staats  
National Smokejumper & Large Fixed-Wing Aircraft Program Manager  
Co-Chair, C-23B+/SD3-60 Sherpa Change Management & Implementation Team  
Date

*/S/ Margaret M. Doherty* 4/6/2017  
Margaret M. Doherty  
Regional Aviation Officer  
Co-Chair, C-23B+/SD3-60 Sherpa Change Management & Implementation Team  
Date

### Reviewed By:

*/S/ Paul Linse* 4/3/2017  
Paul Linse  
Branch Chief, Aviation Operations  
Date

*/S/ John A. Nelson* 4/5/2017  
John A. Nelson  
Branch Chief, Airworthiness  
Date

*/S/ Thomas A. Ricks* 4/4/2017  
Thomas A. Ricks  
Branch Chief, Pilot Standardization  
Date

*/S/ Eric Shambora* 4/10/2017  
Eric Shambora  
Acting Branch Chief, Aviation Safety  
Date

*/S/ Tonya Rymer* 4/10/2017  
Tonya Rymer  
Branch Chief, Business Operations  
Date

*/S/ Mike Peitz* 4/5/2017  
Mike Peitz  
Aviation Strategic Planner  
Date

**Approved By:**

*/s/ Arthur W. Hinaman*

*4/12/2017*

Arthur W. Hinaman  
Assistant Director, Aviation Management

Date

This Sherpa Operations Plan was developed by the U.S. Forest Service C-23B+/SD3-60 Sherpa Change Management Implementation Team and Union representatives from the Forest Service Council in response to a decision made by the Director, Fire and Aviation Management, for the deployment of the C-23B+/SD3-60 Sherpa Aircraft. It is a living document that will be reviewed and updated as the transition progresses.

## Table of Contents

Preparation, Review, and Approval (Signatures).....	i
1. Introduction .....	1
1.1. Applicability and Assumptions.....	2
1.2. Document Security.....	3
1.3. SD3-60 Sherpa Onboarding Programmatic Governance and Management.....	3
2. Operations.....	4
2.1. Multiple Roles .....	4
2.2. Command and Control.....	4
2.3. Aircrew Organization .....	5
2.3.1. SD3-60 Sherpa GOMO Flight Crew.....	5
2.4. Missions .....	6
3. Maintenance Support .....	6
3.1. Oversight.....	6
3.2. Maintenance Organization.....	6
3.2.1. Aircraft Maintenance and Airworthiness Personnel.....	7
3.2.2. Aircrew Aircraft Maintenance and Airworthiness Support .....	8
3.3. Aircraft Maintenance and Airworthiness.....	8
3.3.1. Facilities.....	8
3.3.2. Supply Chain.....	8
4. Forest Service Government AIR Card Fuel Program .....	9
4.1. Government-Furnished Fuel (Alaska) .....	9
5. Aircraft and Equipment Security.....	10
6. Training .....	10
7. Safety Management.....	11
7.1. Oversight.....	12
7.2. Structure .....	12
7.2.1. Assign Responsibilities .....	12
7.2.2. The Gaps.....	13
7.2.3. Are We Ready?.....	13
7.3. Risk Management .....	14
7.3.1. Predictive Processes.....	14

7.3.2. Proactive Processes.....	14
7.3.3. Identify Emerging Hazards and Change Implementation .....	15
7.3.4. Reactive Processes .....	15
7.3.5. Are We Mitigating Hazards and Minimizing Risk? .....	16
7.4. Safety Assurance .....	16
7.4.1. Reassess Effectiveness .....	16
7.4.2. How Well is it Working? (End of Year AAR) .....	16
7.5. Communication, Training and Promotion.....	17
7.6. Critical Event Planning .....	17
Appendix A: Sherpa Production Timeline .....	19
Appendix B: Sherpa Replacement Schedule by Base.....	20
Appendix C: MOU between USFS and the NFFE, Forest Service Council.....	21
Appendix D: Sherpa Program Governance .....	23
Appendix E: Maintenance Communications Process.....	24
Appendix F: Safety Briefing Card.....	25
Appendix G: Flight Risk Assessment Tool.....	26
Appendix H: Daily Operational Risk Assessment Worksheet.....	27
Appendix I: References .....	28
Appendix J: Glossary and Acronyms .....	29

## 1. Introduction

This Sherpa Operations Plan is designed to address operational safety, maintenance, training, and security issues related to the SD3-60 Sherpa aircraft. The primary use of these aircraft will be to deliver smokejumpers and cargo to wildland fires and provide multi-role wildfire mission support transporting crews, teams, and cargo. The U.S. Forest Service (FS) owns four Short Brothers C-23A Sherpas, two De Havilland DHC-6 Twin Otters, and contracts for two Dornier DO-228, three De Havilland DHC-6 Twin Otters, and one Casa 212. All of these aircraft are primarily used for smokejumper operations and support. Agency-owned Twin Otter aircraft will be retained to capitalize on their unique short field, backcountry airport, and high density altitude capabilities.

Due to an aging smokejumper fleet, increased maintenance and repair costs, as well as aircraft performance issues, the FS decided to update and increase the performance and sustainability of agency-owned aircraft. To help meet this need, 15 C-23B+ Sherpa aircraft were transferred from the U.S. Army to the U.S. Forest Service in the National Defense Authorization Act (NDAA) of 2014.

The *U.S. Forest Service C-23B+/SD3-60 Sherpa Change Management and Implementation Plan* (CMIP) describes how the agency intends to implement the Sherpa aircraft in support of the Wildland Fire Suppression Program.<sup>1</sup> While the term “Sherpa” refers generically to a type of aircraft, including the four C-23A model aircraft that the FS currently owns and operates, the reference to the SD3-60 Sherpa is specific to the C-23B+ models once these aircraft receive civil certification from the Federal Aviation Administration.

The goal in changing aircraft is three pronged: to continue to meet current smokejumper mission requirements, enhance the effectiveness of the smokejumper program while maintaining the highest safety outcomes in a very challenging environment, and provide multi-role wildfire mission support to the interagency fire community. Incorporating the SD3-60 Sherpas into the agency-owned fleet will lower the average age of the aircraft in the smokejumper fleet by approximately 10 years each. With the majority of the future smokejumper aircraft fleet being SD3-60 Sherpa aircraft, efficiencies will be achieved through fleet standardization.

The smokejumper aircraft fleet will be operated under the concept of a Government Owned/Mixed Operated (GOMO) model. In this model, the aircraft are owned by the FS and flown and maintained by a mix of FS and contract pilots and maintenance specialists. The GOMO concept ensures that the SD3-60 Sherpa aircraft are fully staffed through the transition period until the regions become fully staffed with agency pilots. Contract pilots may be used to fill staffing shortfalls and during periods of surge capacity.

---

<sup>1</sup> The C-23B+ aircraft were originally built as SD3-60 commercial passenger transport aircraft. The U.S. Army purchased a number of them and had them retrofitted as military aircraft, allowing the standard category type certificate to expire. When the FS acquired the aircraft, an evaluation was done to determine if the aircraft could be conformed to the SD3-60 type certificate and what it would cost to do so.

For the most current information on location and certification stages, refer to Appendix A, Sherpa Production Timeline. This timeline will be updated and available on the Sherpa SharePoint site.

Operations Capability (OC) in 2016 consisted of pilot familiarization and transport of internal cargo and passengers. Beginning in 2017, OC will potentially consist of smokejumper evaluations for smokejumper operations, pilot training, as well as ferrying of passengers and internal cargo. Once approved for smokejumper operations, the aircraft will be distributed to smokejumper bases for smokejumper operations during the spring of 2018. This replacement schedule is in Appendix B, Sherpa Replacement Schedule by Base.

In the recent past, the FS has experienced challenges with pilot staffing. There are several contributing factors, including mandatory retirements due to age limitations, work life balance issues and higher pay and benefits in the airline industry. These shortages have directly led to a variety of impacts, most predominantly increased competition with private industry and conflicting priorities (staffing smokejumper, lead plane or aerial supervision aircraft). Additionally, the process to hire and train new pilots can take several years. Some of these same issues impact our maintenance personnel. It will be necessary for the FS to utilize contract pilots and maintenance providers.

### **1.1. Applicability and Assumptions**

This Sherpa Operational Plan (SOP) provides the framework for aircraft utilization and provides a foundation for following years. It is intended to include all stakeholders as the agency integrates the SD3-60 Sherpa aircraft and subsequent operation and support. See Appendix C, Memorandum of Understanding between the US Forest Service and the National Federation of Federal Employees, Forest Service Council. Intended as a user-oriented document, the SOP represents the agreed-upon understanding of the operational and support context of this aircraft. It defines the roles of stakeholders and provides clarity for the overarching C-23B+/SD3-60 Sherpa Change Management and Implementation Plan.

The following assumptions and constraints currently apply to the SD3-60 Sherpa:

1. One aircraft will be utilized for passenger and internal cargo transport operations. Other missions may be considered with the consent of the Assistant Director, Aviation. Passenger, cargo, training, evaluation, and smokejumper operations are the missions. Two additional aircraft will also be used for these missions.
2. Aircraft missions in 2017 will be evaluated on an individual basis to ensure the current aircraft configuration is capable of successfully completing the mission. Pilot training operations will take place. Communication and coordination will be between the National Smokejumper Program Manager and the Regional Aviation Officers (RAOs), WO Fire Operations, and Aviation. Communications and coordination with the National Interagency Coordination Center (NICC) will need to occur prior to any dispatch. Once aircraft are in



mission status, the aircraft coordination will occur through Geographic Coordination Centers (GACC).

3. Redmond, OR and Missoula, MT will be the primary operational bases for the aircraft in 2017 due to the availability and capabilities of their maintenance facilities.
4. Flight crews from Regions 1, 4, and 6 will initially have the opportunity to increase pilot proficiency and maintain currency in the aircraft.
5. There is a need for a formal training program. This is being addressed by the Branch Chief for Standardization coordinating with the RAOs.
6. The Smokejumper Aircraft Screening and Evaluation Subcommittee (SASES) will perform Operational Testing and Evaluation (OTE). Once the evaluation is satisfactorily completed, a recommendation will be made regarding the SD3-60 Sherpa for smokejumper operations in FY 2018. OTE may begin as early as CY 2017.
7. Additional updates to this SOP will be developed as the SD3-60 Sherpas integrate into smokejumper operations in 2017.

## **1.2. Document Security**

Initial distribution of the SD3-60 Sherpa SOP is authorized to USDA and USDI aviation programs. Other requests for this document shall be referred to FS WO Assistant Director, Aviation, Mr. Art Hinaman (awhinaman@fs.fed.us).

## **1.3. SD3-60 Sherpa Onboarding Programmatic Governance and Management**

SD3-60 Sherpa onboarding is jointly managed through the FS WO Assistant Director, Aviation; the National Smokejumper (SJ) Program Manager; and the Region 1 Regional Aviation Officer in accordance with the CMIP. The National SJ Program Manager and Regional Aviation Officer are co-chairs and are responsible for managing and executing the onboarding requirements and SD3-60 Sherpa operational and support requirements with assistance from various FS branches. Appendix D, Sherpa Program Governance, provides roles and participation in the program.

The activities of the Change Management Implementation Team (CMIT) drive the SD3-60 Sherpa operational and support requirements which ultimately determine the content of this SOP. Significant alteration of operational or support needs will result in modification of the SOP. The CMIT Co-Chairs will communicate changes to the CMIT and manage all changes associated with cost, schedule, and performance. Operational transition to the SD3-60 Sherpa began in 2016 and will end when the fleet is complete. Aircraft testing, pilot certification, passenger transport, and internal cargo flights began in 2016 and will continue. Further implementation will have a designated Transition Monitoring Team (TMT). This team will have a representative from each Region designated by the Sherpa Project Manager (PM).

## 2. Operations

Smokejumpers are a highly mobile resource that is important to federal, state, and local wildland fire management programs to protect communities and natural resources from and successfully manage wildfires. The FS Washington Office (WO) is responsible for the national aviation program. In coordination with the regions, the WO develops aviation policy and procedures. Regional staffs are responsible for the programs in their regions, and have the responsibility to follow and implement national policies and procedures.

### 2.1. Multiple Roles

In 2017, the SD3-60 Sherpa (161Z) will be used for passenger and cargo transport on a limited basis. Avionics in this aircraft have not yet been upgraded. When the SD3-60 Sherpa has been fully upgraded, the aircraft could expand into other uses. This SOP provides a concept for timely, safe, effective, and efficient employment of aircraft to support flight crew training, passengers, and cargo transport. For 2017, the aircraft will primarily operate from smokejumper operating bases.

### 2.2. Command and Control

All SD3-60 Sherpa operations will be managed by the RAOs in the region(s) where aircraft are hosted. This will be accomplished in coordination with the National Smokejumper Program Manager (PM) who will provide oversight for the Sherpa program. Training and operational missions will be executed as follows:

1. Missions. will be ordered through a GACC using Resource Ordering and Status System (ROSS). Sherpa 161Z will be hosted by Northern Rockies in 2017.
2. Aircraft Shuttle for Certification/Paint/Avionics Upgrade. The PM and RAOs will seek opportunities to achieve pilot familiarity/training on these types of point-to-point flights.
3. Passenger Transport and Internal Cargo Missions. The PM will coordinate with RAOs on deployments away from the SD3-60 Sherpa operating bases for passenger transport and internal cargo missions. Additionally, no passenger transport mission shall exceed 19 passengers. Hauling 20 or more passengers requires FAA flight attendant training specified in 14 CFR/FAR 91.533. Limiting the passenger number to 19 will allow time for training to take place so the capability will be available in 2017 and beyond. FS policy requires a Load Master/Fixed-Wing Flight Manager to be part of the flight crew for transport missions of 19 passengers or less.
4. Operational Testing and Evaluation (OTE) Smokejumper Missions. SASES and the Missoula Technology and Development Center (MTDC) OTE for smokejumper operations are scheduled to begin as early as FY 2017. All OTE flights during the evaluation time period will be performed under the supervision of MTDC in coordination with the PM.

## 2.3. Aircrew Organization

The SD3-60 Sherpas will be operated as a Government Owned/Mixed Operated (GOMO) fleet.

### 2.3.1. SD3-60 Sherpa GOMO Flight Crew

GOMO flight crews shall consist of a fully qualified and current SD3-60 Sherpa flight crew as defined by policy and contracts. All smokejumper and para cargo missions will meet the *Interagency Smokejumper Operations Guide* (ISMOG) and the *Interagency Smokejumper Pilots Operations Guide* (ISPOG).

Specific flight crew qualifications are as follows:

1. **Pilot-in-Command (PIC)** – Designated and current with the SD3-60 Sherpa aircraft. The PIC will normally occupy the left pilot seat for operational missions, unless an Inspector Pilot or an Instructor Pilot is a member of the flight crew. The PIC will be the primary point of contact.
2. **Second-In-Command (SIC)** – Person performing as the co-pilot (SIC) is designated and current with the SD3-60 Sherpa aircraft, except when receiving instruction from a qualified instructor. The SIC (or Co-Pilot) will occupy the right seat during missions. The SIC will assist the PIC to ensure safe and effective SD3-60 Sherpa missions.
3. **Load Master**- a person who is qualified as a Fixed-Wing Flight Manager – Shall be a Smokejumper Spotter, Loadmaster, a helicopter/rappel spotter or experienced with aircraft loads, weight and balance. Currency as a Smokejumper/Rappel Spotter is not required. Fixed-Wing Flight Managers are normally Spotter and Loadmaster trained with past experience with loading smokejumper or rappel aircraft. Primary duties of this position are to assist the pilot to ensure proper weight and balance, secure cargo correctly, operate the door/rear ramp, provide safety briefings, risk management briefings, and assist passengers during emergency procedures. No more than 19 passengers will be allowed. Training requirements for Fixed-Wing Flight Managers are found in the *Forest Service Handbook* 5709.16: Flight Operations Handbook, Chapter 30: Aircraft Operations.
4. **Spotters on Smokejumper Missions** – Spotters will be qualified Smokejumper Spotters unless a Spotter is in training, in which case they will be accompanied by a Smokejumper Spotter Trainer. One Spotter will be designated as the “Spotter-in-Charge.” The Spotters will ensure mission crew members, passengers and equipment are properly configured, loaded, and restrained. Assigned Spotter responsibilities will be in accordance with the *Interagency Smokejumper Operations Guide* (ISMOG).
5. **Personnel Protective Equipment (PPE)** – All aircrew members will be required to wear Nomex flight suit for all missions. Smokejumper/paracargo missions may require additional PPE see ISMOG/ISPOG for guidance.

## **2.4. Missions**

Primary missions in 2017 will be passenger transport, cargo, training, and operational testing and evaluation (OTE). Aircraft evaluation for smokejumper operations for SASES will be the priority when the MTDC is ready to begin evaluations. Smokejumper operations are expected to begin in 2018.

The SD3-60 Sherpa aircraft will be dispatched through established procedures found in the Geographic Area and National Mobilization Guides. All missions that involve moving from one geographic area to another will be prioritized by the designated Sherpa Spotter/Loadmaster and the PM.

## **3. Maintenance Support**

The Forest Service SD3-60 Sherpa program shall meet agency maintenance practices and standards. A separate Maintenance Guide is being developed which will govern SD3-60 Sherpa maintenance.

### **3.1. Oversight**

Airworthiness Branch personnel shall provide oversight and RAOs will provide management of the SD3-60 Sherpa aircraft through Regional Aviation Safety Inspectors (ASI). The ASI has responsibility for returning the aircraft to availability for operations.

Maintenance of the SD3-60 Sherpas shall be performed by contracted or agency maintainers with oversight from the assigned ASI. The ASI may further designate government personnel to provide day-to-day oversight for the contracted mechanics. Inspection, maintenance, and repair of the SD3-60 Sherpas are the responsibility of the Regional ASI or their designee. Any issues with availability and maintenance will be reported to and coordinated with the assigned agency ASI or their designee.

### **3.2. Maintenance Organization**

Tables 1 and 2 display the maintenance organization for the SD3-60 Sherpa program.

**Table 1: Maintenance Organization – Organizational Maintenance**

Title	Role
Airworthiness Branch Chief	<ul style="list-style-type: none"> <li>• Oversight of the aircraft maintenance program.</li> </ul>
Regional Aviation Officer	<ul style="list-style-type: none"> <li>• Management of regional aviation program.</li> </ul>
Regional ASI, Airworthiness	<ul style="list-style-type: none"> <li>• Point of contact for contract maintenance or agency maintainers.</li> </ul>
Pilot-in-Command	<ul style="list-style-type: none"> <li>• Accurate reporting of aircraft discrepancies when away from Operating Base and liaison with Aviation Safety Inspector (ASI) and contract/FS aircraft maintenance crew.</li> </ul>

**Table 2: Maintenance Organization – Maintenance Planning/Oversight/Coordination**

Title	Role
Regional ASI Airworthiness or Aviation Maintenance Program Manager	<ul style="list-style-type: none"> <li>• COR or ASI for aircraft maintenance contract.</li> <li>• Oversight and management of regional aviation maintenance programs.</li> <li>• Liaison with Airworthiness Branch.</li> </ul>
Aviation Safety Inspector (ASI, Airworthiness)	<ul style="list-style-type: none"> <li>• Maintenance Release of aircraft for safe operations after completion of maintenance, as required.</li> <li>• Maintenance planning.</li> <li>• Aircraft maintenance contract POC (daily oversight and management of contracted aircraft mechanics and technicians).</li> <li>• Coordination and oversight of aircraft maintenance.</li> <li>• Liaison with Airworthiness Branch.</li> </ul>
Aviation Maintenance Technician (Contract or FS)	<ul style="list-style-type: none"> <li>• Maintenance planning and coordination at the direction of Aviation Safety Inspector, Airworthiness.</li> </ul>
Aviation Logistics Manager/Support	<ul style="list-style-type: none"> <li>• Sherpa parts and spares management in Redmond, OR.</li> </ul>

**3.2.1. Aircraft Maintenance and Airworthiness Personnel**

Support personnel necessary to operate and maintain the aircraft in accordance with FS maintenance requirements and this SD3-60 Sherpa Operations Plan will be available at the operating base and other locations as needed. Aircraft maintenance will be performed by FS and contracted mechanics and technicians. Contract(s) provide year-round maintenance support during the fire season and the off season, with additional on-demand capacity made available at the discretion of the government. An SD3-60 Sherpa Maintenance Plan will be developed.

Appendix E, Maintenance Communications Process, provides a high-level sequence of support personnel responsibilities during fire season in the event of unscheduled maintenance that grounds

the aircraft. The FS Contract Officer's Representative (COR) qualified representative is notified when the aircraft is not mission capable and is responsible for notifying national/regional leadership when the aircraft returns to mission capable status.

### **3.2.2. Aircrew Aircraft Maintenance and Airworthiness Support**

When the GOMO flight crew encounters an in-flight or ground operations aircraft emergency, the PIC shall ensure safety of flight is the primary consideration and respond to the emergency in accordance with applicable SD3-60 Sherpa flight manual and FS Aviation Directives, Standards, and Policy.

When deployed away from the SD3-60 Sherpa operating base, the flight crew shall notify Dispatch and the Regional Aviation Officer when the aircraft is not mission capable and the aircraft repair requires maintenance personnel to be dispatched to the aircraft.

The PIC is responsible for providing detailed information regarding any aircraft discrepancy to the assigned Aviation Safety Inspector or Maintenance Technician. All aircraft discrepancies will be detailed in appropriate documentation according to Policy.

### **3.3. Aircraft Maintenance and Airworthiness**

The SD3-60 Sherpa aircraft shall be maintained in accordance with all applicable FS and manufacturer maintenance requirements. The FS maintenance objective is to ensure that assigned material (airframes and all support equipment, etc.) is serviceable and properly configured to meet mission requirements.

SD3-60 Sherpa maintenance requirements are accomplished by performing inspection, repair, overhaul, modification, preservation, testing, and condition or performance analysis. All inspection and maintenance actions will be determined by FS Policy and manufacturer maintenance requirements. The importance of accurate data reporting and management review must be emphasized at all levels of the maintenance organization. Aircraft missions should be planned so that scheduled inspections are performed where adequate personnel, parts, tools, and equipment are available. This will ensure a high level of quality control and increase Mission Capable (MC) time.

#### **3.3.1. Facilities**

Maintenance will occur at facilities in Redmond, OR; Missoula, MT; Ogden, UT; or wherever else needed. When additional SD3-60 Sherpas become operational, aircraft will be distributed to the smokejumper bases as determined in the CMIP.

#### **3.3.2. Supply Chain**

A parts depot for the SD3-60 Sherpa will be located at Redmond, OR. Supply items not available through these sources will be available through contracts. One C-23B+ will initially be cannibalized

for aircraft parts. Four additional C-23B+ aircraft will be in storage at the Aviation Maintenance and Regeneration Group (AMARG) located in Tucson, AZ. If needed, one or more of these aircraft could be cannibalized for aircraft parts.

## **4. Forest Service Government AIR Card Fuel Program**

Defense Logistics Agency (DLA) policy requires that AIR Cards are in the possession of and submitted for services payment by a federal employee. Agency aircrews are allowed to carry AIR Cards onboard an aircraft and submit the card for payment fuel or services payment.

The AIR Card is the sole property of the U.S. Government and all terms and conditions for use are set by the DLA under their "In-to-Plane" fuel contract program.

To mitigate disruption of flight operations, fuel purchase coordination should be made in advance of aircraft arrival at an airfield or as soon as practicable. Flight crew duties include:

1. Contacting Fixed Based Operators (FBO) at the current or planned airfield to coordinate use for the AIR Card.
2. Maintaining documentation and fuel receipts.
3. Ensuring electronic fuel receipts are submitted to the WO Boise AIR Card Coordinator. Fuel receipts shall be e-mailed to the AIR Card Coordinator, Anne Johnson, at [annemjohnson@fs.fed.us](mailto:annemjohnson@fs.fed.us).

A central number has been established for contact with the On-Duty Coordinator. The AIR Card Coordinators work in a virtual capacity from their home duty stations, rather than in Boise. The Coordinator position is staffed seven days a week and available throughout hours of operations to include extended standby. Coverage for day-off staffing or high activity may be shared with an Alternate Coordinator.

The On-Duty Coordinator contact is: (208) 387-5955.

### **4.1. Government-Furnished Fuel (Alaska)**

When an aircraft is on assignment in Alaska on a BLM resource order, the flight crew shall use government furnished fuel. The DLA fuel card shall not be used. All fuel charges while operating in Alaska are the responsibility of the BLM.

The flight crew shall record each issue of fuel/oil servicing as delivered by the Government, and shall verify the fuel/oil issued by signing a line entry on the OAS-59, Fuel and Oil Issue record.

## 5. Aircraft and Equipment Security

Proper securing of aircraft is the most basic method of enhancing airport security and protecting the high-value asset from damage or loss. The PIC (FS or Contract) should employ multiple methods of securing their aircraft to make it as difficult as possible for an unauthorized person to gain access to it. This includes but is not limited to:

1. Aircraft shall be electrically and/or mechanically disabled by two independent security systems whenever the aircraft is unattended. Deactivating security systems shall be incorporated into preflight checklists to prevent accidental damage to the aircraft or interference with safety of flight.
2. Storing the aircraft in a hangar, if available, and locking hangar doors.
3. If the aircraft is to remain overnight (RON) at another smokejumper facility, the PIC should ensure that the aircraft is secured in accordance with their requirements. Likewise, commercial airports and Fixed Based Operators (FBO) typically employ their own processes and procedures to secure aircraft. The PIC is responsible for ensuring compliance with their local protocol as well.
4. Examples of unacceptable disabling systems are:
  - a. Locked doors or windows.
  - b. Fenced parking areas.

## 6. Training

To increase pilot training efficiency and standardization and therefore provide the safest, most efficient and effective response to wildland fires, the Forest Service will conduct an academy-style smokejumper pilot workshop in the spring of 2018. This academy will provide a single, standardized training venue for smokejumper pilots from all regions and help facilitate the transition from the current C-23A Sherpas to the newer SD3-60 Sherpa aircraft. The training will be called the Smokejumper Pilot Academy (Academy).

The following are key points outlining this new training format:

1. The current proposal is to hold the Academy during April of 2018, in Redding, CA.
2. This will be the first Smokejumper Pilot Academy. The intent is to hold it annually thereafter.
3. The Academy will include inspector training to fulfill the requirements currently accomplished at the biennial Smokejumper Inspector Pilot Workshop.
4. The Academy will provide an opportunity for “out-of-region checks” necessary for pilot standardization.



5. A Sherpa-specific training plan will be developed prior to the Academy.
6. The Academy will include classroom and field instruction.
7. All Forest Service smokejumper pilots should attend, including Twin Otter pilots.
8. Prior to attending the Academy, all pilots should be current in the platform they are to fly, including simulator training, equipment checks, etc. Mission checks may be accomplished at the Academy.
9. Regions 1, 4, 5, and 6 have smokejumper pilots that will need to attend the Academy.
10. The Academy will provide additional training opportunities for smokejumpers and spotters.
11. The Academy will provide opportunities for leaders at the national level to meet with all or most of the smokejumper pilots in a single venue.

Ongoing training flights for FS Standardization of Regional and Contract Pilots, and eventually maintenance personnel, are necessary to operate the SD3-60 Sherpa safely and effectively. All pilots will go through the equipment/instrument training and mission training, if applicable.

The training program is currently being developed. It will include initial, recurrent, refresher, upgrade, and mission-specific training.

FS and contract maintenance personnel will need to gain an appropriate amount of work experience specific to the SD3-60 Sherpa aircraft. New maintenance personnel will need to attend training provided by the Shorts Brothers.

## 7. Safety Management

Safety management is a risk management, performance monitoring, and data analysis activity that provides feedback regarding controls and hazard mitigation measures identified in the change risk management and other risk assessment documents pertinent to the smokejumper aircraft program. It is the primary source for evaluating effectiveness of controls as they are put into action in the field.

It is specifically designed to ensure mitigation efforts are effective for both the *CMIP Risk Assessment US Forest Service C-23B+/SD3-60 Sherpa Change Management and Implementation Plan (September 2016)* and the mitigation measures addressed in the *2013 Safety Impact Analysis for Smokejumper Operations and Smokejumper Aircraft Operations*.

Mitigation measures from the *CMIP Risk Assessment (September 2016)*, which have been implemented, will be reviewed to ensure they are meeting the intent of the plan and mitigation of known hazards. Change risk management requires a quality and safety assurance process that will evaluate the effectiveness of risk mitigations. Following the implementation of these mitigation

measures, this process will determine the effectiveness of those mitigations for the program as aircraft come online and perform missions.

Change often introduces new hazards. As they are revealed, safety management processes capture these hazards and incorporates them into the risk management process. Continuous improvement of safety and risk mitigation is the goal.

## **7.1. Oversight**

During the transition, existing agency Safety Management Systems (SMS) processes and roles will continue within each region. Specific focus will be directed to ensure safety while accomplishing the transition as aircraft continue to come online and are placed into smokejumper and other missions.

The co-chairs of the SD3-60 Sherpa Change Management Implementation Team (CMIT), the National Smokejumper PM, and the RAO for Region 1 will be informed of progress within the safety and transition processes. They will be notified of emerging safety issues and transition impacts on the aviation community, smokejumper community, and any other groups experiencing an impact.

The Regional Aviation Safety Manager (RASM) assigned to the CMIT (R1 RASM) is responsible for assuring the accomplishment of safety processes within this SD3-60 Sherpa Operations Plan. This RASM should coordinate with the Ram-Air SMS Specialist to ensure these two programs, which are experiencing significant change, work closely together.

Safety, transition awareness, safety assurance, and data management processes are to be carried out by members or designees of the CMIT.

## **7.2. Structure**

Each aircrew (Pilots and Spotters) for the SD3-60 Sherpa will be the initial transition monitoring team will report to the RASM any concerns and recommendations. Concerns other than safety items will be reported to either of the project Co-Chairs.

The RASM will ensure these duties, commitments and responsibilities pertaining specifically to this chapter and as assigned by the co-chairs with support of the CMIT are accomplished as planned. If events cause a disruption to the plan, coordination with the co-chairs and CMIT will be accomplished for any altered actions.

### **7.2.1. Assign Responsibilities**

1. Activities and actions will be accomplished as assigned in the Action Tracker<sup>2</sup> by the Change Management and Implementation Team (CMIT).
2. Ongoing safety assurance processes will be assigned in the Action Tracker by the RASM in

---

<sup>2</sup> Contact Aviation Management Specialist, Aimee Mautone for the current version of the Action Tracker.

cooperation with the CMIT.

### **7.2.2. The Gaps**

The intent here is to determine how robust the current safety processes are and if any gaps exist as the program moves into the future.

The *SD3-60 Sherpa CMIP V4* and *2016 Interim Operations Plan* are documents guiding this change effort through risk assessments, action items, and safety plans which have been implemented. Work is still required.

### **7.2.3. Are We Ready?**

1. Have current risk assessments been updated to include the latest known hazards to operations? Should the change risk assessment be updated as well?
2. Have the mitigation measures been implemented?
3. What processes are in place to rapidly gather concerns from the field?
4. Is the Transition Monitoring Process in place?
5. Are communication plans effective and utilized?
6. Is there any safety training that needs to be accomplished for this plan to succeed?

Determine how safety assignments will be accomplished. This should include:

1. Collect and analyze information within the data information archives.
2. Collect, analyze, and implement After Action Review (AAR) information as well as other feedback processes (TMT) valuable to the program.
3. Ensure results and feedback are timely to the CMIT.
4. Modify current or determine new process to ensure the continued capture of emerging hazards and trends.
5. Mitigate these hazards expeditiously back into the risk management process both operationally (Sherpa Ops Plan) and within the change (CMIP) as noted in Appendix F, Safety Briefing Card.
6. Is there an identified person or should there be a position that oversees data and information gathering who is able to document the sources of these emerging hazards and trends, assuring they are deposited into the data information and managed?

### 7.3. Risk Management

No safety process is ever complete. It is continuously evolving, improving, and adjusting to the fluidity of an operational program such as this one. The goal is to continue seeking to become better, more robust, and more effective without overburdening people or the program.

This risk management process is designed to manage hazards related to and introduced by operational missions. Within a changing program, this also requires attention to the change risk management process (refer to CMIP V4, Appendix 5). The degree of impact to safety (criticality) of a system or activity should be considered along with the hazards.

Risk Management tools to be utilized include the following:

1. **Programmatic:** Review and periodically update the *2013 Safety Impact Analysis for Smokejumper Operations and Smokejumper Aircraft Operations* as new information is provided. Validate mitigations are in place and working.
2. **Project:** Use *CMIP Risk Assessment US Forest Service C-23B+/SD3-60 Sherpa Change Management and Implementation Plan, Project Aviation Safety Plans (PASP)*. Validate mitigations are in place and working.
3. **Daily:** The flight crew will complete and submit the Smokejumper Flight Risk Assessment Tool (FRAT) daily and as conditions change, as referenced in Appendix G. The FRAT will be accomplished in conjunction with input from the Spotter, Loadmaster, and/or Fixed Wing Flight Manager as applicable. As mentioned in 7.1, other existing agency SMS processes (DORA, GAR, etc.) may be used. Upon completion of each mission, an AAR will be completed and submitted.

These are new terms and tools. Training for Standard Operating Procedures and correct use of each of these risk assessment tools will be provided to all flight crew and key mission members.

#### 7.3.1. Predictive Processes

A predictive process applies known information about a system or activity to anticipated future operations.

This pre-emptive step in hazard awareness and risk mitigation can be incorporated by obtaining known hazards from current FAM operations and US Army or civilian knowledge of known hazards in this platform.

#### 7.3.2. Proactive Processes

A proactive process identifies hazards within the current program that may exceed current controls as a change is introduced. For example, by reviewing reporting systems, annual reports, program

data, manufacturers' information, and questionnaires on a regular basis, they become part of the proactive process. The following items are also reviewed in the proactive process:

1. Ensure use of the Smokejumper Operations, Smokejumper Aircraft Operations Safety Impact Analysis of 2013 (SJSJASIA 2013) is reviewed, updated and mitigations implemented.
2. Ensure the Smokejumper Operations, Smokejumper Aircraft Operations Implementation Plan December 2014 is reviewed and implemented as necessary.
3. Evaluate the SD3-60 Sherpa Change Risk Assessment and ensure implementation.
4. Ensure critical information from incidents and accidents is gathered and placed back into the risk management process.
5. Evaluate for hazards that may have emerged since the SJSJASIA 2013 risk assessment.

### **7.3.3. Identify Emerging Hazards and Change Implementation**

This is the opportunity to assess risk to hazards that have been identified during observations and implementation activities. This is also a time to identify changes that are taking place that weren't anticipated.

1. Hazards identified during change implementation are fed back into the risk management process and mitigated.
  - a. Ensure these mitigation measures are quickly implemented.
2. Capture change processes that begin to work for the program and update the Change Management and Implementation Plan with the more effective and efficient actions. Continuously work to improve the plan.

### **7.3.4. Reactive Processes**

A reactive approach gathers hazard information that can only be identified when the change has been put into operation for a period. These hazards are uncovered usually after the fact and may be introduced through incident reports, AARs, and lessons learned.

Pilots and crewmembers may provide valuable information in writing or verbally following a mission. If it reveals a hazard, ensure these single events are recorded in an identified data gathering method.

Update operational risk assessments to address factors such as human factors, program capabilities, geographical considerations, and aviation mission pace.

Capture hazards identified within the end of season AAR (Feb 2017) and ensure they are incorporated into the current risk assessment.

### **7.3.5. Are We Mitigating Hazards and Minimizing Risk?**

1. Are we gathering post-mission feedback including any concerns about hazards?
2. Is our process to capture emerging hazards with the risk management system understood and effective?
3. Are identified mitigations being implemented as the roll-out of aircraft continues?
4. Are these mitigation measures effective? If not, what is the process to improve them?
5. How are documents and data being captured for end-of-year or season review?
6. Are we alert to multiple change impacts on the smokejumper program from the ram-air parachute system and SD3-60 Sherpa?
7. As processes (daily mission AARs, SAFECOMs, etc.) are implemented that may reveal unknown hazards, ensure these hazards are rated, mitigated, and actively and quickly implemented.

### **7.4. Safety Assurance**

Safety Assurance (SA) provides feedback on controls and mitigation measures that were identified in the risk management processes. The RASM as a member of the CMIT is responsible to develop or update the SA checklist, AAR, and other field feedback processes. The effort should be made to accomplish these SA tasks prior to pre-season training activities. SA is accomplished in three phases (before, during and after).

1. Determine if a pilot, spotter, and aircraft manager in each region will make field notes on how the change is going and provide feedback to the CMIT (concerns, success stories, etc.).

#### **7.4.1. Reassess Effectiveness**

Schedule analysis reviews that look at documented activities to ensure trends and emerging hazards are not slipping through the implementation unnoticed. Schedule these to allow for a broad look over extended periods of time (monthly, semiannually, annually, etc.). The RASM in cooperation with the CMIT co-chairs will develop a path toward success in data gathering and data mining.

#### **7.4.2. How Well is it Working? (End of Year AAR)**

1. To determine data sources, how data will be compiled, how data will be reviewed throughout the year, and the end-of-year processes for trending and effectiveness, the TMT should accomplish the following:
  - a. Identify how to collect and analyze reporting system data (SAFECOMS, SAFENET, MARS database, etc.) including who will perform this function.
  - b. Determine how to 'fill' gap analysis results (what were the gaps identified pre-season?).

- c. Identify Action Tracker<sup>3</sup> progress and timeline achievements.
  - d. Determine how to update risk assessments and implement results.
  - e. Determine continuous improvement opportunities (lessons learned, quick communication opportunities).
  - f. Develop a process for equipment and procedures to document change.
  - g. Feedback data to and from SASES.
  - h. Ensure important safety updates, concerns and results are communicated back to the CMIT.
2. Provide safety outputs to the community and agency through the communications plan, TMT, and other sources.
  3. Prepare mitigation implementation (remove ineffectiveness, implement new and bolster others) for the coming year, assuring safety.
  4. Augment or modify this chapter for the follow-on year if necessary.
  5. Continuously improve.

## **7.5. Communication, Training and Promotion**

Promoting safety through safety training, communication, and improving safety culture is a continuous improvement process. These efforts enhance safety actions add awareness as the SD3-60 Sherpa implementation gains momentum each year as more aircraft roll-out mission capable.

1. Continually refine a process to promote a safety culture and the benefits of a learning culture throughout the SD3-60 Sherpa program implementation (i.e. human factors training, SMS training).
2. Ensure a dedicated safety representative is involved in every training session.
3. Develop and implement a safety award program.
4. Provide material such as lessons learned, safety awards and recognitions, and other pertinent information to update the aviation safety website.

## **7.6. Critical Event Planning**

Events may occur which require rapid assessment and possible course correction during implementation. Examples of this type of event could be: (a) a systematic problem with the Sherpa aircraft, (b) a significant mishap such as line of duty death (LODD), or (c) a default by primary contractor. If such an event should occur:

---

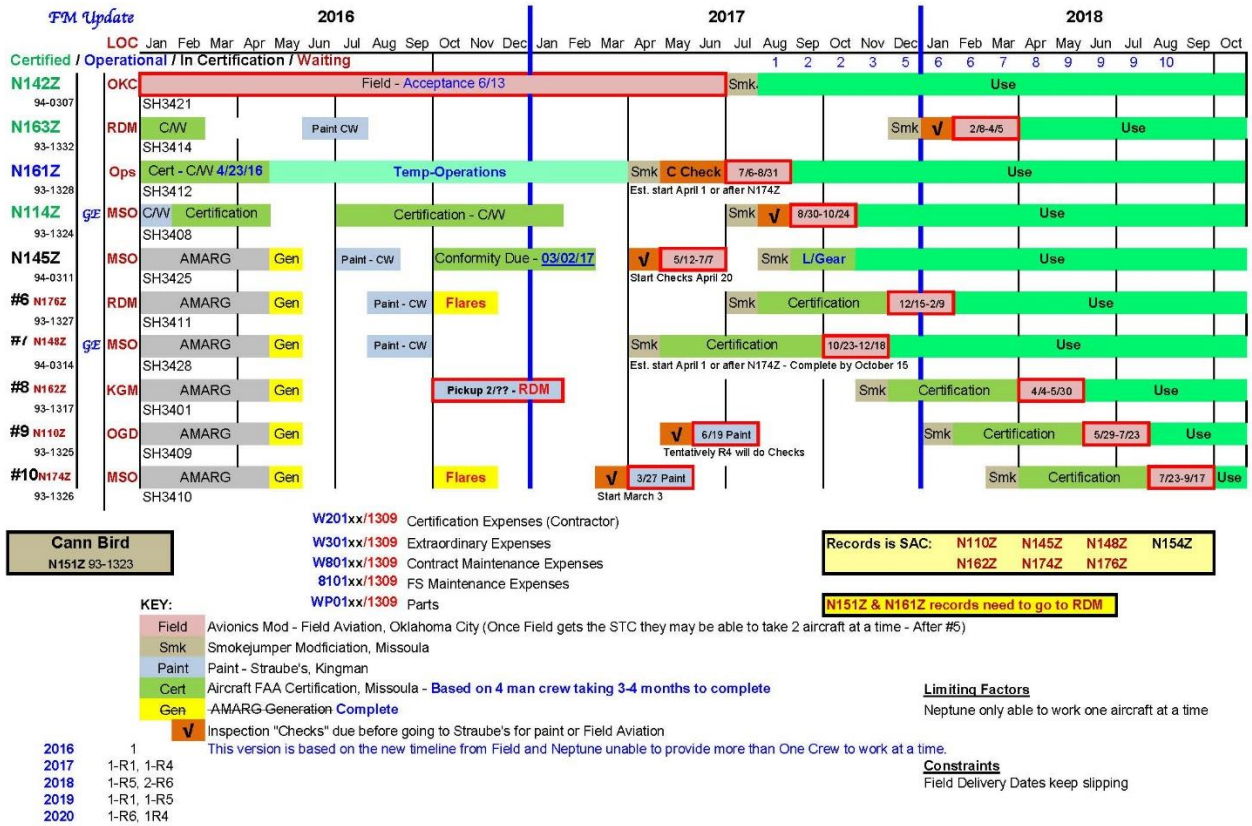
<sup>3</sup> Contact Aviation Management Specialist Aimee Mautone for the current version of the Action Tracker.

1. Report to both the RASM and RAO using established regional protocol.
2. The RAO will notify the Assistant Director, Aviation and Co-Chairs, who will need to rapidly assess the situation, incorporate the CMIT information into the analysis of the situation, and determine the path forward. Depending on the type of event, and the timing and duration of the problem, alternatives ranging from short-term pause to much more drastic action, could be implemented.
3. All mishaps will be reported using the SAFECOM reporting system.
4. Any systematic problem with the SD3-60 Sherpa or a default by a primary contractor will be reported to the ASI and RAO who will report who will report to the PM and appropriate Aviation Branch Chief.



# Appendix A: Sherpa Production Timeline

Figure 1: Sherpa Production Timeline



## Appendix B: Sherpa Replacement Schedule by Base

Table 3: Sherpa Replacement Schedule by Base

Base	Current Aircraft	Agency-Owned/ Contract	Average # SJs per Load	Replacement Aircraft	SD3-60 Sherpa In Service Year	Priority SD3- 60 Sherpa Replacement
Missoula	C-23A Sherpa	Agency-Owned	10	SD3-60 Sherpa (1)	2018	3
Missoula	DC-3T	Agency-Owned, Sold in 2016	16	SD3-60 Sherpa (1)	2018	1
Missoula	Twin Otter	Contract	8	End Contract 2018	N/A	N/A
Redding	C-23A Sherpa	Agency-Owned	10	SD3-60 Sherpa (1)	2019	6
Redding	Dornier	Contract	8	SD3-60 Sherpa (1)	2020	8
Redmond	C-23A Sherpa	Agency-Owned	10	SD3-60 Sherpa (1)	2019	4
Redmond	C-23A Sherpa	Agency-Owned	10	SD3-60 Sherpa (1)	2019	5
McCall	Twin Otter	Agency-Owned	8	Not Replaced	N/A	N/A
McCall	Twin Otter	Agency-Owned	8	Not Replaced	N/A	N/A
McCall	DC-3T	Agency-Owned, Sold in 2013	16	SD3-60 Sherpa (1)	2018	2
McCall	Twin Otter	Contract	8	End Contract 2018	N/A	N/A
West Yellowstone	Dornier	Contract	8	SD3-60 Sherpa (1)	2020	9
Grangeville	Twin Otter	Contract	8	No Change	N/A	N/A
Winthrop	CASA 212	Contract	8	SD3-60 Sherpa (1)	2019	7
Ogden	None	-	-	SD3-60 Sherpa (1)	2020	10

## Appendix C: MOU between USFS and the NFFE, Forest Service Council



Memorandum of Understanding  
Between  
US Forest Service  
and

the National Federation of Federal Employees, Forest Service Council



This Memorandum of Understanding (MOU), made by and between the National Federation of Federal Employees (NFFE), Forest Service Council (Union) and the US Forest Service (Management) collectively "the Parties," pertains to the implementation of fifteen C-23B+/SD3-60 Sherpa aircraft and constitutes a full and final agreement of any and all issues raised in regards to implementation.

As stated in the Change Management Implementation Plan (CMIP), Section 3.1.4 - Pilot Staffing Considerations, management does not intend to reduce USFS pilot positions. Any future needs will be addressed by adding Agency pilot positions and/or contract pilots. Regional input and responses will determine actual mix. The Parties recognize management's right to make decisions on contracting of work and agree to follow Article 38 of the Master Agreement where applicable.

Safety is of paramount importance to both the Management and Union. The Parties agree that implementation of the Sherpa aircraft will only happen after all the necessary and vital work in training, procedures, Smokejumper Aircraft Screening and Evaluation Subcommittee (SASES), etc. are completed. Additionally, contract employees working alongside bargaining unit employees will meet minimum pilot requirements as defined by OPM 2181 and will receive appropriate training.

As further implementation occurs, Management and the Union agree that the Union has and will continue to have a Pre-Decisional Involvement role in the development of documents such as the change management implementation plan, operating plan, National Fixed Wing Standards and Program of Instruction (POI), through forums such as Change Management Implementation Team (CMIT) meetings, National Fire Leadership Council (NFLC), yearly NFFE-FAM (Fire and Aviation Management) meeting and through email when appropriate. Management will provide mandatory "differences" training as a part of this implementation. Training will include ground instruction such as systems, avionics, and preflight checks, as well as flight instruction to ensure practical experience and familiarity with equipment, and demonstration of proficiency

Management will solicit volunteers for instructor assignments through an email to all instructor pilots that includes the factors that will be considered. The factors are: quantity and diversity of relevant flight experience, quantity and diversity of relevant instructor experience, ability to plan and organize material to be presented and ability to communicate in an organized and engaging manner. The Union will be copied on that email in order to facilitate employee awareness of the opportunity. Interested employees may submit a statement explaining why they are interested in the assignment as well as documentation of their ability to meet the factors. Management will interview those qualified candidates who are interested and will make assignments based on consideration of the factors.



Memorandum of Understanding  
Between  
US Forest Service  
and



the National Federation of Federal Employees, Forest Service Council

Assignments will also be contingent on supervisor release. If an employee objects to the assignment decision, the Union may request documentation of the determining criteria and it will be provided.

During implementation, instructors will operate the aircraft for Operational Test and Evaluation and other missions as assigned.

Aircraft 161Z will continue to be in operation for administrative purposes per the Interim Operations Plan. For any additional pilot requirements, management will follow the process outlined above.

If employee work assignments change in a way that results in changing performance expectation for employees, management will comply with Article 15 of the Master Agreement and appropriately document those changes as required by Performance Handbook FSH 6109.13.

To ensure safety and transparency, Management will communicate with employees regarding Sherpa implementation. Management will include the Union if formal discussions occur on this issue.

The Parties have met on this issue pre-decisionally, and will continue to work together, including discussion on some items that would otherwise not be mandatory subjects of bargaining. It is recognized that the Parties will continue to engage in this way, without requiring continued bargaining on items that are not defined as mandatory subjects of bargaining. If any changes occur as a result of this implementation that have an impact to working conditions of bargaining unit employees, the Parties will comply with Article 11 of the Master Agreement.

This MOU becomes effective on the date of final approval by the Agency Head or that date on which the thirty (30) day time limit for agency head review expires, whichever is earlier. Either Party may request to extend, modify or cancel the agreement utilizing the procedures in Article 11 of the Master Agreement. Otherwise, this Agreement will expire at the conclusion of full implementation of the Sherpa aircraft.

Agreed to on 10/13/2016 by:

Arthur W. Hinaman  
Assistant Director, Aviation  
Forest Service

James C. Berry  
Secretary-Treasurer  
NFPE Forest Service Council

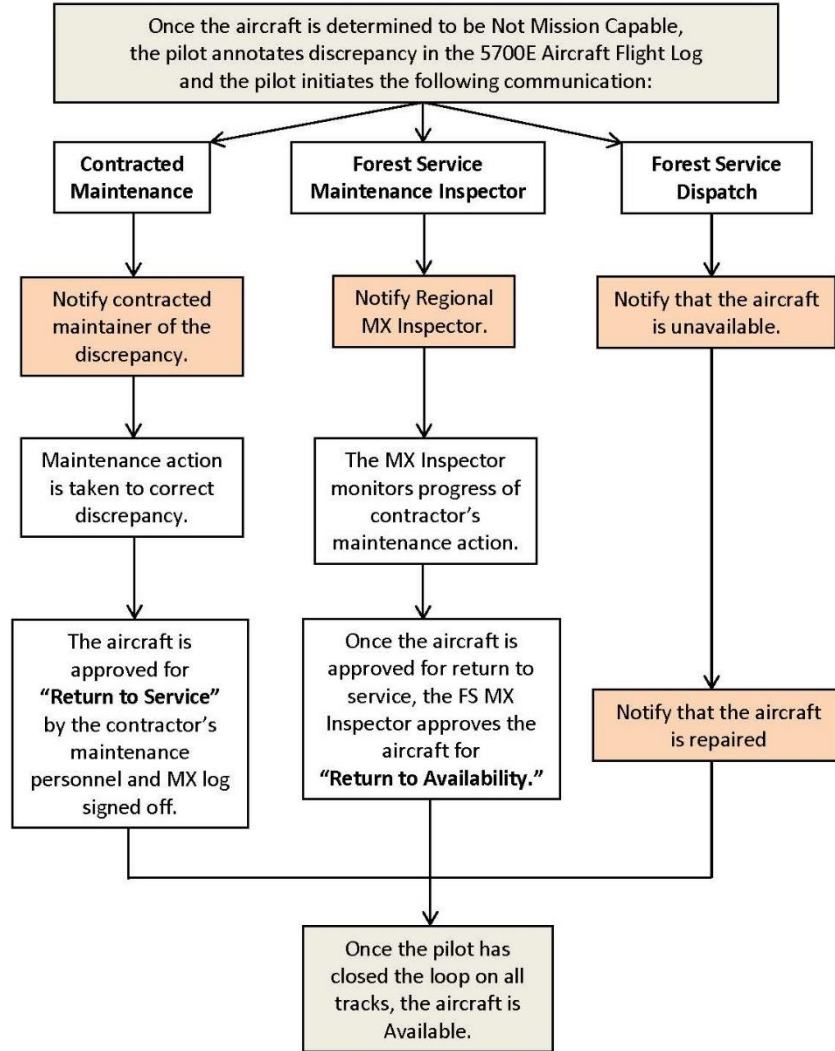
## Appendix D: Sherpa Program Governance

**Table 4: Sherpa Program Governance**

<b>Name</b>	<b>Title</b>	<b>Focus Area</b>	<b>CMIT</b>
<b>Art Hinaman</b>	Assistant Director, Fire and Aviation Management (WO)	Primary interface between FS and all other key stakeholders	
<b>Paul Linse</b>	Branch Chief, Aviation Business Ops (WO)	Responsible for aviation operations and oversight	
<b>John Nelson</b>	Branch Chief, Airworthiness (WO)	Airworthiness, aircraft maintenance, spares, and Ground Support Equipment (GSE)	
<b>Thomas Ricks</b>	Branch Chief Pilot Standardization (WO)	Assists with SD3-60 Sherpa operational requirements, develops mission execution profiles and qualifications	
<b>Margaret Doherty</b>	Region 1, Regional Aviation Officer	Co-Chair, Sherpa CMIT	X
<b>Roger Staats</b>	National Smokejumper Program Manager (WO)	Co-Chair, Sherpa CMIT	X
<b>Gil Elmy</b>	Aviation Safety Inspector (Airworthiness) (WO)	Responsible for Civil Certification of the prototype C-23B+ to SD3-60 Sherpa	X
<b>Michael McFarlane/ Melinda Draper</b>	Contracting Officer (CO)	Contract Acquisition, Task Order development, negotiation, etc.; interface between FS and contractors	X
<b>Aimee Mautone</b>	Aviation Program Integrator (WO)	Facilitates bi-monthly Sherpa conference call	
<b>Brett Terning</b>	Aerospace Engineer (WO)	Development of the STC for smokejumper equipment	
<b>John Kovalicky</b>	Smokejumper Equipment Specialist (MTDC, WO)	Development of the STC for smokejumper equipment	
<b>John Flemmer</b>	Aviation Safety Inspector (WO)	Avionics Inspector	
<b>Abe Fandrich</b>	Pilot, Region 1	Aircraft Performance	X
<b>Shane Bak</b>	Pilot, Region 1	Aircraft Performance	
<b>Eric Shilling</b>	Pilot, Region 6	Aircraft Performance	X
<b>Jim Reed</b>	Region 6, Aviation Safety Inspector	Aircraft Maintenance/Inspection	X
<b>Bob Roth</b>	Region 1, Regional Aviation Safety	Aircraft Safety, Safety Management Systems	X
<b>Sam Ramsay</b>	Region 4, Regional Aviation Officer	Coordination, oversight, and integration of SD3-60 Sherpa	
<b>Jeff Power</b>	Region 5, Regional Aviation Officer	Coordination, oversight, and integration of SD3-60 Sherpa	
<b>Aaron Schoolcraft</b>	Region 6, Regional Aviation Officer	Coordination, oversight, and integration of SD3-60 Sherpa	
<b>Joe Sannella Joe Duran</b>	NFFE Representative	Union input and oversight of SD3-60 Sherpa integration	X
<b>Heather Matusiak</b>	Aviation Management Specialist (WO)	Working Capital Fund oversight and integration of SD3-60 Sherpa	
<b>Eric Shambora (Acting)</b>	Aviation Safety Management Systems Branch Chief	Coordination, oversight, and integration of SD3-60 Sherpa safety and risk management	
<b>Jennifer Jones</b>	Public Affairs Specialist (NIFC)	Public and interagency information updates of SD3-60 Sherpa integration	

## Appendix E: Maintenance Communications Process

Figure 2: WCF Aircraft “Return to Availability” Process



**FSM 5713.41 – Aircraft Return to Service Approval**

Do not return aircraft having mechanical or equipment deficiencies to service until the aircraft has been approved by an authorized aircraft inspector.

**FSH 5709.16 42.11 – Aircraft Return to Use After Maintenance**

1. Working Capital Fund (WCF) Aircraft. Do not return Forest Service WCF Fleet aircraft having mechanical or equipment deficiencies to service until the aircraft has been approved by an authorized Aircraft Inspector.

# Appendix F: Safety Briefing Card



## SHORTS SD3-60 SHERPA SAFETY INSTRUCTIONS



<p>Insert into Seat Belt Buckle</p>	<p>Rotate Latch To Lock</p>		
<p><b>Seat Belt</b></p>		<p>Insert To Engage and Lock Net Harness</p>	<p>To Release Net Harness</p>
<p>Safety Net</p>			

**DO NOT REMOVE FROM AIRCRAFT**

## **Appendix G: Flight Risk Assessment Tool**

The key contact for the Flight Risk Assessment Tool (FRAT) is currently Donna Shope. Instructors, passwords, and additional direction on the use of FRAT will be issued the spring of 2017 and this appendix will be updated immediately as a result of that issuance. Contact Donna Shope for the latest information.



## Appendix H: Smokejumper GAR (Optional)

GREEN 0 – 11	AMBER 12 - 19	RED 20 - 25	Spotter Loadmaster	IC – OPS -Requester	Pilot	Base Manager	* Team Mitigation Score
Risk rated 1-5 for each category. Mitigations should be considered for any category rated higher than 3. If one or more categories rate higher than 3, team mitigation needs to be completed for that category. Team mitigation also must be completed if the total of the individual score is greater than 12.							
<b>Supervision:</b> Presence, accessibility, and effectiveness of leadership for all teams and personnel. Clear chain of command. Mission objectives clearly identified.							
<b>Planning:</b> Adequate briefings and mission planning time available. Shared communications plan. Radio communications available throughout area of operations. Urgency not driving the mission. Local airspace factors and hazards (TFR, FTA, and MOA) identified.							
<b>Team Selection:</b> Level of individual training and experience. Level of team member’s rest/fatigue, physical fitness, morale, and absence of outside distractions. All team members current in required qualifications and standardized procedures.							
<b>Environment:</b> Extreme temperatures, elevation, difficulty of terrain (aspect, canopy, slope, etc.), long approach, remoteness. Aircraft weight and balance, performance limitations.							
<b>Incident Complexity:</b> Number of variables that impact the performance of the mission. Number of aircraft on scene, airspace entry/exit procedures on large incidents. Pace of operations, are other factors driving tempo? Task saturation/mission creep, are there multiple mission objectives planned?							
<b>Total</b>							

<b>GREEN</b> 0 - 11 <b>LOW RISK</b> Proceed with Mission	<b>AMBER</b> 12 – 19 <b>MODERATE RISK</b> Proceed with Caution	<b>RED</b> 20 - 25 <b>HIGH RISK</b> Implement Mitigation Prior to Proceeding
---	---	--

The ability to assign numerical values or “color codes” to hazards is not the most important part of risk assessment. Team discussion is critical to understanding the risks and how they will be managed.

\*The Team Mitigation column should be used if any one team member’s overall score goes into the amber or red, or if an individual rates any category higher than a 3. Use the reverse side of this worksheet to document mitigation measures. If the team’s consensus mitigation score stays in the red, they will need Line Officer or IC approval to proceed with the mission.

**Crew/Team Mitigations:** Use reverse side of this page to document crew/team mitigations.

**Line Officer/IC Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## **Appendix I: References**

Geographic Area/National Mobilization Guide(s), Chapter 20.

Sherpa SharePoint site.

National Defense Authorization Act of 2014 (the act that authorized the transfer of 15 C-23B+ Sherpa aircraft from the U.S. Army National Guard to the U.S. Forest Service).

NWCG Glossary of Wildland Fire Terminology at [www.iat.gov](http://www.iat.gov).

U.S. Forest Service. 2017. Interagency Smokejumper Operations Guide.

U.S. Forest Service. Forest Service Handbook 5709.16, Flight Operations Handbook, Aircraft Operations.

U.S. Forest Service. Interagency Smokejumper Pilots Operations Guide.

U.S. Forest Service. Memorandum of Understanding between the U.S. Forest Service and the National Federation of Federal Employees, Forest Service Council. October 13, 2016.

## Appendix J: Glossary and Acronyms

**ADFF** – Aerial-Delivered Firefighter.

**AMARG** – Aviation Maintenance and Regeneration Group - An Air Force facility at Davis-Monthan Air Force Base in Tucson, AZ, which specializes in storing and regenerating aircraft.

**AQM** – Acquisition Management.

**ASC** – Albuquerque Service Center - U.S. Forest Service’s National Service Centers for Human Resources, Budget and Finance, and Information Management.

**ASI** – Regional Aviation Safety Inspectors.

**AIR Card** – Government credit card to obtain fuel and services for an aircraft.

**Aviation Business Case** – A methodology for aviation capital asset planning required by the Office of Management and Budget Circular A-11.

**BLM** – Bureau of Land Management - U.S. Department of Interior agency that sponsors two smokejumper bases, one in Boise, ID, and one in Fairbanks, AK.

**C-23A Sherpa** – A transport aircraft provided by Short Aviation for the U.S. Air Force from 1984-1990. These aircraft were manufactured in the mid 1980’s. The Forest Service acquired seven C-23As in 1991. Three of these were transferred to the BLM who utilized them as Smokejumper and cargo transport aircraft and later disposed of them. The Forest Service operates four C-23A aircraft as Smokejumper aircraft in a GOGO model.

**C-23B+ Sherpa** – The C-23B+ aircraft were designed and manufactured as Short SD3-60 airliners in Belfast, Northern Ireland. They were remanufactured as C-23B+ Sherpas by the Army National Guard in Clarksburg, WV. These aircraft, while similar to the C-23A Sherpa, have additional horsepower and a rear ramp that can be lowered in flight. The Forest Service is acquiring 15 C-23B+ Sherpa aircraft via the National Defense Authorization Act of 2014. They were manufactured between 1993 and 1994. Following significant documentation and some modification, the aircraft may achieve Civil Aviation status as SD3-60 Sherpas.

**Change** – Change involves developing a means of placing something new into a current system or program to address a given problem.

**Change Management** – Considerations and plans to manage internal and external disruptions to an organization or program.

**CMIP** – Change Management and Implementation Plan - A detailed plan that describes the steps and processes that will be used to achieve the goal of the change. The Change Management and Implementation Team is responsible for development of the CMIP.

**CMIT** – Change Management and Implementation Team - A team chartered to develop the CMIP and to provide overall guidance to the Forest Service C-23B+/SD3-60 Sherpa Change Management and Implementation Project.

**Change Safety Assurance** – A safety process of management functions that systematically provides confidence that the organization's change processes are meeting the safety controls identified in the Change Risk Management process and that it is on schedule.

**Civil Aircraft** – Certification by the Federal Aviation Administration that aircraft conforms to standard established and approved for Civil Aircraft Operations.

**COCO** – Contractor Owned/Contractor Operated.

**COR** – Contracting Officer Representative - An agency employee who is appointed by a Contracting Officer to provide oversight and serve as a point of contact for a contract.

**CP** – Co-Pilot.

**Criticality** – Criticality relates to the potential consequences of equipment being improperly operated or an activity being incorrectly executed.

**DLA** – Defense Logistics Agency.

**Dry Rate** – The cost of the Sherpa aircraft when fuel is not included (used in Alaska).

**DOI** – U.S. Department of Interior - The Department that manages the Bureau of Land Management.

**FAA** – Federal Aviation Administration.

**FBO** – Fixed Based Operators.

**FOC** – Full Operational Capability.

**FRAT** – Flight Risk Assessment Tool – A process to evaluate hazards and associated risk during flight missions. It allows pilots and crewmembers the ability to differentiate in advance between low risk flight and high risk flight and establishes a review process to determine risk mitigation strategies throughout the operation/mission.

**FS** – U.S. Forest Service.

**Gantt Chart** – A detailed project management schedule.

**Gap Analysis** – The purpose of a safety management system gap analysis is to locate safety processes within a program where elements are not being performed. This creates “gaps” between the safety processes of a program and implementation on the ground. This analysis will help disclose which processes may exist and are minimally effective as well as processes that are in place and are being implemented well at the field level.

**GAR** – A tool for evaluating or assessing risk by assigning color codes (green, amber, red) often with numerical values, to known hazards. It is a critical step in leading team discussion toward understanding risks and how they are managed during specific missions.

**GOGO** – Government Owned/Government Operated model.

**GOMO** – Government Owned/Mixed Operation. A government owned aircraft operated by any combination of government or contractor pilot or maintenance operators.

**GSE** – Ground Support Equipment.

**Implementation** –To carry out, put into action, perform, complete, satisfy, or fulfill.

**IOC** – Initial Operations Capability.

**IP** – Instructor Pilot.

**ISB** – Incident Support Branch.

**ISMOG** – Interagency Smokejumper Operations Guide.

**ISPOG** – Interagency Smokejumper Pilot’s Operations Guide.

**Leader’s Intent** – A concise statement that outlines what individuals must know in order to be successful for a given assignment. The intent communicates three essential pieces of information: (1) Task – What is the goal or objective, (2) Purpose – Why it is to be done, and (3) End state – How it should look when successfully completed. Source: *NWCG Glossary of Wildland Fire Terminology*, p. 112.

**MAP** – Mandatory Availability Period.

**MC** – Mission capable.

**MOU** – Memorandum of Understanding.

**MTDC** – Missoula Technology Development Center – One of the two Technology and Development Centers of the U.S. Forest Service.

**NDAA** – National Defense Authorization Act of 2014 - The act that authorized the transfer of 15 C-23B+ Sherpa from the U.S. Army National Guard to the U.S. Forest Service.

**NFFE** – National Federation of Federal Employees - The union that represents a large number of U.S. Forest Service bargaining unit employees.

**NMC** – Not mission capable.

**NWCG** – National Wildfire Coordinating Group.

**OEM** – Original Equipment Manufacturer.

**OTE** – Operational Testing and Evaluation.

**Outputs** – Results of a process, plan or activity that is documented and communicated throughout the program or organization.

**Phase I “The Ending”** – The first phase in the process of transition. Whenever there is a change implemented into an organization, employees and managers alike have to let go of something. Endings create a loss or require “letting go” of something. This is where managers often find themselves dealing with resistance.

**Phase II “The Neutral Zone”** – The Neutral Zone is the period after the change implementation has begun; the old ways are gone, but the new way isn’t comfortable yet or working satisfactorily. This is where management could get impatient with the time it seems to be taking for the change to be fully operational and effective. This is a difficult time for both the organization and the workforce.

**Phase III “The New Beginning”** – This phase is marked by new energy and confidence. People have moved past the loss and sorted out their place and future within the change process. They are once again comfortable in their work.

**PI** – Aircraft Maintenance Contract Project Inspector.

**PIC** – Pilot-in-Command.

**PM** – Program Manager.

**R and D** – Research and development.

**RASM** – Regional Aviation Safety Manager(s).

**Region 1** – Northern Region, U.S. Forest Service.

**Region 4** – Intermountain Region, U.S. Forest Service.

**Region 5** – Pacific Southwest Region, U.S. Forest Service.

**Region 6** – Pacific Northwest Region, U.S. Forest Service.

**RFI** – Request for Information.

**RON** – Remain Over Night

**SAFECOM** – Forest Service Form FSM 5700-14, SAFECOM, Aviation Safety Communiqué, used to report aviation mishaps or hazards; this form also is approved for interagency use as Form OAS-34.

**SASE** – Smokejumper Aircraft Screening and Evaluation - Evaluation of a model of aircraft for smokejumper missions. See also Smokejumper Aircraft Screening and Evaluation Subcommittee (**SASES**).

**SASES** – Smokejumper Aircraft Screening and Evaluation Subcommittee, formerly known as SASEB (Smokejumper Aircraft Screening and Evaluation Board). An interagency board that certifies various models of aircraft for smokejumper missions by applying established standards to the capabilities and performance of a given aircraft.

**SD3-60 Sherpa** – Post certification name of the C-23B+ Sherpa.

**Sherpa** – The assigned popular name for a series of transport aircraft manufactured by Short Aviation.

**SIA** – Safety Impact Analysis - A document that analyzes the hazards and mitigation measures associated with an activity and includes chapters addressing both safety assurance and quality assurance.

**SIC** – Second-in-Command.

**SJ** – Smokejumper.

**SME** – Subject Matter Expert(s).

**SOP** – Sherpa Operations Plan

**STC** – Supplemental Type Certificate – A Type Certificate received when an applicant has received approval from the FAA to modify an aircraft from its original design.

**TBD** – To be determined.

**Terms of Reference** – A statement of the operational background and organizational intent in deciding composition of the Change Management Action Team and its activities and interactions within the Change Management Plan.

**TMT** – Transition Monitoring Team - A team selected to closely track the implementation of change to provide independent assurance that the change is successful.

**Transition** – Transition is the result of incorporating change into the system which then impacts the people within a particular program.

**Transition Management** – A detailed process that addresses change from a personal level for the workforce with a plan that will orient the change implementation by selecting, designing and scheduling events, actions and projects that move people through the transition phases.

**Trigger Point** – An event or series of events that indicate a planned activity cannot occur and contingency plans will need to be considered.

**WCF** – Working Capital Fund - A fund and management system that creates revenues based on availability and flight time of aircraft and applies those revenues to pay for expenses incurred in the operation and maintenance of the aircraft.

**Wet Rate** – The cost of the Sherpa aircraft for normal aircraft missions.

**Wildfire Season** – The period during which 90% of a National Forest’s wildfires occur.