



U.S. Forest Service Ram-Air Parachute System Transition



**Operations Plan
2018**



Acronyms

AAR – After Action Review
BLM – Bureau of Land Management
CMIG – Change Management and Implementation Guide
CMIP – Change Management and Implementation Plan
CRM – Crew Resource Management
CY – Calendar Year
GAC – Grangeville Smokejumper Base
GAR – Green, Amber, Red
FAM – Fire & Aviation Management
FS – Forest Service
FSH – Forest Service Handbook
FSM – Forest Service Manual
IDIQ – Indefinite Delivery Indefinite Quantity
ISMOG – Interagency Smokejumper Operations Guide
JHA – Job Hazard Analysis
MARS – Malfunction Abnormality Reporting System
MODOC – Smokejumper Modification Document System (BLM)
MOU – Memorandum of Understanding
MSO – Missoula Smokejumper Base
MTV – Malfunction Television
MYL – McCall Smokejumper Base
NASM – National Aviation Safety Manager
NCSB – North Cascades Smokejumper Base
NFFE – National Federation of Federal Employees
NSPM – National Smokejumper Program Manager
NTDP – National Technology and Development Program
PASP – Project Aviation Safety Plan
RAC – Redmond Smokejumper Base
RACMAT – Ram-Air Change Management Action Team
RAISC – Ram-Air Implementation Steering Committee
RAO – Regional Aviation Officer
RAOP – Ram-Air Operations Plan
RARA – Ram-Air Readiness Assessment
RASM – Regional Aviation Safety Manager
RATG – Ram-Air Training Guide (FS)
RATM – Ram-Air Training Manual (BLM)
RATT – Ram-Air Transition Trainee
RDD – Redding Smokejumper Base
ROSS – Resource Ordering and Status System
SBMC – Smokejumper Base Managers Council
SIA – Safety Impact Analysis
SMS – Safety Management System
TM – Transition Monitoring
TSS – Transition Safety Subgroup
USDA – United States Department of Agriculture
USDI – United States Department of the Interior
USFS – United States Forest Service
WYS – West Yellowstone Smokejumper Base

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U.S. Forest Service
Ram-Air Parachute System Transition
Operations Plan
2018



This Operations Plan was developed by the U.S. Forest Service smokejumper community and National Federation of Federal Employees (NFFE) representatives from the Forest Service Council in response to a decision made by the Director, Fire and Aviation Management in 2015 to begin a graduated transition to a U.S. Forest Service Ram-Air Parachute System. This is an update of the Operations Plan for the 2018 calendar year. It is a living document that will be reviewed and updated as the transition progresses.

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USFS Ram-Air Parachute System Transition Operations Plan – 2018

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Review and Approval

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Revision and Amendment Log

The following chart summarizes revisions and amendments made to the Ram-Air Parachute System Transition Operations Plan for 2018. Editorial changes such as formatting and grammatical changes that do not affect meaning are not included in this list.

1. Tracking number.
2. Section number where the revision or amendment was made.
3. Brief description of the revision or amendment

Tracking No.	Section No.	Brief Description
2018-1	Cover, Title Page	Cover and title pages updated with new date and photos.
2018-2	Acronyms	Created a list of acronyms near front of document.
2018-3	Anti-Discrimination Notice	Condensed USDA anti-discrimination notice at front of document to mirror recently published Forest Service guides.
2018-4	Review & Approval	Approval signature block updated.
2018-5	Table of Contents	Recompiled Table of Contents.
2018-6	Revision & Amendment Log	Updated to reflect changes in document between 2017 and 2018.
2018-7	Throughout	MTDC replaced with new title NTDP where applicable.
2018-8	Throughout	Dates updated as needed from 2017 to 2018.
2018-9	Throughout	Updated subgroup assignments and chairs throughout.
2018-10	Throughout	Minor edits for grammar, punctuation, consistency, clarity, etc.
2018-11	Throughout	Texts, figures, and tables updated where needed to reflect new SMS assignment on RACMAT, RAISC, and Transition Safety Subgroup: Kent Hamilton, Branch Chief, Aviation SMS.
2018-12	1	Introduction updated.
2018-13	1.0	AAR Summary updated.
2018-14	1.1	New material inserted in Calendar Year 2018 Summary.
2018-15	1.1.1	New material inserted for 2018 Projections, including data in Table 1 which was also redesigned to include projections for returning ram-air jumpers and total ram-air jumpers at each base.
2018-16	1.2.1, #3a.	Project Leader title simplified to match titles in 3b and 3c.
2018-17	1.2.2, #3 & 4	Key Assumptions updated.
2018-18	2, 3, 4, 5, 6	Support, Operations, Loft, Training, Safety sections updated at annual meeting.

Tracking No.	Section No.	Brief Description
2018-19	2.1.2	Updated.
2018-20	2.9.1, 2.9.2	Updated.
2018-21	2.11.2	Updated.
2018-22	2.11.3	2.11.3 Providing Information to the RACMAT was summarized in 2.11.2 and then removed from the document; detailed display of the pros/cons of how to relay transition monitoring information was deemed no longer necessary to display.
2018-23	2.11.4	Since Section 2.11.3 was deleted, 2.11.4 was updated to 2.11.3.
2018-24	3.3	Wording in Operations SOP #2 updated based on experience in 2017.
2018-25	3.4	Added need for a hardcopy checklist for ram-air jumpers who have jumped rounds who give buddy checks to round jumpers.
2018-26	4.4.1, #1	Removed “jump twenty-first parachute.”
2018-27	4.4.2	Added to rigging refresher qualifications that at least one parachute shall have entangled lines and shall be cleared properly.
2018-28	4.4.4	Added to rigging supervisor refresher qualifications that at least one parachute shall have entangled lines and shall be cleared properly. Also, must pass a written test.
2018-29	4.7	Added utilizing FS Smokejumper Project Proposal database for new development projects.
2018-30	5.3.2	Minimum 50 jumps criteria removed and replaced with approval from training department.
2018-31	5.4	Students selected should also represent each operational area.
2018-32	5.4	Class size information updated in #2 and #3. Wording of #7 updated.
2018-33	5.10	Training calendar updated for 2018; added table displaying lead instructors and shadows for 2018 training season.
2018-34	6.3 #12	Removed Safenet.
2018-35	6.7	Updated.
2018-36	6.5.1, 6.5.2, 6.5.3	Updated and reformatted.
2018-37	Appendix C	Appendix C, Fall 2015 Ram-Air Readiness Assessment (RARA) Synopsis was deemed no longer useful and was removed; it may be referenced in the Operations Plans for previous years (2016 and 2017).
2018-38	Appendices	Appendices redesignated to reflect deletion of previous Appendix C.
2018-39	Appendix A	Action Tracker updated for 2018 and reformatted to better separate “outstanding” and “archived” action items.

Tracking No.	Section No.	Brief Description
2018-40	Appendix B	Base plans updated for 2018.
2018-41	Appendix C	After Action Review updated for 2018.
2018-42	Appendix D	Considerations for the Future updated for 2018.
2018-43	3.8	Ram-Air Transition Statistics Form (previously Figure 5) modified (dry run columns removed, added a row for “other”) and completed for the 2017 fire season. Changed label from Figure 5 to Table 5.
2018-44	4.6	Updated text to refer directly to Ram-Air Canopy Evaluation Plan rather than ISMOG.
2018-45	6.1	Removed second and third paragraphs that consisted of redundant information contained elsewhere in the Operations Plan.
2018-46	Appendix H	Added USFS/NFFE Ram-Air Parachute System MOU as Appendix H.

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1 Introduction

On July 1, 2015, the Director, Fire and Aviation Management, decided to begin a measured transition to a ram-air parachute system in the U.S. Forest Service (FS) Smokejumper Program (see decision memorandum in Appendix E). A “square” ram-air parachute system will gradually replace the “round” FS-14 parachute system currently in use.

The Bureau of Land Management (BLM) and FS each have a smokejumper program. These programs function as a partnership. Smokejumpers from each agency can jump utilizing their own agency’s parachute system from each other’s aircraft and under the direction of each other’s smokejumper spotters. This principle of interoperability is a cornerstone of both agencies’ smokejumper programs.

The BLM began assessing ram-air parachutes in 1979 and has used ram-air parachutes as their sole parachute since 1991. Region 1 began an operational evaluation of the ram-air parachute system in 2008. Their program was guided by a Memorandum of Understanding with the BLM which provided extensive support and assistance in training and equipping Region 1 smokejumpers. Without the BLM’s support, the FS would not have been in a position to stand up its own ram-air parachute system. Responsibility and accountability for the oversight and management of the FS ram-air parachute system was transferred from the BLM to the FS.

The Ram-Air Parachute System Transition officially began in 2016 with 37 smokejumpers from three Regions successfully completing ram-air parachute system training. This brought the total number of FS smokejumpers using the ram-air system to 108, or 36 percent of the total FS smokejumper force.

In 2017, the second year of the transition, 40 smokejumpers from four Regions successfully completed ram-air training, bringing the total number of FS smokejumpers using the ram-air system to 128, or 43 percent of the total FS smokejumper force.

1.0 After-Action Review (AAR) 2017 Summary

Many things went well and much was accomplished in the 2017 season. Lessons learned and corrective actions are included in this document.

In the fall of 2016, the smokejumper community came together to develop the Operations Plan for 2017. The Ram-Air Implementation Steering Committee (RAISC) met on pending matters relevant to the transition effort. The Ram-Air Change Management Action Team (RACMAT), base managers, and affected departments communicated often and used the Operations Plan for reference in implementation throughout the year.

The 2017 Operations Plan was implemented as published, although the projected number of new ram-air trainees will always tend to fluctuate due to attrition and other factors. Although it required enormous effort from all the Regions and BLM,

implementation of the transition in 2017 was well coordinated. There were associated impacts that are addressed in this review and plan for 2018. The Operations Plan will continue to be the planning template for future years of the FS ram-air transition.

See Appendix C for documentation of the 2017 AAR.

1.1 Calendar Year 2018 Summary

In determining projections for 2018, the smokejumper base managers expressed differing opinions on strategy and the number of smokejumpers from each base who should be trained on the ram-air system in 2018. Eventually a consensus was reached by the RACMAT after voting on a variety of viable alternatives. When a consensus is reached, there must be total commitment to it by all group members. Arriving at a consensus doesn't mean that the decision was easily reached or that there were not widely differing views shared and debated during the group's discussion. However, once a consensus is achieved, division of opinion related to the decision should cease as the group moves forward.

All seven FS smokejumper bases need to continue to work together to develop a cohesive, national program. The following projections for 2018 reflect the consensus that was reached, but may be adjusted by the RACMAT due to factors such as attrition and other unknowns. Base management should expect minor adjustments and maintain flexibility accordingly.

Of utmost importance is a focus on employees and ensuring that increased workloads don't cause excessive fatigue and/or stress and that there isn't a reduction in efficacy of performance or quality of materials. The smokejumper community is a "can do" culture; we must remember that we can be successful even if we don't achieve the following projected numbers in 2018.

1.1.1 Projections

Based on the availability of equipment, qualified trainers and parachute riggers, the number of smokejumpers who will be able to receive initial or transition ram-air training in CY2018 is again limited to approximately 56 smokejumpers.

The emphasis of the transition in CY2018 will be as follows:

1. Manufacture 50 new sets of ram-air parachute components and jump gear.
2. Continue to train rookies in Region 1 on the ram-air parachute system (up to 18 rookies in one class). Redding will send 6 rookies to the Boise Smokejumpers for training.

3. Continue the transition at the Region 1 smokejumper bases (10 total transition trainees), McCall Smokejumper Base (12¹ transition trainees), Redding Smokejumper Base (4 transition trainees), and Region 6 smokejumper bases (3 transition trainees each). Conduct three ram-air transition classes, with up to 14 trainees per class.

Please note: These projections may be adjusted slightly due to attrition and other unknowns. Emphasis will be on quality of training so that new trainees are confident and able to perform effectively as smokejumpers.

Table 1 displays the estimated number of ram-air parachute trainees for CY2018 based on hiring projections. The table also includes projected numbers of returning and total ram-air jumpers. These projections are subject to change.

Table 1: Projected Ram-Air Parachute Trainees and Returnees CY2018

Smokejumper Base	Ram-Air Rookies 2018	1 st Year RATTs 2018	Total New Trainees 2018	Returning Ram-Air Jumpers	Total Ram-Air Jumpers
Missoula (MSO)	8	5	13	52	65
West Yellowstone (WYS)	6	1	7	22	29
Grangeville (GAC)	4	4	8	23	31
McCall (MYL)	0	12	12 ¹	17	29
Redmond (RAC)	0	3	3	2	5
North Cascades (NCSB)	0	3	3	2	5
Redding (RDD)	6	6	12	10	22
Total	18	38	56	128	184

1.2 Applicability and Assumptions

The primary focus of this Operations Plan is on transition activities occurring in CY2018.

1.2.1 Key Assumptions Guiding the Transition

Key assumptions that guide the overall transition are listed below:

1. A realistic range of time to accomplish the service-wide transition is up to the year 2025.

¹ The number of first year RATTs at the McCall Smokejumper Base in 2018 will increase from 12 to 14 if there is attrition in prior training sessions

2. Having a predictable, multi-year stream of funding to support the implementation is essential.
3. Personnel dedicated to support the transition effort are essential to its success and include:
 - a. Ram-Air Project Leader.
 - b. Project Training Lead.
 - c. Safety Management System (SMS) Specialist (Risk Management, Quality and Safety Assurance, Data Management).
4. Mixed loads of FS-14 parachutes and ram-air parachutes will continue until completion of the implementation.
5. Qualifying a smokejumper on only one parachute system at a time is the accepted best practice.
6. Minimize impacts on national smokejumper operational capability and response during the transition while not compromising an emphasis on safety.
7. Using current methods, the total time to train an experienced smokejumper on a ram-air parachute system is approximately five weeks.
 - a. A “train the trainer” model, currently in use, will persist while encouraging exchange and participation among agencies, regions, and bases.
 - b. Other training models will be explored as opportunities arise
8. Bases in Regions 4, 5, and 6 will proactively develop SMEs within their operations. This will help develop loft, training, and daily operations at bases in the early stages of the transition. This is in addition to formal training processes and procedures.
9. The FS Smokejumper Program will go from a high skill and high parachute experience workforce to a high skill and low parachute experience workforce in the early years of the parachute system transition.
10. Continuing engagement with the BLM throughout the process is essential.

1.2.2 Key Assumptions Guiding Development of the Operations Plan

Key assumptions that guide the development of this Operations Plan include:

1. Interoperability between the BLM and FS smokejumper programs will be maintained in accordance with the ISMOG.

2. Each agency will be responsible for the administration of its own parachute system.
3. The BLM is committed to aid in the FS transition where able. Manufacturing and refresher training is encouraged. Assistance with training and incidental oversight needs will be supported on a case-by-case basis.
4. For as long as it is determined necessary by the RAISC and RACMAT, an annual AAR will be held in conjunction with the review of the Transition Operations Plan with the intent to develop the subsequent year's plan. As policy, operating procedures and personnel are developed, refined or assigned, it will be codified in relevant documents (Interagency Smokejumper Operations Guide, Operations Plans, etc.) by the RACMAT.
5. Washington Office funding will be available to support this Transition Operations Plan.
6. There will be an increase in workload and responsibilities at each base during the transition phase.
7. The Transition Operations Plan will be progressive, updated, and administered as a living document.

1.3 Document Security

This Operations Plan is intended as a tool for FS employees at all levels. No special document security requirements have been identified.

1.4 Programmatic Governance and Management

U.S. Forest Service direction governing the Smokejumper Program is found in Forest Service Manual (FSM) 5700. FSM 5700 incorporates by reference the Interagency Smokejumper Operations Guide (ISMOG). The ISMOG cites and incorporates the U.S. Forest Service Smokejumper Training Guide and Ram-Air Parachute Training Guide (RATG).

BLM direction regarding their Smokejumper Program is found in their BLM Ram-Air Parachute Training Manual (RATM) and the BLM Approved Smokejumper Equipment List.

The FS will continue to reference BLM guidance as needed in the development of guides for the U.S. Forest Service Ram-Air Parachute Program. Continuous improvement and best practices will be a collaborative effort between FS and BLM smokejumper programs.

1.4.1 Reference Documents

Reference documents in this transition include the most current versions of the following:

1. U.S. Forest Service Ram-Air Parachute System Implementation Project, Change Management and Implementation Plan (CMIP).
2. Decision Memorandum. Implementation of Ram-air Parachute Delivery System in Support of Continuous Improvement and Innovation in the U.S. Forest Service Smokejumper Program. July 1, 2015.
3. A multi-year interagency agreement has been established that authorizes the exchange of funds with the USDI-Bureau of Land Management for specified activities and services including the Smokejumper Program. Please contact either the National Smokejumper Program Manager or the Ram-Air Project Leader for further information about the intent and use of this agreement.
4. Safety Impact Analysis for Smokejumper Operations and Smokejumper Aircraft Operations, U.S. Forest Service, 2013.
5. 2010 Region 1 Risk Assessment of BLM Parachute System in U.S. Forest Service Operations and U.S. Forest Service Operations in Two Systems. November 2014 update.
6. Red Book. Interagency Standards for Fire and Fire Aviation Operations (Red Book). National Interagency Fire Center. Boise, ID.

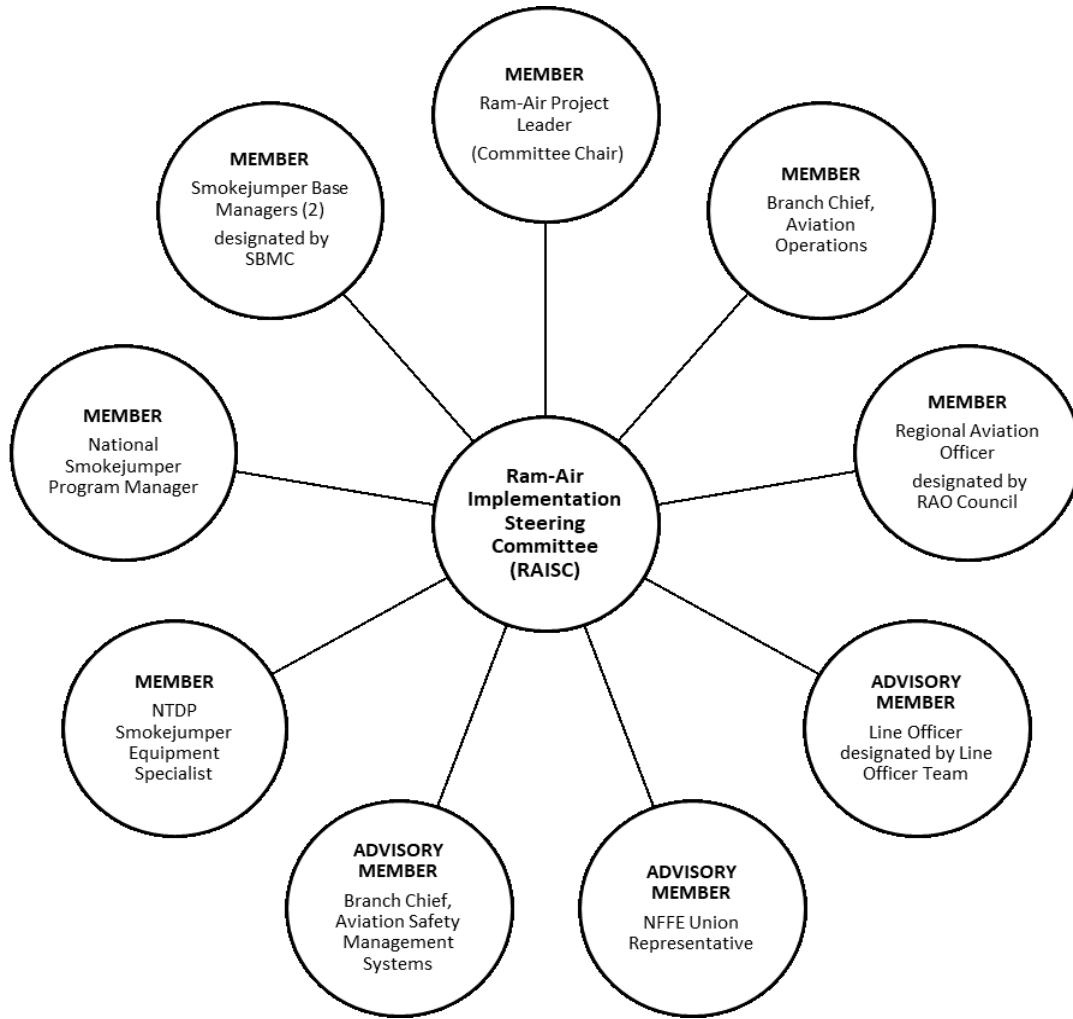
1.4.2 Organizational Components

Organizational components in this transition include the following: the Ram-Air Implementation Steering Committee (RAISC), the U.S. Forest Service Smokejumper Base Managers Council (SBMC), and the Ram-Air Change Management Action Team (RACMAT).

1.4.2a Ram-Air Implementation Steering Committee (RAISC)

The RAISC is chartered to “execute and amend as necessary a Change Management and Implementation Plan for the U.S. Forest Service Smokejumper Program’s transition to the ram-air parachute system” (RAISC Charter, pg. 1). The RAISC, through the Director, Fire and Aviation Management, “provides guidance and oversight for the transition” (RAISC Charter, pg.1). Members of the RAISC are displayed in Figure 1.

Figure 1: RAISC Positions



The RAISC may establish work groups as necessary. This includes the Ram-Air Change Management Action Team (RACMAT).

1.4.2b Ram-Air Parachute System Change Management Action Team (RACMAT)

The RACMAT is formed as a working group to help “guide the Smokejumper Program through the planning, implementation, and transition of the change to a ram-air parachute system” (CMIP, Chapter 4, Section C, Point 1). Members of the RACMAT are displayed in Figure 2 and current assignments are listed in Table 2.

A Transition Monitoring (TM) representative will be selected at each base to communicate unfiltered information regarding the implementation to the RACMAT. More information about TM can be found in Section 2.11 of this Operations Plan.

Figure 2: RACMAT Positions

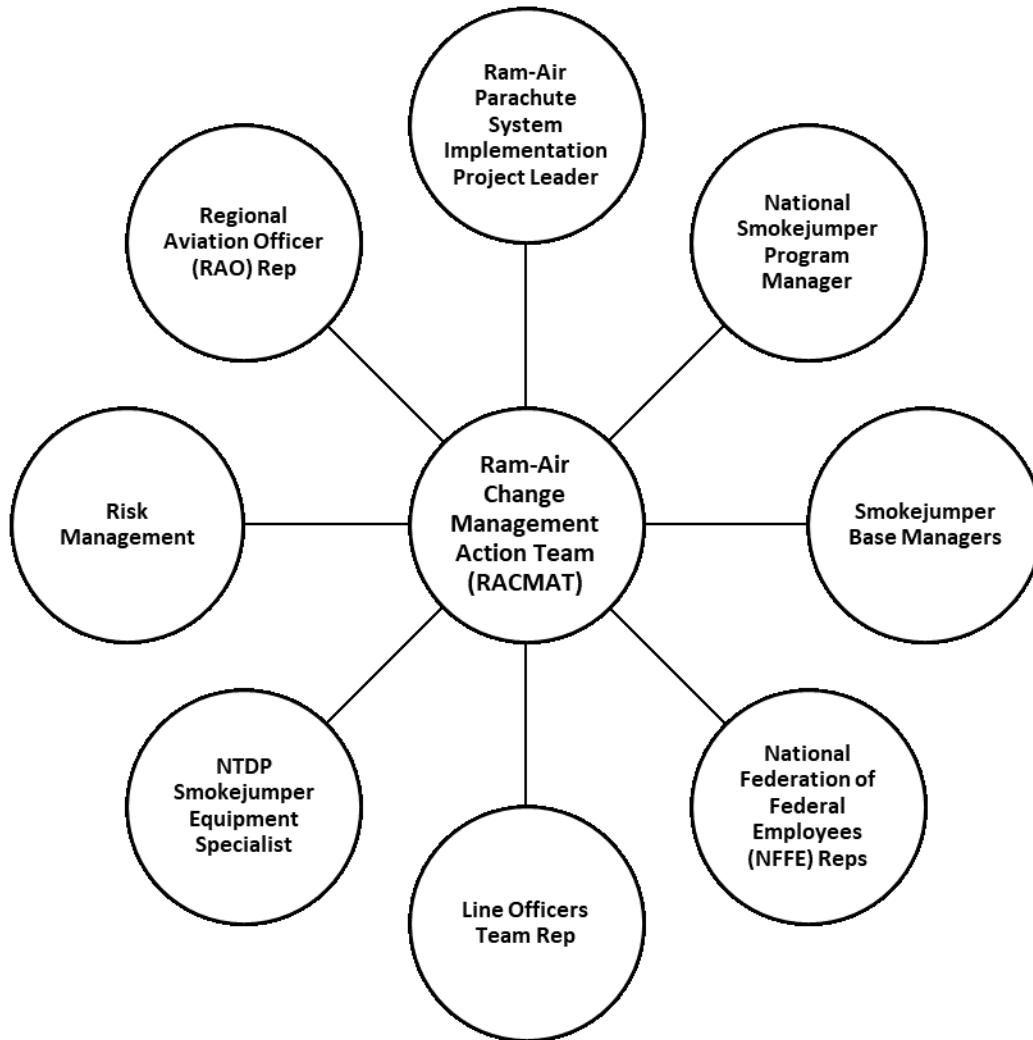


Table 2: Ram-Air Change Management Action Team (RACMAT) Assignments

RACMAT Position	Name	Title
Ram-Air Parachute System Implementation Project Leader	Mike Fritsen	Same
National Smokejumper Program Manager	Roger Staats	Same
Smokejumper Base Managers	Tory Kendrick (MSO) Pete Lannan (WYS) Chris Young (GAC) Joe Brinkley (MYL) Bill Selby (RAC) Daren Belsby (NCSB) Josh Mathiesen (RDD)	Same

RACMAT Position	Name	Title
NFFE Representatives	Joe Duran (point of contact)	FSC-Union Representative, Wilderness Trail Manager, Los Padres National Forest, Santa Lucia Ranger District
Line Officer Team Representative	Bill Avey	Forest Supervisor, Helena-Lewis & Clark National Forest
NTDP Smokejumper Equipment Specialist	Nate Hesse	Same
Risk Management	Kent Hamilton	Branch Chief, Aviation Safety Management Systems
RAO Representative	Aaron Schoolcraft	RAO, Region 6/10

1.4.2c Smokejumper Base Managers Council (SBMC)

The Smokejumper Base Managers Council is comprised of the base managers from each of the seven FS smokejumper bases. The council is chartered to do the following (see Appendix F, Smokejumper Base Managers Council Charter, Purpose, A-E):

1. Identify and address program-wide standardization needed to enhance the effectiveness and safety of the Smokejumper Program.
2. Facilitate the mutual support of all smokejumper bases across all regions by providing a forum for sharing corporate knowledge and history, and maintaining regular, recurring communication to enhance program learning.
3. Provide a forum for the base managers to exercise their responsibility as the “Smokejumper Equipment Development Committee” as described in the Interagency Smokejumper Operations Guide (ISMOG), Forest Service Section.
4. Provide a conduit for interagency cooperation and coordination and achieve better strategic communication related to the Smokejumper Program at all levels of the agency.
5. Provide leadership to the safety and learning culture and aviation accident prevention plan through implementation of the four pillars of SMS (Policy, Risk Management, Assurance, and Promotion) to facilitate the agency’s goal of zero aviation accidents and fatalities in the Forest Service.

1.4.2d Project Organization

A project organization has been established to direct the day-to-day aspects of the transition. See Section 2.2 of this Operations Plan.

2 Support

2.1 Command and Control

2.1.1 National Smokejumper Program Manager

The National Smokejumper Program Manager is supervised by the Washington Office Branch Chief, Aviation Operations (Boise, Idaho) and provides national leadership, coordination, and interagency cooperation for the U.S. Forest Service Smokejumper Program.

2.1.2 Ram-Air Project Lead Positions

The three positions described in 2.1.3 through 2.1.5 have been identified in the CMIP and associated risk assessment as key positions for providing an adequate span of control and oversight for the ram-air transition. The Ram-Air Project Leader position has been filled. As of October 2017, the Ram-Air Project Training Lead and Ram-Air SMS Specialist positions have been approved and are in the process of being filled.

2.1.3 Ram-Air Project Leader

The Ram-Air Project Leader reports directly to the National Smokejumper Program Manager.

The Project Training Lead and the Safety Management System (SMS) Specialist report to the Project Leader, and the Project Leader also has a close working relationship with the NTDP Ram-Air Parachute System Specialist.

The roles and responsibilities of the Project Leader are as follows:

1. Facilitate all aspects of the Change Management and Implementation Plan (CMIP) for the project.
2. Coordinate with the Ram-Air Change Management Action Team (RACMAT).
3. Coordinate implementation of the Communication Plan.
4. Be the point of contact between the FS and BLM regarding the ram-air parachute system.
5. Coordinate the interagency agreement with the BLM.
6. Administer documents and data related to the ram-air transition.
7. Coordinate the effort for any needed change of direction.
8. Coordinate with NTDP.
9. Provide oversight for Transition Monitoring (TM) representatives.

10. Manage project budget.
11. Manage project timelines.
12. Ensure quality assurance mechanisms are in place for implementation of the CMIP.
13. Assemble and lead project staff.
14. Define and coordinate work of all subcommittees.

2.1.4 Ram-Air Project Training Lead

The Ram-Air Project Training Lead reports directly to the Ram-Air Project Leader and has a close working relationship with smokejumper base managers, training supervisors, assistant supervisors, and ram-air training cadre.

The roles and responsibilities of the Ram-Air Project Training Lead are as follows:

1. Prepare and update ram-air operations and training plans.
2. Facilitate training aspects of the Change Management and Implementation Plan (CMIP) for the project.
3. Coordinate dates and locations for training.
4. Identify trainer leads and students by working in conjunction with training supervisors and/or base managers.
5. Update training guides, aids, and curriculums to meet safety standards and progressive practices.
6. Review, advise, and consult with bases on their readiness for a ram-air program.
7. Promote a culture of cross-training and program sharing.
8. Build the next generation of trainers and training cadre by providing development opportunities.
9. Act as liaison between the FS and BLM regarding training and interagency interoperability.
10. Coordinate the effort for any needed change of direction as it pertains to training methods and aids.
11. Coordinate with training supervisors and/or base managers to adjust or develop training events and provide updates on student progress as needed.
12. Ensure ram-air smokejumpers are provided training oversight after completing training.

13. Work with base managers and training supervisors to ensure that proficiency training and spotter training are adequate to ensure successful transition to the ram-air parachute system.
14. As qualified, may serve as a smokejumper spotter and lead smokejumper on fire assignments to enhance knowledge and safety for the ram-air transition.
15. As qualified, provide rigging supervision and ensure ram-air rigging standards are being met.
16. Coordinate data input for ram-air transition training to report accomplishments with smokejumper base managers and Regional/Forest fire managers.
17. Manage training budget and timelines.
18. Advise and coordinate ram-air training and planning strategies.
19. Monitor practices and ensure standardization of critical training components.

2.1.5 Ram-Air Safety Management System (SMS) Specialist

The Ram-Air Safety Management System (SMS) Specialist reports directly to the Ram-Air Project Leader. The person in this position should be trusted by the smokejumper community to communicate strategic and operational concerns in the most appropriate manner, and be capable enough to develop and implement necessary corrective actions.

The SMS Specialist should participate in initial and refresher training sessions and perform safety representative (or trainee) duties at a variety of bases to help gain and share different perspectives.

Avoid assigning the SMS Specialist additional roles (spotter, smokejumper, etc.) during training sessions. It will be easier for them to monitor for hazards and/or latent hazardous conditions if they are not accountable for numerous other tasks.

The roles and responsibilities of the SMS Specialist are as follows:

1. Promote information sharing and SMS program awareness. Establish and maintain interdisciplinary communication networks with:
 - a. Transition Safety Subgroup members.
 - b. Training and operations personnel.
 - c. RAISC.
 - d. Smokejumper Base Manager Council.
 - e. RACMAT.

- f. Regional aviation program managers.
 - g. Transition monitors.
2. Promote use of risk analyses in the development of pre-operational briefings during refresher and initial trainings. If Job Hazard Analyses (JHAs) are still in use in some Regions, assess for relevance and assist in adjustments if needed.
 3. Promote use of SMS risk management tools in daily operations (GAR or similar guides).
 4. Ensure that SMS principles are applied and monitored for all training events.
 5. Ensure that appropriate guidance and other information needed in case of a mishap is in place at each smokejumper base.
 6. Monitor and review accident/incident reports to evaluate local compliance and assess the need for corrective actions.
 7. For incidents or accidents, assist in developing relevant documentation and communication products.
 8. Monitor transition operations for compliance with FS policy (i.e., Ram-Air Operations Plan, CMIP, ISMOG, Regional PASPs, etc.). Assist with development of local policy alignment if needed.

2.1.6 National Federation of Federal Employees (NFFE) Representation

Fire and Aviation Management, Assistant Directors Jeff Power and Frank Guzman have been designated to represent the Forest Service in matters related to the transition.

National Federation of Federal Employees (NFFE) Fire and Aviation Committee Chair Joe Duran has been designated to represent NFFE in matters related to the transition. In this effort, he is supported by McCall Smokejumper Derek Hoban and Missoula Smokejumper Kurt Rohrbach.

2.2 Force Structure

The U.S. Forest Service Ram-Air Parachute System Implementation Project organization is shown in Figure 3 (updated version of CMIP, Chapter 1, Figure 3).

Figure 3: Ram-Air Parachute Project Organization

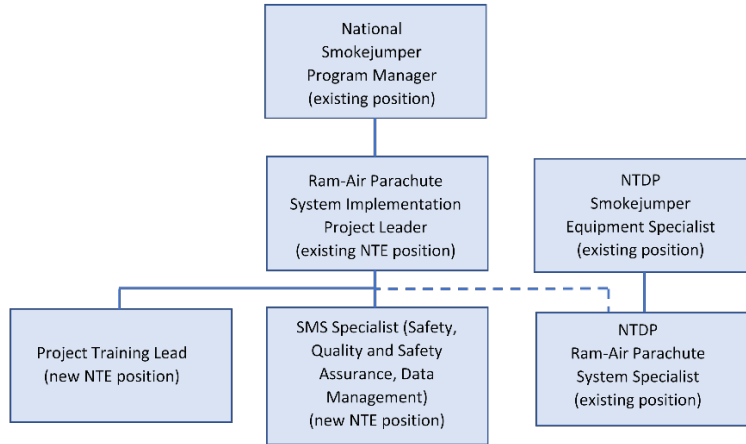
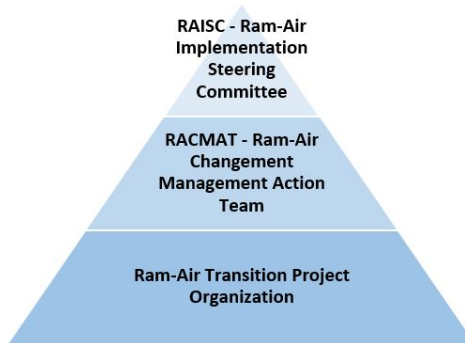


Figure 4 shows how the RAISC, RACMAT, and Project Organization are hierarchically related.

Figure 4: Ram-Air Transition Organizational Hierarchy



2.2.1 Subgroup Ram-Air Transition Assignments

Table 3 summarizes ram-air transition assignments for smokejumper subgroups. As soon as the Ram-Air Project Training Lead and SMS Specialist positions are filled, these individuals will become the point-of-contact for their respective subgroup.

Table 3: Subgroup Ram-Air Transition Assignments

Subgroup	Name	Assignment
Operations	Mike Blinn (GAC)	Point of Contact
Loft	Nate Hesse (NTDP)	Point of Contact
Training	Jake Besmer (MSO)	Point of Contact
Safety	Hans Ohme (MYL)	Point of Contact

2.3 Budgeting

Preparation and management of the project budget is the responsibility of the National Smokejumper Program Manager. Coordination of expenditures for implementation will occur through the Project Leader, NTDP Smokejumper Equipment Specialist, and affected FS base managers.

The National Smokejumper Program Manager and Project Leader will actively pursue opportunities for cooperation with the Regions and BLM, and will facilitate authorization of expenditures related to the implementation through the most appropriate means.

The NTDP Smokejumper Equipment Specialist position serves as the focal point for centralized procurement of parachutes and related components that are under IDIQ contracts, lessening the overall expense. The Training Lead will be the primary point of contact for training-related budget issues such as personnel and aircraft support for ram-air training events.

2.4 Ram-Air Parachute System Support

1. NTDP Smokejumper Equipment Specialists will develop and manage approved specifications for equipment including drawings, systems to manage equipment modifications and changes, and support for consolidated purchases, where appropriate.
2. The development and maintenance of ram-air parachute system direction in the U.S. Forest Service directives system will be a key work item for the project team and its subgroups.
3. Implementing facilities needed to support the needs for the ram-air parachute system transition identified in the 2015 Ram-Air Facilities Gap Analysis is an important and ongoing task.
4. An overall element of support is to ensure that qualified and experienced ram-air smokejumpers are available to work with ram-air trainees.

2.5 Round Parachute System Support

1. NTDP Smokejumper Equipment Specialists will continue to manage approved specifications for equipment including drawings, systems to manage equipment modifications and changes, and support for consolidated purchases, where appropriate.
2. Qualified and highly skilled parachute loft and training personnel will continue to provide full support to this system and to the smokejumpers still utilizing this system.

3. Maintaining a national inventory of parachutes and related smokejumper equipment is valuable as the need for FS-14 parachutes and system components changes as the ram-air implementation moves forward.

2.6 Personnel Support

1. Smokejumpers being trained on ram-air parachutes should have no other duties while going through training. Their focus should be to gain as much experience jumping the canopy as the season allows (CMIP, Appendix 3Cd, Training, Alternative 1, Year 1).
2. Ensure that the focus of smokejumpers going through ram-air training is on developing skills with the ram-air system. This may involve utilizing detailers or temporary promotions to fill supervisory positions while those smokejumpers are being trained.
3. Once training is completed, the number of operational ram-air jumps needs to be monitored to ensure that skills are maintained and further developed. When practical, consider placing smokejumpers at a high percentage ram-air base.
4. First-year smokejumpers selected for training on ram-air parachutes that are not successful will either be placed elsewhere in the organization or their employment will be terminated. Experienced smokejumpers selected to transition to the ram-air parachute who are not successful may be requalified on the FS-14 (round) parachute system.
5. Providing opportunities for smokejumpers to receive training and begin manufacturing equipment ahead of the transition planned for their base will accelerate their development.

2.7 Smokejumper Program Gap Analysis

A quality assurance assessment has been completed to determine preparedness to execute the CMIP and Operations Plan for 2018. (See Appendix A, Action Tracker, Item 2.005.)

2.8 Readiness Assessment – Gap Analysis

Ram-Air Readiness Assessments (RARAs) and Gap Analyses for 2017 were completed on all bases. Individual action plans have been developed by each base.

The complete Ram-Air Readiness Assessments and Gap Analyses for 2017 are on file with the National Smokejumper Program Manager.

2.9 Facilities

2.9.1 Loft Modifications

Specific loft modifications needed for the transition were identified in the 2015 Ram-Air Readiness Reviews and Gap Analyses. Most loft facilities have made modifications and upgrades that will continue as we progress through the transition. Needed modifications should be categorized and summarized in an action plan. (See Section 2.8 of this Operations Plan.)

NTDP facilities will be upgraded as needed to meet the demands of the ram-air transition.

2.9.2 Training Unit Modifications

Specific training unit modifications needed for the transition were identified in the 2015 Ram-Air Readiness Reviews and Gap Analyses. Most training units have made modifications or are in the process of modifying units; this will continue as we progress through the transition. Needed modifications should be categorized and summarized in an action plan. (See Section 2.8 of this Operations Plan.)

2.10 Contingency Planning for a Critical Event during Implementation

Events may occur which require rapid assessment and possible course correction during implementation. Examples of this type of event could be the inability of needed ram-air parachute system equipment to be procured in a timely manner for training, a mishap during training, emerging hazards to employees, or equipment defects that might initiate a safety stand-down (CMIP, Chapter 4, Section F). See Section 6.7 of this Operations Plan for more information on critical event planning.

2.11 Transition Monitoring

2.11.1 Function of Transition Monitoring

The function of Transition Monitoring (TM) is to provide information to the RACMAT to create awareness of the effects of the change and reactions to it. The scale of this change may be too large for the RACMAT to effectively monitor on its own. Trusted individuals identified by their respective base managers will help ensure quality communication and coordination with the appropriate functions (RACMAT, subgroups, project leader, etc.) throughout the transition.

2.11.2 Base Representatives

A TM representative will be identified at each base; most often they will be the safety representative. They will be individuals with credibility that is recognized by peers and management. They should be approachable and available. They should:

1. Facilitate unfiltered information to the RACMAT using the most appropriate and effective means. Information may be relayed through the following:
 - a. National Smokejumper Program Manager.
 - b. Ram-Air Project Leader.
 - c. Base managers.
 - d. Most relevant subgroups.
2. Assess effectiveness of communication to the smokejumper community.
3. Help to counter misinformation and rumors.
4. Aid in addressing concerns that may otherwise go unnoticed or unaddressed.

2.11.3 Benefits of Transition Monitoring

Benefits include the following:

1. People's mistrust starts to die out when they discover their worries and difficulties are being recognized, answered, and remedied by the RACMAT through TM.
2. Provides feedback to groups and individuals on specific issues they are concerned with.
3. Identifying problems early--before they become serious issues.
4. Rumor control--sometimes information from trusted peers is more readily accepted as truth by the workforce than if coming directly from management (CMIG, 2011, pg.32).

3 Operations

3.1 Command and Control

The Operations section at each smokejumper base is highly experienced and proficient at operating under mixed load protocols with both ram-air and FS-14 equipped smokejumpers.

Operations will continue to communicate between smokejumper bases to share information regarding the transition and will elevate important information to the RACMAT.



Map reading in preparation for an assignment.

3.2 Force Structure

Reassigning the supervisory and collateral duties of personnel being trained on the ram-air system will require careful planning. Where vacant positions exist, this could be very challenging to accomplish. Opportunities to compensate those taking on additional duties may be pursued in the form of details and/or temporary promotions.

Table 4 Operations Subgroup Members

Name	Role / Smokejumper Base
Mike Blinn	Subgroup Chair, Grangeville Smokejumper Base Representative
Mitch Hokanson	Redding Smokejumper Base Representative
Kurt Rohrbach	Missoula Smokejumper Base Representative
Knute Olson	West Yellowstone Smokejumper Base Representative
Matt Galyardt	McCall Smokejumper Base Representative
Michael Noe	North Cascades Smokejumper Base Representative
Gary Atteberry	Redmond Smokejumper Base Representative

3.3 Standard Operating Procedures

1. Once a smokejumper is current on a particular parachute system, they shall be available for all assignments regardless of Region.
2. Although it is a best practice to minimize manipulation of the jump list, acknowledge there may be a need to manipulate lists for fire assignments and/or boosts during the transition. Communicate this to crews before the season begins and explain why it is important for the Smokejumper Program as a whole.
3. Providing timely and factual information on the implementation is essential. Consider items such as injury rates, dry run percentages, system costs, and other relevant topics.
 - a. Utilize and augment as necessary the MARS database reports and Mission Incident process.
 - b. Complete the Ram-Air Transition Statistics Form (see Table 5 in 3.8 of this Operations Plan) at the end of each fire season.
4. The operations section or duty officer at each smokejumper base is often the first to hear of a significant event or rumor. This is a RACMAT or TM notification trigger. Operations needs to be especially alert to determine the facts in order to provide candid, factual information to smokejumpers as specified by the RACMAT. Events or rumors shall be communicated to the Smokejumper Base Manager and the National Smokejumper Program Manager who will notify the National Office as appropriate.

3.4 Buddy Checks and Spotter Checks

FS spotters will be authorized to check round jumpers if they were previously qualified on the FS-14.

Develop a hardcopy checklist for ram-air jumpers who have previously jumped rounds to use when giving a buddy check to round jumpers (see Action Tracker Item 2.015).



Ram-Air Transition Training Practice Jump 2017. Photo Credit: Jake Besmer.

3.5 Rigging Supervisors

1. If a Smokejumper Rigging Supervisor is needed, ensure that qualification is noted in the “Comments” section of the Resource Ordering and Request System (ROSS) request.
2. Consider alternatives to Rigging Supervisors such as shipping parachutes between bases or sending additional parachutes with a booster load if no Rigging Supervisor is available.
3. For special request orders (RATT Trainer), use ram-air support code on resource order and indicate name of person needed or special skills required. Inform Mike Fritsen or Roger Staats of order being placed and attach their name and phone number for questions; this will streamline the request.
4. Consider utilizing “experienced” ram-air smokejumpers on short- or long-term details during the first and second year of a base’s transition to ram-air parachutes or a smokejumper exchange (rounds for squares).

3.6 Intra-agency Communication

The Operations Subgroup is constantly in contact with a wide audience regarding smokejumper capabilities and operations. The subgroup proposes to continue to provide positive communications, transparency, and education regarding capabilities with all entities in the Fire and Aviation Program, including the following:

- National Interagency Coordination Center (NICC).
- Geographic Area Coordination Centers (GACCs).
- Regional Aviation Safety Managers (RASMs).
- Forest Aviation Officers (FAOs).
- Duty Officers (DOs).
- Fire Directors.
- Regional Aviation Officers (RAOs).
- Incident Commander/Area Commander Group.
- BLM Fire and Aviation Program Leadership.
- BLM Smokejumper Base Managers.
- National Smokejumper Association (NSA).

The Communication Plan should be updated to include communication opportunities that the Operations Subgroup has because of its unique role.

3.7 Quality Assurance

Ensure that Operations Subgroup responsibilities are included in all reviews, surveys, and after-action reviews with an emphasis on the items covered in Sections 3.1 through 3.6 of this Operations Plan. As the transition model evolves, quality assurance checklists will be developed. QA checklists developed for Forest Service Aviation could be utilized.

The Smokejumper Mission Incident notification will be used to rapidly share information between bases when an incident occurs. As needed, a “Lessons Learned,” Technical Bulletin, etc. can be used to provide more detailed information.

3.8 Transition Statistics Year-End Reporting

Table 5 displays transition statistics for the 2017 season. Ram-air transition statistics will be compiled after each fire season. The template in Table 5 should be completed at the end of each fire season and shall be included as part of the Smokejumper National Report.

Table 5: Ram-Air Transition Statistics 2017

	Total Number of Jumps	Malfunction/ Abnormality (Minor)	Malfunction/ Abnormality (Serious)	Injury (No Lost Time)	Injury (Lost Time)
Training	1392	21	2	2	1
Fire	1741	1	0	0	2
Other	n/a	9	0	n/a	n/a
Total	3133	31	2	2	3

Definitions:

Training Jump -- A training jump occurs in a monitored environment designed to critique parachute skills in a variety of terrain and environmental conditions to meet determined objectives to develop skills and/or maintain proficiency.

Fire Jump -- A parachute jump into a variety of terrain and environmental conditions to implement actions to meet land management objectives on a wildland fire.

Other – This category applies to malfunctions or abnormalities that occur during times other than training or fire jumps, such as evaluation jumps, rescues, etc.

Malfunction/Abnormality (Minor) -- An issue that does not compromise the integrity or safety of the parachute system.

Malfunction/Abnormality (Major) -- An issue that compromises the integrity or safety of the parachute system that may require an emergency procedure such as a reserve parachute deployment.

Injury (No Lost Time) -- A minor injury that does not require hospitalization or result in lost time at work.

Injury (Lost Time) – An injury that requires hospitalization and/or results in lost time at work. These types of injuries are reportable to OSHA.

4 Loft

4.1 Command and Control

The main contact for U.S. Forest Service ram-air transition loft coordination is Nate Hesse (NTDP). At each base, the contact is the Loft Manager.

4.2 Force Structure

Table 6 Loft Subgroup Members

Name	Role / Smokejumper Base
Nate Hesse	Subgroup Chair, NTDP
Keith Wolferman	Missoula Smokejumper Base Representative
Knute Olson	West Yellowstone Smokejumper Base Representative
Jason Junes	Grangeville Smokejumper Base Representative
Todd Franzen	McCall Smokejumper Base Representative
Dave Johnson	Redding Smokejumper Base Representative
Charles McCarthy	North Cascades Smokejumper Base Representative
Dirk Stevens	Redmond Smokejumper Base Representative

4.3 Manufacturing

In 2018, Region 1 bases: West Yellowstone (WYS), Missoula (MSO), and Grangeville (GAC) will do main construction of equipment. Redding (RDD) and McCall (MYL) will manufacture major components with Region 1 support. For FY18, Redmond (RAC) and North Cascades (NCSB) will coordinate with Region 1, 4, and 5 lofts to help construct ram-air materials or components.

4.3.1 Manufacturing Principles

Manufacturing principles include the following:

1. Each component is manufactured with a lead person who has shadowed a lead, been involved in manufacturing that specific component, or is overseen by someone who has led the project.
2. Each component manufactured has a first article made and inspected prior to manufacturing of full run. NTDP will coordinate the inspection of first article of parachute components.

- a. End article inspections will be conducted under a Master Rigger's supervision by personnel with in-depth knowledge of the component and that are not directly involved in the initial construction.
3. All final inspections of manufactured components will be stamped with DOM and MTDC/NTDP part number. End article inspections will be stamped with inspector's rigger seal.
4. Manufacturing of parachute components should be accomplished from September to May.
5. Manufacturing lead must be in place from start to finish of project.

4.4 Ram-Air Rigging Qualifications

4.4.1 General Rigging Qualifications

To be qualified to rig for shelf under a rigging supervisor, rigger must attain the following:

1. Rig 20 main parachutes to the satisfaction of loft personnel.
 - a. New ram-air jumpers will complete training packs prior to going operational for the season unless an agreed upon training curriculum is developed between loft management, base manager, and the individual.
2. Riggers not current on the system must be at minimum:
 - a. FAA certified senior rigger.
 - b. Successfully rig 20 main canopies under the supervision of qualified personnel.
 - c. Rig for a full training session (i.e. RATT, Rookie).
 - d. Maintain currency.
3. If packing a main parachute that the rigger is unfamiliar with, or has not packed before, five packs will be broken down and inspected to the satisfaction of designated loft personnel.

4.4.2 General Rigging Refresher Qualifications

A general rigging refresher consists of packing two main parachutes, one on the floor/ground and one on the rigging table, with at least one parachute with entangled lines that are cleared properly. Field Rigging Supervisors will refresh by additionally packing two reserve parachutes. These parachutes will be broken down and inspected by loft personnel to acceptable standards.

4.4.3 Rigging Supervisor Qualifications

Rigging Supervisor qualifications include the following:

1. Either (a) complete two years on the ram-air system, or (b) complete one year on the ram-air system and be a qualified master rigger, or (c) be approved by U.S. Forest Service Loft Subgroup.
2. Achieve senior rigger status.
3. Work on the construction of either harness or reserve container.
4. Successfully rig 20 main parachutes and 20 reserve parachutes.
5. Attend Rigger Supervisor training and successfully pass a written and practical test.

4.4.4 Rigging Supervisor Refresher Qualifications

A rigging supervisor refresher consists of the following:

1. Rig two main parachutes, one of each type, one on the floor/ground and one on the rigging table, with at least one parachute with entangled lines that are cleared properly.
2. Rig two reserve parachutes.
3. Complete a task sheet that has been signed by a loft designee and pass a written test.

4.5 Round Rigging Qualifications

Maintain current base protocols.

4.6 Canopy Evaluation

See the U.S. Forest Service Smokejumper Ram-Air Canopy Evaluation Plan.

4.7 Equipment and Procedural Development

NTDP will coordinate equipment and procedural development for the FS ram-air parachute system in FY 2018. Minimal proposals will be accepted for 2018. NTDP will continue to refine a process that will streamline equipment and development efforts for all smokejumper equipment. Utilize FS Smokejumper Project Proposal database for new development projects.

4.8 Loft Principles and Protocols

4.8.1 General Principles

1. Each year do a full annual inspection of harness and a mid-season inspection of harness and gear.
2. Each year every jumper on the ram-air system is suspended by their harness to see how equipment fits. This should be accomplished by a loft designee who is experienced in suspending personnel.
3. Any major equipment change (such as jump pant replacement, new boots, or shifting of gear) constitutes rehanging smokejumper to see if equipment still fits.
4. Personal gear bags will comply with dimensions and requirements in the BLM approved equipment list. (Refer to BLM MODOCs 012 and 059.)
5. In-service inspection of ram-air equipment will be accomplished by loft designee(s). The lead loft technician shall be experienced in parachute system inspections and versed in ram-air equipment.
6. Use standard operating procedures for abnormalities of ram-air harness parachute systems. See Standard Operating Procedures Associated with Parachute and/or Harness Abnormalities, U.S. Forest Service, revised 2017.
7. Use protocols for suspending a smokejumper for the U.S. Forest Service ram-air smokejumper. See USFS Protocols for Hanging and Fitting a Ram-Air Jumper, revised December 2016. These protocols were revised to reflect proper harness sizing.

4.9 Inventory

Recommended inventory levels for ram-air parachute systems in 2018 are the following:

1. Two main parachutes for each smokejumper.
2. One and a half reserve parachutes for each smokejumper.

A national inventory of jump-related equipment (suits, helmets, bags, etc.) should be completed (Action Tracker Item 4.022). A national parachute inventory will be completed and maintained by NTDP (Action Tracker Item 4.023). Inventory shall consist of Harness, Main, Reserve, Drogue, and AAD.

5 Training

5.1 Command and Control

The main contact for U.S. Forest Service ram-air transition training is the Ram-Air Project Training Lead. At each base, the contact is the training manager. Information sharing will occur between the main contact and the training managers at each base.

The Training Subgroup will continue to communicate between smokejumper bases to share information regarding the transition and will elevate important information to the RACMAT.

5.2 Force Structure

Region 1 will provide lead ram-air instructors and supporting cadre in 2018. Some smokejumpers from bases trained in previous years will be expected to join the training effort in following years with the end state goal of developing future leads from outside of Region 1.

In the ram-air transition effort, the Training Subgroup anticipates increased workloads to accomplish training. Teamwork between bases will be crucial to accomplish training.

A concern is the extra workload placed on training positions without an increase in organizational chart positions; two assistants under each Training Manager would be ideal.

Table 7: Training Subgroup Members

Name	Role / Smokejumper Base
Jake Besmer	Subgroup Chair, Acting Ram-Air Training Lead ²
Mitch Kearns	Missoula Smokejumper Base Representative
Russell Frei	Grangeville Smokejumper Base Representative
Mark Belitz	West Yellowstone Smokejumper Base Representative
Jeff Schricker	McCall Smokejumper Base Representative
Jerry Spence	Redding Smokejumper Base Representative
Inaki Baraibar	North Cascades Smokejumper Base Representative
Tony Johnson	Redmond Smokejumper Base Representative

² Subgroup chair will be Ram-Air Training Lead once position is filled.

5.3 Parachute Protocols

5.3.1 CR360 Jump Qualifications for DC7 Smokejumpers

The CR360 and DC7 are two trademarked canopies currently in the Forest Service inventory. They have slightly different handling characteristics.

CR360 jump qualifications for DC7 smokejumpers are as follows:

1. No minimum number of jumps if person refreshes on canopy at beginning of season.
2. If under 50 jumps on DC7 when switched, no moving back and forth.

5.3.2 DC7 Jump Qualifications for CR360 Smokejumpers

DC7 jump qualifications for CR360 smokejumpers are as follows:

1. Practice Jumping:
 - a. DC7 workshop as indicated in the Instructor Supplement to the RATG.
 - b. Approval from training department for attendance in DC7 workshop.
2. Operational Jumping:
 - a. DC7 workshop as indicated in the Instructor Supplement to the RATG.
 - b. Approval from training department for attendance in DC7 workshop and operational jumping.



*Ram-Air Transition Training 2017
Photo Credit: Jake Besmer*

5.4 Initial Ram-Air Training

1. Students selected for initial ram-air training will be determined by each individual base. Participation is on a voluntary basis. Consider the following when selecting students for initial ram-air training:
 - a. Jumping Jumpers – Select students who will take the canopy into the field, jump it continually, and represent each operational area.
 - b. Trainers -- Select people who are already your best trainers and are interested in training in future years.
 - c. Commitment -- The first year should be viewed as an investment in trainers who are willing to give back for the next two years.
 - d. Open-Minded and Critical – Look for the ability to listen, learn, and look critically at the training.
 - e. Ground Level Support -- Select people others look up to and trust, the “lead by example” type.
 - f. Other Assignments -- Minimize single resource and detail assignments to get the most experience on the canopy.
 - g. Expectations -- Students will be expected to be involved during the year following their initial training with either rigging or training.
2. The ideal class size for initial training has been determined to be 12 students, with a maximum of 14 students. Rookie class size to be determined by training managers.

**Rookie class size for 2018 is
specified as 14-18 students.**

3. Initial transition training approach for 2018 will be for Region 1 to provide training cadre leads while strategically selecting cadre members from bases to enhance FS training capability, the goal being to conduct three RATT and one rookie group training sessions.

**Total ram-air transition/rookie trainees for 2018 is
specified as approximately 56 students.**

4. Trainer exchanges between bases are valuable to help prepare equipment and training tactics for future transitions to the ram-air system.
5. Ram-air transition training will require approximately five weeks, based on class performance and other factors.

6. Class size and instructor/student ratio will be determined by the Training Manager and Lead Trainer.
7. Interagency training of ram-air smokejumpers may occur in 2018. Interagency alignment or a plan to mitigate differences must be in place and agreed upon to accommodate the trainees. FS smokejumpers will be trained on the CR360 canopy.



*McCall RATT Training 2017
Photo Credit: Jake Besmer*

5.5 Refresher Ram-Air Training

All ram-air smokejumpers will attend and successfully complete an objective-based ram-air refresher course annually.

Continue proficiency jumps throughout the season following Ram-Air Parachute Training Guide (RATG) proficiency protocols.

Interagency refresher training of experienced smokejumpers may occur with adherence to the agency-specific procedures required by each refresher smokejumper's agency. These differences will be discussed by training cadre with interagency refresher participants.

5.6 Initial Round Training

Refer to Forest Service Smokejumper Training Guide; continue current procedures.

5.7 Refresher Round Training

Refer to Forest Service Smokejumper Training Guide; continue current procedures.

5.8 Trainer Standards

Trainer standards will adhere to the FS section of the ISMOG (Chapter 4.1). In addition, trainers will be selected who are able to demonstrate and instruct lessons according to the FS RATG.

Region 1 will provide qualified lead instructors for 2018 while remaining cadre will be strategically selected to build FS training capacity.

5.9 Spotter Training

Continue to follow the Forest Service Smokejumper Training Guide.

5.10 2018 FS Ram-Air System Training Schedule

Figure 5 shows the ram-air system training schedule for 2017-2018. This schedule is tentative and subject to change. For changes and/or the most recent training schedule and assignments, contact the Ram-Air Training Lead.

Table 8 displays lead instructors for the 2018 training season.

Table 8: Lead Instructors for 2018 Training Season

RDD RATT	R1 RATT	MYL RATT	R1 Rookie
Feb 20 – Mar 16	Apr 23 – May 18	May 14 – Jun 8	Apr 30 – Jun 8
Banfill-L	Gilman-L	Belitz-L	Olivares-L
Spence-LS	Thomson-LS	Haynes-LS	Quinn-LS
Pattison-PL	Chambers-PL	Cox-PL	Bullington-PL
Graham-PLS	Atkinson-PLS	Messenger-PLS	Dunn-PLS

SYMBOLS:

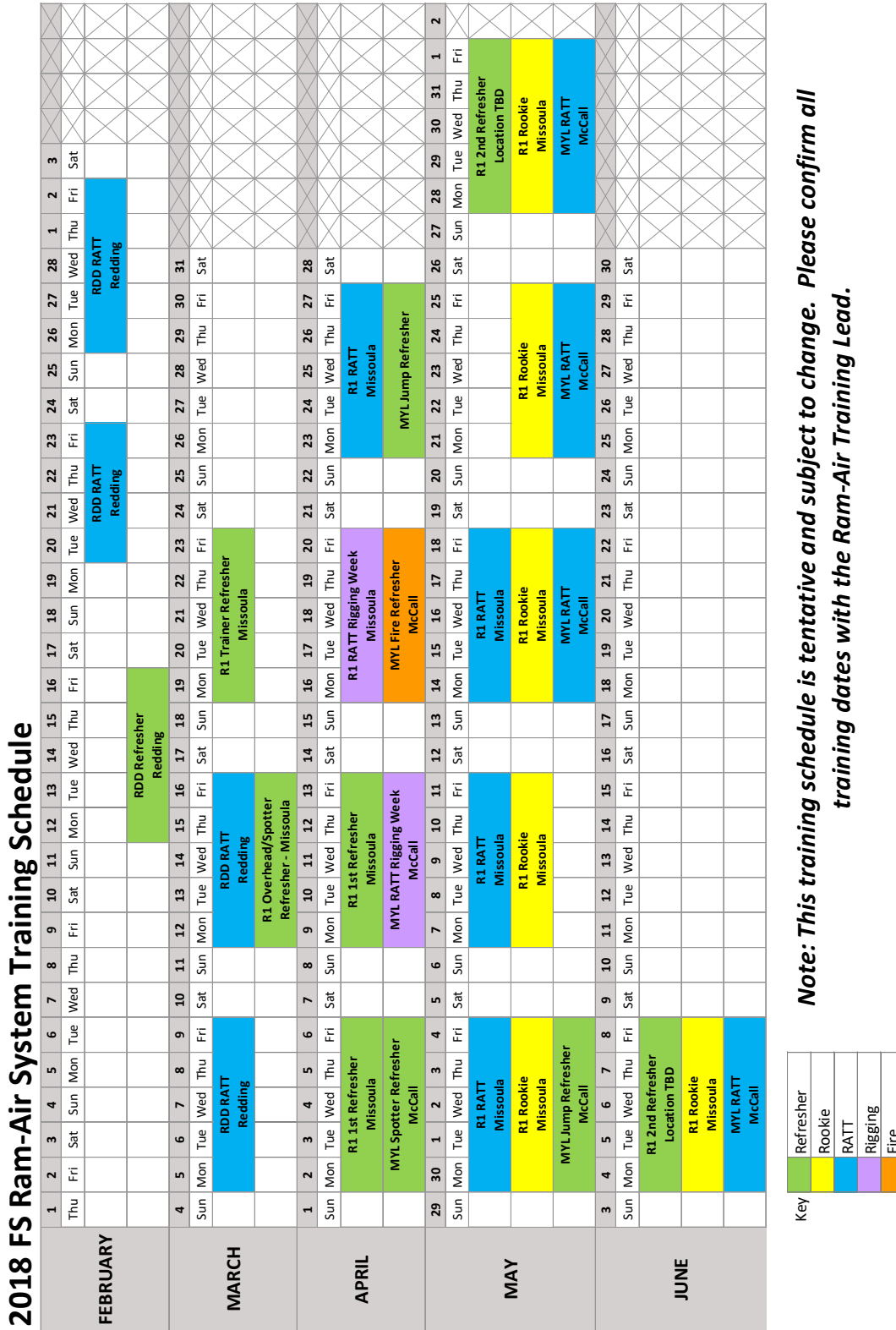
L = LEAD

LS = LEAD SHADOW

PL = PARACHUTE LEAD

PS = PARACHUTE SHADOW

Figure 5: 2018 FS Ram-Air System Training Schedule



6 Safety

The Transition Safety Subgroup will provide daily transition and safety oversight as directed by the Ram-Air Project Leader. It will implement risk management, quality and safety assurance, data management, and safety promotion activities while this transition is occurring throughout the smokejumper community. This subgroup will address not just smokejumpers using certain parachutes, but the entire community that is going through the transition.

6.1 Command and Control

During the transition, the existing agency and individual base safety processes and roles will continue. In addition, specific focus will be directed at ensuring safety while accomplishing the transition in the high-tempo environment that characterizes today's smokejumper world by implementing the organizational roles and processes described in this Operations Plan.

The Safety Management System (SMS) Specialist (see 2.2, Figure 3, for organization chart) is the lead representative for the Transition Safety Subgroup which is made up of a safety representative from all seven FS bases.

Safety, transition awareness, quality assurance, and data management processes are to be carried out by each base's safety representative as identified in this Operations Plan. These are supported in the CMIP and are designated by the RACMAT for the Transition Safety Subgroup.

6.2 Force Structure

The Transition Safety Subgroup is composed of a safety representative from each smokejumper base and an SMS Specialist as the subgroup chair. The safety processes identified for this transition fall within the Safety Management System, and the subgroup is advised by an SMS-qualified safety manager.

Although the Base Manager Council specified that the Safety Subgroup is specific to the ram-air implementation project, most smokejumper activities will correlate now and into the future. Current members of the Transition Safety Subgroup are listed in Table 9.

Table 9: Transition Safety Subgroup Members

Name	Role / Smokejumper Base
Hans Ohme	Subgroup Chair, Acting SMS Specialist ³
Kent Hamilton	Branch Chief, Aviation Safety Management Systems (advisor)

³ Subgroup chair will be SMS Specialist once position is filled.

Name	Role / Smokejumper Base
Darby Thomson	Missoula Smokejumper Base Safety Representative
Amanda Holt	Grangeville Smokejumper Base Safety Representative
Joe Rock	West Yellowstone Smokejumper Base Safety Representative
Greg Fashano	Redding Smokejumper Base Safety Representative
Hans Ohme	McCall Smokejumper Base Safety Representative
Dustin Underhill	Redmond Smokejumper Base Safety Representative
Ryan Taie	North Cascades Smokejumper Base Safety Representative
Ben Oakleaf	BLM-Boise
Randy Foland	BLM-Alaska

6.3 Safety Commitment and Responsibility

The primary tasks assigned to the Transition Safety Subgroup are to develop, implement and monitor risk management, quality and safety assurance, and transition concerns throughout the change and transition. These roles and responsibilities are assigned by the RACMAT to the Transition Safety Subgroup.

The SMS Specialist position will ensure these duties, commitments, and responsibilities are accomplished and will report back to the RACMAT. This position plans and coordinates special safety studies through reviews of smokejumper documents, data bases, and various reporting systems to determine emerging hazards, unknown hazards, or trends that should come to the attention of the RACMAT. This position determines the need for ram-air and transition safety training for all smokejumpers experiencing transition, no matter the parachute system they are using, and for any other personnel pertinent to the transition and change.

Transition Safety Subgroup members will:

1. Assist SMS Specialist in the development of plans and procedures.
2. Provide recommendations to ensure and support accomplishments in the transition.
3. Serve as a subject matter expert (SME) as requested by the RACMAT.
4. Identify a safety position for each local training.
 - a. If possible, the safety position should be stand-alone position rather than a collateral duty or an additional responsibility of the trainer(s).

- b. Safety position should be a ram-air jumper who is knowledgeable of the risks.
 - c. Integrate the safety position without detracting from the primary goal. The safety position is dependent on identification of local risks and should be determined by experienced training cadre.
5. Observe trainings outside the Smokejumper Program that utilize risk management tools as per RACMAT recommendation.
6. Participate in safety training opportunities to build safety knowledge and skills.
7. Continue with scheduled meetings to discuss checkpoints, milestones, and risk assessment tools monthly (or more often if needed). Subgroup members will have a representative on each call if they cannot participate in the call.
8. Communicate safety issues both ways--from their respective base to the Transition Safety Subgroup and from the subgroup to their base.
9. Ensure risk analyses are current and being briefed prior to refresher and initial trainings. (If JHAs are in place, ensure they are current and briefed.) Document signatures and ensure they are in place.
10. Ensure GAR (Green, Amber, Red) or similar risk management discussions are conducted daily between spotters, pilots, base managers, and operations. Encourage spotters to fill out detailed comments on Smokejumper Master Action to capture events throughout the transition.
11. Educate their respective base on communication link for safety items.
12. Continually monitor reporting processes (MARS, SAFECOM, Mission Incident Worksheets).

6.4 Risk Management

The change risk management process is designed to manage the risks related to and introduced by the change implemented into and impacting the Smokejumper Program. The degree of impact to safety (criticality) of a system or activity should be considered along with the hazards.

Three different perspectives or processes can be used to identify hazards: predictive, proactive, and reactive.

6.4.1 Predictive

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

1. This preemptive step in hazard awareness and risk mitigation can be incorporated by obtaining Forest Service ram-air experience and BLM ram-air knowledge of known hazards. These hazards may or may not yet be known by the U.S. Forest Service Smokejumper Program in its entirety.
2. Are there known hazards being revealed in the civilian world that may cross over to the Smokejumper Program?

6.4.2 Proactive

A proactive process identifies hazards within the current program that may exceed current controls if a change is introduced, for example, by reviewing reporting systems, annual reports, program data, manufacturers' information, and questionnaires.

1. Ensure use of the Ram-Air Risk Assessment (November 2014), U.S. Forest Service Ram-Air Parachute System Implementation Project, Change Management and Implementation Plan (CMIP), Appendix 5A.
2. Revealing unknown hazards through trend analysis and other data sources is a proactive way to uncover concerns before they become an accident. These are the hazards that have been identified through the quality and safety assurance processes identified in Section 6.5 of this operations plan.
3. Ensure critical information from incidents and accidents is gathered and placed into the risk management process.
4. Review the Smokejumper Safety Impact Analysis (2013) with affected personnel prior to engagement in the spring of 2018.
 - a. Evaluate for hazards that may have emerged since the 2013 risk assessment.
 - b. Monitor transition operations for emerging hazards. Update risk assessment as needed.
 - c. Ensure that mitigations implemented into the program are working as intended (from fall of 2017 through winter of 2018). See Section 6.5 of this operations plan.

6.4.3 Reactive

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

1. Smokejumpers may provide valuable information in writing or verbally following a jump. If it reveals a hazard, ensure these single events are recorded in

Smokejumper Master Action and into the risk management process, mitigated, and implemented.

2. Utilize the risk assessment for the transition to a new parachute system (hazards introduced by change) that was completed in March 2016. This risk assessment addresses factors such as social aspects, human factors, program capabilities, geographical considerations, aviation, pace, etc. This risk assessment will be updated throughout the transition.
3. Capture hazards identified by each subgroup during the AAR meeting in October 2017. Ensure these hazards are incorporated into the Risk Assessment process and associated mitigations are implemented.

6.5 Quality and Safety Assurance

Quality and safety assurance provides feedback on controls and mitigation measures that were identified in the risk management processes. The Ram-Air Project Leader is responsible to update the Quality Assurance (QA) checklist, field visits, and AARs with input from the SMS Specialist and Transition Safety Subgroup before commencement of training. This will be accomplished in three phases (outlined in 6.5.1 through 6.5.3) and communicated to the RACMAT at their fall meeting.

6.5.1 Preparation for 2018

In preparing for the 2018 training and fire season ensure and monitor that:

1. The operational risk assessment for the transition is updated with hazards identified from the previous season (reference 2017 AAR).
2. Processes are in place to gather concerns from the field as they arise.
3. Transition Monitoring (TM) is in place.

6.5.2 Quality Assurance

During the transition, perform duties such as hazard mitigation, risk management and promotion as follows:

1. Gather post-mission information (i.e., Master Action items).
2. Utilize the communication plan and methods.
3. Capture emerging hazards within the risk management system; identify and implement mitigation measures.
4. Capture data from base reviews at the end of the season.
5. When appropriate, utilize “real world” events for future training opportunities and lessons learned.

6. Observe, study, or assess other program areas and/or agencies for relevant trainings to promote or improve smokejumper operations.

6.5.3 Maintenance and Assessment

Annually review risk assessments and mitigation measures to determine effectiveness in the field. If ineffective, adjust as necessary and document in risk management process and affected manuals or plans. Continue to:

1. Review MARS.
2. Review SAFECOMs.
3. Review NTDP Smokejumper Injury Database.
 - a. Mission Incident Reports.
 - b. Continue to explore development of a database that combines all data information into one location.
 - c. Establish a standard operating procedure for information dissemination, documentation, and communication.
4. Compile the results of these data reviews and determine if trends are emerging that should be considered.
5. Ensure timely feedback to the RACMAT on all assurance process results.
6. Improve upon quality and safety assurance processes.

6.6 Safety Promotion

Promoting safety through safety training, communications, and improving safety culture is a continuous improvement process. These efforts enhance safety actions and awareness as the ram-air change and transition continues to move forward with each successive year.

1. Continue to promote a safety culture and the benefits of a learning culture throughout the Smokejumper Program (i.e., Safety Journey, human factors training, have a contact in the Office of Learning).
2. Ensure that SMS principles are applied and monitored for all training events.
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 agency websites.

6.7 Critical Event Planning

Events may occur which require rapid assessment and possible course correction during implementation of the ram-air transition.

Should an event of this type occur, the National Smokejumper Program Manager, the RACMAT, and the RAISC, or a combination of the three, will need to assess the complexity of the event and associated impacts. Some events may dictate that alternatives be developed and recommendations selected for the Director, Fire and Aviation Management.

The RACMAT will develop contingency plans as situations develop. All plans will contain:

1. Communication.
2. Situation assessment.
3. Recommendations (short-term and long-term if necessary).

As in 2017, with two parachute systems in use throughout 2018, the contingency plan will be to continue to use the system that is not affected.

If the Transition Safety Subgroup encounters an issue that warrants a potential pause of the transition, the subgroup will immediately elevate that issue to the RACMAT. The RACMAT will then assess the issue to determine how to proceed and whether a whole or partial pause of the transition is warranted. This assessment will be completed as rapidly as reasonably possible.

Items that may be a catalyst for a pause event include, but are not limited to: lack of equipment, aircraft, suitable training cadre, and/or loft support to address demands associated with the transition.

7 Summary of Impacts

Many of the expected impacts are referred to in the department-specific sections above (i.e., loft, training, operations), and the key assumptions guiding the transition (1.2.1). Most notably is the assumption that the FS Smokejumper Program will go from a high skill and high parachute experience workforce to a high skill and low parachute experience workforce in the early years of the parachute system transition. This has an impact on the personnel involved since it affects their day-to-day work environment. There is an increased workload throughout the smokejumper community of which they all have a part. There is also increased anxiety at the individual level since they don't yet know how to personally forecast or predict their own performance through the transition.

Programmatically there is much yet to learn. The experience gained from the Region 1 program and their partnership with the BLM has increased program exposure to the rest of the community, yet each region and smokejumper base will encounter opportunities and challenges unique to their own region. While there is no method to predict them in entirety, the increased coordination and discussions among the RACMAT provide a venue and opportunity to bring concerns to light in a proactive manner.

7.1 Command and Control

Chapters 1 and 2 of this Operations Plan detail governance of the national transition. Locally, command and control are embedded in the existing base hierarchy. The National Smokejumper Program Manager and the transition organization will coordinate support throughout the transition period.

7.2 Force Structure

The transition organization (lead, training, safety, and loft positions) are intended to augment the existing smokejumper management structure. While the FS smokejumper program is building the programmatic foundation for the future, continuity from these positions helps provide the common vision that they will build upon. Outside of this organization, regional and base management provide the day-to-day oversight. The BLM is assisting in this as well.

7.3 Personnel Impacts

The magnitude of this change on the U.S. Forest Service Smokejumper Program should not be underestimated. The organization will go from being highly skilled and highly experienced on the FS-14 parachute system to being highly skilled and much less experienced on a ram-air system. A higher than usual percentage of the smokejumper workforce will be in their early years of mastering a new parachute system. Smokejumpers will be in the process of gaining confidence in operating the ram-air parachute system.

Considerations for these concerns are addressed in the following documents:

1. The Ram-Air Risk Assessment (November 2014) – An assessment of the hazards and mitigation measures of operating ram-air parachutes in a FS environment developed by FS subject matter experts.
2. The Change Management and Implementation Plan (CMIP) for the U.S. Forest Service Ram-Air Parachute System Implementation (June 2015) – An assessment of the issues related to the change. See Chapter 3 and Appendix 3B in the CMIP for a list of possible Human Factor and Human Resource Considerations. This was developed by FS subject matter experts in partnership with the National Federation of Federal Employees.

7.4 Supervisory Impacts

While base managers and department supervisors are undergoing transition training, there is potential for added stress in the organization. Supervisors feel a responsibility to lead, become proficient, and manage their operational areas. There is no single “recipe for success.” Base managers will need to encourage effective delegation, know their people, and devise ways to help dissipate the stress in their organization. Strategies that are available to them may include:

1. Temporary promotions to provide added help to managers who are undergoing training.
2. Effective prioritization of issues, tasks, and schedules.
3. Resource ordering support as needed.
4. Facilitating appropriate leave requests, or utilizing operational hold to provide time-at-home to help provide a positive work/life balance.

This is not an inclusive list. Smokejumpers and base managers are adept at managing their time effectively. Acknowledging the impacts, and communicating with base personnel before, during, and after will help manage this time in a positive manner.

7.5 Operational Impacts

While the smokejumper program is extremely proficient at managing mixed loads of round and ram-air personnel, there is a potential for conflicting priorities between staffing and support. For example, there are times when personnel will be needed from one region or agency to support another even in times of shortages from the desired sending unit. Effective communication between the regions and national coordination will be needed as these incidents arise. Smokejumper managers and operations personnel are equipped to help resolve issues as they arise, and will need to remain open to, and communicate solutions throughout the community.

7.6 Training Impacts

Chapter 5 of this Operations Plan addresses avenues that training personnel believe address impacts associated with the transition. There is an increased need in the number of training sessions, additional instructors, flight time, and logistical support to plan and execute the additional training. Quality control and oversight will be crucial to minimize degradation of training standards. The balance of training skills between the ram-air and FS-14 systems will change over the years.

This document provides a pace for progression that training personnel believe can be sustained. This pace will be closely monitored and adjusted as needed.

7.7 Loft Impacts

Parachute loft personnel will have to be proficient and qualified on both the ram-air and FS-14 parachute systems and their support gear. Loft personnel have provided strategies in Chapter 4 that provide the quality control and staffing needed to support the 2018 plan.

7.8 Support Impacts

Support impacts occur in several organizational locations as follows:

1. The five National Forests and two Regional Offices that supervise smokejumper bases need to actively support the transition and be thoroughly versed in the implementation considerations of the transition.
2. Fire and Aviation Management must continually communicate its intent for the transition and make its achievement a clear and constant high priority.
3. The Training Lead and SMS Specialist positions have been approved to be filled for the 2018 season.
4. The initial Communications Plan was focused on the decision to transition to a ram-air parachute system. Now that the decision has been made, the Communication Plan must be updated with a focus on the implementation.

7.9 Best Practices

The most relevant best practices are embedded in the assumptions in section 2.2.1 and 3.3. Adherence to existing best practices in the Smokejumper Program will aid in reducing operational and personal impacts from the transition. Some additional assumptions are that:

1. National and Regional Fire and Aviation Management are in agreement on the priority and pace of the transition, and their expectations of each other.

2. The Ram-Air Project Leader will ensure that the Communication Plan is appropriate, current, and used by all involved in the transition.
3. The smokejumper program will continue to provide a positive working environment for employees on both parachute systems.
4. Ram-air representatives will visit and brief other bases on progress and expectations during the transition. (There is a concern that supervisors who don't have experience yet with the ram-air system may not be able to answer crew questions.)

Appendices

Table 10: Operations Plan Appendices

Appendix	Description
Appendix A	Action Tracker (Measurements of Success) – Outstanding Action Items and Archived Action Items
Appendix B	CY2018 Smokejumper Base Plans / Transition Schedule
Appendix C	2017 Ram-Air Transition After Action Review (AAR)
Appendix D	Considerations for the Future
Appendix E	Decision Memo for Implementation of Ram-Air Parachute Delivery System
Appendix F	U.S. Forest Service Smokejumper Base Managers Council Charter
Appendix G	Ram-Air Implementation Steering Committee Charter
Appendix H	Memorandum of Understanding Regarding Implementation of Ram-Air Parachute System Between USFS and NFFE, Forest Service Council

Appendix A – Action Tracker (Measurements of Success)

Appendix A consists of two parts: Outstanding Action Items and Archived Action Items. The Action Tracker in this appendix is a “snapshot” of action items as of the date of this Operations Plan. Contact Mike Fritsen, Ram-Air Project Leader, for a copy of the most recent version of the Action Tracker and the current status of action items.

Outstanding Action Items

Support – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
2.006	Invite BLM representative to participate as advisory member on RAISC and/or RACMAT.	National Smokejumper Program Manager		Not completed; revisit for 2018	
2.007	Identify a comprehensive contingency plan for a critical event during implementation.	Ram-Air Project Leader		In progress (emphasis item for 2018 Operations Plan).	See CMIP Action Tracker, 4.007, pg. 143.
2.008	Ensure that the Communications Plan is updated and kept current.	Ram-Air Project Leader			
2.009	Specify and clarify the roles and responsibilities of the ram-air parachute project organization as related to subgroup roles and responsibilities.			Ongoing	See organization chart in 2.2.
2.010	Arrange for an independent quality assurance source to complete an assessment of project implementation efforts to determine compliance with the CMIP and Operations Plan for CY16.	RACMAT SMS Specialist	Prior to initiating 2016 training activities.	Need to validate and elaborate on for 2018.	

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
2.011	Develop an action plan to ensure items identified in the Ram-Air Readiness Assessments and Gap Analyses for 2015 are resolved or mitigated.			Same for 2018. Bolster this.	
2.012	Create a career ladder white paper for loft positions.	Chris Young Pete Lannan		Completed 2017	Address time-in-grade issues. BLM has career path identified for each GS level.
2.013	Distribute the draft Smokejumper Incident Response Flowchart and Smokejumper EMS (SEMS) Hospital Liaison Guidelines (which includes an Injured Employee Information Sheet) to appropriate personnel for review to ensure accuracy.	National Smokejumper Program Manager			Placeholder created for these in the FS Section of the ISMOG (appendices) 12/2016.
2.014	Devise a plan for post-training support for Region 6 RATTs.	Ram-Air Project Lead	1/15/2018	Ongoing	
2.015	Develop a hardcopy checklist for ram-air jumpers who used to jump rounds for use when doing round buddy checks.				
2.016	Determine and communicate program-wide direction on whether a new ram-air jumper will be available for single resource assignments.				

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
2.017	As early as reasonably possible, set a date for the 2018 annual transition planning and AAR meeting and reserve a venue.	Ram-Air Project Lead			First week of October is generally preferred.
2.018	Conduct 2017 AAR and planning meeting with smokejumper representatives from all subgroups; develop Operations Plan for 2018.	Ram-Air Project Lead with assistance from RACMAT, RAISC, and Smokejumper Community	First draft due 11/1/2017; review period ends 11/30/2017; final due 12/15/2017.	AAR and planning meeting COMPLETE; Operations Plan in progress.	ANNUAL EVENT
2.019	Ensure that RAOP Action Tracker is periodically updated throughout the calendar year.	Ram-Air Project Lead			Coordinate with subgroups.

Operations – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Comments
3.001	Revise directives to permit FS Spotters to buddy check the parachute systems with which they have experience jumping. Put this in ISMOG and SMJ Training Guide.	TBD	TBD	COMPLETED 2016 Need to revisit for 2017. Ram-Air Project Lead will follow up on this at SBMC Meeting.	
3.003	Update Communications Plan to include communication opportunities that the Operations Subgroup has because of its unique role.	National Smokejumper Program Manager		Revisit/ Complete.	

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ID #	Action Item/ Decision	Assigned To	Due	Status	Comments
3.006	Fill out Transition Statistics form for 2018 season.	Ram-Air Project Lead with assistance from smokejumper bases	Post-season 2018.		See form template in RAOP, Section 3.8.

Loft – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
4.014	Research the possibility of contracting equipment.	NTDP Ram-Air Parachute System Specialist	CY 2016+	Completed for 2016 and 2017. Ongoing.	Met with contracting officer and discussed possibilities of IDIQ.
4.015	Research the possibility of teaching ram-air Rigging Supervisors before being trained on ram-air parachute system.	NTDP Ram-Air Parachute System Specialist	CY 2016+	Completed for previous years. Revisit and codify for 2018.	
4.019	Loft upgrades for ram-air parachutes funded by Washington Office.	Region 1	CY 2016+	Ongoing	
4.020	Develop a written and practical Rigging Supervisor test.	Hesse	February 2016	Completed/ Ongoing	
4.021	Develop FS equipment evaluation process and guide implementation of the evaluation process.	NTDP Fritsen/ Kovalicky/ Hesse		In progress.	
4.022	Complete and maintain a national inventory of jump-related equipment.	NTDP		2017 ongoing.	Annual year-end totals from each base.
4.037	Proposal for Main-D bag modification.	Sutton	6/1/17	Field test on practice packs completed; drop test at NTDP ongoing.	
4.040	Explore AAD alternatives.	NTDP	Ongoing		Need to contact vendor.

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
4.045	Develop FS Parachute Packing instructions.	NTDP	2/1/17		Revise packing instructions. Coordinate with BLM.
4.046	Develop FS Parachute Repair Standards.	NTDP	2/1/17		Refer to Manufacturer's Recommendations, FAA Parachute Rigger Manual and Poynter manual.
4.047	Develop FS Approved Equipment list.	NTDP	3/1/17	Ongoing	
4.049	Vent system upgrade.	All Bases	FY2017-2022		Funding dependent, cost est. 20K per system.
4.050	QR code parachute tracking.	MYL	FY2017		Field season MYL, report on bringing other bases onboard.
4.051	Pneumatic grommet press.	All Bases	FY2017+		Implement as funds are available.
4.052	Rigging Manual	NTDP	FY2017+		Make current document with NTDP criteria.
4.053	Identify Rigging Supervisors for training and coordinate class.	RDD and MYL. RS refresher Assigned MSO	FY2017		Coordinate with Training for calendar conflicts.
4.054	BLM harness participation.	2 FS loft techs	FY2017		Learn the 1302 mfg. from BLM-Boise TBD.
4.055	Facilitate Sewing Machine repair class.	Junes	FY2017		Look into one course this year.
4.056	Build A suitable TSO lock up for Certified Materials.	MSO/GAC	FY2017		
4.057	Revise Rigging Supervisor Document	MSO	FY2017		

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2017/2018 Ram-Air Equipment Manufacturing Schedule (Tentative)

Equipment ID	NCSB	RAC	RDD	MSO	WYS	GAC	MYL	TOTAL
MTDC-1125a-Drogue Canopy-Parachute (CONTRACTED)								
MTDC-1125b-Drogue Deployment Bag	(20) 2/2-3/2		(30) 9/1	(50) 10/10		(50) 11/1	(60) 2/12-3/2	210
MTDC-1126a-Main Container	(20) 2/1-3/1						(50) 10/30-11/10	70
MTDC-1126b-Main Deployment Bag			(25) 9/1	(40) 2/5	(40) TBD		(50) 10/16-10/27	155
MTDC-1126c-Main Cross Connector			(30) 101-11/1	(30) 1/2	(20) TBD	(30) 1/3	(40) 10/16-10-27	155
MTDC-1126d-Main Risers			(30) 101-11/1	(30) 1/2	(20) TBD	(30) 1/3	(40) 10/16-10-27	155
MTDC-1126e-Main Canopy Steering Toggle			(30) 101-11/1	(30) 1/2	(20) TBD	(30) 1/3	(40) 10/16-10-27	155
MTDC-1127a-Reserve Container	(20) 10/1-11/1	(20) TBD					(20) 11/27-12/22	60
MTDC-1127b-Reserve Ripcord	(20) 10/1-11/1	(20) TBD					(20) 11/27-12/22	60
MTDC-1127c-Reserve RSL Lanyard	(20) 10/1-11/1	(20) TBD					(20) 11/27-12/22	60
MTDC-1127d-Reserve Risers	(20) 10/1-11/1	(20) TBD	(15) 10/1				(20) 11/27-12/22	85
MTDC-1127e-Reserve Canopy Steering Toggle	(20) 10/1-11/1	(20) TBD	(15) 10/1				(20) 11/27-12/22	85
MTDC-1128a-Harness (SM, MED, LG)	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 11/6	(20) TBD		(20) 1/8-2/9	90
MTDC-1128b-Harness Yoke	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 11/6	(20) TBD		(20) 1/8-2/9	90
MTDC-1128c-Harness Housing Cover	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 11/6	(20) TBD		(20) 1/8-2/9	90
MTDC-1128d-Harness Cable Housing	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 11/6	(20) BD		(20) 1/8-2/9	90
MTDC-1128e-Harness Drogue Release Handle	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 11/6	(20) TBD		(20) 1/8-2/9	90
MTDC-1128f-Harness Cutaway Handle	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 1/6	(20) TBD		(20) 1/8-2/9	90
MTDC-1128g-Harness RSL Cutaway System	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 11/6	(20) TBD		(20) 1/8-2/9	90
MTDC-1128h-Harness Leg Pads	W/RAC	(15) 11/1-12/1	(15) 1/1-2/1	(20) 11/6	(20) TBD		(20) 1/8-2/9	90
MTDC-1120-Ram-Air Spotter Harness							(10) 2/1-3/2	10

Training – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
5.006	Maintain retention, develop trainers, and fill positions.	All		Ongoing	Training Lead position to be filled winter 2017/2018.
5.007b	Budget overtime for training students and instructors.	Training Chair/Lead			ANNUAL EVENT
5.008b	Conduct 2018 Rookie Training.	Olivares	Apr/May 2018		ANNUAL EVENT
5.009b	Conduct 2018 RATT Training Session in Redding, CA.	Banfill	Feb/Mar 2018		Preceded by RDD Ram-Air Refresher.
5.010b	Conduct 2018 RATT Training Session in Region 1.	Gilman	Apr/May 2018		
5.010c	Conduct 2018 RATT Training Session in McCall, Idaho.	Belitz	May/June 2018		
5.011	Create static line misroute training video to augment current training.	Ram-Air Training Lead (or acting)	February 2018	Ongoing	October 2017 update: FS trainers approve of how static line management was taught in the FS during the 2017 season and plan to continue the technique taught and will reconsider the need for a training video.
5.014	Organize and conduct a mid-winter meeting of all ram-air trainers prior to the 2018 training season.	Ram-Air Training Lead			

Safety – Safety Administration – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6A.008	Identify safety committee members from Boise, Redmond, and Alaska.	Shane Ralston	TBD	Ongoing	
6A.009	Revise MARS spreadsheet.	SMS Specialist	Winter 2017/2018	Ongoing	

Safety – Risk Management – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6B.001	Update and implement the Smokejumper Risk Assessment (2014) per Ops Plan. Address CMIP subsystems Human Factors and Social Factors.	Shane Ralston	January 2017	Ongoing	Need to plan a RA update meeting
6B.003	Implement the mitigations measures identified in the change operational risk assessment.	Transition Safety Subgroup Members	Spring 2016	COMPLETED. Incorporated into QA assessment. Ongoing.	

Safety – Safety Assurance – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6C.002	Continue refining the After-Action Review process.	Shane Ralston & Transition Safety Subgroup	Fall 2015/Winter 2016	Ongoing	Ensure the ability to capture information after each mission from the smokejumpers. Minor information can lead to uncovering latent conditions.

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6C.003	All-encompassing Master Action. More detail to mission-specific items, like jump spot selection and risk mgmt. Consolidated database for “everything smokejumper.” Include mass contact list for all smokejumpers (basic and emergency contact information).	RACMAT	Fall 2016 and future years	Ongoing	Fritsen, Kovalicky, Staats
6C.004	Develop and maintain a Ram-Air Safety webpage via the SharePoint site.	Ram-Air Project Leader	Spring 2017	Ongoing	
6C.006	In coordination with the Base Managers Council, ensure Transition Safety Subgroup implements Chapter 6 of the Operations Plan.	Shane Ralston	Annually	Ongoing	
6C.007	Update the Quality Assurance Checklist	Shane Ralston	Spring 2017	After updating RAS.	
6C.008	In coordination with the Base Managers Council, ensure resolution of the implementation plan for the Safety Impact Analysis (SIA) for Smokejumper Operations and Smokejumper Aircraft Operations, March 5, 2013.	Roger Staats, Mike Fritsen, Shane Ralston	Winter 2017	Complete 4/17	The SIA will need to be updated in the near future to include ram-air operations.

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6C.009	Plan a data mining schedule and develop the process to gather end of the year trending information and emerging hazard information. Ensure hazards are implemented back into the risk management process	SMS Specialist Transition Safety Subgroup		Ongoing	Use RACMAT, SMS Specialist, and Branch Chief, Aviation SMS for advice and direction.
6C.010	Incorporate the risk assessment that was updated in Nov. 2014 into an operational risk assessment that takes into account new hazards identified in the 2016 AAR.	SMS Specialist		2/18/2017	
6C.011	Continue to resolve incorrect parachute hook-ups through training/safety.	Jake Besmer		1/15/2018	

Safety – Safety Promotion – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination / Remarks
6D.003	Set Transition Safety Subgroup schedule to include scheduled calls, and e-mail participants and Base Managers.	Shane Ralston	Fall 2016	Ongoing	Ensure safety information is being shared and disseminated to the RACMAT.
6D.004	Develop and implement a Safety award program and lessons learned process to implement into the smokejumper community.	SMS Specialist	Fall 2016	Ongoing	

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination / Remarks
6D.005	Observe training outside the Smokejumper Program to continuously improve safety risk management tool and safety processes.	SMS Specialist, All	Fall 2016	Ongoing; Ralston attended rappel training and short haul workshop.	Select Transition Safety Subgroup members as opportunities arise. Rotate opportunities to all subgroup members.
6D.006	Promote training and educational opportunities to improve safety knowledge and skills.	Mike Fritsen, SMS Specialist	Fall 2016	Ongoing; validate.	Will need approval at all appropriate levels. Seek these educational opportunities within as well as outside the FS.
6D.007	Educate each base on communication link for safety items.	Each safety representative for that base.	Fall 2016	Ongoing, validate.	Ensure TSS knows their roles, responsibilities and communication links.
6D.008	Develop a safety training program to add to training events.	SMS Specialist	Fall 2016	Ongoing	
6D.009	Dissemination of safety information (hazards, accidents, mishaps) to all bases (example: mass text).	Shane Ralston	Spring 2016	Assess 2016	
6D.010	Ensure annual safety training is developed for human factors, safety culture and safety training development for all smokejumpers.	Transition Safety Subgroup	Spring 2016	Assess 2016	Sessions such as the Safety Journey, human factors training, etc.

Safety – Critical Event – Outstanding Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination / Remarks
6E.001	Review and update Line of Duty Death and Serious Accident Plans at each unit; make sure these plans are available at each unit.	Transition Safety Subgroup	Spring 2017	Assess 2016	
6E.002	Inform all TSS members as to what the RACMAT is expecting from them in a critical event.	Ram-Air Project Leader Shane Ralston	Winter 2016	Assess 2016	Ensure the RACMAT plan is developed and the TSS knows their role in that plan.
6E.003	Review and update MYL flowchart for incident response.	Shane Ralston	Nov. 18 2016		

Archived Action Items

Support – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
2.001	Follow up with Paul Linse on document security related to Operations Plan.	National Smokejumper Program Manager	11/20/2015	COMPLETED	Document security with Ram-Air Transition Operations Plan is not a concern.
2.002	Review Operations Plan to determine budget for 2017.	Smokejumper Base Managers Council	Spring 2016	COMPLETED	Project manufacturing needs.
2.003	Review Operations Plan to project plan for 2017.	RACMAT	Fall 2016	COMPLETED	
2.004	Develop Operations Plan for 2017.	RAISC	Jan. 2017	COMPLETED	
2.005	Develop a gap analysis for affected functional areas.	RACMAT	Fall 2015	COMPLETED	Same as CMIP 2015 by Mike Fritsen.

Operations – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
3.002	Determine if Rigging Supervisors should have that qualification on their fire qualifications card.	TBD	TBD	COMPLETED	Not necessary; utilize established language for ordering.
3.004	Create a template for yearly reporting that captures dry runs, injuries, and other pertinent data.	National Smokejumper Program Manager	Nov. 18, 2016	COMPLETED	Nov. 14, 2016. See Table 5 in Section 3.8 of this Operations Plan.
3.005	Fill out Transition Statistics form for 2017 season; modify form as needed.	Ram-Air Project Lead with assistance from smokejumper bases	Post-season 2017.	COMPLETED	See form template in RAOP, Section 3.8.

Loft – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
4.001	Manufacture reserve parachute risers (MSO).	Gilman, Wallace, Quinn	Nov. 9, 2015	COMPLETED	
4.002	Manufacture reserve parachute containers (MSO).	Frei, Quinn	Jan. 4, 2016	COMPLETED	
4.003	Manufacture 8801 harnesses (MSO).	Gilman, Wallace	Nov. 30, 2015	COMPLETED	
4.004	Manufacture main parachute risers (MSO).	Manufacturing Room	Feb. 1, 2016	COMPLETED	
4.005	Manufacture jumpsuits (MSO).	Manufacturing Room	TBD	COMPLETED	
4.006	Manufacture drogue deployment bags (WYS).	Held	Dec. 7, 2015	COMPLETED	
4.007	Manufacture main parachute risers (GAC).	Hertel	TBD	COMPLETED	
4.008	Manufacture main parachute containers (WYS).	Held	Sept. 28, 2015	COMPLETED	
4.009	Manufacture deployment bags (WYS).	Rishay	Oct. 6, 2015	COMPLETED	Finished Nov. 4, 2015.
4.010	Manufacture personal gear bags (WYS).	TBD	Sept. 1, 2015	COMPLETED	
4.011	Manufacture 8801 harnesses (RDD).	RDD Loft	January 2016	COMPLETED	
4.012	Manufacture reserve parachute containers (MYL).	MYL Loft	February 2016	COMPLETED	
4.013	Ensure that first article approvals occur.	NTDP Ram-Air Parachute System Specialist	2016+	COMPLETED	MSO loft-will fall under NTDP coordination 2017.
4.016	Develop a FS canopy evaluation process.	Gilman	CY 2017+	COMPLETED	
4.017	Explore concept of a national jump equipment supply.	Hesse	CY 2017	COMPLETED	

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
4.018	Determine compatibility of current smokejumper equipment with ram-air parachute system.	NTDP Ram-Air Parachute System Specialist	CY 2016+	COMPLETED	
4.023	Complete and maintain a national parachute inventory.	NTDP		COMPLETED. 2017	Inventory shall consist of Main, Reserve, Drogue, and AAD. Post to SharePoint.
4.032	Cypress unit install instructions.	Stanzak	Draft by 1/1/17	COMPLETED	
4.033	Proposal for Harness Leg Strap extension Small size.	MSO	1/1/17	COMPLETED	
4.034	Proposal for Harness cover extension.	MSO	1/1/17	COMPLETED	
4.035	Define who is authorized for Harness fit checks.	MSO	1/1/17	COMPLETED	Designated loft techs. Reference 2017 Hanging Protocols.
4.036	Ram-Air Rigging Supervisors document Approval.	Review by Loft Subgroup members.	12/1/17	COMPLETED	
4.038	Review previous Rigging Supervisor documents, refine and update.	MSO	12/15/16	DUPLICATE	Repeat of previous action item.
4.039	First Article mfg. in RAC for RDD, RAC, NCSB.	RAC	11/28-12/9/16	COMPLETED	
4.048	Develop FS Equipment instructions	NTDP	3/1/17	COMPLETED	
4.049	Revise protocols for harness sizing.	Region 1	Draft by 1/1/17	COMPLETED 12/2016	Note: When change tracking is available, enter it into database.
5.005	Train other bases on rigging.	Loft (Charles Savoia)	ASAP	COMPLETED	This item transferred from Training to Loft.

Training – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
5.001	Identify base(s) slated for Ram-Air Transition Training in 2016.	Base Managers Council	Fall 2015	COMPLETED	Decision: 36 trainees in 2016 (28 in Region 1 and 8 in Region 5). Number of trainees limited based on equipment availability.
5.001a	Identify base(s) slated for Ram-Air Transition Training in 2017.			COMPLETED	Decision: For 2017, 14 students from MYL, 2 NCSB, 2 RAC, 6 RDD, 4 R1 (MSO & GAC).
5.002	Research possibility of fall training in October 2016; prepare and check units.	Training Lead (Mark Belitz)	June 1, 2016	COMPLETED	ARCHIVE
5.003	Research possibility of overhead refresher training at Redding in Jan/Feb. 2016.	Mark Belitz	Jan. 1, 2016	COMPLETED	ARCHIVE
5.004	Fill Project Training Lead position as designated in the CMIP (not via collateral duties).	Ram-Air Project Leader	ASAP	COMPLETED	In process of being filled Winter 2017-2018.
5.007	Budget overtime for training students and instructors.	Mark Belitz	Mar. 1, 2016	COMPLETED	ANNUAL EVENT
5.007a	Budget overtime for training students and instructors.	Training Chair/Lead	2017	COMPLETED	ANNUAL EVENT
5.008	Conduct 2016 Rookie Training.		April 25 - May 27, 2016	COMPLETED	ANNUAL EVENT
5.008a	Conduct 2017 Rookie Training.			COMPLETED	ANNUAL EVENT

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
5.009	Conduct 2016 RATT Training Session #1.		April 11 – May 13, 2016	COMPLETED	In Missoula. ANNUAL EVENT
5.009a	Conduct 2017 RATT Training Session #1.			COMPLETED	ANNUAL EVENT
5.010	Conduct 2016 RATT Training Session #2.		May 9 – June 3, 2016	COMPLETED	Units in Missoula and jumps in Grangeville. ANNUAL EVENT
5.010a	Conduct 2017 RATT Training Session #3.			COMPLETED	ANNUAL EVENT
5.012	Detail 2 RAC and 2 NCSB RATTs to busy ram-air base(s) in summer 2017.	Ram-Air Project Leader	Spring 2017	COMPLETED	Possibly RDD.
5.013	Stress AAD zero display in training.	Training Lead	Spring 2017	COMPLETED; Ongoing from now on.	Include as a test question to validate student knowledge.

Safety – Safety Administration – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6A.001	Ensure Leader's Intent safety message is disseminated and understood by Transition Safety Subgroup (TSS).	RACMAT	Fall 2015/Winter 2016	COMPLETED	
6A.002	Acquire SMS position description for review.	Bobby Sutton	Completed	COMPLETED	Completed at Oct. 5-9, 2015 Ram-Air Operations Plan Workshop.
6A.003	Identify RASM representative on RACMAT.	Smokejumper Base Managers Council	Completed	COMPLETED by Roger Staats; Bob Roth was identified as the RASM rep.	Completed at Oct. 5-9, 2015 Ram-Air Operations Plan Workshop.

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ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6A.004	Determine who has the authority to approve Risk Assessments.	Shane Ralston and Bob Roth	Spring 2017	COMPLETED	We are garnering approvals as needed.
6A.005	Reestablish/reaffirm Transition Safety Subgroup Members.	Shane Ralston, Base Managers	Fall 2016	COMPLETED by Ralston. Ongoing as members change.	
6A.006	Define a process to rotate new members into the TSS as current members leave or obtain new assignments.	Transition Safety Subgroup		COMPLETED	The process is to ensure someone is in place during the monthly call or replaced if a new job is taken.
6A.007	Charter for Transition Safety Subgroup.	Bobby Sutton	Fall 2015	CANCELLED	Not needed due to operating under the RACMAT who is operating under the approval of the CMIP.
6A.010	Confirm SMS representation on RAISC/RACMAT.	National Smokejumper Program Manager	October 2017	COMPLETED	

Safety – Risk Management – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination/ Remarks
6B.002	Develop CMIP Risk Assessment (RA) dealing with the hazards introduced by the change.	Transition Safety Subgroup Members	Spring 2016	COMPLETED Presented to RAISC spring 2016	Consult with SMS Specialist and RASM for guidance and BLM for hazards that FS may not be aware of that should be captured in the RA. May be an additional tab to the latest smokejumper risk assessment.

Safety – Safety Assurance – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination / Remarks
6C.001	Develop a post-incident assessment tool and an After-Action Review process.	Hans Ohme Jesse Myers Jason Junes	Edit and post in Operations Plan	CANCELLED	
6C.005	Develop interagency template for FLA and discuss participants.	Shane Ralston, Chris Young, Jason Junes	2016	CANCELLED	Related to 6C.001.

Safety – Safety Promotion – Archived Action Items

ID #	Action Item/ Decision	Assigned To	Due	Status	Coordination / Remarks
6D.001	SMS Specialist will report weekly to the Project Leader on the progress of commitments and responsibilities.	Shane Ralston		CANCELLED	
6D.002	Safety promotion e-mail.	Shane Ralston	Fall 2016	Archive	

Appendix B – CY2018 Smokejumper Base Plans / Transition Schedule

The following smokejumper base plans and projections are to illustrate each base’s intent for trainees in 2018. They are based on best estimates for CY2018 as of December 2017 and are likely to change.

Table 11: Calendar Year 2018 Smokejumper Base Plan Summary – Missoula

Smokejumper Base	Ram-Air Returning	Round Returning	Ram-Air Rookies	Round Rookies	Ram-Air RATT	Total
Missoula (MSO)	52	6	8	0	5	71

Support the agency’s goal to transition to a ram-air delivery system. Work closely with BLM and NTDP to ensure that the goal does not preclude further development of improved equipment and training practices. Improve on the way.

Training:

1. Continue training with BLM.
2. Continue to develop qualified ram-air training cadre.
3. Train one rookie class for Region 1.
4. Train one ram-air transition class of 14 in Missoula.
5. Assist in the training of ram-air transition classes at other locations.
6. Continue support and training of other Forest Service smokejumper bases in ram-air transition.

Loft:

1. Continue to develop qualified ram-air parachute riggers.
2. Continue to develop qualified ram-air rigging supervisors.
3. Build components for ram-air transition.
4. Support other Forest Service bases in ram-air component building.
5. Continue to support NTDP with the evaluation of equipment and components.

Operations:

1. Increase coordination with functional areas to continue to support customers in conjunction with transition.

Table 12: Calendar Year 2018 Smokejumper Base Plan Summary – West Yellowstone

Smokejumper Base	Ram-Air Returning	Round Returning	Ram-Air Rookies	Round Rookies	Ram-Air RATT	Total
West Yellowstone (WYS)	22	2	6	0	1	30

Training:

1. Continue to identify and train new trainers.
2. Develop and refine the training skills of current trainers.
3. Lead/Host jumping portion of Rookie or Refresher Training at West Yellowstone for WYS/GAC.
4. Assist with training of other bases and the training of their trainers.
5. Seek out existing new “Train the Trainer” opportunities.
6. Maintain round training capabilities for one individual who does not wish to transition but will retire in the next few years.

Loft:

1. Train and maintain a total of 10 Rigging Supervisors.
2. Continue to train additional smokejumpers in the manufacturing of ram-air components.
3. Support other bases as they transition to ram-air by training and assisting in the rigging and manufacturing of all ram-air components.
4. Maintain all capabilities of the round parachute system.
5. Acquire leased warehouse space in Bozeman for manufacturing/loft work.
6. Install more lawn for checking and rigging parachutes.

Operations:

1. Manage to ensure smokejumpers on both systems are available to jump and are current.
2. Support local, Regional, and National needs for smokejumpers.
3. Provide logistical support as needed.

Table 13: Calendar Year 2018 Smokejumper Base Plan Summary – Grangeville

Smokejumper Base	Ram-Air Returning	Round Returning	Ram-Air Rookies	Round Rookies	Ram-Air RATT	Total
Grangeville (GAC)	23	6	4	0	4	34

Training:

1. Host ram-air late refresher for region (TBD).

Loft:

1. Pursue facilities funding for tower modifications.
2. Build 50 Drogue Deployment Bags.
3. Build 30 Main Parachute Risers.
4. Complete in-service inspections of ram-air main canopies.

Operations:

1. Provide logistical support nationally.
2. All four 2017 RATTs will engage in manufacturing in MSO or Bozeman.

Table 14: Calendar Year 2018 Smokejumper Base Plan Summary – McCall

Smokejumper Base	Ram-Air Returning	Round Returning	Ram-Air Rookies	Round Rookies	Ram-Air RATT	Total
McCall (MYL)	17	33-35 ⁴	0	0	12-14 ⁵	64

Training:

1. Twelve to fourteen MYL students to attend RATT 3 in MYL.
2. Pursue opportunities for MYL ram-air jumpers to be cadre members in RDD, MSO, and MYL RATT classes.
3. Send trainer observers to Region 1 and/or BLM rookie training.
4. Coordinate efforts with other functional areas.
5. Continue to pursue low trolley system for units.
6. Coordination efforts with other functional areas.
7. Identify AV employee for RATT 3.

Loft:

1. Six to eight employed throughout this winter to learn ram-air components and rigging procedures.
2. Oversight of manufacturing components for Region 6.
3. Obtain Rigging Supervisor for six employees.
4. Rigger support at other RATT trainings.
5. Working towards self-sufficiency as riggers in McCall to support RATT trainings.
6. Continue to build National ram-air parachute and component inventory.
7. Install adequate ventilation system for material cutout.
8. Continue to explore the use of QR Code Reader for parachute tracking.
9. Construct 50 Main D-Bags.
10. Construct 40 Main Risers.

⁴ The number of returning round parachute jumpers may decrease from 35 to 33 if two additional 1st year RATT openings are picked up due to attrition in prior training sessions.

⁵ The number of 1st year RATTs at the McCall Smokejumper Base in 2018 will increase from 12 to 14 if there is attrition in prior training sessions.

11. Construct 50 Main Containers.
12. Construct 25 Reserve Risers.
13. Construct 20 Reserve Containers.
14. Construct 20 Harnesses.
15. Construct 60 Drogue D-Bags.
16. Construct 10 Spotter Harnesses.
17. Coordination efforts with other functional areas.

Operations:

1. Prepare to logistically support 2018 RATT in McCall including vehicles and practice jump coordination.
2. Secure lodging for off-unit trainers and riggers on behalf of 2018 RATT in McCall.
3. Support local, regional, and national needs for smokejumpers.

Table 15: Calendar Year 2018 Smokejumper Base Plan Summary – Redmond

Smokejumper Base	Ram-Air Returning	Round Returning	Ram-Air Rookies	Round Rookies	Ram-Air RATT	Total
Redmond (RAC)	2	40	0	5	3	50

Training:

1. Complete unit alterations with a goal of sponsoring a RATT class or ram-air refresher in 2019.
 - a. Exit Risers.
 - b. Letdown Risers.
 - c. Adjusting Berms.
 - d. Build Malfunction Trolley System.
2. Send personnel to observe and participate in RATT training at other bases.
3. Update exit and let-down towers to accommodate ram-air parachute system.
4. Acquire training aids, such as a malfunction video tower.

Loft:

1. Participate in the construction of ram-air equipment.
2. Encourage future ram-air candidates to work on practice rigging ram-air parachutes with a goal of 20 minimum rigged.
3. Continue modifying and upgrading loft facilities to meet ram-air needs.
4. Continue updating sewing room with additional sewing machines and ventilation system for “hot knife” cut-out area and modify rigging tables.
5. Continue acquiring supplies for future ram-air equipment construction.
6. Check current jump gear for compatibility.

Operations:

1. Support local, regional, and national needs for smokejumpers.
2. Provide logistical support as needed.

Table 16: Calendar Year 2018 Smokejumper Base Plan Summary – North Cascades

Smokejumper Base	Ram-Air Returning	Round Returning	Ram-Air Rookies	Round Rookies	Ram-Air RATT	Total
North Cascades (NCSB)	2	21	0	4	3	30

Training:

1. Observe and participate in RATT classes in 2018.
2. Three smokejumpers (to include training and loft department heads) participating in 2018 RATT.
3. Two malfunction (MTV) racks constructed.
4. Currently constructing low trolley system.
5. Two ram-air rigging tables constructed.
6. Updating exit and let-down tower for ram-air conversion.
7. Continue to transition current smokejumpers to ram-air system and coordinate with other functional areas in preparation.

Loft:

1. Check equipment compatibility.
2. Upgrade sewing machines and sewing loft.
3. Participate in Region 1 equipment construction.
4. Construct 20 drogue deployment bags, 20 main containers, 20 reserve containers, and 15 harnesses.
5. Manufacture ram-air specific jumpsuits for NCSB.
6. Continue to purchase equipment, tools, and materials for ram-air specific components.
7. Expose employees, ideally four, to rigging and training techniques by shadowing ram-air training in other regions.

Operations:

1. Consider jump list guideline updates to regularly manage mixed jump loads.
2. Continue to educate our users on the transition and the opportunities it provides.
3. Manage to ensure smokejumpers on both systems are available to jump and are current.
4. Support local, regional, and national needs for smokejumpers.
5. Assure the operational capacity of the smokejumper base is not compromised during transition.

Table 17: Calendar Year 2018 Smokejumper Base Plan Summary – Redding

Smokejumper Base	Ram-Air Returning	Round Returning	Ram-Air Rookies	Round Rookies	Ram-Air RATT	Total
Redding (RDD)	10	11	6	6	6	43

Training:

1. Support a Ram-Air Refresher and RATT in Redding in February 2018.
2. Provide trainers to shadow Redding Ram-Air Refresher, Redding RATT, and MSO and MYL RATT.
3. Write MOUs for jump spots that will be needed for the February RATT.

Loft:

1. Continue configuring Loft for ram-air with upgrade funding.
2. Manufacture all parachute components related to the ram-air system.
3. Build 25 harnesses.
4. Seek ways to contract some of the repair work needed for round canopies so Loft personnel can concentrate on ram-air.

Operations:

1. Continue to refine MOUs and Project Aviation Safety Plans needed for the multitude of jumps spots required for RATT training.

Appendix C – 2017 Ram-Air Transition After Action Review (AAR)

C.1 Support

AAR Participants: Roger Staats, Mike Fritsen, Joe Brinkley, Chris Young, Bill Selby, Tory Kendrick, Josh Mathiesen, Pete Lannan, Daren Belsby, Paul Linse, Phil Lind, and John Kovalicky.

Accomplishments (related to the transition):

- We hit all projections/benchmarks in 1.1.1 of the 2017 RAOP except #5 (the possibility of training personnel at BLM).
- Approval finally received to fill long-term ram-air SMS and training lead positions.
- Approximately 43 percent of FS smokejumpers have transitioned to the ram-air canopy.
- There was an appropriate level of response to reserve deployments.
- The rigging supervisor schedule worked well.
- We hit our manufacturing targets; quality assurance has been good.
- This year we were able to more effectively mobilize people according to need.
- We were six percent over budget in 2017, which is an acceptable level.

Successes:

	Successes	How to Ensure Success in the Future
1	Aircraft training schedule that the National Smokejumper Program Manager put together was a big success and useful for trainers and base managers.	Continue this for 2018 (currently in progress).
2	Help from On Course Safety in developing RAOP and facilitating annual meeting.	Continue to seek professional assistance for annual meeting and RAOP development in 2018.
3	Annual meeting with representatives from all bases and subgroups in one spot is very helpful and facilitates sharing of information and collaborating.	Schedule annual meeting for next fall well in advance. First week of October generally works well. (See Action Tracker item 2.017.)
4	Rookie and RATT training was a success. Training given to McCall by Region 1 was successful; they gave them the tools they needed to succeed.	

	Successes	How to Ensure Success in the Future
5	All regions and all bases were involved in the transition this last year.	Continue multi-base involvement in the future.
6	Good coordination between subgroups and bases.	
7	Region 1 organization charts led to being able to fill SMS and training lead positions. This was an innovative solution.	
8	February refresher at Redding was a success and well attended.	Continue discussion.
9	Continued relationship, coordination, and cooperation with BLM.	
10	Grangeville's late interagency refresher was a success.	Schedule and firm-up late refresher plans sooner.
11	Training in McCall was a success--this was the first RATT training hosted by a FS base outside of Region 1.	
12	The 2017 RAOP was by and large considered a useful document. It provided structure associated with actions and improved accountability.	Continue to maintain the RAOP as a living document. Promote accessibility of the RAOP to the general smokejumper community.

What Could Be Improved:

	What Could Be Improved	Recommendations
1	Would like to be one year ahead in manufacturing.	Opportunity to contract retired smokejumpers to help with manufacturing, rigging, repair.
2	Work to build trust with contractors for manufacturing equipment.	Possibly provide personnel to engage with contractors and provide oversight during the manufacturing process.
3	Be transparent about challenges, injuries, malfunctions, etc., yet also be aware of external, behind-the-scene factors such as budget, turn-over in management, etc.	
4	With a total of 48 rookies projected for 2018, the recent high "wash-out" rate of rookies is a concern. Look at rookie success rate and retention.	Is this a trend? How do we find smokejumper candidates who have the resilience required by the job? Possibility of over-hiring by 25% to account for attrition.
5	The Action Tracker was not updated.	Use SharePoint site to update Action Tracker. Ram-Air Project Lead to ensure subgroup leaders periodically update

	What Could Be Improved	Recommendations
		Action Tracker. (See Action Tracker item 2.019.)
6	Better define SMS position role/sideboards.	RAISC should clearly define the SMS position role and responsibilities.
7	Review Transition Monitoring (2.11) section of RAOP and improve as needed.	Transition Safety Subgroup may be used for transition monitoring (2.11).
8	How we manage people who have finished training could be improved. Where do they belong? Who has operational control over them?	We need to clearly define post-training expectations and plans for isolated ram-air trainees.
9	The RAOP was not considered useful and/or not referenced by the Operations subgroup during the season.	Make the RAOP more accessible to the smokejumper community and promote it as a useful reference.

C.2 Operations

AAR Participants: Matt Galyardt, MYL Operations; Mike Blinn, GAC Operations; Mike Noe, NCSB Operations, and Kurt Rohrbach, MSO Spotter.

Accomplishments (related to the transition): In McCall, we supported a heavier logistics load during the training season. More personnel are needed in Operations to support the duty officer. MYL was able to detail Field Rigging Supervisor (Banfill) from MSO.

Successes: Practices that were considered successful include (1) efforts to treat everyone the same no matter what style of parachute they use, (2) matching “like” jump partners, (3) using spotters as buddy checkers, and (4) ram-air spotters giving round buddy checks.

What Could Be Improved:

- Availability of first-year RATTs for single-resource assignments should be consistent from base to base. For example, a first-year RATT at one base shouldn't be disallowed from accepting single-resource assignments during the season while a first-year RATT at another base is allowed to accept such assignments. The Operations Subgroup recommends removing the restriction on accepting single-resource assignments and putting greater emphasis on *proficiency* rather than *currency*.
- “Unlike” buddy checks (a square jumper giving a buddy check to a round jumper) could be improved by making a hard-copy checklist available to use as a reference. Again, the emphasis here should be on proficiency rather than currency.

Key Recommendations:

- Focus on completing transitions at bases that have already started transitioning.
- Staff the Operations Functional Area with more than one person during training.

C.3 Loft

AAR Participants: Nate Hesse, Kurtis Ryan, Dan Booth, Dave Johnson, Jeremy Zemke, Charlie McCarthy, Knute Olson, Court Wallace, Ivan Smith, JT Gilman, Todd Franzen, Keith Wolferman, Jason Junes, and Dirk Stevens.

Accomplishments (related to the transition): The benchmark to build equipment to outfit 56 smokejumpers was a large task taken on by the FS lofts for the fall and winter 2016-2017. The consensus was that we were successful, but stretched thin by several factors that will be mentioned later. It is important to recognize that this past year reflected well on our smokejumper program’s ability to support each other and assist in many aspects that aided in achievements. Every base participated in manufacturing and sent smokejumpers out to learn and shadow production runs at other bases. Jump suits, PG bags, and gear bags were produced in conjunction with the below totals. (The following numbers do not reflect components that made it through final inspection.)

Table 18: Total Ram-Air Equipment Produced for the National Smokejumper Program (Fall/Winter 2016-2017)⁶

Item	Quantity
Drogue Deployment Bags	230
Main Containers	170
Main Deployment Bags	160
Main Risers	155
Reserve Containers	120
Harnesses	63

The oversight on projects was assigned accordingly and delegated properly. A schedule was built early on that set a framework for supplying equipment. We were able to place orders on the IDIQ contracts early enough to allow equipment delivery on the six-month manufacturing window. The SharePoint site was utilized to house and track documents pertaining to the loft and used readily to post and reference updated versions and changes. This heavy manufacturing workload allowed smokejumpers opportunities in familiarization, learning, building ram-air equipment, and in-servicing parachutes. West Yellowstone utilized a building in Bozeman to provide a temporary loft to support manufacturing. Mystery Ranch provided laser-cutouts for equipment which lessened personnel time in hand cutting.

⁶ The equipment totals displayed here include equipment that was produced but discarded due to not meeting end article inspection.

Successes:

	Successes	How to Ensure Success in the Future
1	Ram-air equipment was available and used to train up to 56 smokejumpers.	Continue to build an inventory that allows for unforeseen circumstances.
2	Teamwork between bases was exceptional.	Recognize when the “can do” attitude is realistic.
3	Rigging support was available to the classes.	Coordinate a lead to ensure people are committed and available to support.
4	Rigging Supervisor course in Region 1.	Additional course with the number of new candidates.
5	Major parachute orders arrived on time.	Try to order earlier to get inventory before training.
6	Technical Drawings updated.	
7	Mystery Ranch Laser cut-out procurement.	Work on a sole source contract; add to contracted equipment
8	Quality Assurance by implementation of Rigger Checks during high volume packing.	
9	Procurement of PG Bags, Pack out bags.	
10	The support of oversight travelling from base to base.	Keep funding to allow this support to continue during transition.
11	Gear issue/rigging in advance of training allowed more time to fix problems.	Continue to schedule.

What Could Be Improved:

There were several unfilled or new to loft management positions, which required individuals to learn quickly not only the job, but in some cases learning to construct an unfamiliar product with tight tolerance parameters.

FS technical drawings were sent to the bases in draft phase to enhance corrections and provide consistent drawings, but the smokejumpers needed to review and track corrections that differed from previous years.

Funding was available, but appropriate distribution will allow greater knowledge of what is within each program’s parameters to purchase textiles and hardware.

This past manufacturing season presented an above normal workload which created unnecessary stress on personnel. Timeframes were tight and didn’t account for errors, and pressure was increased on manufacturing crews. There was an evident deterioration in quality towards the end of production runs due to the high operational

tempo associated with manufacturing work. There were some bases that had both loft tech and training dual-duty obligations which could contribute to overload.

There were several bases who had issues with older sewing machines that could have created delays.

There was much attention given to ram-air manufacturing, in-servicing and rigging while other needed equipment was put aside. Cargo chutes and other round repairs remained untouched throughout the winter because of the ram-air workload. There was neglect in manufacturing of other necessary equipment, such as PG bags, jumpsuits, and other miscellaneous gear.

A majority of the equipment manufactured was used for new trainees; a surplus of equipment was not achieved. It is important to maintain a sufficient surplus of equipment to provide for operational capability due to unforeseen circumstances.

	What Could Be Improved	Recommendations
1	Commitment levels that were not adhered to.	Be aware of conflicts in fire training, details, and dual duties.
2	Overcommitted individuals.	Have a substitute or back-up.
3	Success of training depended on all manufactured equipment for 2016-2017. This allowed for few alternative options.	Build an inventory of equipment.
4	Purchase equipment early to account for delays in delivery.	
5	Monitor compressed timeframes and the unintended related consequences.	Try to delegate workloads to allow for adequate inspection.
6	Budget needs to be distributed appropriately and reflective of programmatic needs.	Costs of equipment are going up and each base needs to track accordingly.
7	Plan well in advance for sustainability of the program and of individual bases.	Annual budgets seem to be the focus. Long-term unknowns need to be accounted for.
8	Correct contradictions in the Ram-Air Operations Plan and ISMOG.	

Key Recommendations:

Loft Key Recommendations for 2018	
1	Maintain integrity of the overall program by setting a realistic pace.
2	Realize the purpose of MARS reporting is to track trends and learn from mistakes.

	Loft Key Recommendations for 2018
3	Manufacture all equipment with a high degree of attention to detail.
4	All bases need to work together to accomplish goals collectively for the National Program.
5	Ensure key personal are in place for oversight and participation.
6	Continue to invest and develop the next generation of smokejumpers.

C.4 Training

AAR Participants: Mitch Kearns, Russell Frei, Brendan Quinn, Sam Bullington, Inaki Baraibar, Guy McLean, Jarrod Hattervig, Fidel Verduzzo, Mike Dunn, Charles Savoia, Anthony Johnson, Ryan McCliment, David Ortland, Mark Belitz, Audrey Banfill, Sam Cox, Ty Vankeuren, Enrique Olivares, Jeff Schricker, Todd Haynes, Brent Morrison, Andrew Pattison, and Jerry Spence.

Accomplishments (related to the transition):

MSO RATT -- Started with 14 students from 5 different bases (MSO, GAC, RDD, RAC, NCSB). Lost handle reserve deployment occurred (student pulled themselves from training), and another student lost confidence and withdrew from training. Finished with 12 students that continued with the season, most successfully, and one student decided to stop jumping all together (both systems) mid-season.

MYL RATT -- Started with 14 students. One student lost confidence in the system and withdrew from training. Finished with 13 students who also had a successful season. Very strategic selection of students for future growth.

RDD Ram-Air Refresher -- Originally used as a tool to “truth” the units for ram-air. Training was done in February beginning with a 3-day weekend; starting with a short week is not ideal. Students mostly from RDD, one from MYL, one from BLM-Boise, and a few from Region 1. Took place over two weeks with varied participation due to rigger training.

R1 Rookie Training -- Hired 28, started training with 25, and ended with 15. Split group up after units at start of jumping phase and rejoined for last week of jumping. Most “washed” students were during the units section. Had good wind conditions for one of the groups. Three jump days is challenging, but easier if planned multiple days in advance and with similar objectives for all three jumps. Number of students in units was a challenge that needed managing by taking time and providing quality training. Suggest a mid-winter meeting of all ram-air trainers.

R1 Refreshers (round and ram-air) -- Late refresher did units in MSO, jumps in GAC, and students included jumpers from five different bases including both the FS and BLM.



MYL RATT Graduation Photo 2017-- the first RATT training hosted by a FS base outside of Region 1. Photo Credit: Mark Belitz.

The following tables list personnel who had a role in FS ram-air training and rigging in 2017.

Table 19: 2017 Ram-Air Trainers

Rookies	Home Base	Role(s)	Location of Training	RATT1	Home Base	Role(s)	RATT2	Home Base	Role(s)
Wallace	MSO	L	WYS	Pattison	MSO	L	Belitz	WYS	L
Parker	MSO	L	MSO	Thomson	MSO	PL	Banfill	MSO	LS
Olivares	MSO	LS	WYS	Pennacchio	MSO	PS	Besmer	MSO	PL
Gilman	MSO	PL	WYS	Duffey	WYS	S	Cox	MSO	PS
Quinn	MSO	PL	MSO	Atkinson	MSO		Haynes	MYL	S
Bullington	MSO	PL	MSO	Maclay-Schulte	MSO		Ryan	MSO	
Chambers	WYS	PS	WYS	Quigley	MSO		Harris	MYL	ROUND
Savoia	MSO	S	MSO	Surgenor	MSO				
Stanzak	WYS	S	WYS						
Ochs	MSO		MSO						
Dunn	MSO		MSO						
Hoyt	GAC		MSO						
Ryg	WYS	ROUND	WYS						
Weston	RDD		MSO						
Kieth	MSO		WYS						
Mills	MSO		WYS						

SYMBOLS:

- L = LEAD
- LS = LEAD SHADOW
- PL = PARACHUTE LEAD
- PS = PARACHUTE SHADOW
- S = SPOTTER (PRIMARY)

Note: Three NCSB jumpers and one RAC jumper observed parts of the RATT1 training in MSO.

Table 20: Riggers and Weeks of Rigging Accomplished in 2017

Rigger Name	Weeks	Rigger Name	Weeks
Duffey	3	Hart	2
Barber	2	Schultz	2

Rigger Name	Weeks	Rigger Name	Weeks
Underhill	2	Kendrick	1
Womack	3	Gerard	3
Swan	3	Bedell	3
Starr	3	Latham	4
Wood	3	Quigley	1
Atkinson	2	Lynn	3
Yarrow	2	Allen-Schmid	2
Hart	3	Vogel	2
Rataj	1	Odea	2
Within	3	Nevin	2
Held	1	Gill	2
Zohner	2	Thorp, E.	2
Hill	2	Thorp, A.	3
Graham	2	Washburn	3
Normand	2	Manion	2
Wolferman	3	Junes	3
Stanzak	2	Wealton	2
Hesse	1	Humphrey	2

Successes:

	Successes	How to Ensure Success in the Future
1	Two RATT Trainings.	Ensure quality control of trainer selection.
2	Region 1 Rookie Training.	Ensure quality control of trainer selection.
3	MYL training at home base (MYL).	Explore doing with other transition bases.
4	RDD Ram-Air Refresher.	Build missing training tools and identifying adequate jump spots.
5	Region 6 students being on the road, being exposed to ram-air jump base.	When home base does not provide the opportunity, continue to give students this immersion experience.
6	MYL RATT students managed distractions of being at home base well.	Provide adequate pre-training planning, communication of training demands, and attempt to not have a refresher during a RATT.
7	Managing trainer burn out.	Selection of cadre, managing winter work, allowing for “outside the box” mitigation techniques.

What Could Be Improved:

	What Could Be Improved	Recommendations
1	Follow-up season on second-year ram-air jumpers. Not getting adequate practice jumps to provide confidence and skill set.	Attempt to get additional jumps on these students the week after a refresher. Ram-Air Training Lead monitor students after

	What Could Be Improved	Recommendations
		training and refresher trainings to facilitate additional jumps. Provide quality classroom sessions, knowing second-year jumpers benefit greatly from these.
2	Region 6 students, follow-up after training.	Have a better plan in place prior to end of training. Declare a primary contact and decision maker for these students. Minimize late/last minute decisions.
3	Spring training schedule with overlapping trainings.	Attempt to minimize and manage this situation. Consider extra aircraft.
4	Managing development of trainers.	Give more attention, possibly develop a process or maybe an individual plan for each trainer. Deploy a “trainer draft day” to distribute experience and development needs.

Key Recommendations:

	Key Recommendations for 2018
1	Follow up on students more effectively.
2	Maximize opportunities to reduce impact of training, i.e., training at home base, provide long weekend during training, select the right trainers for the training.
3	Maximize potential for interoperability and cross-pollination of training. Reduce changes that create differences between FS and BLM. Trainers currently approve of training between agencies, including refreshers, RATT and rookie with guidance found in Operations Plan.
4	Development of non-Region 1 trainers.
5	Removal of 50 jump requirement for CR360 to DC7 jumpers, addition of training department approval.

C.5 Safety

AAR Participants: Hans Ohme, Darby Thomson, Amanda Holt, Dustin Underhill, Ryan Taie, Joe Rock, and Alex Abols.

Accomplishments (related to the transition):

- Dissemination of information and improved channels of communication.
- Safety representation at all trainings.
- Ram-Air SMS position had a presence at 6 out of 7 bases.
- Improved logistical support.
- Raising education and awareness through increased exposure.
- More integration with Region 6.
- Highlighted the subject of human factors.

Successes:

	Successes	How to Ensure Success in the Future
1	Safety success through transition including rookie training (concern was that there would be increased rates of injury as the transition took place).	Continued diligence and safety promotion.
2	Improved reporting culture.	Continue with current trend of reporting relevant ram-air events and continue wide distribution. Uncooperative and/or blaming responses to MARS entries should be discouraged; focus on making the program better and approaching issues with constructive criticism and positivity.
3	Increased use of risk management tools.	Continue improved CRM with flight crew.

What Could Be Improved:

	What Could Be Improved	Recommendations
1	Understanding human factors in relation to transition.	Develop case studies so that Lessons Learned are not forgotten.
2	Develop/Improve a “climate of trust.”	Remain approachable.

	What Could Be Improved	Recommendations
3	More input/influence associated with the high level of operational tempo of training and transition.	Advocate for a reasonable tempo and adjust if necessary.
4	Promoting interoperability.	Recommend advocacy for standardization within training manual/guide.
5	Identify and assess emerging hazards (i.e., jumping the wrong canopy).	Annual review of MARS by Transition Safety Subgroup.

Key Recommendations:

	Key Recommendations for 2018
1	Improve accessibility to MARS databases and other reports and improve ability to query data.
2	Standardization of training manual/guide (promote interoperability).
3	Increasing logistical support, i.e., Rigging Supervisor, experienced RATT.
4	Continue improving upon reporting culture and dissemination of information.
5	Promote education/training opportunities following RATT completion.

Appendix D – Considerations for the Future

D.1 Support

1. Develop a plan for when there are only a handful of smokejumpers using round parachutes at each base.
2. Develop a long-term plan for personnel who do not transition from the round to the ram-air parachute system.
3. Streamline the RACMAT's decision-making process in the annual meeting; present projected number of ram-air trainees at each base earlier in the meeting.

D.2 Operations

1. Continue to update parachute numbers in Smokejumper Master Action in conjunction with Loft management.
2. Continue constant communication between Operations groups on all bases (U.S. Forest Service and BLM) to facilitate efficiency during the transition.
3. Address SMS in Operations briefings; coordinate with Transition Safety Subgroup.
4. Set up exchanges between ram-air jumpers that best serve efficiency of programs; also, set up exchanges between round parachute smokejumpers and smokejumper spotters.
5. Look for opportunities for smokejumpers and spotters to gain experience. Look for opportunities for shadowing and for personnel to gain experience.
6. Ensure RATT bases are getting enough support as far as Rigging Supervisors, continuation of training at home base, and "experienced" ram-air jumpers.

D.3 Loft

1. Continue to update parachute numbers in Smokejumper Master Action in conjunction with Operations.
2. Obtain parachute equipment timely to allow for in-service and avoid excessive workload.
3. Have meetings earlier to pre-plan for meeting and manufacturing season.
4. Hold drawing review meetings earlier to allow for clean product.
5. BLM/FS drawing part numbers should reflect each other.
6. Master Action labeling/numbering of parachutes.

D.4 Training

1. Determine how to manage rounds in the future (in 3 to 8 years their numbers will decrease), including load configurations, buddy checks, and spotter checks.
2. Set up exchanges between ram-air jumpers that best serve efficiency of programs; also, set up exchanges between round parachute smokejumpers and smokejumper spotters.
3. Look for opportunities for smokejumpers and spotters to gain experience. Look for opportunities for shadowing and for personnel to gain experience.
4. Allow time for a multi-day workshop after initial training or the use of split training sites to allow smokejumpers several jumps in their own country with trainer oversight.
5. Following initial training, capitalize on opportunities for new ram-air jumpers to detail to a base with ram-air experience or boost to areas with activity outside of their region to increase “ram-air specific” training.
6. Consider using trainers from other bases, ram-air or round, to assist with jump instruction to facilitate the ram-air transition or maintain smokejumper numbers at a given base.

D.5 Safety

1. Continue to implement ways to gather data (SAFECOM, MARS, Master Actions, various surveys) into one place; make it easy to access, easy to collect.
2. Identify trends that could affect the transition.
3. Coordinate with Operations to address SMS in Operations briefings.

Appendix E – Decision Memo for Implementation of Ram-Air Parachute Delivery System

DECISION MEMORANDUM FOR THE DIRECTOR, FIRE AND AVIATION MANAGEMENT

FROM: Arthur W. Hinaman

Assistant Director, Aviation

SUBJECT: Implementation of Ram-Air Parachute Delivery System in Support of Continuous Improvement and Innovation in the U.S. Forest Service Smokejumper Program

FILE CODE: 5100/5700

Background

In order to improve the safety and effectiveness of our smokejumpers, the U.S. Forest Service is proposing a transition to the ram-air parachute delivery system. This transition is part of an overarching continuous improvement and innovation effort to expand the mission capability of the smokejumper program and take advantage of emerging technology. The Director, Fire and Aviation Management, has the authority to make this decision, per FSM 5704.

The environment in which U.S. Forest Service wildland firefighters operate continues to increase in complexity due to hazardous fuel build-ups; insect and disease infestations; non-native species invasions; climate change; drought; the presence of approximately 70,000 communities in the wildland-urban interface; and other factors. U.S. Forest Service and other scientists have confirmed that the number, size, intensity, and duration of wildfires have increased and that fire seasons have become longer. Many U.S. Forest Service and other scientists predict these trends to continue, with some forecasting the number of acres burned to double or triple by mid-century; fire seasons continuing to lengthen; and another 17 million housing units to be built within 30 miles of national forests, national parks, and wilderness areas by 2030.

The increasing complexity in the wildland fire environment has resulted in some sobering statistics. In 2006, 9.87 million acres of federal, state, and private land burned nationwide, the highest number of acres since 1960, as far back as reliable records go. Since 2000, more than 5,000 structures have been lost in one year three times. In 2013, a total of 34 wildland firefighters perished in the line of duty, the highest loss of life of wildland firefighters in one year since 1994.

The U.S. Forest Service must seek continuous improvement and innovation in our equipment, aircraft, training, and other areas to ensure that we maintain sufficient operational capability to meet the challenges associated with increasing complexity in

the wildland fire environment. While continuous improvement and innovation can increase risk, so can stagnation in terms of potential escalating loss of lives, property, and valuable natural and cultural resources.

The U.S. Forest Service smokejumper program is an elite program, born of innovation. Of the 10,000 firefighters in the U.S. Forest Service, approximately 320 are smokejumpers. The U.S. Forest Service smokejumper program was born in 1934 when visionary Intermountain Regional Forester T.V. Pearson first proposed it as a means to quickly provide initial attack on forest fires. U.S. Forest Service smokejumpers have been leaders in innovation since the first fire jump was made in 1940 on the Nez Perce National Forest. For the last 75 years, U.S. Forest Service smokejumpers have played a vital role in wildfire suppression by providing a unique capability to deliver large numbers of highly skilled, qualified firefighters over large distances in a short amount of time. U.S. Forest Service smokejumpers are envisioned to continue to be a critical component of the U.S. Forest Service Fire and Aviation Management program in the future. It is critical to ensure that they have the appropriate equipment, aircraft, and organizational configuration to ensure that they can support the mission of getting the right assets to the right places at the right time. Based on extensive study and discussions with the smokejumper community, I believe that it is necessary to seek continuous improvement and innovation in each of these program elements, beginning with a measured transition to the ram-air parachute delivery system.

Discussion

Round parachutes, which U.S. Forest Service smokejumpers have been using since the program's inception in 1939, have reached the limits of their performance while ram-air parachute technology is still evolving. Ram-air parachutes are more maneuverable and enable smokejumpers to jump in higher winds than round parachutes. This supports an earlier response to critical wildfires, reducing the chances that they will become large, costly, and dangerous to other firefighters and the public. Investment in the ram-air parachute delivery system at this time is expected to yield further improvements in safety and efficiency in the future.

Since 2008, the U.S. Forest Service has gained extensive experience in ram-air parachute technology through a pilot program in the Northern Region (R1) and has developed the expertise to transition the agency's smokejumper program to ram-air parachute technology. Over the last seven years, approximately 55 U.S. Forest Service smokejumpers made approximately 5,000 training and operational jumps using ram-air parachutes.

Firefighter and public safety are the U.S. Forest Service's top priorities in wildland fire management. The U.S. Forest Service has gathered and thoroughly examined extensive data on injuries and fatalities experienced by smokejumpers on both round and ram-air parachute delivery systems and has concluded that a transition to the ram-air parachute delivery system will improve overall safety in the long term. Due to ram-air parachute technology allowing for slower vertical landing speeds, it is expected that the

Forest Service will see a reduction in injuries to the ankles, legs and hips during parachute landings. Analysis of information from 2001 through 2014 in NTDP's parachute landing data base shows the overall likelihood of injury on any given jump is 0.33% using round parachutes and 0.21% using ram-air parachutes. The overall minor injury rate is 0.22% using round parachutes and 0.15% using ram-air parachutes. The overall serious injury rate is 0.10% for round parachutes compared to 0.06% for ram-air parachutes.

The ram-air parachutes that U.S. Forest Service smokejumpers are currently using, and will continue to use, are equipped with a reserve static line (RSL), which automatically opens the reserve container when the main parachute is cut away due to a malfunction, as well as an automatic activation device (AAD) that will automatically open the reserve container if the jumper is unable to open the primary ram-air chute.

At this time, initial investment in a ram-air parachute delivery system is estimated at approximately twice the cost of the current FS-14 system. However, procurement efficiencies on the scale of the entire program have not yet been explored. Procurement strategies will be monitored and adjusted to capitalize on costs-savings opportunities, but not at the expense of quality or safety. The handful of times that ram-air jumpers have been able to jump when others couldn't, and may have been able to suppress wildfires while they were still small, may have translated to savings equal to the cost of the entire U.S. Forest Service smokejumper program.

Alternatives

1. Seek continuous improvement and innovation in smokejumper equipment, aircraft, and organizational configuration, beginning with a measured transition to ram-air parachute technology in 2016.
2. Keep Forest Service on the round parachute delivery system and revisit parachute technology in ten years.
3. Continue the ram-air program only in Region 1 and continue to capture data on the effectiveness and efficiency of ram-air parachute technology.

Decision


The U.S. Forest Service will begin a measured transition to a ram-air parachute delivery system at smokejumper bases, to replace round FS-14 parachutes currently in use. A change management and implementation plan will be developed to start transition at the beginning of Fiscal Year 2016. There will be continual assessment and management of the associated risks of this transition.

Key to the success of this transition is to continue to support smokejumpers and their equipment throughout the transition. This includes supporting both the round parachute system and the ram-air parachute system for the duration, and ensuring that

smokejumpers who do not successfully transition to ram-air are given appropriate employment assistance within the agency.

DECISION BY THE DIRECTOR, FIRE AND AVIATION MANAGEMENT:

Approve X

Date 01 JULY 2015 

Disapprove

(Note: Typographical modifications that do not impact meaning, including changes in formatting, spelling and punctuation, were made in the above document to align with conventions used in this Operations Plan. An original copy of the Decision Memo can be found on file with the National Smokejumper Program Manager.)

Appendix F – U.S. Forest Service Smokejumper Base Managers Council Charter

Background

The Forest Service Fire and Aviation Management program supports a broad range of natural resource objectives and projects. To achieve better communications and planning at all levels within the Forest Service Fire and Aviation Management program, the Director of Fire and Aviation Management (FAM) has established the Smokejumper Base Manager Council.

Name

The name of this council, hereinafter referred to as the Council, is the Smokejumper Base Manager Council (SBMC).

Authority

The Council is established pursuant to the authorities and responsibilities of the Director of Fire and Aviation Management outlined in Forest Service Manual (FSM) 5700;

The deliberations of this Council are exempt from the Federal Advisory Committee Act under Section 204 of the Unfunded Mandates Reform Act of 1995.

The Council receives leader's intent and direction from the Director of Fire and Aviation Management and reports to the Assistant Director, Aviation.

The Chair of the Council is authorized to convene meetings, schedule agenda items, make contacts, negotiate work assignments, make commitments on behalf of the Council, may charge members or technical specialists with tasks, create working groups and task teams, or commit such resources as available within the Council or as tasked by the Director , Fire and Aviation Management.

Purpose

- A. To identify and address program-wide standardization needs to enhance the effectiveness and safety of the Smokejumper Program.
- B. Facilitate the mutual support of all smokejumper bases across all Regions by providing a forum for sharing corporate knowledge and history, and maintaining regular, recurring communication to enhance program learning.
- C. Provide a forum for the base managers to exercise their responsibility as the "Smokejumper Equipment Development Committee" as described in the Interagency Smokejumper Operations Guide (ISMOG) – Forest Service Section Chapter 4.

- D. Provide a conduit for interagency cooperation and coordination and achieve better strategic communication related to the Smokejumper Program at all levels of the agency.
- E. The Council also provides leadership to the safety and learning culture and aviation accident prevention plan through the implementation of the four pillars of SMS (Policy, Risk Management, Assurance, and Promotion) and to facilitate the Agency's goal of zero aviation accidents and fatalities in the Forest Service.

The Council will strengthen aviation program relationships with line officers, National and Regional technical staff, cooperators and contractors. The council will serve as a forum to promote communication, inclusiveness, efficiency, coordination and standardization for Forest Service Aviation Management. This is accomplished through planning, issue identification, and prioritization.

Membership

- A. Membership in the council will consist of base managers from each of the seven permanent FS Smokejumper Bases and the WO Smokejumper Program Manager. The WO Deputy Assistant Director, Operations and the National Technology and Development Program (NTDP) Smokejumper Equipment Technical Specialist will be advisory members to the Council. Majority Vote Carries.
- B. A Chairperson will be elected by majority vote of the council to serve a two-year term; election of a successor should occur one year before the incumbent's term ends to allow for a manageable transition.
- C. The chairperson's duties include:
 - i. Act as the point of contact for the council with other entities such as WO Aviation, WO Fire Operations, NICC, and interagency partners.
 - ii. Represent the FS Smokejumper Program as a member of the National Operations Group in conjunction with the National Smokejumper Program Manager position.
 - iii. Facilitate updates and approval of ISMOG through the National Smokejumper Program Manager.
 - iv. Facilitate monthly conference calls and provide for capture and dissemination of notes from these calls.
 - v. Organize additional Council meetings/calls as needed.
 - vi. Coordinate with the National Smokejumper Program Manager to facilitate base reviews as prescribed by ISMOG.

Cooperation and Coordination

- A. Schedule to meet at least once a year with additional meetings and/or conference calls as needed.
- B. Meeting attendance will be limited to Council members only or their proxy's; participation of other individuals will be issue or subject matter driven and by invitation only. Host base will produce and distribute notes that include decisions, action items, and recommendations to all members of the council.
- C. Hosting and organization of annual meetings will be on a rotating basis:
 - i. R1 – Grangeville
 - ii. R1 – Missoula
 - iii. R1 – West Yellowstone
 - iv. R4 – McCall
 - v. R5 – Redding
 - vi. R6 – North Cascades
 - vii. R6 – Redmond
- D. Annual Meeting host base will provide facilitation and note-taker or scribe to record meeting minutes.
- E. Notification of annual meetings will be provided to the Regional Fire Directors, Regional Fire Operations Specialists, WO Fire Operations Specialist, WO Deputy Director of Operations, and WO Aviation Operations Officer
- F. National Smokejumper Program Manager will maintain master archive of council notes from all meetings, calls, etc.
- G. Inclusiveness and communication need to flow both ways between the Council, the Aerial Delivered Fire Fighter – Steering Committee (ADFF-SC), and the Washington Office.
- H. As a Council they will report to the Assistant Director, Aviation to ensure appropriate coordination, collaboration, and information sharing with other groups and organizations for the subject matter and specific tasks of the team.
- I. The Council will coordinate with agency employees, supervisors, cooperators, contractors and other federal agencies to maintain and improve cooperation.

Responsibility

Coordinate and unify smokejumper and aviation related program issues and opportunities through the National Smokejumper Program Manager. Provide program recommendations, advice and counsel to the Director, FAM through the Assistant Director, Aviation in the development, implementation, standardization and quality assurance of the National Smokejumper Program.

Effectively involve, support, and set priorities for NTDP Smokejumper Equipment Specialist in equipment development and certification along with other associated smokejumper projects and assignments.

Responsibilities include reviewing smokejumper policy, procedures and standards, mission requirements, training, smokejumper aircraft, equipment and support services, and specifications for acquisition. The Council will make recommendations based on review and analysis to enhance and improve the Forest Service Smokejumper Program. Recommendations will be reached by consensus of voting members.

The National Smokejumper Program Manager and a member of the council will represent the Smokejumper Program on the Aerial Delivered Fire Fighters (ADFF) Steering Committee. These representatives will update and inform the ADFF Steering Committee of pertinent National Smokejumper issues.

The Council will meet annually in person, and via VTC as needed. In addition, Council members will participate on monthly conference calls.

Identify program of work at each fall meeting for the following year.

Charter Amendments

Changes to, or revocation of, this charter must be reviewed by the Assistant Director listed in the Authority section and approved by the Director of Fire and Aviation Management. Changes to, or revocation of this charter will be documented by official correspondence to the field in a Decision Memo or letter.

Changes to, or revocation of, this charter will be listed here by official date and document title.

Approval

The Council and charter are effective as of the date of approval by the Director of Fire and Aviation Management and shall remain in effect until revised or revoked. This charter will be documented by official correspondence to the field in a Decision Memo or letter.

Approved:

/s/ Tom Harbour

March 18, 2015

Tom Harbour

Date:

Director, Fire and Aviation Management

(Note: Typographical modifications that do not impact meaning, including changes in formatting, spelling and punctuation, were made in the above document to align with conventions used in this Operations Plan. An original copy of the charter can be found on file with the National Smokejumper Program Manager.)

Appendix G – Ram-Air Implementation Steering Committee Charter

Background

In 2008 the U.S. Forest Service (FS), in collaboration with the Bureau of Land Management (BLM), began evaluating the ram-air parachute system now in use with the BLM. In the fall of 2012, after five fire seasons of assessment, Forest Service Smokejumper Subject Matter Experts (SMEs) and program management gathered at the direction of Fire and Aviation Management (FAM) staff to recommend to FS senior leadership on whether to transition the Smokejumper program completely to the ram-air parachute system or discontinue ram-air operations and continue using the round parachute system as the only system in the FS Smokejumper program. The results of this meeting were developed into an Aviation Business Case and recommended a program wide transition to the ram-air parachute system over a period of up to 10 years.

The last seven years has given the Forest Service Smokejumper program extensive experience in ram-air parachute technology and has developed the capacity of the FS Smokejumper program to lead the transition from a round parachute system to a ram-air parachute system.

Name

The name of the Committee hereinafter shall be referred to as the Ram-Air Parachute Implementation Steering Committee (RAISC).

Authority

The Committee is established pursuant to the authorities and responsibilities of the Director, Fire and Aviation Management, outlined in Forest Service Manual (FSM) 5700;

The deliberations of this Committee are exempt from the Federal Advisory Committee Act under section 204 of the Unfunded Mandates Reform Act of 1995.

The Committee receives leader's intent and direction from the Director of Fire and Aviation Management and reports to the Assistant Director, Aviation.

The Committee chairman is authorized to convene meetings, schedule agenda items, make contacts, negotiate work assignments, make commitments on behalf of the committee, may charge members or technical specialists with tasks, create working groups and task teams, or commit such resources as available within the Committee or as tasked by the Director, Fire and Aviation Management.

Purpose

The RAISC is chartered to execute and amend as necessary a Change Management and Implementation Plan for the FS Smokejumper program's transition to the ram-air parachute system. This plan includes policy, objectives, data collection and planning,

risk management processes, change implementation, change management promotion, safety assurance, transition management, and documentation.

The Smokejumper program is a National program and oversight will occur at the National, Regional, and Forest level. The plan will need to be implemented at the Regional and Local levels. The RAISC, through the Director of FAM, provides guidance and oversight for the transition from the current Forest Service Smokejumper round parachute system to a ram-air parachute system. The RAISC will recommend changes to current policy, guides, and plans affected by the transition.

Membership

The RAISC is composed of:

Members

- Ram-Air Program Coordinator – WO Boise -- Shall act as Committee Chair
- Branch Chief, Aviation Operations -- WO Boise
- Smokejumper Base Managers (2) – Smokejumper Council designated
- Smokejumper Program Manager, WO Boise
- Smokejumper Equipment Specialist, NTDP
- Regional Aviation Officer (RAO) – RAO Council designated

Advisory Members

- Regional Aviation Safety Manager (RASM) – RASM Council designated
- Line Officer representative- Line Officer Team designated
- NFFE union representative

The committee may establish working groups staffed by technical specialists to support the RAISC as required. This will include establishment of the Ram-Air Change Management Action Team (RACMAT) as outlined in the Ram-Air Change Management and Implementation Plan. Technical specialists may include but are not limited to Smokejumper Loft and Training Specialists, Human Resource (HR) Specialists, Contracting Specialists, Public Affairs Specialist, or Aviation Technology Specialists.

The terms of tenure for the RAISC will be for the duration of this charter. Working group member tenure will be as needed and assigned by the RAISC.

Cooperation and Coordination

The Committee will cooperate and coordinate with interagency partners.

Responsibility

The RAISC has the primary responsibility of overseeing the Ram-air Change Management and Implementation Plan. Responsibilities include but are not limited to the following:

- Support the Smokejumper Program and FAM in oversight and continued evaluation of ram-air parachute system implementation and operations as executed to accomplish Agency objectives.

Deliverables

- Formally communicate this document and the authority of the RAISC to Regional Fire and Aviation Management staffs.
- Provide a quality assurance process for mitigations, new procedures, and new technologies.
- Develop a ram-air implementation budget and work plan within constraints established by the Director, FAM. The budget will be submitted to and reviewed by the Assistant Director, Aviation and approved by the Director, FAM.
- The RAISC will recommend and submit any policy, guides, or operational plans to the Assistant Director, Aviation for review.
- Approval of Aviation policy including guides will be by the Deputy Chief, State and Private Forestry; Approval of Human Resource Policy will be coordinated through the Director of Human Resource Management.
- Approval of Smokejumper operational plans will be by the Assistant Director, Aviation.
- The Forest Service Council National Federation of Federal Employees will be involved in the CMIP development and process as members of the RACMAT. RAISC/RACMAT decisions affecting Bargaining Unit employees will be administered in accordance with the Master Agreement.

Charter Amendments

Changes to, or revocation of, this charter must be reviewed by the Assistant Director listed in the Authority section and approved by the Director, Fire and Aviation Management. Changes to, or revocation of this charter will be documented by official correspondence to the field in a Decision Memo or letter.

Changes to, or revocation of, this charter will be listed here by official date and document title.

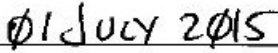
Charter Approval

The Ram-Air Parachute System Implementation Steering Committee and charter are effective as of the date of approval by the Director of Fire and Aviation Management and shall remain in effect until revised or revoked. This charter will be documented by official correspondence to the field in a Decision Memo or letter.

Approved



Tom Harbour
Director, Fire and Aviation Management



Date:

(Note: Typographical modifications that do not impact meaning, including changes in formatting, spelling and punctuation, were made in the above document to align with conventions used in this Operations Plan. An original copy of the charter can be found on file with the National Smokejumper Program Manager.)

Appendix H – Memorandum of Understanding Regarding Implementation of Ram-Air Parachute System Between USFS and NFFE, 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 Fire and Aviation Management (Management), collectively “the Parties,” pertains to the joint development, implementation and transition of the ram-air parachute system for use over a 10-year period ending September 30, 2026.

This MOU must be read in conjunction with the most current Ram-Air Parachute System Transition Operations Plan (Transition Operations Plan).

In accordance with 5 U.S.C. § 7106, Management will exercise its right to transition to a ram-air parachute system in the United States Forest Service (USFS) Smokejumper Program. A “square” ram-air parachute system will replace the “round” FS-14 parachute system currently in use over a 10-year period.

Employees who do not wish to transition from the FS-14 parachute to the ram-air parachute or are unable to transition can continue to use the FS-14 parachute system through the transition period.

After the transition period ending on September 30, 2026, employees unable to transition to the ram-air parachute will be given priority placement into a position they are qualified to hold. Employees who continue to use the FS-14 parachute system will have continued support throughout the transition period.

Management will provide comprehensive ram-air parachute training as described in the Ram-Air Training Guide (RATG). The RATG is a guide for trainers who will be teaching Forest Service Smokejumpers the proper use of the ram-air parachute system. The RATG provides reference for course work, terminology, equipment, procedures, and historical background. Upon completion of the ram-air training program, students must perform satisfactorily in all area of Ram-Air Smokejumper Training. FS-14 smokejumpers who do not perform successfully in the ram-air training will be given a choice to remain on the FS-14 or retake the ram-air training the following year.

Safety is of paramount importance to both the Management and Union. The Parties agree that during implementation of the ram-air parachute system, management will monitor and collect injury statistics. If there are indicating trends or spikes in injury rates, management will evaluate and take appropriate action(s).

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

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, Transition Operations Plan, through forums such as Ram-Air Implementation Steering Committee (RAISC), and Ram-Air Parachute System Change Management Action Team (RACMAT) annual meeting(s) and through e-mail or phone conference when appropriate.

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 ram-air parachute systems.

Agreed to on April 12, 2017 by:

<u>ARTHUR HINAMAN</u> Arthur W. Hinaman Assistant Director, Aviation Forest Service	Digitally signed by ARTHUR HINAMAN Date: 2017.04.12 15:10:12 -04'00'	<u>JOE DURAN</u> Joe Duran Fire Committee Chairperson NFFE, Forest Service Council	Digitally signed by JOE DURAN Date: 2017.04.13 08:27:40 -07'00'
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(Note: Typographical modifications that do not impact meaning, including changes in formatting, spelling and punctuation, were made in the above document to align with conventions used in this Operations Plan. An original copy of the MOU can be found on file with the National Smokejumper Program Manager.)

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Glossary

The following is a glossary of terms and acronyms used in the U.S. Forest Service Ram-Air Parachute System Transition Operations Plan.

CMIG – Change Management and Implementation Guide, Version 2, January 2016.

CMIP – U.S. Forest Service Ram-Air Parachute System Implementation Project Change Management and Implementation Plan, June 2015.

Container (main or reserve parachute) – The part of a parachute assembly that contains a folded canopy and suspension lines.

CR360 – One of two parachutes (DC7 and CR360) approved for smokejumper operations by the Forest Service and Bureau of Land Management. When a parachute is approved, it has successfully passed all phases of development.

DC7 – One of two parachutes (DC7 and CR360) approved for smokejumper operations by the Forest Service and Bureau of Land Management. When a parachute is approved, it has successfully passed all phases of development.

Drogue deployment bag – A textile container from which a drogue parachute deploys.

Drogue parachute -- A parachute which is attached to the smokejumper and is used to provide initial stabilization and initial deceleration. This is a pilot parachute for the main parachute.

Dry run -- A training or fire jump that is aborted due to factors such as terrain hazards that cannot be mitigated or unfavorable wind conditions.

Fire jump -- A parachute jump into a variety of terrain and environmental conditions to implement actions to meet land management objectives on a wildland fire.

First article approval – All Forest Service parachute procurement contracts require the contractor to provide a first article item for inspection by Forest Service personnel. These first article inspections are routinely conducted at the contractor's plant. Inspection of the contractor's facilities and of the contractor's in-house quality assurance system is accomplished at this time.

GAC – Grangeville Air Center, a U.S. Forest Service Smokejumper Base in Grangeville, Idaho, located in Region 1.

Initial training – Training for a new smokejumper or a smokejumper beginning the transition to a different parachute.

Injury (Lost Time) – An injury that requires hospitalization and/or results in lost time at work. These types of injuries are reportable to OSHA.

Injury (No Lost Time) -- A minor injury that does not require hospitalization or result in lost time at work.

ISMOG – Interagency Smokejumper Operations Guide consisting of a BLM Section, Forest Service Section, and Interagency Section.

JHA -- Job Hazard Analysis.

Malfunction/Abnormality (Major) -- An issue that compromises the integrity or safety of the parachute system that may require an emergency procedure such as a reserve parachute deployment.

Malfunction/Abnormality (Minor) -- An issue that does not compromise the integrity or safety of the parachute system.

Malfunction Abnormality Reporting System (MARS) -- MARS is a database maintained on the U.S. Forest Service Intranet by the National Technology and Development Program (NTDP). This site was developed to track any abnormality or malfunction in the equipment involved in getting the smokejumper from the airplane to the ground. There are two MARS databases, one maintained by the U.S. Forest Service at NTDP, and another maintained by the BLM that is included in the Interagency Smokejumper Master Action Database.

MARS – Malfunction Abnormality Reporting System.

Master Action – A web-enabled, centralized database to track smokejumper activity. Allows each base to generate reports for personnel such as Jumper Qualifications, Last Day Off, and Date of Last Jump.

Mixed Load(s) -- Smokejumper flights that contain personnel equipped with a mix of square and round parachutes.

MODOC -- Smokejumper Modification Document System (BLM).

MSO – Missoula International Airport, Missoula, Montana, USA; an abbreviation used in this document to signify the U.S. Forest Service Smokejumper Base in Missoula, Montana, in Region 1.

MTV – Malfunction Television.

MYL – McCall Municipal Airport, McCall, Idaho; an abbreviation used in this document to signify the U.S. Forest Service Smokejumper Base in McCall, Idaho, in Region 4.

NCSB – North Cascades Smokejumper Base in Winthrop, Washington in Region 6.

NTDP – National Technology and Development Program.

Personal gear (PG) bag – A bag attached to the smokejumper's harness during parachute jumping that usually converts to a gear pack for operational use on the ground.

Project Leader – In this Operations Plan, refers to the Ram-Air Parachute System Implementation Project Leader.

RAC – Redmond Air Center; an acronym used in this document to signify the Redmond Smokejumper Base, a U.S. Forest Service Smokejumper Base in Central Oregon, located in Region 6.

RACMAT – Ram-Air Parachute System Change Management Action Team.

RAISC – Ram-Air Implementation Steering Committee.

Ram-Air Implementation Steering Committee (RAISC) – A committee chartered to execute and amend as necessary the Change Management and Implementation Plan for the U.S. Forest Service Smokejumper Program’s transition to a ram-air parachute system. The committee provides guidance and oversight for the transition from a round to a ram-air parachute system and recommends changes to current policy, guides, and plans affected by the transition.

RARA – Ram-Air Readiness Assessment. See the 2016 and 2017 Ram-Air Parachute System Transition Operations Plans for a summary of the Ram-Air Readiness Assessments.

RASM – Regional Aviation Safety Manager.

RATG – FS Ram-Air Parachute Training Guide. The BLM counterpart is the Ram-Air Parachute Training Manual (RATM).

RATM – Ram-Air Parachute Training Manual (BLM). The FS counterpart is the Ram-Air Parachute Training Guide (RATG).

RATT – Ram-Air Transition Training/Trainee; an experienced smokejumper transitioning from a round to a ram-air parachute system.

RDD – Redding, California, Redding Municipal Airport; an acronym used to signify the U.S. Forest Service Smokejumper Base in Redding, California, located in Region 5.

Red Card – A colloquial reference to the Interagency Fire Qualifications card.

Refresher – May refer to a refresher training session OR to a smokejumper who is participating in a refresher training session.

Refresher training – Recurrent training for an experienced smokejumper.

Rigging supervisor – A Smokejumper who is an FAA certified Senior or Master Rigger who is designated to oversee the rigging of parachutes includes inspection, minor repair, and re-packing of parachutes, which includes fitting and adjusting harnesses.

Riser (main or reserve parachute) – The part of a parachute assembly connecting the suspension lines to the harness. Risers usually are made from a length of webbing and are attached using connector links or canopy releases.

ROSS – Resource Ordering and Status System. An automated system that inventories wildland fire qualified personnel and tracks their status and availability for assignment.

Rookie -- A first-year smokejumper.

SAFECOM – U.S. Forest Service Form FS 5700-14, SAFECOM: Aviation Safety Communique, used to report aviation mishaps or hazards.

Safety Management System (SMS) – A quality management approach for controlling risk that provides an organizational framework for constructing and supporting a sound safety culture that actively controls exposure to risk. SMS includes safety policy, safety risk management, safety assurance, and safety promotion.

SBMC – U.S. Forest Service Smokejumper Base Managers Council

Smokejumper Modification Document System (MODOC) -- A Bureau of Land Management process for documenting and approving modifications to Smokejumper equipment.

SMS – Safety Management System.

Subgroup – Examples of subgroups in the U.S. Forest Service Smokejumper Program include Loft, Training, Operations, and Safety.

Training Jump -- A training jump occurs in a monitored environment designed to critique parachute skills in a variety of terrain and environmental conditions to meet determined objectives to develop skills and/or maintain proficiency.

Transition – This term has a two-fold meaning in this Operations Plan. It refers to the “graduated transition” of the FS Smokejumper Program from a round FS14 parachute system to a ram-air parachute system. It is also a Change Management term that refers to the psychological process that people in a program go through as a result of a change in that program.

Transition Monitoring (TM) – A process for providing candid feedback to the RACMAT throughout the transition process using representatives at each base.

TSS – Transition Safety Subgroup.

USFS – United States Forest Service

WYS – West Yellowstone Airport, West Yellowstone, Montana, USA; an abbreviation used in this document to signify the U.S. Forest Service Smokejumper Base in West Yellowstone, Montana, in Region 1.