



## Aerial Survey Working Group Report January 18-19, 2017 Loveland, CO



The 2017 Aerial Survey Working Group (ASWG) meeting was hosted in the Rocky Mountain Region. This report is the responsibility of Jeff Mai, Forest Health Protection National Aviation Safety Manager and Aerial Detection Survey Program Manager (FHP NASM/ADSPM). We thank Kathy Matthews and Jeff Moore for volunteering to host and assisting in gathering cost comparisons to determine the most cost-effective meeting location. The group also thanks Grace Moore, Rocky Mountain Region, for providing the 2016 Annual Mishap Review. Roy Mask, Director's Liaison to the ASWG, was on detail during the meeting and unable to attend but has returned and the group is appreciative of his continued representation.

We had a very large turnout with broad geographic and agency representation, however, state representation was fairly low this year. Nearly 90% of those present were federal or federal contract personnel.

In attendance were:

1. Aleksandar Dozic Washington Department of Natural Resources
2. Alan Dymerski FHP, Rocky Mountain Region
3. Amy Chambers FHP, Rocky Mountain Region
4. Ben Smith FHP, Pacific Northwest Region
5. Bill Frament FHP, Northeastern Area, DFO
6. Bill Monahan FHP, FHAAST, WO
7. Brian Howell FHP, Rocky Mountain Region
8. \*Brian Schwingle Minnesota Department of Natural Resources
9. Chad Nelson FHP, Intermountain Region
10. Chris Dietrich FHP, FHAAST, WO
11. Chris Fischer FHP, Pacific Southwest Region
12. Chris Hayes FHP, Northeastern Area, Morgantown
13. Crystal Tischler FHP, Southwestern Region
14. Daniel DePinte FHP, Southwestern Region
15. Dan Dillner Vermont Department of Forests, Parks and Recreation
16. Danny Norlander Oregon Department of Forestry
17. \*Dan Ryerson FHP, Southwestern Region
18. Dan West Colorado State Forest Service
19. David Jenkins South Carolina Forestry Commission
20. Drew McMahan FHP, FHAAST, WO
21. Frank Krist FHP, FHAAST, WO
22. Frank Sapio FHP, FHAAST, WO
23. Gracie Moore FAM, Rocky Mountain Region
24. JD Mullen FHP, FHAAST, Cherokee Nation Technologies
25. Jeanine Paschke FHP, FHAAST, Cherokee Nation Technologies
26. Jeff Mai FHP, FHAAST, WO

27. Jeff Moore	FHP, Pacific Southwest Region
28. Jeri Lyn Harris	FHM, Rocky Mountain Region
29. Jim Yaussi	FHP, FHAAST, Cherokee Nation Technologies
30. John Cowardin	FHP, FHAAST, Cherokee Nation Technologies
31. John Withrow	FHP, FHAAST, Cherokee Nation Technologies
32. Justin Backsen	FHP, Rocky Mountain Region
33. Justin Hof	FHP, Pacific Northwest Region
34. Kathleen Matthews	FHP, Northern and Intermountain Regions
35. *Kayanna Warren	FHP, Pacific Southwest Region
36. Karen Ripley	FHP, Pacific Northwest Region
37. Kevin Carlin	International Institute of Tropical Forestry, Puerto Rico
38. Marc Roberts	FHP, Northeastern Area, SPFO
39. *Mark Zwiefler	FHP, FHAAST, Cherokee Nation Technologies
40. Matt Vernier	FHP, FHAAST, Cherokee Nation Technologies
41. Nathan Edberg	FHP, FHAAST, Cherokee Nation Technologies
42. Rebecca Powell	FHP, Rocky Mountain Region
43. Ron Cousineau	Colorado State Forest Service
44. Rusty Rhea	FHP, Southern Region
45. Scott Sontag	FHP, Northern Region
46. *Sheri Smith	FHP, Pacific Southwest Region
47. *Sherry Hazelhurst	S&PF, Pacific Southwest Region
48. Sheryl Romero	FHP, FHAAST, Cherokee Nation Technologies
49. Sky Stephens	FHP, Rocky Mountain Region
50. Tom Heutte	FHP, Alaska Region
51. Vanessa Lopez	FHP, FHAAST, WO
52. Vern Thomas	FHP, FHAAST, Cherokee Nation Technologies

\*attending virtually via Adobe Connect/conference line; others dialed in not identified.

## The ASWG Three Key Issues for 2017

### 1. Flight Hours, Automated Flight Following (AFF) and Digital Mapping

Approximately 3483.3 flight hours were reported by FHP and State Cooperators conducting survey and remote sensing in 2016. The total hours break down as follows: 40% FHP, 44% State and 16% cooperatively flown (both FHP and State on board). Automated Flight Following (AFF) was utilized 61% of the total survey flight time, a 1% decrease from last year. AFF is used on all FHP missions. Several cooperators in the Northeastern Area and Region 8 are not realizing the full benefit of this added safety measure. Digital mapping systems were used 78% of the total survey flight time, a 1% decrease from what was reported last year. Digital Mobile Sketch Mapping (DMSM) systems were used on approximately half of our 2016 surveys, while the system being replaced, Digital Aerial Sketch Mapping (DASM), was used nearly exclusively in Regions 2, 5 and 6.

In addition to aerial survey, FHP and States cooperated to fly 1145.6 hours aerial application. Total flight hours, all operations = 4,628.9. Unmanned Aircraft Systems (UAS) and manned remote sensing flights are included in survey hours. Black Hills aerial photography, a cooperative project between South Dakota and the Black Hills National Forest, was not FHP-funded and is not included.

FHP and cooperators had no accidents or incidents with potential in 2016; however, there was one incident during contracted UAS flights on the Apache-Sitgreaves National Forest (see SMS Assurance). We have had no aerial application accidents for the last 13 years or aerial survey accidents for the last 6 years. Using flight hours reported during the last decade, the calculated 10-year average accident rate is 1.85 accidents per 100,000 hours flown for all FHP and cooperator operations; this compares to Fire and Aviation Management's (FAM) 2016 Safety Summary 10-year average accident rate of 2.81 accidents per 100,000 hours flown for all USFS and cooperator operations.

Flight hours for 2016 aerial survey and for all operations combined in are the lowest reported since 2002. Accurate tracking and timely reporting of hours is critical, not only as a responsibility to measure our safety performance and production rates, but as an indicator of oversight in monitoring progress and accomplishments among Agency and partner aviation users locally and nationally. All aircraft users must track and report to UAOs; UAOs report to FHP NASM/ADSPM using the standardized template distributed annually. Use "2017\_Survey\_RemSens\_Application\_Stats.xlsx" for all 2017 FHP and cooperator missions and fully report no later than November 15<sup>th</sup>. This due date is consistent with the due date for reporting Insect and Disease Survey (IDS) data to the newly renamed Forest Health Assessment and Applied Sciences Team (FHAASST, formerly known as FHTET). Aerial application is usually completed much earlier in the year and the FHP NASM/ADSPM will typically request interim reporting of aerial application hours in September, in advance of and in preparation for the Fall Aerial Application Safety Council (AASC) and Annual Gypsy Moth Review meetings.

Additional National and Regional/Area statistical information is available at [www.fs.fed.us/foresthealth/aviation/safety/safety-statistics.shtml](http://www.fs.fed.us/foresthealth/aviation/safety/safety-statistics.shtml). Strategic planning, leadership support and effective implementation of Safety Management Systems (SMS) are essential to further accident rate reduction. Our goal is to strive for zero accidents.

## 2. Strategic Planning and Alignment Across Regions/Area/States

This Key Issue is carried forward from previous reports, with increasing emphasis on the need for program stability now and into the future. DMSM software and workflow improvements are many and largely acceptable to the entire survey community, we thank FHAAST for the valuable improvements realized with the new system and the tremendous field input toward development. However, there remain a handful of unresolved national standards-related and data quality concerns, to include negative perceptions regarding the decision-making process (when to adopt or not adopt recommendations from the field and FHP NASM/ADSPM); these apply only to the most controversial software changes of which we are all aware. The authority of FHAAST to determine standards through DMSM software development has repeatedly been questioned; conversely, it is also understood that decisions must be made and the project must be led in order to move forward. Lacking a Change Management Plan, a current FHP Strategic Plan, and leadership approval of other strategically critical documents (e.g. core survey coverage, charters, revised and accepted survey standards), the aerial survey community remains at a crossroads in achieving full DMSM implementation and an organized, stable and safe aviation program.

The time-consuming and costly challenges experienced during the transition from DASM to DMSM and an apparent lack of unified direction and transparently documented decision-making ability are chronologically detailed in the 2016 ASWG Report. Negotiations with Regions 1, 4, 5 and 6 who have elevated concerns about DMSM capability and software specifications have occurred; communication between Regional and FHAAST leadership has occurred; additional in-person (Portland and Fort Collins) and virtual meetings have been held. Though requiring increased travel cost and time, progress has been made to mutually understand both national and local needs. Some software modifications and data utility concerns have been addressed but the most controversial are not fully resolved; e.g. transitioning to percent class, post processing techniques as a proxy for TPA/Number of Trees, more rapid feature attribution, quick key management and ease of use, and other efficiency-related functionality in DMSM. Until decision space is made clear to the survey community and supported by leadership, DMSM development costs, frustrations and impacts to other program functions will continue and we could potentially fail in delivering a system that meets both local and national needs. In advance of the 2017 Spring Directors Meeting, a Transition Brief was drafted in an effort to identify standards-related stumbling blocks, mutually agreed decisions and DMSM status thus far, and (with clearly understood transparency) decision points for Regional/Area and National leadership regarding controversial changes that must be resolved for full implementation. The brief shall be revisited and finalized following the Directors meeting to incorporate FHAAST input, factoring agreements reached during the R5/R6 visit to Fort Collins, and to outline next steps after flight season and additional DMSM operational feedback.

Generally speaking, emphasis must be placed on smooth integration of mature technology and accepted methods into annual programs, development needs to interact at key points while allowing these programs to adequately perform regular duties (including aviation safety and management oversight). FHAAST's mission focus is on analysis and reporting, software development and application support but the FHP NASM/ADSPM and Regional/Area/State stakeholders also have obligations for other status quo responsibilities, ensuring program accomplishments, with collateral duties to an extremely complex aviation program. Nationally and locally, programs suffer while in a state of flux in efficiently resolving DMSM issues. For reasons explained in last year's ASWG Report and recent FHP Aviation Organization Brief (also drafted prior to the Spring meeting), it is recommended that FHP considers dividing the program management and safety duties of the FHP NASM/ADSPM into two positions, located outside of FHAAST, answering directly to the WO FHP

Director. There are policy implications and negotiations with the FAM policy rewrite effort to also consider (see the SMS-Policy section).

The FHP NASM/ADSPM has also participated on the Business Plan Committee to the limited extent time has permitted, advocating the need for strategic improvements such as: 1) formalizing core survey areas to facilitate national and unit-level efficiency, effectiveness and management, and 2) attaining consistent quality assurance and oversight from national and regional survey program managers and UAOs. It should also be noted that FSM 3400 and 3410 are fairly general in direction for detection surveys. The draft Business Plan has also been routed prior to the Spring meeting along with the results of a regional survey to better capture and reflect current priorities, challenges and opportunities in the 2017 Business Plan.

In spite of attempts, charters for both the Aerial Survey Working Group (ASWG) and Aerial Application Safety Council (AASC) have not been renewed since 2010 and 2009 respectively. For more information on these groups, including historical significance and importance in FHP mission accomplishment, see [www.fs.fed.us/foresthealth/aviation/resources/docs/ASWG\\_2010\\_Charter.pdf](http://www.fs.fed.us/foresthealth/aviation/resources/docs/ASWG_2010_Charter.pdf), [www.fs.fed.us/foresthealth/aviation/resources/docs/AASC\\_Charter\\_2009.pdf](http://www.fs.fed.us/foresthealth/aviation/resources/docs/AASC_Charter_2009.pdf), and [www.fs.fed.us/foresthealth/aviation/resources/docs/AASC\\_CharterAttachment\\_101309.pdf](http://www.fs.fed.us/foresthealth/aviation/resources/docs/AASC_CharterAttachment_101309.pdf). Prior to the Spring meeting, the FHP NASM/ADSPM has also provided the updated charters to FHP leadership for review and approval which should soon be accomplished.

*Charter renewal, outcome of the FHP Organization and Transition Briefs, the Business Plan and the cohesion and direction they will provide are critical to the form, function and safety of all FHP and cooperator aviation programs.*

### **3. Safety Management Systems (SMS)**

SMS is a comprehensive system of safety and business management to minimize aviation risk, extremely effective when engaged and supported. Deputy Chief, James Hubbard, approved the 2016 SMS Guide in August stating: “The 2016 NASMSG documents Fire and Aviation Management (FAM) leaders’ intent and describes authority, roles, and responsibilities, programs, and activities for the application, implementation, and maintenance of Aviation Safety Management System (SMS) in the FS and for its aviation service providers.” The purpose of the guide is to assist in fulfilling the requirements of FSM 5700 and the National Aviation Safety and Management Plan (NASMP), with respect to the implementation of Safety Management Systems (SMS). The guide provides best practices for the application of SMS in the Forest Service and for its service providers.

Approaches to measuring and reporting safety performance metrics and assessment tools used in the industry were discussed at the 2016 ASWG Meeting and again reassigned in 2017 to the FHP NASM/ADSPM and subject matter experts (SMEs). Relative to other duties, the FHP NASM/ADSPM has not had sufficient time and support to accomplish this work but analysis and reporting techniques for safety performance are again prioritized. FHP SMEs will soon be assembled to develop performance measurements in the context of FHP aviation. Several other opportunities for improvement and FHP accomplishments are highlighted within each of the four components of our Agency SMS Policy:

- A. Policy – *The Forest Service is committed to developing, implementing and continuously improving the aviation operation. Our number one job is to protect our most valuable resource—our*

*employees. Unless we do that, we cannot be a world-class leader in natural resource management. Every line officer, manager, supervisor, and employee has the responsibility to manage risk exposure. That means identifying and abating hazards, refusing to accept unnecessary risk, and making risk-related decisions at the appropriate level.*

- The complete overhaul of FSM 5700 and FSH 5709.16 is still in process. Numerous changes are included affecting plan approvals, documenting operational risk management, aircraft performance requirements, and FHP aviation positions (from UAOs up through and including the WO FHP Director). The FHP NASM/ADSPM has been engaged over the last three years but continues to struggle with having our responsibilities and organization accurately reflected in policy (reference changed FHP NASM/ADSPM title in the new 2017 NASMP, last year's ASWG Report, and the Aviation Safety and Management – Brief for August 2016 Directors Meeting (080416)). Our positions in policy and full performance in the aviation environment are critical to successful SMS implementation and effective program oversight. This will be a continuing topic through future FHP NASM/ADSM interactions with the policy rewrite team, possibly in April.
- Following ASWG 2017, the FHP NASM/ADSPM, FHAASST Assistant Director of FHP and WO FHP Director met to discuss options for future organization and the opportunity for leadership to work with FAM enhancing understanding of FHP operations and mutually resolving any retitling or reorganization. The FHP NASM/ADSPM has drafted an FHP Organization Brief for the WO FHP Director describing impacts and options to resolve, including considering dividing the program management and safety duties of the FHP NASM/ADSPM into two positions (similar to the deliberate separation of Regional Aviation Officers and Safety Managers in FAM), located outside of FHAASST and answering directly to the WO FHP Director (as intended in original policy).
- Unmanned Aircraft Systems (UAS) policy and procedures continue to mature within the Agency. Numerous requests for information and desires to purchase or otherwise operate UAS continue to come into the FHP NASM/ADSPM and others on the UAS Advisory Group (UASAG). The UASAG, working under the guidance of the Executive Steering Committee, has made progress on several fronts (with status reports routinely provided to UAOs). All aircraft purchases, including UAS, must be approved by the WO FAM Director. The Aviation Business Case for UAS has been drafted; special thanks to Dan Zimmerman, Area Aviation Officer, for his tremendous efforts on the document. FHP drafted, and in partnership with Forest Management, implemented the first Agency UAS contract. Lessons learned from that experience have been widely distributed and will serve to inform future contracting and policy development within the Agency, as well as management decisions regarding the cost/benefit of potential UAS missions in FHP. The Forest Health Applications of UAS Imagery brief has been prepared in advance of the Spring Directors Meeting. This brief provides next steps regarding FHP's assessment of the utility of UAS imagery in mapping and attributing forest disturbance. Also, through coordination with FAM's Public Affairs Specialist, four standardized press releases have been developed for the purpose of protecting our manned resource operations from UAS encounters in different operational scenarios, on and off National Forest lands (to be finalized and distributed to the field soon).

- Initial framework for a FS UAS Missions Database Tracking Tool has been developed; the desire is for a web-based interface to capture initial Mission Requests and populate technical details for approved projects (also aiding management decisions). The UAS Desk Guide was widely distributed in November, includes current Agency policy, decision processes under a variety of scenarios and the required Mission Request form for Agency operations (to be completed and provided to Area/Regional Aviation Officers). Additional guidance has been provided to UAOs by the FHP NASM/ADSPM regarding approvals/agreements for cooperative projects, not over FS lands and not under our operational control. When in doubt, ask. Complete the Mission Request form. Coordinate any proposed operation with the appropriate AAO/RAO and prepare a Project Area Safety Plan as we would for any aviation project.

**B. Risk Management** – *Risk is an expression of the impact of an undesired event in terms of event severity and event likelihood. Throughout the risk management process, hazards are identified, risks analyzed, assessed, prioritized, and results documented for decision-making. The continuous loop process provides for validation of decisions and evaluation for desired results and/or the need for further action. The goal is risk management is not eliminate all risk, but to manage those risks that cannot be eliminated so the mission can be accomplished with minimum negative impact. Risk management is a robust component of the Agency’s SMS and shall occur throughout Agency aviation operations.*

- Through the efforts of the excellent field staff and cooperators, risks are identified and hazards mitigated while accomplishing core survey coverage but, given the level of effort to manage changes in survey methodology and other administrative processes, accident prevention efforts and emphasis on SMS suffers. We are losing ground on earlier SMS accomplishments and significantly challenged to give adequate attention to several important technological, quality oversight, safety-related improvements and processes that are ongoing or need to be developed.
- Consistent with the principles of risk management and our commitment to improve FHP’s safety profile, alternative technology including UAS, satellite-based operational remote sensing (ORS), manned airborne remote sensing, and use of turbine aircraft are all being explored by FHP. ORS areas identified out of the 2016 ASWG Meeting were not developed further to enable labeling of ORS signatures during 2016 ADS flights as planned but some spot checks were accomplished in Region 5 and 6. Alternative methods are not currently in production nor replacing conventional ADS but costs/benefits of each are being further developed to provide leadership and aviation managers with the information necessary to make better strategic risk decisions.
- Aviation Risk Assessments (RAs) for Aerial Application, Aerial Detection Survey and Remote Sensing are all due for update this year. QA efforts including site visits, structured reviews, and after action reviews are a critical part of the system safety process and help provide feedback to these RAs by capturing new hazards and mitigations or modifying existing. Additional hazards, mitigations and edits will be incorporated utilizing assurance review results, Safecomms and other reporting

mechanisms, input from UAOs and the aviation user community. Subject matter experts shall convene soon to revise all three assessments. Current RAs may be downloaded from [www.fs.fed.us/foresthealth/aviation/safety/safety-riskmgmt.shtml](http://www.fs.fed.us/foresthealth/aviation/safety/safety-riskmgmt.shtml).

- The FS is transitioning to a turbine fleet (FS Aviation Strategic Plan 2014-2018). Consistent with that plan and as determined through risk management efforts, FHP has identified relatively higher risk flight environments providing justification and mission profile definitions to the national replacement effort. Region 2 and Region 6 are entering their third season of Interagency Agreements (IAA) with Fish and Wildlife Service (FWS) utilizing two of their Quest Kodiak aircraft, these aircraft are performing exceptionally well with increased performance and reduced risk (STOL equipped, more power and increased reliability). An additional IAA for 2017 is in process in Region 5 for the use of a FWS turbo Partenavia. Thanks to the ground work done in the regions and a very good relationship with FWS, the FHP NASM/ADSPM is now in communication with FWS to possibly develop a national agreement that could meet a number of needs while also minimizing potential duplication of effort and expense. The solicitation for FS purchase of up to ten high performance single-engine aircraft with multi-mission capability recently closed and the technical evaluation board has convened. We may see at least one aircraft replacement at some point in 2018 with more to follow. Fiscal impacts associated with aircraft purchase as well as IAAs is nominal. IAAs with FWS typically include very reasonable flight rates (but are temporary) and aircraft replacement will be accomplished using WCF funds. There are some costs that need to be covered or shared by FHP (depending on specific arrangements and equipment) including fixed operating rate, pilot salary, specialized equipment and flight time. It is recommended that FHP leadership consider budget adjustments to accommodate supplemental funding for aircraft, pilot salary, sensor mount(s) and other equipment needs as appropriate.
  - We are continuing to implement DMSM while giving the necessary time to safely plan and conduct surveys; this requires advance familiarization with software functionality, methods, and post-survey workflow. Additional time may be necessary to brief pilots/crew, to make adjustments during survey operations, provide for post-flight data synchronization and editing (users must manage workloads and duty time). Numerous training sessions have been and will continue to be provided by FHAAST and recorded production is planned with assistance from GTAC.
- C. Assurance - *Safety management requires feedback on safety performance to perpetuate the safety management cycle. Through monitoring and feedback, SMS performance can be evaluated and any necessary changes to the system effected. In addition, safety assurance provides employees an indication of the level of safety performance affected by the safety management system.*
- The Agency can be considered in a growth period regarding continued development and implementation, we have received GSA's Gold Standard for our SMS but are still working toward certification through International Standard for Business Aviation Operations (IS-BAO) SMS Audits. As discussed during ASWG, FHP has room for improvement including scheduling our first SMS Audit, development of an Aviation Safety Assessment Tool that quantifies our safety performance, and other techniques to enable managers to easily identify successes and challenges. The FHP

NASM/ADSPM was tasked with development but has not had sufficient time and support to accomplish relative to other duties, follow-on remains a priority in 2017. Assurance remains our greatest opportunity for safety and management improvement!

- The FS, FHP and cooperators had no accidents during 2016. However, there was a mechanical malfunction experienced during the UAS contract mission in Region 3. Response was to initially treat the event as an “accident” but later determined by Agency aviation safety investigation in consultation with the NTSB that, while it met requirements for reporting, it did not meet the criteria for an accident and is classified as an “incident”. All required actions were taken in accordance with the contract for notification to the FAA, the operator and Agency aviation personnel followed FS mishap protocol. Preliminary recommendations and lessons learned are included within the Aircraft Incident Report which has been shared widely among UAOs, Regional/Area and National Aviation Staff, the UASAG, and the ASWG.
- Special thanks to the organizers and participants of the 2016 Sandpoint, Idaho Fly-in. This event was a huge success and included use of two aircraft, DMSM mapping exercises, ground checks, project planning and risk management. State and federal personnel from five regions and Canada were in attendance. Region 1 RASM, Bob Roth, provided support for the event, attended and provided the 2015 Mishap Review. Regional/Area and State preseason workshops and meetings and postseason After Action Reviews (AARs) are becoming more regular but formats and content vary; agendas should be shared for general awareness and to enhance future events across the country.
- The FHP NASM/ADSPM did not conduct any functional assistance trips or reviews for aerial survey; this activity needs national emphasis and support. Until the 2016 Safety Assurance Review (SAR) for PADCNR, the FHP NASM/ADSPM had not attended an aerial application project since 2013. The AASC SAR has successfully evaluated six state and federal programs since 2010; initial plans are underway for the 2017 SAR, likely to be hosted by NCDA. Review and oversight activities must continue and expand to routinely include FS and state aviation managers in order to attain robust quality and safety assurance throughout all FHP mission areas and operational units.
- Use of SAFECOM <https://www.safecom.gov/> as a reporting system fulfills both the assurance and promotion roles in accident prevention, lessons learned and safety communication. FHP and cooperator use of the system needs continued emphasis. UAOs were provided with database query results mid-season and the ASWG reviewed seven 2016 FHP SAFECOMs. Categories included mishap prevention “kudos”, airspace conflicts, forced landing, incident (UAS damage), communications and maintenance issues. As SAFECOMs are submitted, the FHP NASM/ADSPM and Area Aviation Officer or Regional Aviation Safety Manager are notified by email which precipitates follow-on communications with the UAO and others as needed to address any issue(s) and finalize the SAFECOM. A mobile web application is available for convenience [www.safecom.gov/mobile/#/](http://www.safecom.gov/mobile/#/). The open communication fostered by this system regarding safety of flight is invaluable and frequently SAFECOMs help generate Safety Alerts and a variety of bulletins

[www.fs.fed.us/fire/av\\_safety/promotion/index.html](http://www.fs.fed.us/fire/av_safety/promotion/index.html). Thanks for utilizing the system and future efforts to expand its effectiveness as a communication and accident prevention tool.

**D. Promotion** – *The safety efforts cannot succeed by mandate or strictly through implementation of policies. Safety promotion sets the tone and enhances the organization’s policies, procedures and processes, providing a sense of purpose and direction. Aviation Managers must make every effort to communicate objectives, as well as the current status of SMS activities and significant events. Likewise, we must strive to create and maintain a channel of upward communication in an environment of openness.*

- A primary function of the ASWG and the AASC is safety promotion throughout all FHP and cooperator aviation operations. Charters for these groups are expected to be renewed imminently. Thanks to the membership of both groups for their continuing commitment in the interim, continuing to provide valuable services enhancing state and federal program operational effectiveness and safety management [www.fs.fed.us/foresthealth/aviation/aviationprogram.shtml](http://www.fs.fed.us/foresthealth/aviation/aviationprogram.shtml). The AASC welcomes Marc Roberts, NA SFO UAO, to its membership and Dave Adkins, Ohio Department of Agriculture, as the new Chair. The AASC is currently looking to fill two membership vacancies including one industry and one state representative. Contact FHP NASM/ADSPM if interested.
- FHP proudly announced Brian Howell, Region 2 FHP Aerial Survey Program Manager, as the recipient of the 2016 FHP Aviation Safety Award. He routinely goes far beyond the duties of his position to achieve safety and operational excellence within the region, states and abroad. Brian provides exceptional quality and safety assurance oversight and coordination across a very complex survey program, supporting cooperator involvement and delivering survey results of the highest quality to a wide array of stakeholders. He also led the effort to secure IAAs with FWS for performance aircraft and helped to inform the Agency multi-mission aircraft replacement effort, contributing to safety and production improvements nationally. His efforts have significantly influenced and contributed toward an exceptional safety record not only for his state personnel and the Rocky Mountain Region, but for FHP and partner organizations nationally. Congratulations and thank you Brian!
- The FHP Aviation Safety Award is structured for one state or federal nominee per Area/Region; individuals are evaluated based on 1) promoting a positive safety culture, 2) contributing to forest health activities directly benefitting the resource, and 3) building efficiency and effectiveness among partners in forest health aviation safety. The call letter for the 2017 Award was delayed in correspondence and due date for nominees extended until February 28<sup>th</sup>. Area and Regional responses have been received and the panel should soon convene to make the 2017 selection. Thanks to everyone taking the time to discuss and nominate their top state and federal performers. Questions have come from the field this year pertaining to the development and implementation of the award. Some regions want to submit more than one nominee or make the award available to groups. This was not the original structure and Directors may wish to advise regarding the current design and process changes.

- Training accomplishments in 2016 include Aerial Survey Aviation Safety and Management (AS2M) in Dover, NH. The ASWG recommends AS2M for all state and FHP aerial observers and flight managers on a three-year recurrence. Aviation Program Overview for Agency Administrators (A-314) was provided to FHP first and second-level supervisors through two webinars in 2016, additional supervisor training shall be scheduled in 2017 as needed. Aerial Application Safety for Project Personnel was provided in Annapolis, MD (thanks to the AASC for supporting and MDA for hosting). A two-day short course in aviation safety and management was hosted by Region 5 in Honolulu for state aerial observers and flight managers from all the islands (thanks to Jeff Moore for organizing and supporting the event, including virtual participation by the FHP NASM/ADSPM). Following requests made during the 2015 Annual Gypsy Moth Review, Ben Smith and Jeff Mai coordinated fulfilling a special request for aerial application safety training in advance of OR/WA AGM eradication. The AASC has promoted training with an operational component including calibration flights for some time; subsequent Regional and Area coordination has resulted in offering Aerial Pesticide Application Training (APAT), to be held in Ovid, MI during the week of the March Directors Meeting. Advanced aviation safety training continues to be made available each Fall, Winter and Spring quarter through Treasure Valley Community College (TVCC). TVCC scholarships are available for federal employees but all are welcome to attend this training. Contact your RASM/AAO and the FHP NASM/ADSPM if interested.
- National support in funding training events, instructor development and travel is critical to the continued success and development of quality training and instructors. The FHP NASM/ADSPM has prepared and delivered a brief to the WO FHP Director to secure additional funding supporting instructor travel to AS2M. The 2017 AS2M is hosted by the Southern Region and will be held in Atlanta during the week of April 24<sup>th</sup>. In addition to classroom training requirements, on-line requirements for all positions with aviation responsibilities are found at [www.fs.fed.us/foresthealth/aviation/training.shtml](http://www.fs.fed.us/foresthealth/aviation/training.shtml).
- The IAT Guide was updated in 2016 and will be finalized during the upcoming April IAT Steering call; subsequently, the Guide shall be provided to the National Interagency Aviation Committee for adoption into policy. Several important changes are included, including the ability to qualify individuals as “Flight Followers” to address our challenges with dispatch coverage in remote locations or where communications trailers follow operations. Following approval of the 2017 IAT Guide, FHP’s requirements will be updated, including currency requirements for certain AS2M courses. Also, the ASWG tasked a subcommittee led by Kathy Matthews to revise our 2010 FWFMSU Task Book. The FHP FWFMSU Task Book Subcommittee is making good progress and a goal is to produce the new task book by flight season; current task books already in progress should be completed and trainees will not be impacted once the new version is finalized.
- The IAT Steering Committee has been diligently working to make AT.2.0 [www.iat.gov](http://www.iat.gov) more user-friendly and powerful. Unit Aviation Training Administrator access has been provided to all FHP UAOs for the purpose of monitoring training compliance and generating reports (as one of the new functions in AT2.0). Instructions have been provided to all FHP and, presumably, all cooperators for how to update their

profiles to the appropriate unit. Direct any questions on profile set up, use of the website to your FHP UAO or the FHP NASM/ADSPM. Technical difficulties will continue to be addressed through IAT Steering.

- Six Fixed Wing Flight Manager – Special Use Task Books were signed off for state and federal FHP flight managers (half state and half federal personnel). Congratulations go out to Melinda Lamb, Stephani Penske, Daniel DePinte, Tom Zegler, Dan West and Rebecca Powell on their diligence in working toward certification!

## **Additional Information**

- A. Several briefs have been drafted as mentioned in the ASWG Meeting Notes/Action Items and within this Report: Survey Standards Transition, ADS Sampling, FHP Aviation Organization, FHP Aviation Travel, and Forest Health Applications of UAS Imagery. Any topics not addressed at the Directors Meeting (likely most, as FHP Aviation is not expressly an agenda item) will be elevated with the suggestion to follow up during the next scheduled Director’s Call or subgroup calls as necessary, depending on the briefing topic. Not yet drafted is the brief addressing Survey and Technical Assistance intended to inform current leadership regarding the significance of aerial survey in FHP’s mission accomplishments, the origin of FHP and FHM, and implications of sampling (intended to be more developed than ADS Sampling mentioned above); the subgroup assigned during ASWG for this brief has yet to be assembled but the FHP NASM/ADSPM will follow up.
- B. Additional action items listed in the ASWG Meeting Notes (45 in total) are priority to address over the coming months, some sooner than later; responsibilities to those action items are dispersed among: Subgroups/Individuals, the FHP NASM/ADSPM, All members, or FHAAST. Thanks in advance for shepherding those through to completion.
- C. Congratulations to the Pacific Northwest Region, Oregon and Washington on celebrating 70 Years of Aerial Survey! Ben Smith made an excellent presentation to the ASWG on in the Pacific Northwest’s rich and influential history. The history of aerial survey is also the history of Forest Health Protection. The region has produced a book called “The Survey”, a reference work on the 1947-2016 history of the program (how the aerial survey effort began, early to current photos, changes in personal protective equipment and training, etc.). A low-resolution, 508 compliant version will soon be loaded to R6’s FHP website. Currently a very large, high-resolution, print quality file is available at: [archive.org/details/AerialForestInsectAndDiseaseDetectionSurveysInORandWA19472016TheSurveyHighRes](https://archive.org/details/AerialForestInsectAndDiseaseDetectionSurveysInORandWA19472016TheSurveyHighRes). This public archive site has been around since 1996 and has robust tools, amazing content, and is available to everyone. When you get to the first view using the link, you can only page through the book but when you hit the “full screen” button on the upper right side, the book’s contents become available as searchable text. Once the book is in full screen mode, the *search inside the book* tool becomes available (thank you Julie Johnson!)
- D. The Northeastern Area, Durham Field Office, partnered with NASA to deploy and test the G-LiHT sensor for EAB, SPB and other damage. The project has collected LiDAR, VNIR and

thermal image data annually since in 2014. Continued feedback to the ASWG and FHAASST regarding the results of this work is necessary for our overall strategy and will serve to inform aircraft equipment needs and capabilities for use of multi-mission remote sensing platform(s) included in the aircraft replacement effort beginning this year.

- E.** There is a continuing need for qualified IAT Instructors to assist with a variety of FAM, FHP and externally-sponsored training. These are great opportunities for state and federal employee development and sharing resource aviation expertise. Personnel are encouraged to take advantage of, and assist with, training events currently being planned for aerial application and aerial survey programs.
- F.** Flight planning resources: digital aeronautical sectionals, TFRs, vertical obstructions, AP1B charts, etc. can be downloaded from a variety of sources including FAA, DINS, and USFS. NIFC has a new service called the NESS Application Portal or “NAP”, FS employees may request accounts <https://nap.nwcg.gov/NAP/>. Also, controlled/restricted airspace layers are available through Google Earth <http://www.soothingdata.info/aviation/airspaceTab.html>; convert to a GDB in ArcMap and clip to your project area, shows all controlled and restricted airspace for use in TPK or shapefile generation. Another excellent resource for airspace and airport information, including fuel availability/prices, weather, pilot reports and more is [skyvector.com](http://skyvector.com). Skyvector is a great flight planning tool and the only known location currently where DROTAMs would be posted (these are the new, UAS-equivalent of a NOTAM). Under Part 107 no longer a requirement for commercial operators to file NOTAMs, consult specific 333 or COA for requirements (and be aware that not all UAS activity will be on DROTAMs).
- G.** The ASWG recommends pinch-hitter training for flight managers on a two-year cycle and currency for all aviation positions, including Fixed Wing Flight Manager-Special Use, per the FHP Matrix [www.fs.fed.us/foresthealth/aviation/resources/docs/FHP\\_IAT\\_Matrix\\_2014.pdf](http://www.fs.fed.us/foresthealth/aviation/resources/docs/FHP_IAT_Matrix_2014.pdf); Position Task Books for Fixed-Wing Flight Manager Special-Use and Helicopter Manager – Resource are available at [www.fs.fed.us/foresthealth/aviation/training.shtml](http://www.fs.fed.us/foresthealth/aviation/training.shtml). On-line, classroom and webinar training is available through [www.iat.gov](http://www.iat.gov). FHP’s training and workshop announcements will be posted on [www.fs.fed.us/foresthealth/aviation/news.shtml](http://www.fs.fed.us/foresthealth/aviation/news.shtml).
- H.** Pre/post-season workshops, site visits, and reviews are vital to improving safety and quality. Calibration flights coupled with ground checks are recommended annually. Notify Jeff Mai if you plan any pre or postseason workshops and training. Region 2 began pinch-hitter training in March and will also be hosting the 2017 Four-Regions Fly-in in Gunnison during the week of June 5<sup>th</sup>, contact Brian Howell [behowell@fs.fed.us](mailto:behowell@fs.fed.us) for more information on that event.
- I.** Assistance across Region/Area boundaries is strongly encouraged for employee development, teamwork and achieving FHP mission goals. There are opportunities to assist with DMSM/DASM system comparisons in California, contact Jeff Moore [jwmoore02@fs.fed.us](mailto:jwmoore02@fs.fed.us). Aircraft are being shared to the Northeastern Area Durham Field Office for remote sensing and to the Southwestern Region for aerial survey. Contact individual UAOs for more information and to request or share aircraft and personnel.
- J.** The FHP Aviation website [www.fs.fed.us/foresthealth/aviation](http://www.fs.fed.us/foresthealth/aviation) needs maintenance and shall be accomplished as we reconfigure to the new Agency format, please be patient.
- K.** Regional and Area UAO contacts [www.fs.fed.us/foresthealth/aviation/regionalaviation.shtml](http://www.fs.fed.us/foresthealth/aviation/regionalaviation.shtml)

- L.** The ASWG thanks all meeting participants and especially the following discussion leads: Ben Smith, Gracie Moore, Chris Fischer, Jeff Moore, Jeanine Paschke, Matt Vernier, Vern Thomas, Frank Krist, Frank Sapio, John Cowardin, Mike Conly, Tom Heutte, Bill Monahan, Kathy Matthews, and Nathan Edberg.
- M.** Handouts associated with ASWG topics have been distributed to the ASWG 2017 mailing list and include: ASWG ORS, DASM vs DMSM Surveyor Count Summary, DMSM and ArcGIS, DMSM Equipment Specs, DMSM Bug List, DMSM Desktop Tools, DMSM 2017 Enhancements, UAS Incident Report (final), FWFMSU Task Book, DMSM Acres Calc, and Heat Study.
- N.** The 2018 ASWG meeting will be held January 17<sup>th</sup> – 18<sup>th</sup>, host and location TBD; contact Jeff Mai if you are interested in hosting the next meeting.

Meeting notes are available and questions will be answered upon request - End of Report.