

# Aviation Search and Rescue Study

## DRAFT Observations and Recommendations

### OBSERVATIONS

#### General Observations

- 1. Due to a relatively large and active general aviation (GA) community in Washington, and challenging flight conditions in the state, it is important to have an effective aviation search and rescue (ASAR) program.**

*During the period from 2000 through 2011, there were nearly 750 GA accidents in Washington, resulting in 162 fatalities. The yearly accident rate was relatively constant during the period. During this same period, the WSDOT ASAR office managed thirty-four lost aircraft searches; more searches occurred in the first half of the period than in recent years.*

*National trends show a general decline in GA accidents, falling from 1,467 in 2000 to 1,116 in 2011, a 24 percent drop. Seventy-three percent of non-fatal accidents and 77 percent of fatal accidents involved personal flights, as opposed to instructional or business flights.*

- 2. Across the country, the ASAR function is primarily assigned to state departments of Emergency Management, the State Police and Transportation.**

*A survey of the 50 states and the District of Columbia conducted as a part of this study found that the ASAR function is located principally in three different state agencies: Emergency Management (24); State Patrol (11); and Transportation (8). Among the eight other jurisdictions, the Civil Air Patrol had prime responsibility in five, and other agencies in three instances.*

*A state's level of effort on ASAR is affected by the scale of general aviation and topography of the state. At the July 31, 2012 Work Group meeting, Dan Conley of*

*the United States Air Force Rescue Coordination Center (USAFRCC) and Chris Long of the Washington State Emergency Operations Center (Military Department) said they believe that those states with the best ASAR organizations, and which have relatively high numbers of missing aircraft incidents, house ASAR in an aviation department or division, and have dedicated personnel to address those incidents. States with fewer missing aircraft incidents assign ASAR to emergency management.*

- 3. Washington's ASAR program is acknowledged by many in the local and national general aviation community to be effective, and was cited by some as one of the better ASAR programs in the country.**

*Work Group members and others interviewed for this study concurred that public agency personnel and private volunteers involved in ASAR in Washington are, for the most part, well-trained and capable of effectively carrying out their mission tasks. WSDOT has a dedicated ASAR budget, and is able to call on volunteers and resources from federal, state and local agencies to fulfill search missions. Stakeholders expressed a common sentiment that if you are going to be lost in a downed aircraft, Washington is a good state to have it happen in. Another Work Group member stated, "Don't fix what's not broken."*

- 4. In Washington State, public agencies and other organizations generally contribute whatever equipment and personnel are needed for a search.**

*The ASAR process utilizes various public agencies and private organizations. These include WSDOT's aviation emergency coordinator, the Military Department, local law enforcement and the State Patrol, the U.S. Air Force Rescue Coordination Center (USAFRCC), the Civil Air Patrol, and Washington Air Search and Rescue (WASAR) and other volunteers not affiliated with a particular group. Those entities often donate both equipment and staff or volunteer time.*

## **Observations about WSDOT Aviation Search and Rescue Operations**

- 5. There appears to be little support among stakeholders involved in the Washington ASAR process for transferring the ASAR functions from WSDOT to another agency.**

*The issue of moving the ASAR function out of WSDOT to another agency was one of the primary questions to be addressed by this study. ASAR stakeholders generally indicated support for WSDOT retaining responsibility for the program. At the July 31, 2012 Work Group meeting, agencies expressed the following concerns about moving ASAR out of WSDOT:*

- *Military Department representatives expressed concern over locating the ASAR program within their agency, explaining that their Emergency Management Division (EMD) is not a response agency, but an agency which coordinates responses and resources.*
- *The WSP Aviation Division expressed concern over assuming the ASAR function because their primary mission is aerial law enforcement.*
- *The CAP argued that the activity should remain with a state agency and not CAP, since CAP is largely a volunteer organization with a diversity of duties.*

- 6. WSDOT's ASAR program is involved in much more than lost aircraft searches. Since 2000, they have led between one and seven lost aircraft searches annually. During that same time period, they were involved in between 149 and 322 ASAR incidents annually. They also participated in other activities.**

*Besides coordinating and conducting lost aircraft searches, the WSDOT's ASAR program investigates ASAR incidents such as emergency aircraft locator transmitter alerts, other emergency beacon alerts, overdue aircraft reports, and aircraft accidents. They also provide assistance to county sheriffs for missing persons on the ground, airborne damage assessment after a disaster, and transportation of critical supplies and personnel during disasters. WSDOT also conducts emergency planning and is a co-sponsor of the Rescue Coordination Center at Camp Murray.*

- 7. WSDOT's ASAR program is located in WSDOT's Emergency and Security Operations Office in Olympia, and has one full-time employee.**

*The ASAR program at WSDOT is staffed by one person, the aviation emergency coordinator, whose duties include program coordination, aviation searches,*

*response to emergency locator transmitter alerts, ASAR training classes, and other program activities. The coordinator is housed in the Emergency and Security Operations Office at WSDOT's headquarters in Olympia, rather than the Aviation Division, located in Arlington. WSDOT says locating this person in the Emergency and Security Operations Office in Olympia is beneficial for at least two reasons: it's closer to the State's Emergency Management Center at Camp Murray, and it allows the individual to better coordinate with other emergency-related transportation activities within WSDOT.*

**8. Concerns were raised about the lack of back-up for the aviation emergency coordinator. Other WSDOT staff has only minimal ASAR-related training.**

*A single individual is primarily responsible for ASAR activities at WSDOT. While this person does not function alone, reporting to a supervisor who has some ASAR-related knowledge, no one else at WSDOT is trained to manage ASAR missions. Having a single individual doing the job provides a consistent approach to aviation search operations, but it leaves aviation emergencies susceptible to that person's absence.*

*During the conduct of this study, WSDOT has begun more cross-training of other agency staff to carry out ASAR functions. This includes more extensive documentation of emergency procedures, training of others in ASAR procedures, and qualifying others to operate emergency operations equipment.*

**9. Good communication between WSDOT and others involved in ASAR is vital to ensuring an effective search capability and maintaining a strong volunteer base. Some stakeholders expressed concerns about communications in the early stages of the study, but noted improvements as the study progressed.**

*The ASAR program is heavily dependent on involvement from many agencies and the volunteer community.*

*During this study, numerous suggestions were made concerning the need to improve communication among participating agencies and organizations, and their need to better understand their role in ASAR. Many procedures in the*

*communication and search protocol are well defined, and carried out with precision. Others are not as well understood, nor well defined.*

*Recent efforts among these organizations appear to have improved communication within the past year.*

**10. Some general aviation stakeholders have said WSDOT's ASAR administration and mission search processes are not as transparent as they should be.**

*Some stakeholders expressed concerns about a lack of transparency in WSDOT's ASAR procedures. For example, while WSDOT has a MOU with CAP outlining CAP's role in ASAR, there is no similar MOU with WASAR despite repeated WASAR attempts to develop one. (In September, 2012, WSDOT did provide a draft MOU to WASAR, and WASAR is currently reviewing that document.) WSDOT and WASAR are discussing improving procedures for WSDOT contact of WASAR during ASAR emergencies, including WASAR developing an "on call" roster so volunteers are able to identify periods they can plan to be available.*

**11. The biennial budget for ASAR activities at WSDOT is approximately \$400,000, funded from the State Aeronautics Account.**

*The ASAR budget funds the aviation emergency coordinator, maintenance of an aircraft, a mobile command and communication center, ASAR training classes, and limited volunteer expense reimbursement.*

*Limited data from the 50-state ASAR survey conducted as part of this study, as well as information from WSDOT's aviation emergency coordinator, suggests that Washington's ASAR funding level may be the highest in the lower 48 states. However, it is difficult to confirm ASAR program expenses among the states because they don't always separate ASAR budget activities from other related activities. For example, Montana estimates its ASAR budget at \$15,000; however they have eight staff involved in ASAR, among other duties, and other division expenses contribute to the ASAR effort.*

## **Observations concerning Search-Related Issues**

- 12. Technological developments are enabling searchers to more quickly locate downed aircraft, but are also creating additional work load for emergency responders. Many aircraft do not have the most effective equipment.**

*Federal law requires all aircraft with more than one seat to have Emergency Locator Transmitters (ELTs), to aid in lost aircraft searches. However, not all such aircraft meet this requirement, and even when they do, the ELTs don't always work well. In many cases, ELTs are not turned on, not operable, or fail as a result of a crash. Older ELTs have a crash activation rate of less than 25 percent. In addition, ELTs are sometimes activated unintentionally, but those unintentional alerts require follow up.*

*Newer ELTs such as the 406 beacon are more dependable and provide personal contact information and GPS coordinates related to that specific aircraft. The \$1,000 - \$1,500 cost of equipping aircraft with those devices is often cited as the reason only about 10 percent of GA aircraft have them. Some pilots instead use Personal Locator Beacons (PLBs), similar to those used by hikers; or cellular phones which provide information for the last cellular tower they were within range of.*

- 13. Nationally, eighty-three percent of general aviation pilots do not file flight plans.**

*While filing a flight plan is simple and can make lost aircraft searches much easier, only 17 percent of general aviation pilots file them. Flight plans can be prepared in just a few minutes and can be filed at the airport on departure, or by computer with minimal effort. Most importantly, filing flight plans can ensure a more immediate response to the emergency of a search. Reasons for not filing flight plans are primarily personal choice issues including personal freedom and no perceived need, such as for very short trips.*

- 14. WSDOT prescribes the classroom and flight training volunteers must have to participate in a search. WSDOT and the Civil Air Patrol offer some similar training classes, but they are often not coordinated regarding scheduling nor**

**content. Also, WSDOT doesn't always accept CAP courses as meeting WSDOT training requirements.**

*Training is vital to preparing for ASAR missions, both from the aerial search perspective as well as for ground support. WSDOT offers 18 different ASAR courses; 6 - 12 classes are offered each year. In 2011, WSDOT's training included 387 course registrations involving 311 different persons. Six of the courses involved flight training.*

*WSDOT training costs to-date in the 2011-13 biennium total \$37,500; this amount does not include staff time. It does include reimbursement for the trainee's gas and oil expenses during training and en route to the training if flight is an integral part of the training. It does not cover other aircraft costs the trainee may incur while training. Most of WSDOT's training class participants are CAP members, while others are WASAR members.*

*WAC 468-200-110 prescribes the requirements organizations must meet for their courses to meet WSDOT's ASAR training requirements. These include prior approval of course instructor qualifications, content, and training materials.*

*While CAP accepts WSDOT training courses for CAP course requirements, WSDOT does not always accept CAP courses. CAP leadership has stated that, on some occasions, they have failed to meet the requirements of WAC 468-200-110, and therefore share some responsibility for some of their courses not meeting WSDOT requirements.*

#### **15. ASAR training is conducted in Western Washington.**

*Of the 34 training classes held by WSDOT between 2008 and 2011, all were held in Western Washington. WSDOT said this is because most general aviation pilots live in Western Washington, and that's where most aircraft are lost. Members of the aviation community in Eastern Washington have asked that some of the instruction be held in Eastern Washington, to maintain a trained volunteer presence throughout the state.*

- 16. The number of qualified mission pilots, other volunteers, and aircraft available for ASAR is declining, due in part to the rising cost of flying, the recession, a drop in the number of downed aircraft searches, and a perceived lack by some in the aviation community, of training opportunities and subsequent utilization in mission assignments.**

*Several organizations such as CAP and WASAR provide the qualified pilots, observers, and mission scanners that are critical for ASAR missions. Washington CAP has set a goal of 55 qualified mission pilots, but has only been able to achieve 46 to date. Seven of these pilots are located in Eastern Washington; 39 are in Western Washington.*

*According to WASAR, in 1998, there were over 200 privately-owned aircraft available at the call of WSDOT for ASAR. As of 2007, the resource dropped to 29 aircraft and 101 qualified flight crews. This decline is due, in part, to the increasing cost of general aviation, which has reduced the number of volunteers. In addition, with improved search technology there has been a reduction in the number of searches to volunteer for, so volunteer interest may be waning as a result.*



# DRAFT RECOMMENDATIONS

## **WSDOT Administration of ASAR**

1. The Washington ASAR program should remain in WSDOT.
2. WSDOT should assess whether the ASAR program should remain in the WSDOT Office of Emergency Management, or be moved to the Aviation Division.
3. WSDOT should cross-train existing WSDOT staff to lead air searches, in order to provide back-up to the aviation emergency coordinator. (Certain of this cross-training has occurred, and it should continue.)
4. WSDOT should take steps to make the ASAR program more transparent to its cooperating agencies and volunteers. This includes transparency in policies and process, agreements with stakeholder groups, methods for making search assignments, and criteria for assignment to ASAR volunteer rosters.
5. WSDOT should work more closely with CAP, WASAR and other aviation stakeholders to improve relationships with those organizations, including holding regular meetings to maintain good working relationships and improve the flow of information.
6. The WSDOT should report to the Joint Transportation Committee by September 1, 2013 on steps taken to implement recommendations contained in this report.

## **ASAR Training**

7. WSDOT and CAP, in cooperation with WASAR and others, should coordinate ASAR training courses to maximize the effectiveness of limited resources.
  - a. To the extent possible, courses offered by WSDOT and CAP should be uniform to provide transferability at course completion.
  - b. Course materials should, to the extent practical, be developed jointly and shared among organizations conducting training.

- c. WSDOT should explore opportunities to utilize qualified instructors, including CAP and WASAR instructors for training using WSDOT approved media in order to reduce workload on paid staff.
8. WSDOT should work to expand ASAR training course offerings in Central and Eastern Washington, to make it easier for Central and Eastern Washington pilots to participate in ASAR.
9. WSDOT should more clearly designate training required to participate in ASAR missions.

### **Enhancements to General Aviation Safety**

10. Organizations involved in general aviation should strongly encourage pilots to file flight plans.
11. Organizations involved in general aviation should conduct on-going pilot safety education about the importance of using emergency beacons and following other flight safety policies.
12. The Aircraft Owners and Pilots Association, in conjunction with WSDOT and others, should encourage aircraft owners to equip their aircraft with 406 emergency beacons.
13. Aircraft registration renewals, aviation newsletters, and community colleges aviation courses should all be employed to enhance general aviation safety awareness.