



50 F St. NW, Suite 750  
Washington, D.C. 20001

T. 202-737-7950  
F. 202-273-7951

[www.aopa.org](http://www.aopa.org)

August 22, 2019

Mrs. Kelsey Sydney  
Top 5 Program Coordinator  
Safety Performance Monitoring, AJI-313  
Federal Aviation Administration  
950 L'Enfant Plaza  
Washington, DC 20024

**Re: Development of FY20 Corrective Action Plan for the Air Traffic Organization Top 5 Safety Program: High-priority factors that contribute to the risk in the National Airspace System**

Dear Mrs. Sydney,

The Aircraft Owners and Pilots Association (AOPA), the world's largest aviation membership association, submits the following recommendations for consideration in the development of next year's Corrective Action Plan (CAP) for the Air Traffic Organization (ATO) Top 5 Safety Program. We appreciate this opportunity to provide our proposals to reduce the safety risk of each category being discussed and to participate in this important data-driven safety process.

### **Altitude Compliance – Aircraft operating at unexpected/unintended altitude**

The FY19 CAP for Altitude Compliance included a recommendation for providing the lessons learned from the data analysis and insights shared by the focus group to the broader pilot community: "Provide data-driven observations to pilot community (e.g., phase of flight where most readback errors occur) to encourage improved awareness and communication when executing altitude clearances." This full report was reviewed by AOPA and we highlighted the results to the general aviation community in a 2019 article.<sup>1</sup>

We found several of the mitigations proposed in the FAA report, such as changes to Air Traffic Control (ATC) phraseology, worthwhile for further conversation, as well as the concepts for further research. Below are the findings from the report that we believe are important for discussion and, potentially, swift implementation. We feel it is important that any recommendations, particularly those that affect phraseology, are coordinated with the Pilot/Controller Procedures and Systems Integration (PCPSI) Working Group. As this group is also looking at altitude compliance issues, it is important all mitigation efforts are harmonized.

#### **Miscommunication/Readback Error**

This category, which includes a loss of separation occurring after the flight crew read back an altitude assignment incorrectly, took the wrong clearance, failed to respond to a clearance, or misinterpreted an instruction, represents the greatest number of commercial and general aviation events that were reviewed. As this is the leading issue for altitude compliance errors, we believe the priority should be on discussing the proposed mitigations from the report for this issue. There are multiple products that might result from

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<sup>1</sup> <https://www.aopa.org/news-and-media/all-news/2019/may/06/mistakes-and-mitigations>

these recommendations depending on whether the audience are pilots or controllers. We are happy to continue our collaboration on developing safety products.

- ATC & Pilot: Emphasize listening skills in training for controllers and flight crew using simulations.
- ATC & Pilot: Include common scenarios in initial training and refresher courses to ensure pilots/controllers are sharpening their listening ability over time.
- ATC: Develop training scenarios to include demonstration of readback errors to influence the trainee to listen carefully for correct information.
- ATC: Include the technique of repeating intended altitude after issuing a traffic call in FAA Order JO 7110.65, Air Traffic Control.

#### Departure/Cleared Altitude Violation

This category defines a loss of separation that occurred where an aircraft was issued an initial climb altitude by clearance delivery or issued a pre-departure clearance and, after departure, did not level at its assigned altitude. One of the mitigations proposed in the FAA report highlights the use of technology as a means to reduce these events and specifically the use of an application:

- ATC & Pilot: Technology to send pre-departure clearance information to general aviation pilots via email or using an application is currently undergoing testing. Providing the data in a way that it is available for future reference may reduce confusion later.

In developing the 2018 safety risk management document and CAP, AOPA commented noting MITRE was developing an application that could promote a better transfer of clearance delivery information.<sup>2</sup> MITRE worked closely with several FAA lines of business, NATCA, and ForeFlight to complete a test at Manassas Regional Airport in Virginia. This initial success led to discussions of a larger test which would include other vendors, like Garmin. This application would significantly reduce the back and forth between the pilot and controller. The idea is that the pilot will receive their flight plan/clearance data via email, app, or text. The message will include a “secure code.” When the pilot contacts clearance delivery they will only be required to read back the secure code. The controller will be able to find the same secure code on the flight strip in the tower. Matching code means same information.

This type of technology has broad industry support. One of the recommendations in the Performance Based Navigation (PBN) Route System Final Report, an industry consensus report of the RTCA Tactical Operations Committee submitted to the FAA in August 2017, stated “the FAA should evaluate an affordable solution for general aviation to receive IFR clearances via their mobile device.” This recommendation was written in acknowledgement that many general aviation aircraft cannot participate in the FAA’s Data Communication effort due to cost of equipage. The report noted that “75% of pilots agreed they would find it operationally advantageous to receive their clearance for an IFR flight plan, on the ground at an uncontrolled airport, via communication with ATC using an app.” AOPA strongly supports this recommendation given the number of general aviation pilots who would benefit from this app and who otherwise cannot participate in the FAA’s Data Communication effort.

In September 2016, the Flight Service NAS Efficient Streamlined Services (FSNESS) User Group submitted a list of recommendations to the director of Flight Service regarding improvements industry would like to see in a future Flight Service. Flight Service specialists frequently conduct clearance relay

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<sup>2</sup> <https://www.aopa.org/news-and-media/all-news/2017/november/30/app-could-deliver-ifr-clearances-to-mobile-devices>

for pilots, a task which could be simplified using MITRE's app. The FSNESS User Group recommended the FAA investigate allowing pilots to use automation, such as apps, to reduce time-consuming and manual processes for the specialist and pilot.

We encourage the FAA to field test the MITRE app as soon as possible given the benefits it could provide to pilots and air traffic controllers in reducing altitude violations. AOPA stands ready to support such a project. We appreciate the FAA recognizing the industry recommendations in support of this concept and the value pilots have noted.

**Traffic Advisories/Safety Alerts – Conflict becomes imminent because a traffic advisory and/or safety alert was not provided**

The FY19 CAP called for a collaborative effort to develop videos that explain the importance of traffic advisories to pilots, particularly for VFR pilots. In partnership with NATCA and the FAA, AOPA produced in 2019 a series of short videos highlighting the human side and compelling importance of traffic advisories. It is important for the aviation community to continue to emphasize the importance of sharing traffic information and saying something when there is any level of discomfort.

We believe the collaborative education campaign should continue in FY20. For example, it is not well known or publicized that about 75% of pilots do not respond with traffic in sight when ATC issues a traffic advisory. It is important to share with controllers what a non-response from a pilot may indicate, including that they may need further assistance or additional traffic calls to facilitate identification of the traffic. The FAA should coordinate additional materials for controllers with the assistance of industry, like AOPA. We also believe educational materials would be beneficial for pilots as to how they can better respond to traffic calls.

The FAA should also promote ATC supporting VFR pilot's requests to participate in flight following (i.e., radar traffic advisories). ATC handles these requests on a workload-permitting basis and controllers should be encouraged to facilitate flight following to the maximum extent practicable. AOPA routinely receives phone calls from pilots who believe this service was not provided when it could have been. Although many of these denials of service are likely justified, promoting the safety benefits of accommodating VFR flight following requests from general aviation pilots may assist with mitigating the perception that this service is not as critical as other ATC functions.

**PIREP Solicitation/Dissemination – ATC did not meet the requirement to solicit and/or disseminate PIREP information**

PIREPs continue to provide critical weather observations to other pilots, ATC, Flight Service, forecasters, and weather researchers. We are disappointed to see the declining trend of PIREP submissions by pilots, which we believe is attributable to several factors: (1) a lack of confidence in the PIREP system, (2) perception that the methods to submit a PIREP today are inconvenient, (3) a lack of training and emphasis on PIREPs during airman certification, and (4) misunderstanding of the value a PIREP provides to the aviation community. Over the last few years, AOPA has published many articles on PIREPs promoting improvements to the process and expressing the value of these reports; however, we see from our membership surveys that the number of pilots who provide unsolicited PIREPs continues to decline. Based on the survey and operations data we have reviewed, we believe several fundamental changes to the PIREP program are needed.

### Improving user confidence in the PIREP system

One of the common concerns we hear from pilots is that they do not believe that their PIREPs relayed through Flight Service or ATC are always getting entered into the system. Pilots will frequently check whether their PIREP made it into FIS-B or the Aviation Weather Center (AWC) website. Unfortunately, there continue to be cases where a PIREP is not properly submitted electronically by the specialist or controller, or some other technical issue occurs, that results in the PIREP not making it into the system for all to see. In other cases, a PIREP is present but doesn't accurately represent the information supplied by the pilot. The issues that result in a PIREP not fully making it into the digital network still need to be addressed.

- An end-to-end system review should be undertaken by the FAA Civil Aerospace Medical Institute (CAMI), or a similar entity, focusing on documenting the technical issues that prevent PIREPs from entering the electronic database and from being presented to all PIREP users. The technical issues have been partially documented by PEGASAS researchers, the NTSB, and the ATO Top 5.
- The misunderstanding by specialists and controllers as to the importance of entering PIREPs electronically continues to be a culture change that needs emphasis. Controllers solely verbally relaying PIREPs over the radio does not help the broader aviation community nor maximize the benefit of a PIREP.

### Improving PIREP submission process

The organization and required data elements of a PIREP are established in U.S. and international policy documents that can sometimes be rigid and challenging to pilots. These standards were established some time ago and changing these fields has proven to be a lengthy process. The FAA needs to devote the necessary resources and to adequately prioritize PIREP requirement changes in order to meet user needs.

- The FAA should accelerate their work to incorporate runway braking action, mountain wave, and other modernization changes to the PIREP form. The FAA should collaborate with industry to identify other beneficial changes to the form that would make submission easier.
- The AWC's web-based PIREP submission tool should be supported by the FAA through increased promotion and improvement to the user interface. The FAA and AWC should discuss opportunities to make PIREPs more interactive by hosting a PIREP request tool and a "PIREPs needed" map.
- The FAA should ensure the automation and submission tools for ATC and Flight Service allow for easy PIREP entry.

A regular request of general aviation pilots is to have the ability to submit PIREPs via an app. Similar to how Waze allows users to indicate an abnormal road condition, pilots want the ability to quickly indicate a weather condition they are experiencing.

- In the near term, undertake efforts to prototype two-way texting of PIREPs to Flight Service.
- In the long-term, the FAA should support the downlink submission of semiautomated weather reports via ADS-B and pilot apps. This work was recommended by the NTSB and the work is already underway in RTCA SC-206.

### Addressing pilot training on PIREPs

A quick reference guide to PIREPs was added to the Chart Supplement in 2018 and these important pages were moved to an easier to access location in this publication in 2019. Similar efforts to provide practical information to pilots is important. For example, AOPA is revamping our SkySpotter course to incorporate the last few years of lessons learned to better communicate the information pilots need to submit a PIREP.

The emphasis on PIREPs during primary flight training appears to be inconsistent and sometimes real-world submission is not demonstrated at all. AOPA believes PIREP submission should be an emphasis item for pilot training and for flight instructors.

Engaging younger and less experienced pilots is important. AOPA's 2019 weather survey showed younger pilots, those with less experience, and those with fewer ratings were much less likely to submit an unsolicited PIREP.<sup>3</sup> We believe the lack of training and knowledge of available submission tools, like the AWC web portal, to be contributing to this dearth of knowledge. The FAA should increase their PIREP submission outreach to this community in collaboration with industry.

- Initial pilot training: The FAA should explore adding a new skill requirement for the Private Pilot and Instrument Rating Airman Certification Standards: Submit a PIREP/current weather report to the appropriate air traffic facility. This proposal should be coordinated with the Aviation Rulemaking Advisory Committee (ARAC) Airman Certification System Working Group (ACSWG).
- Ongoing training: Encourage flight instructors conducting biennial flight reviews to explain the expanded uses of PIREPs, and to encourage a systematic pattern of reporting, rather than just when hazardous or unforecast conditions exist.
- Engage with the National Association of Flight Instructors (NAFI) and the Society of Aviation and Flight Educators (SAFE), and organizations that develop eFIRC products, to expand the emphasis on PIREPs, their uses, and the need to file for routine as well as unforecast weather.

### Increasing awareness of PIREP value

The FAA should continue their collaboration with AOPA and other industry groups to promote PIREP submission. We are happy to support efforts that impress upon Flight Service and ATC the importance of correctly entering PIREPs electronically, such as through videos or articles. A revised 7110.65 document change proposal and other policy efforts should also be made to formally address the deficiencies noted by the NTSB and the ATO Top 5. AOPA also supports identifying the various PIREP projects and efforts by FAA and industry to improve coordination across the board.

### **Wrong Surface Landings – Aircraft lands on the wrong runway or on a taxiway**

AOPA is a member of the joint FAA-Industry Runway Safety Council, which continues its work to reduce the number of wrong surface events. Pilot deviations account for some portion of the events, and raising pilot awareness of runway safety best practices is part of AOPA's mission. AOPA's Air Safety Institute is constantly innovating ways to educate pilots using the latest educational technology. These methods include engaging seminars, videos, podcasts, and interactive courses. Our runway safety educational content reached more than 154,000 pilots in 2018.

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<sup>3</sup> [https://download.aopa.org/advocacy/2019/AOPA\\_2019\\_Weather\\_Survey\\_Report.pdf](https://download.aopa.org/advocacy/2019/AOPA_2019_Weather_Survey_Report.pdf)

As aviation technology advances, AOPA urges pilots to consider the benefits of using new safety-enhancing devices in their aircraft. AOPA supports reducing undue barriers to the use of inexpensive, potentially life-saving technology that improves pilot situational awareness and reduces the probability of a wrong surface event.

### **Conclusion**

AOPA appreciates the opportunity to participate in this important safety effort and to share our recommendations. We look forward to continuing to work with the FAA and our industry partners to ensure the safe and efficient operations of all aircraft in the NAS. Please feel free to contact me at 202-509-9515 if you have any questions.

Sincerely,



Rune Duke  
Senior Director, Airspace and Air Traffic