2016 Pilot Report Survey

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Introduction

<u>Background</u>

To better understand pilots uses and perceptions regarding Pilot Reports (PIREPs), the Aircraft Owners and Pilots Association (AOPA) conducted a national survey during the month of May, 2016. The goal was to learn how pilots used the PIREP system, determine challenges and barriers to using the system, and consider any changes that could improve it. The survey was in support of an industry/government working group in Alaska, as well as a Special Investigation Study that is being conducted by the National Transportation Safety Board.

<u>Method</u>

The study was conducted using Qualtrics, an online survey tool. A thirty-five question survey accessed via an open access URL link was promoted nationally in AOPA's weekly ePilot newsletter and the eBrief publication. The survey was featured on AOPA Live (a weekly video news report), blog posts and via other aviation organization newsletters and communication tools.

The results presented in this document are grouped by topic, and not in the chronological order the questions were asked. The numbers shown in different figures correspond to the questions in the survey. Not all questions were presented to all pilots. Those answering "no" to the question "do you file pilot reports?" were asked a separate question to probe why, and not asked a series of questions about how they filed reports.

<u>Key Findings</u>

At the highest level, here are a few bullet point that summarize the results of this survey.

- Most pilots value pilot reports, and most file them
- Many feel it has become too complicated and time consuming to file over the radio to Flight Service
- Many feel that Air Traffic Control (ATC) does not want to take "routine" pilot reports
- The most frequent requests were for an electronic means of filing PIREPs, and simplification of the procedures used by Flight Service to take a report
- While pilots learn about PIREPs in initial training, not much attention is paid to learning how to file or interpret them
- Those that don't file PIREPs have similar complaints about the system as those that do

The results are provided in the sections that follow in more detail, both numerically and illustrated with comments, where appropriate. A series of recommendations are at the end of the document, which include results of the survey and subsequent information from stakeholder meetings and the NTSB PIREP Forum.
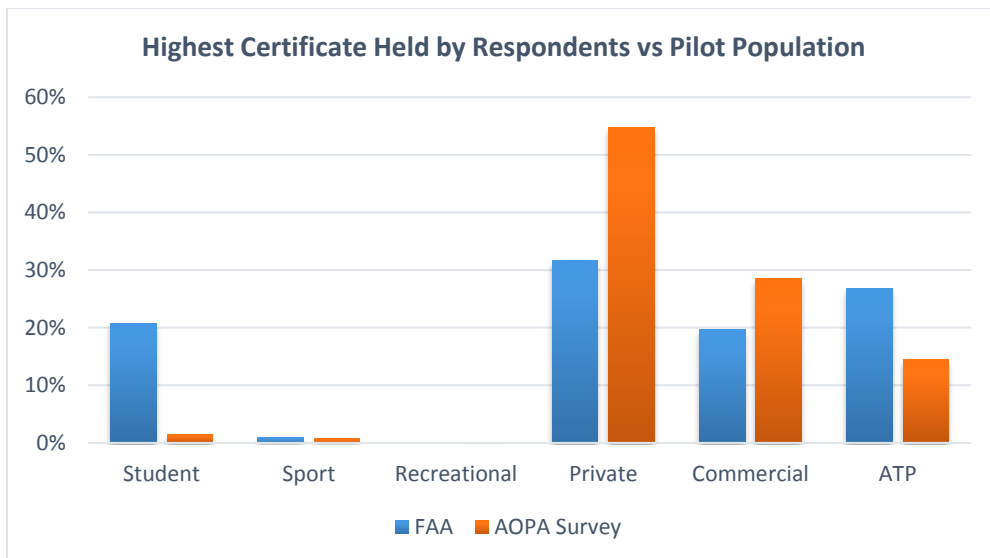
Survey Results

A total of 725 pilots throughout the United States responded to the survey between May 5 and June 8, 2016. This number of responses allows for a margin of error of 3.64% at a 95% confidence level.

Demographics

Individuals responding to this survey represented a cross-section of the pilot population, slanted toward older pilots, with a wide range of flight experience. Private and Commercial certificate holders made up a larger share of respondents than are found in the total pilot population.

5. What is your age?

#	Answer	Bar	Response	%
1	Under 18 years		1	0%
2	18-24 years		6	1%
3	25-34 years		38	5%
4	35-44 years		68	10%
5	45-54 years		111	16%
6	55-64 years		206	30%
7	65 years or older		263	38%
	Total		693	

6. Approximately how many hours of flying experience do you have?

#	Answer	Bar	Response	%
1	0-500		148	21%
2	500-1,000		146	21%
3	1,000-2,500		175	25%
4	2,500 or more		226	33%
	Total		695	

Highest Certificate Held by Respondents vs Pilot Population

Bar chart comparing FAA and AOPA Survey percentages across certificate types: Student, Sport, Recreational, Private, Commercial, ATP.

Question #7: What is the highest pilot certificate that you hold?

Certificate	FAA	FAA	AOPA Survey	AOPA Survey
Student	122,729	20.8%	10	1.4%
Sport	5,482	0.9%	5	0.7%
Recreational	191	0.0%	1	0.1%
Private	186,786	31.7%	380	54.7%
Commercial	116,291	19.7%	198	28.5%
ATP	158,559	26.9%	101	14.5%
	590,038	**100.0%**	**695**	**100.0%**

Nature of Flight Activities

Almost all the pilots responding to the survey indicated they primarily operated under Part 91 rules. Nearly two thirds flew primarily under visual flight rules (VFR), with the remaining third operating under instrument flight rules (IFR). The pilots represented all regions of the United States.

11. Under what part of the Federal Aviation Regulations (FARs) do you primarily fly? (select one)

#	Answer	Bar	Response	%
1	Part 91		635	94%
2	Part 121		11	2%
3	Part 135		28	4%
	Total		674	

12. Under what type of flight rules do you primarily fly? (select one)

#	Answer	Bar	Response	%
1	Visual Flight Rules (VFR)		437	64%
2	Instrument Flight Rules (IFR)		250	36%
	Total		687	

13. In what region of the country do you fly the most?

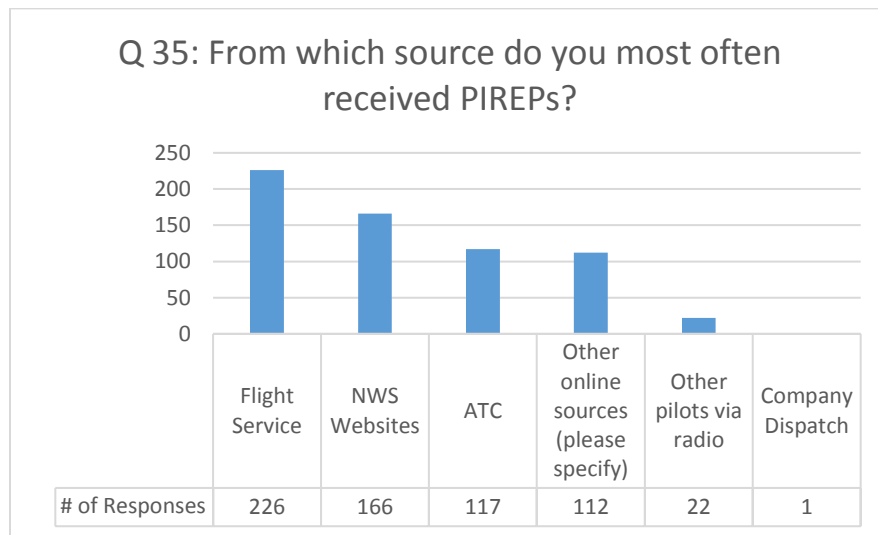| #	Answer	Bar	Response	%
1	Northeast		133	19%
2	South		118	17%
3	Midwest		117	17%
4	Southwest		170	25%
5	Pacific Northwest		73	11%
6	Alaska		75	11%
7	Hawaii		2	0%
	Total		688	

Training regarding PIREPs

The respondents indicated their initial training regarding pilot reports came from a combination of ground school and inflight training, however 71% indicated the emphasis on PIREPs was "little" or "none."

3. Where did you learn about Pilot Reports (PIREPs)?

#	Answer	Bar	Response	%
1	Ground School		221	32%
2	In-Flight Training		48	7%
3	Both		387	55%
4	Neither		43	6%
	Total		699	

4. How much emphasis was placed on PIREPs during your initial flight training?

#	Answer	Bar	Response	%
1	None		107	15%
2	A little		392	56%
3	A moderate amount		171	24%
4	A lot		28	4%
	Total		698	

General Access to Pilot Reports

Pilots access PIREPs from a variety of sources, predominantly from Flight Service and ATC as well as through a variety of online sources. Aviation and National Weather Service websites, along with apps, most notably ForeFlight, were frequently mentioned in comments.

Q 35: From which source do you most often received PIREPs?

	Flight Service	NWS Websites	ATC	Other online sources (please specify)	Other pilots via radio	Company Dispatch
# of Responses	226	166	117	112	22	1

Word cloud of the comments from Question 35: *From which source do you most often receive PIREPs?*
Size of the word corresponds to frequency of occurrence.

Pre-Flight Use of PIREPs

Half of the pilots responding indicated they used PIREPs "frequently" or "always" as a tool in their preflight decision making process.

8. How often do you use PIREPs during your preflight planning decision-making?

#	Answer	Bar	Response	%
1	Never (0% of flights)		26	4%
2	Rarely (1-33% of flights)		153	22%
3	Sometimes (34-65% of flights)		171	25%
4	Frequently (66-99% of flights)		225	33%
5	Always (100% of flights)		115	17%
	Total		690	

Access to PIREPs pre-flight was from a wide variety of sources, however the two largest sources cited were online graphic displays and tablet or smart phones. Phone calls to Flight Service was the next most popular source. Comments received for the "other" category reported almost exclusively online access to reports.

32. How do you typically access PIREPs in the course of pre-flight planning? (check all that apply)

#	Answer	Bar	Response	%
1	Phoning Flight Service		316	49%
2	DUATs text report		185	29%
3	Online graphic display		325	51%
4	Tablet or smartphone		355	55%
6	Other (please specify)		45	7%

Inflight Use of PIREPs

Radio calls to ATC or Flight Service were the dominant means pilots used to access PIREPs in flight. Tablet and smart phone devices followed by FIS-B or satellite weather sources also represent significant means of access. A few pilots report using satellite weather services that include PIREPs. Higher-end aircraft that have access to WIFI inflight or other company communication channels were used by a small percentage of the respondents.

33.	How do you typically access PIREPs while in flight? (check all that apply)			
#	**Answer**	**Bar**	**Response**	**%**
1	Over the radio with ATC or Flight Service		442	79%
2	FIS-B or other satellite weather services		110	20%
3	Tablet or smartphone		154	28%
5	Other (please specify)		20	4%

PIREPs Pushed by FAA

Two questions were specifically framed to ask how often either ATC or Flight Service offered PIREPs, without the pilot requesting them. Pilots indicated that 71% of the time ATC "rarely" or "never" provided PIREPs applicable to their flight without requesting them. The pattern was similar for Flight Service, with only just over half the pilots indicating they "rarely" or "never" received unsolicited reports.

9.	How often does Air Traffic Control (ATC) provide PIREPs applicable to your flight while en route without your requesting them?			
#	**Answer**	**Bar**	**Response**	**%**
1	Never (0% of flights)		116	17%
2	Rarely (1-33% of flights)		365	54%
3	Sometimes (34-65% of flights)		149	22%
4	Frequently (66-99% of flights)		45	7%
5	Always (100% of flights)		3	0%
	Total		678	

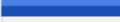| 10.	How often does a Flight Service Station (FSS) provide PIREPs applicable to your flight while en route without your requesting them?			
#	**Answer**	**Bar**	**Response**	**%**
1	Never (0% of flights)		108	19%
2	Rarely (1-33% of flights)		181	32%
3	Sometimes (34-65% of flights)		134	24%
4	Frequently (66-99% of flights)		112	20%
5	Always (100% of flights)		34	6%
	Total		569	

Filing PIREPS

Almost three-quarters of the pilots who responded to this survey indicated that they filed pilot reports. The survey questions branched at this point. The series of questions about filing PIREPs were only presented to those that said they filed PIREPs. A separate question was asked of pilots who selected "no" to this question. See the section below Pilots who don't file PIREPs (page 12) for details.

14. Do you file PIREPs?

#	Answer	Bar	Response	%
1	Yes		500	73%
2	No		188	27%
	Total		688	

Pilots that do file reports indicated they "sometimes" filed unsolicited reports, but over three-quarters of them said that ATC "rarely" or "never" requested reports from them. Flight Service appears to do a better job of soliciting reports, however. There responses were more evenly split across the spectrum.

16. On average, how often do you provide an unsolicited PIREP?

#	Answer	Bar	Response	%
1	Never (0% of flights)		0	0%
2	Rarely (1-33% of flights)		189	38%
3	Sometimes (34-65% of flights)		230	46%
4	Frequently (66-99% of flights)		71	14%
5	Always (100% of flights)		9	2%
	Total		499	

17. On average, how often does ATC request PIREPs from you?

#	Answer	Bar	Response	%
1	Never (0% of flights)		85	17%
2	Rarely (1-33% of flights)		292	60%
3	Sometimes (34-65% of flights)		90	18%
4	Frequently (66-99% of flights)		18	4%
5	Always (100% of flights)		4	1%
	Total		489	

18. On average, how often does Flight Service solicit PIREPs from you?

#	Answer	Bar	Response	%
1	Never (0% of flights)		86	20%
2	Rarely (1-33% of flights)		116	28%
3	Sometimes (34-65% of flights)		59	14%
4	Frequently (66-99% of flights)		93	22%
5	Always (100% of flights)		66	16%
	Total		420	

Most pilots indicated they filed their PIREPs with Air Traffic Control, followed by Flight Service. Only 9% indicated they filed with other sources such as company dispatch, local tower or used an app. Almost half of the 33 comments received in response to this question noted that they used the FSS Flight Watch frequency for pilot reports, prior to its decommissioning. One exception to this pattern is from the pilots flying in Alaska, where the Flight Service Program is operated by the FAA, and there is very limited radar coverage at the lower altitudes to support ATC Flight Following services. The pilots that indicated
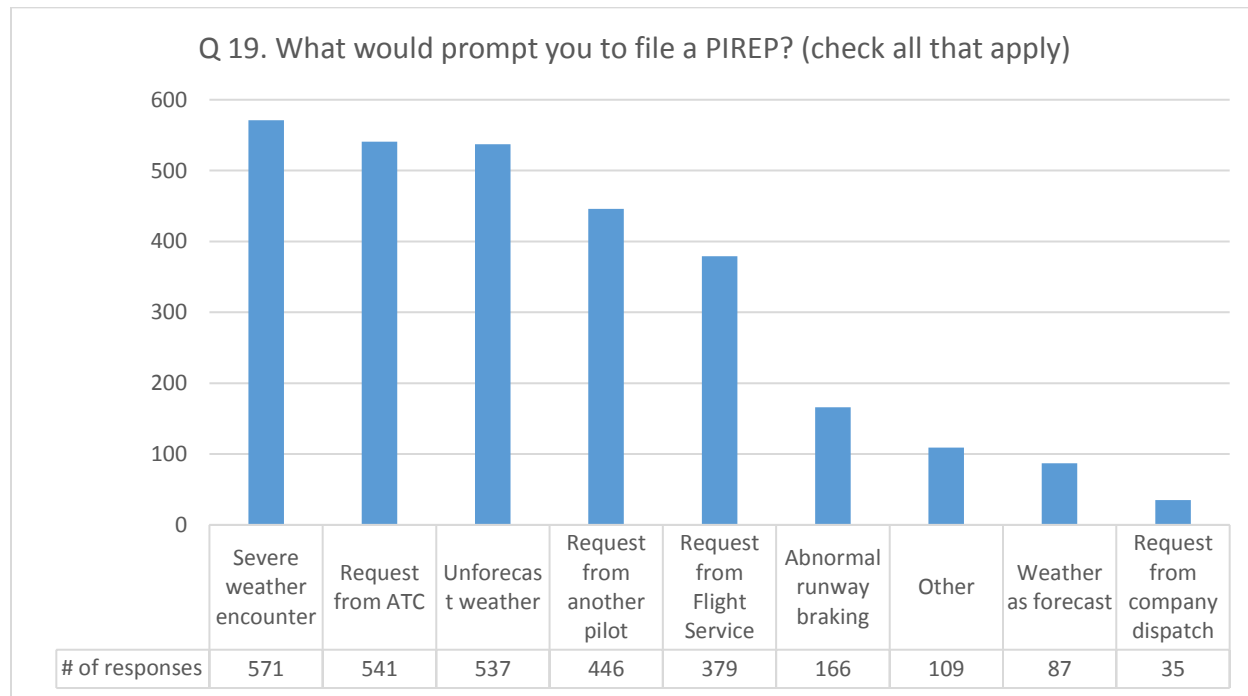
they flew in Alaska said that about 80% of their PIREPs were filed with Flight Service, with ATC collecting about 18%.

#	Answer	Bar	Response	%
	24. To whom do you normally submit PIREPs? (check all that apply)			
1	ATC		333	68%
2	Lockheed Martin Flight Service		184	37%
3	FAA Flight Service (Alaska)		70	14%
4	Your company's dispatch		12	2%
5	Other (please specify)		33	7%

Motivation to File

In response to Question 19, "What would prompt you to file a PIREP?" a wide range of conditions were noted. The feature that stands out the most about the numerical responses to this question was the low number of responses under the category "weather as forecast."

Q 19. What would prompt you to file a PIREP? (check all that apply)

	Severe weather encounter	Request from ATC	Unforecast weather	Request from another pilot	Request from Flight Service	Abnormal runway braking	Other	Weather as forecast	Request from company dispatch
# of responses	571	541	537	446	379	166	109	87	35

In addition to making multiple selections, pilots were invited to comment. A total of 107 text responses were received related to this question. The majority of comments described types of weather conditions reported (cloud tops, bases, wind shear, unexpected weather), however about 10% of the responses focused on the difficulty of filing reports.

> *"If it were easier to file the report. Currently I have to request to leave the frequency change frequencies wait for a fss response file the report and then change frequencies and report back on. Too many steps."*

And the need for an easier means:

> *"Electronic way to file PIREP while in the air (not consume voice time on the frequency)."*

When asked how often a pilot thought their reports were entered into the national system, the response was across the spectrum.

#	Answer	Bar	Response	%
27.	**How often do you think your PIREPs make it into the national system (i.e. you could find them online)?**			
1	Never (0% of the time)		36	8%
2	Rarely (1-33% of the time)		120	25%
3	Sometimes (34-65% of the time)		138	29%
4	Frequently (66-99% of the time)		137	29%
5	Always (100% of the time)		41	9%
	Total		472	

When asked if concerns over possible enforcement action ever influences you decision on filing a PIREP, 84% of the pilots said that it didn't.

#	Answer	Bar	Response	%
29.	**Do concerns over enforcement action ever influence your decision to file or not to file a PIREP?**			
1	Yes		107	16%
2	No		568	84%
	Total		675	

Conditions Reported

When asked what weather conditions should be included in a PIREP, two thirds of the respondents said it should include "any condition worth reporting."

#	Answer	Bar	Response	%
20.	**What weather information should be included when filing a PIREP?**			
1	Full set of weather parameters (clouds, visibility, wind, turbulence, icing, etc.)		190	28%
2	Any condition worth reporting		457	67%
3	Don't know		11	2%
4	Other (please specify)		26	4%
	Total		684	

Comments associated with this question also indicated that at times this wasn't practical to file a complete report with a full set of parameters.

> "*People get trained that they are supposed to go through the whole form when filing a PIREP. Since I am often flying single pilot IFR and am busy, I generally just give what is important -- tops, unexpected turbulence, mountain wave, etc*."

Eighty-six percent of the pilots reported "rarely" or "never" filing PIREPs after landing to report inflight conditions.

#	Answer	Bar	Response	%
21.	**How often do you file a PIREP after landing for a condition that you experienced during your flight?**			
1	Never (0% of flights)		226	46%
2	Rarely (1-33% of flights)		197	40%
3	Sometimes (34-65% of flights)		57	11%
4	Frequently (66-99% of flights)		13	3%
5	Always (100% of flights)		3	1%
	Total		496	

A similarly high percentage of pilots reported a lack of reporting "weather conditions as forecast," or of benign weather conditions.

22. How often do you file PIREPs when conditions are as forecast?

#	Answer	Bar	Response	%
1	Never (0% of flights)		182	37%
2	Rarely (1-33% of flights)		217	44%
3	Sometimes (34-65% of flights)		71	14%
4	Frequently (66-99% of flights)		24	5%
5	Always (100% of flights)		2	0%
	Total		496	

23. How often do you file PIREPs for benign conditions (e.g. no turbulence, no icing, no wind, etc.) regardless of the current forecast?

#	Answer	Bar	Response	%
1	Never (0% of flights)		164	33%
2	Rarely (1-33% of flights)		212	43%
3	Sometimes (34-65% of flights)		86	17%
4	Frequently (66-99% of flights)		31	6%
5	Always (100% of flights)		3	1%
	Total		496	

In response to the question about using standards for icing and turbulence, 78% said they did use objective FAA standards.

28. When reporting the severity of icing and turbulence, do you use objective FAA-defined standards to classify the conditions encountered?

#	Answer	Bar	Response	%
1	Yes		382	78%
2	No		28	6%
3	I don't know		78	16%
	Total		488	

Technology

Only eight percent of the survey respondents said that they used in-cockpit technology to file pilot reports. Tablet computers were identified as the primary hardware currently in use.
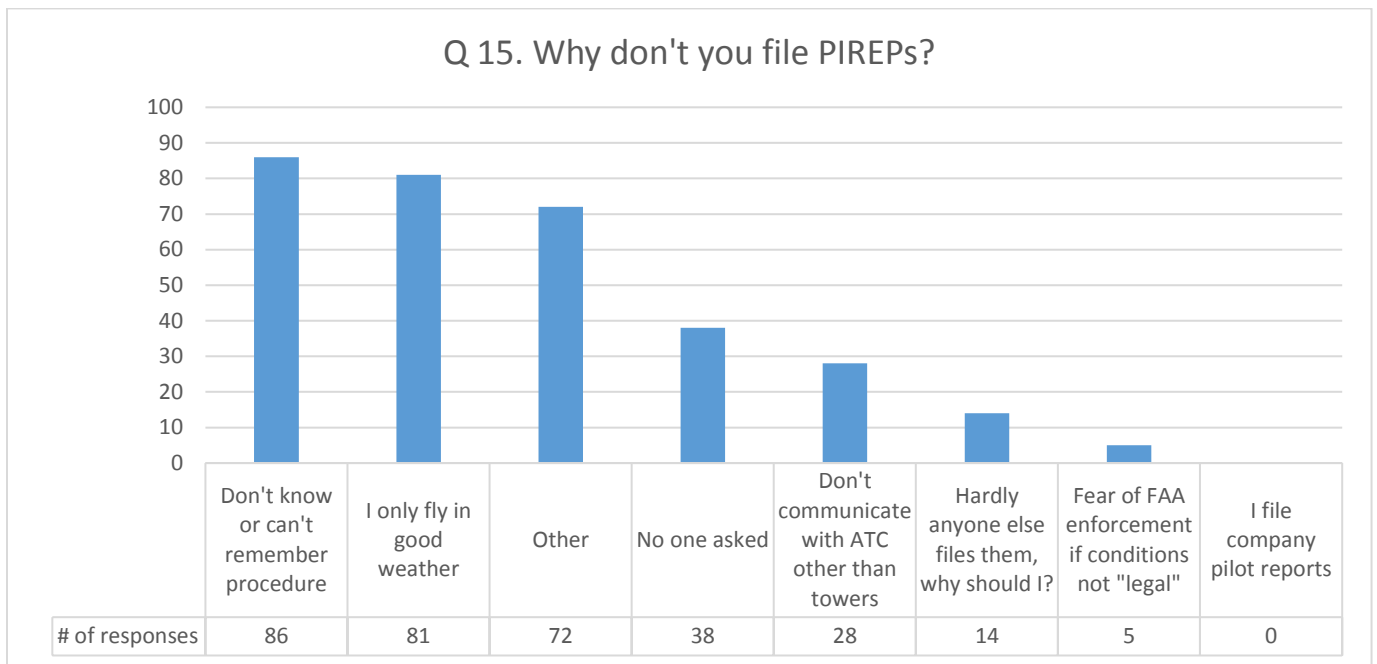
25. Do you ever use in-cockpit technology (e.g. tablet, avionics) other than the aircraft radio to file a PIREP?

#	Answer	Bar	Response	%
1	Yes		38	8%
2	No		456	92%
	Total		494	

26. Which technology do you use?

#	Answer	Bar	Response	%
1	Tablet computer		20	53%
2	Cell phone app		7	18%
3	Cell phone call		3	8%
4	Other (please specify)		8	21%
	Total		38	

Pilots who don't file PIREPs

Pilot who answered "no" to Question 14 "Do you file PIREPs?" were asked an addition question: Question 15 "Why you file PIREPs?" The answers were varied, with "don't know how" getting the most responses, followed by "only fly in good weather."

Q 15. Why don't you file PIREPs?

	Don't know or can't remember procedure	I only fly in good weather	Other	No one asked	Don't communicate with ATC other than towers	Hardly anyone else files them, why should I?	Fear of FAA enforcement if conditions not "legal"	I file company pilot reports
# of responses	86	81	72	38	28	14	5	0

This question also had a comment field, to let pilots elaborate, which garnered 73 responses. These largely mirrored the comments made in response to other questions by pilots who answer "yes" in response to Question 14.

Almost half the comments described the difficulty/complexity of filing reports, again citing the complexity of leaving an ATC frequency, finding an FSS frequency, etc. In several cases, these pilot indicated that they had filed reports previously, but the increased complications once they got to FSS caused them to stop.

> *"I used to file pireps every flight. Then FSS got too complicated in receiving them. I used to call FSS, give location, altitude, type aircraft and conditions then be gone but now I have to wait for FSS to ask each question then answer then wait for next question. I fly IFR and don't have the time in busy airspace to take 10 minutes to give a pilot report. I do give center reports such as ice etc."*

> *"If I could just call someone up and say here's what I'm experiencing and let them figure out how to format it, I would file a PIREP, But now, no way."*

There is also the impression the PIREPs must be given to Flight Service, and not to ATC.

> *"The process of leaving the freq, calling FSS, getting a response, and then making the report is unbelievably bureaucratic and complicated. Why can't you give a report to controllers and have them enter it into the system, i.e. tops reports etc."*

Related to that concern were an additional number of comments focused on the loss of the Flight Watch frequency as the primary place to file reports, and difficulty locating a specific FSS frequency for the area they are flying in at the time.

> *"Generally can't get the right freq for the area I'm in. I use to file pireps on every flight on 122.0 but no one can give me the right freq or no one is listening. Go back to a single freq and I will file pireps on every flight. It's as simple as that."*

The next most common complaint was a lack of knowing or being comfortable with the procedure for giving a PIREP. About a fifth of the comments indicated a lack of training, understanding the procedures, or awareness of the benefit of providing PIREPs other than for adverse conditions.

> *"Too complex for a 300 hour, twice a month, 50-50 IFR/VFR pilot to remember along with everything else."*
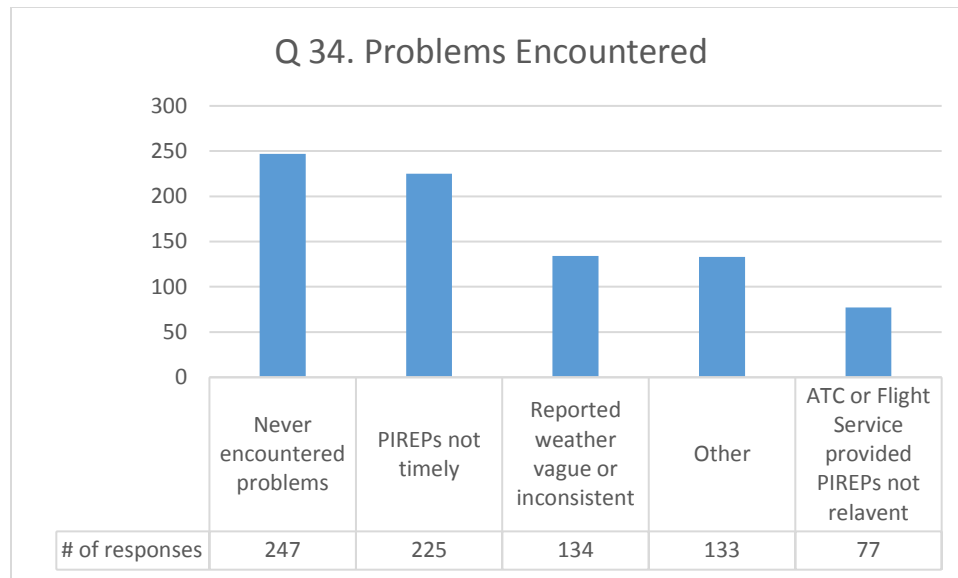
> *"My flights are relatively short (hr or less) and I am low-time (< 300 hrs). There are so many other things to attend to that I don't have the time to file. Might file more if I was more familiar with the procedure."*

> *"Would like to but don't understand how."*

Improvements Needed

Several questions dealt with what problems pilots had encountered and what changes it would take to improve the system (and file more reports). These questions all offered the opportunity to comment, in addition to checking a multiple-choice box, which many of the pilots took advantage of. Comments perhaps provide more insight than numbers into the nature of their concerns.

In response to Question 34, "What problems have you encountered when using PIREPs," the choice with the highest response was "never encounter problems" followed by "pireps not timely."

Q 34. Problems Encountered

	Never encountered problems	PIREPs not timely	Reported weather vague or inconsistent	Other	ATC or Flight Service provided PIREPs not relavent
# of responses	247	225	134	133	77

A total of 132 comments related to this question were received, which both highlighted the value of PIREPs and the pilots' frustration with the system. The concern in over half of the comments was the lack of reports available and relevant for the locations these pilots were flying.

> *"I have had many days where the forecast and the sky seemed at odds. Standing on the ground, I need a PIREP to know what's really up there. So, my big problem is looking for one and not finding it. There should always be PIREPs available with the traffic volume we have."*

> *"complete lack of pireps for my route of flight."*

> *"Not enough along my route of flight. I do primarily 250-400 mile cross country flights, and pireps are extremely helpful when the weather does not play nice"*

A subset of that theme dealt with the lack of reports below the flight levels, and the impression that PIREPs were mostly for high altitude operations,

> *"For flying lower than 5000 ft, there just isn't much pirep information available. It's perceived to be more for those guys that fly 'way up there'"*

> *"insufficient, especially at the altitudes I fly (normally 10,000 ft or below)"*

Another theme was that the text PIREPs are difficult to decode.

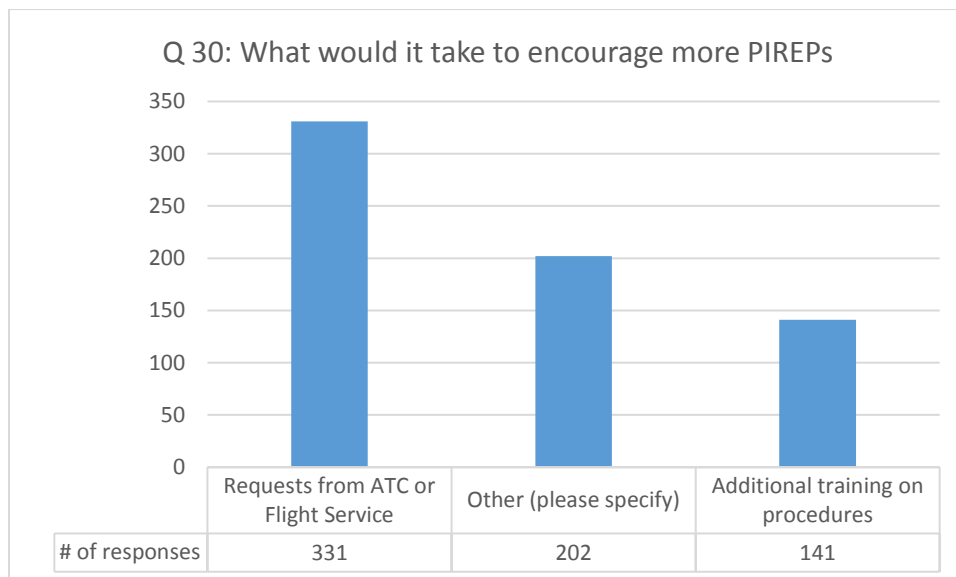> *"They are not decoded when reading them so it's not easy."*

> *"Sometimes the abbreviations are too cryptic"*

Others mentioned that the PIREPs they filed often didn't make it into the system, as reflected in these comments:

> *"No problems, but I have checked for my own PIREP's occasionally after landing and they were not in the system."*

> *"PIREPS which I have filed have not appeared in electronic sources (e.g. Foreflight), which makes me suspicious that the ATC controllers never actually entered them."*

In an attempt to draw pilots into thinking about how to get more reports in the system, Question 30 asked, "What do you think it would take to encourage you or other pilots that you know to file more PIREPs?" The multiple choice answers favored requests from ATC and Flight Service, however from the 201 comments received, some distinct themes emerged.

Q 30: What would it take to encourage more PIREPs

# of responses	Requests from ATC or Flight Service	Other (please specify)	Additional training on procedures
	331	202	141

The comments made most frequently focused on making it simpler to file PIREPs. Several components of this theme were expressed.

Automate filing: The largest number of responses asked to provide tools for PIREPs to be electronically filed directly from the cockpit using technology to reduce time spent talking on the radio to either ATC or Flight Service.

> *"ability to submit pireps electronically using iPad through Delorme, Text message, or other new transmission technologies"*

> *"A tablet application that steps pilots through the process with fill in the blank and drop down selection lists would make the process easier and improve accuracy. The information could also then be transmitted directly through ADS-B if the device is connected."*

> *"An easy method to enter the information into electronic devices and transmit it to ATC. Also, confidence that reported PIREPS actually make it somewhere where other pilots will be aware of them."*

Simply Filing by Radio: Pilots flying IFR or using ATC Flight Following expressed difficulty with having to leave the ATC radio frequency, find an FSS frequency, and file a report.

> *"If it were easier to file the report. Currently I have to request to leave the frequency change frequencies wait for a fss response file the report and then change frequencies and report back on. Too many steps"*

> *"Need an easier to contact. if IFR you have to change frequency some times they give you a short time to do it it in, And it is harder to find the frequency. The old way just call 122.0 now you have to find the frequency on the chart and when you are pressed for time and you do not do it."*

This is followed by complaints that when they get to Flight Service, it takes too long to file the report.

> *"...Because of the radio congestion, there is not time to file a PIREP in flight. Additionally, when filing one with FSS, it takes way too long and they usually start asking for a novel on the weather."*

> *"It is a hassle to provide a pilot report. It appears that the FSS requires a checklist must be completed before a PIREP can be placed into the system. I get the impression the FSS person cannot seem to understand what I am saying. Two days ago I was receiving flight following by ATC at 12,500 Ft. Moderate turbulence was forecast at 14,000 and below for the entire SW USA. The controller, once asked the question, "How is your ride". I reported, "Smooth Ride". If I would report the same info to FSS, it would take an extended conversation to pass the information. Don't know why??"*

On the lighter side, one pilot had a different suggestion on how to obtain more pilot reports.

> *"Money. Pay us."*

ATC PIREPs not Recorded: Finally, pilots also expressed the impression that PIPEPs given to ATC don't get recorded.
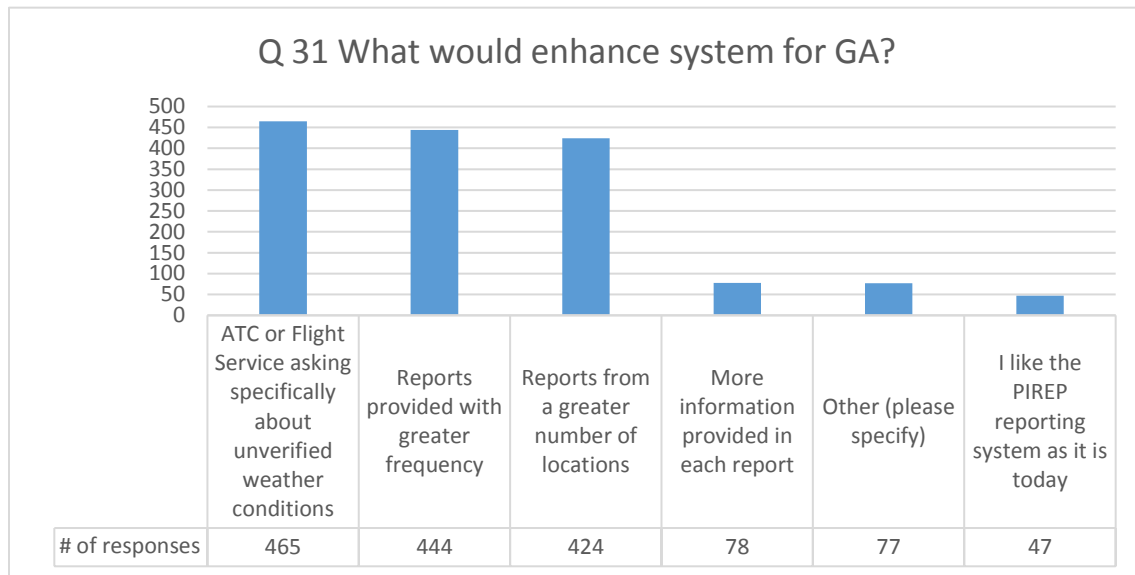
> *"Bring back Flight Watch. It's a pain to report to a FSS. I've heard that reports filed with ATC don't get to other facilities."*

> *"Certainty that ATC puts PIREPs into the system. Personal experience tells me they rarely do.*

> *"I almost always use flight following or IFR. I have little confidence my pireps are going past their ears."*

Question 31 asked, "Which of the following would enhance the usefulness of the PIREP reporting system for general aviation pilots? (check all that apply)." The numerical responses to this question call for ATC and FSS to make requests for specific weather conditions, and a desire to see more reports available, both in frequency and location. There were seventy-seven responses to this question which added more specific details, reinforcing the themes identified above.

Q 31 What would enhance system for GA?

# of responses	ATC or Flight Service asking specifically about unverified weather conditions	Reports provided with greater frequency	Reports from a greater number of locations	More information provided in each report	Other (please specify)	I like the PIREP reporting system as it is today
	465	444	424	78	77	47

The largest number of comments focused on making it easier to file a report over the radio.

> *"Inform pilots that they only have to report what they feel appropriate instead of following the published format in its entirety; the format intimidates many that would otherwise report."*

> *"Make the format for filing less intimidating."*

This was followed, again, by the request to provide an electronic means of filing reports.

> *"Ability to report a pirep via onboard technology such as EFB app or ADSB"*

> *"Easier ability to file PIREP from tablet"*

As in responses to other questions, frustration was expressed that many PIREPs provided to ATC don't make it into the system. In addition, the attitude expressed by ATC eventually causes some pilots to quit offering PIREPs.

> *"As a commercial pilot I know we sometimes give up on filing pilot reports since they often don't make it into the system."*

> *"ATC could act more interested. The few times I have filed a PIREP, they acted like it was a major bother and caused frequency congestion, so I stopped giving them."*

The theme of making PIREPs easier to read also re-occurred in response to this question, as well as the desire to see more reports in the low altitude structure.

> *"Make pireps easier to understand. Use plain English language instead of a bunch of difficult to understand abbreviations that in reality save no time and lead to misunderstandings."*

> *"More PIREPs at piston altitudes."*

Discussion

Following the collection of survey data, AOPA held several stakeholder meetings, and participated in the National Transportation Safety Board's PIREP Forum, held on June 21-22 in Washington, DC. Information from those meetings and discussions at the NTSB Forum are included in the evaluation of the survey results. Summarizing responses and comments from the different questions and themes identified previously, the following topics are identified.

PIREPs Important to Pilots

Based on the responses to this survey, pilots clearly value pilot reports. A large majority of pilots file them, and would like to see more reports available. Many noted a lack of PIREPs along the routes they fly, and at altitudes where most general aviation aircraft operate. There is a perception that PIREPs are focused more on high-altitude operations.

Difficulties Filing Reports

The comments associated with several of the survey questions provided insight into what the pilots are experiencing when they use the PIREP system. While two-thirds of the responders primarily fly under visual flight rules, many appear to take advantage of ATC flight following services. These pilots report that the process of leaving the ATC frequency to file a pilot report is too time consuming. They also state that in the past they believed that the Flight Watch frequency, 122.0, was the universal frequency used to file PIREPs. With the advent of the discontinuation of that function and radio frequency, it is now more confusing to determine which radio frequency to use to contact Flight Service. They further report that after contacting a Flight Service specialist, the process of filing a PIREP is cumbersome, with readbacks and confirmations required, thus fewer pilots are bothering to file PIREPs with Flight Service. AOPA subsequently followed up with Lockheed Martin Flight Service, who provides flight services for the contiguous 48 states. They confirmed that to meet FAA performance requirements, specialists do attempt to obtain a complete report, read it back and ask for confirmation from the pilot. A relaxing of those restrictions would probably increase the number of PIREPs collected by Flight Service, but potentially at the cost of some detail in the reports received.

PIREPs and ATC

Since most of these pilots are talking to ATC already, the question was asked "Why not just file with the controllers in the first place?" Comments from multiple questions reinforced the perception that ATC passes reports from pilots on to adjacent aircraft, but doesn't "write them down" so they don't make it into the system. Consequently, many pilots don't offer PIREPs to ATC, and certainly not "routine" reports. At the NTSB PIREP Form, ATC representatives acknowledged that they are often too busy to capture formal reports, and get them entered into the system. The lack of tools for controllers to easily enter PIREPs without loss of situational awareness handling air traffic was identified as an issue.

An App for PIREPs

While today a very small number of pilots are filing PIREPs electronically from the cockpit, the message that came through loudest across multiple questions was the desire to have an electronic means for the submission of pilot reports. This would reduce radio traffic, both for ATC and Flight Service. There are only a few general aviation oriented electronic flight bag programs today that allow pilots to file electronically. Presently FAA won't accept a PIREP more than one hour old, which makes connectivity in-flight an issue. Cell phone links and satellite communication devices are potential ways to facilitate communications from the cockpit. In the longer term, adding PIREPs to the ADS-B data stream is a

means to transmit this data. Providing a direct means to file reports was the most asked for capability expressed in this survey.

Pilot Training
While all pilots may see the value of PIREPs for flight planning, many don't appear to understand that weather forecasters and other groups also utilize them to validate or modify aviation weather forecasts or manage traffic flow. Filing reports for "weather as forecast" and for "benign conditions" received consistently low responses. There is a lack of awareness of the benefits of negative reports used to confirm weather as forecast, or over-forecast conditions, which should be addressed. The PIREP system serves many users including:

a) Pilots engaged in pre-flight planning, deciding whether to fly or not, and making decisions about what route will allow them to accomplish their mission.
b) Pilots in-flight, evaluating conditions ahead, making decisions about whether to continue, re-route their flight or head to an alternate place to land.
c) Air Traffic Controllers, who are actively obtaining information about the airspace they are responsible for, and determining when to change traffic flows in response to dynamic weather.
d) Weather forecasters who look at PIREPs in addition to surface observations, and other weather data to revise forecasts, or issue warnings.
e) Atmospheric research scientists, who develop new forecast models, and use pilot reports retrospectively to support case studies to create and validate their products.

Being aware of the broader community of users of the PIREP system may help pilots understand the value of filing reports for other than hazardous weather conditions. While pilots indicate they were exposed to PIREPs during initial training, more emphasis on procedures to file, as well as how to interpret appear to be needed.

Recommendations

The needs of all users should be considered when evaluating how the PIREP system works, or considering changes to it. Based on the results from this survey, and subsequent meetings and discussions with stakeholders, the following recommendations are made.

1) Encourage development of systems integrated with Electronic Flight Bags or other onboard equipment to automate the transmission of PIREPs from the cockpit into the system, without adding workload to ATC or Flight Service staff.
   a. In the short term, support efforts to transmit PIREPs via satellite link or cellular coverage.
   b. Start the process to consider adding PIREPs to the ADS-B feed, to take advantage of that communication network already provided by FAA.
   c. Allow the FAA to accept and relay PIREPs filed over one-hour old as these reports are of value to the National Weather Service forecasters.
2) Review and consider simplification of procedures used by Flight Service to capture PIREPs more efficiently, even if it results in less than a fully populated report.

3) Provide tools to ATC to capture PIREPs at their normal work station to increase the number of reports that are entered into the system, and are therefore available to the other user communities.
4) Embark in an education campaign to:
    a. Inform pilots of the value of PIREPs that confirm forecasts, as opposed to only those that represent hazardous weather, to help improve aviation forecasting.
    b. Increase reports filed in the low-altitude route structures.
    c. Encourage filing reports as complete as practical, but not require exact sequencing of information provided.
    d. Increase ATC's awareness of the importance of having PIREPs enter the system.
    e. Increase awareness of how to file a PIREP, the PIREP format, and how to contact Flight Service following the discontinuance of the Enroute Flight Advisory Service.
5) Encourage development of apps and/or graphic displays and plain language that make it easier to visualize and decode PIREPs.

The Aircraft Owners and Pilots Association (AOPA) is a not-for-profit individual membership organization of general aviation pilots and aircraft owners. AOPA's mission is to effectively serve the interests of its members and establish, maintain and articulate positions of leadership to promote the economy, safety, utility and popularity of flight in general aviation aircraft. Representing two thirds of all pilots in the United States, AOPA is the largest civil aviation organization the world.

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