IDAHO AVIATION ACCIDENT SCORE CARD (IAASC)

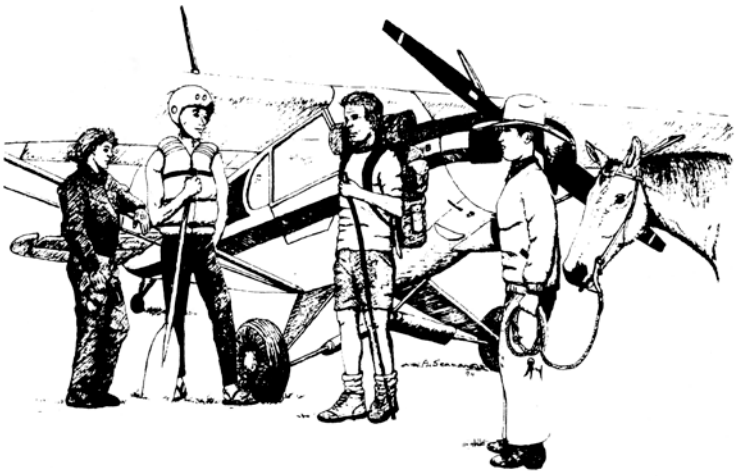
Prepared by the *Idaho Division of Aeronautics, Safety and Education Department*

2020

WILDERNESS PARTNERS

Wilderness is for everyone!

By being considerate of each other's needs, we can all get along.



- ❒ A cruising altitude of at least 2000 feet AGL is recommended.
- ❒ Check NOTAMs for airfield conditions or closures.
- ❒ Keep number of landings to a minimum.
- ❒ Minimize proficiency flights.
- ❒ Practice no trace camping.

United States Department of Agriculture Forest Service

Idaho Division of Aeronautics

In memory of a fine aviator, Susan Schroeder

Idaho Aviation Association

MONITOR GUARD FREQUENCY 121.5!

If you hear a distress signal or radio call:

Note your altitude, location and time

and

PASS IT ON . . . IMMEDIATELY!!

- ATC or FSS
- FSS: 800-WXBRIEF (800-992-7433)
- Idaho State Communications (800-632-8000)
- Local FBO
- Local County Sheriff

INTRODUCTION

Welcome to the 2020 Idaho Aviation Accident Score Card (IAASC). The Idaho Division of Aeronautics presents this review of Idaho aviation accidents from 2018 in the hopes that you may learn lessons from the experiences of others that may apply to your flying training and preparation.

This 2020 IAASC Report provides details on all Idaho aircraft accidents that occurred from January 1 to December 31, 2018, and is compiled directly from the National Transportation Safety Board (NTSB) database.

The IAASC includes: yearly comparisons and summaries, total number of General Aviation (GA) accidents, fatal accidents, fatalities, pilot qualifications, and class of aircraft. In addition, the IAASC provides an overview of Idaho aviation trends. It is published annually and analyzes accidents from two years prior. While preliminary information on aircraft investigations is available within weeks of the accident, the full NTSB investigation can take 2-3 years.

The Idaho Division of Aeronautics vision is to "forge a nationally renowned, progressive aviation system." We want to be recognized nationwide as an innovative, forward-thinking organization dedicated to preserving the incredible opportunities our aviation network provides. The Safety/Education unit of the Division supports this vision by providing relevant, high-quality safety information, and education programs for the benefit of our aviation community. We offer welcome packets for visiting pilots, airport standard operating procedures, fly-in safety briefings, sponsor safety seminars, and meet every year for our annual Safety Stand Down.

**General Aviation, for the purposes of this report, excludes flight activity performed by the uniformed armed services and scheduled airlines. Furthermore, turbine-engines, gliders, weight-shift control aircraft, powered parachutes, gyrocopters, lighter-than-air, and aircraft with maximum takeoff weights greater than 12,500 pounds are also excluded. Please note, however, this report does include flight instruction, agricultural, public-benefit missions such as fire suppression and law enforcement, cargo, and passenger charter operations.*

ACCIDENT STATISTICS

Comparison between 2017 and 2018

- Aircraft accidents decreased from 29 in 2017 to 26 in 2018
- Fatalities resulting from aircraft accidents increased from 3 in 2017 to 5 in 2018
- Fatal Accidents remained flat at 3

Summary of 2018

- Two-thirds of the fatal accidents occurred at or within close proximity to mountainous terrain.
- The majority of the total accidents in 2018 have been categorized as **"pilot error"** by the NTSB. Fifteen percent are categorized as "**mechanical**" accidents, with a spike in failures of landing gear or brakes. One accident (4%) involved a night bird strike and was categorized as "**Other**". Thirty-one percent of 2018's accidents have causes that remain categorized as "**Unknown**" due to incomplete investigations.
- In Idaho in 2018, aviation accidents occurred in all seasons. Over half of the total accidents occurred during the summer flying season (May through Aug).
- Fatal accidents occurred in May, September and December.
- The number of GA accidents occurring in neighboring states compared to Idaho's 26 accidents:

Washington	39
Oregon	27
Idaho	**26**
Nevada	19
Utah	16
Montana	12
Wyoming	7

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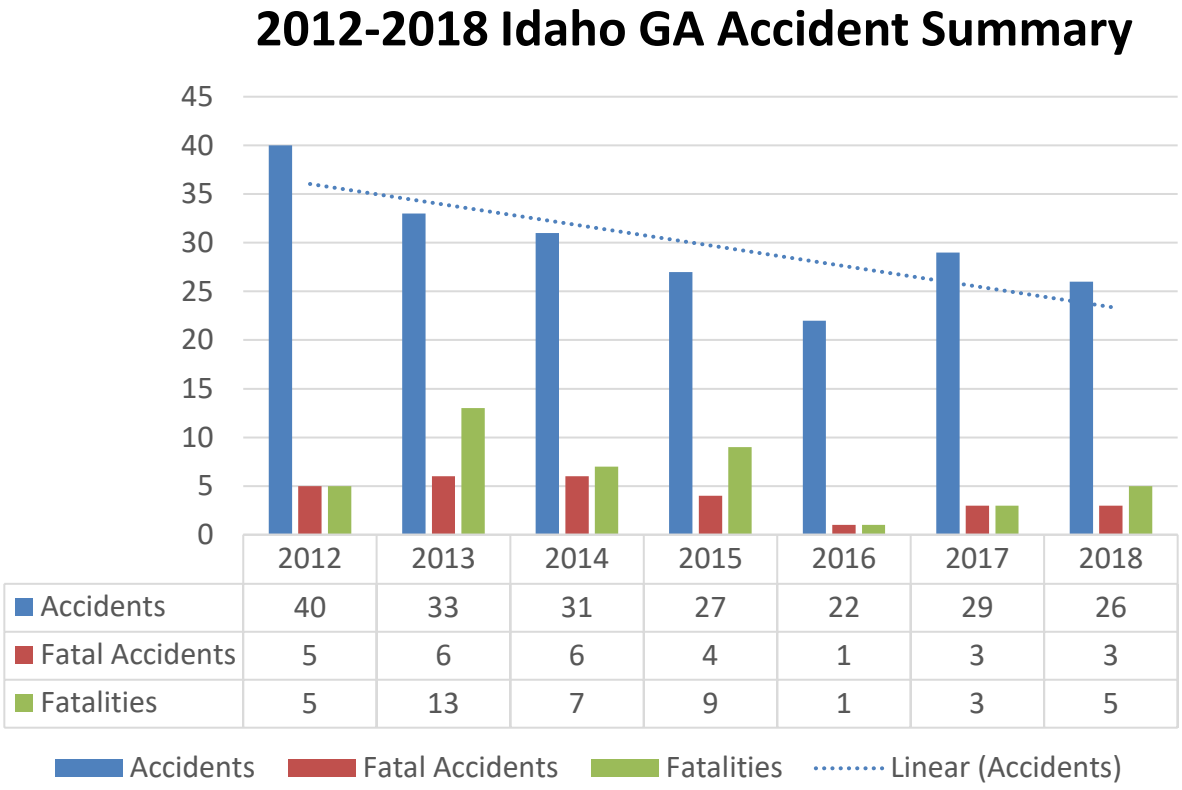
Contact the Division of Aeronautics at 208-334-8775 or email tammy.schoen@itd.idaho.gov

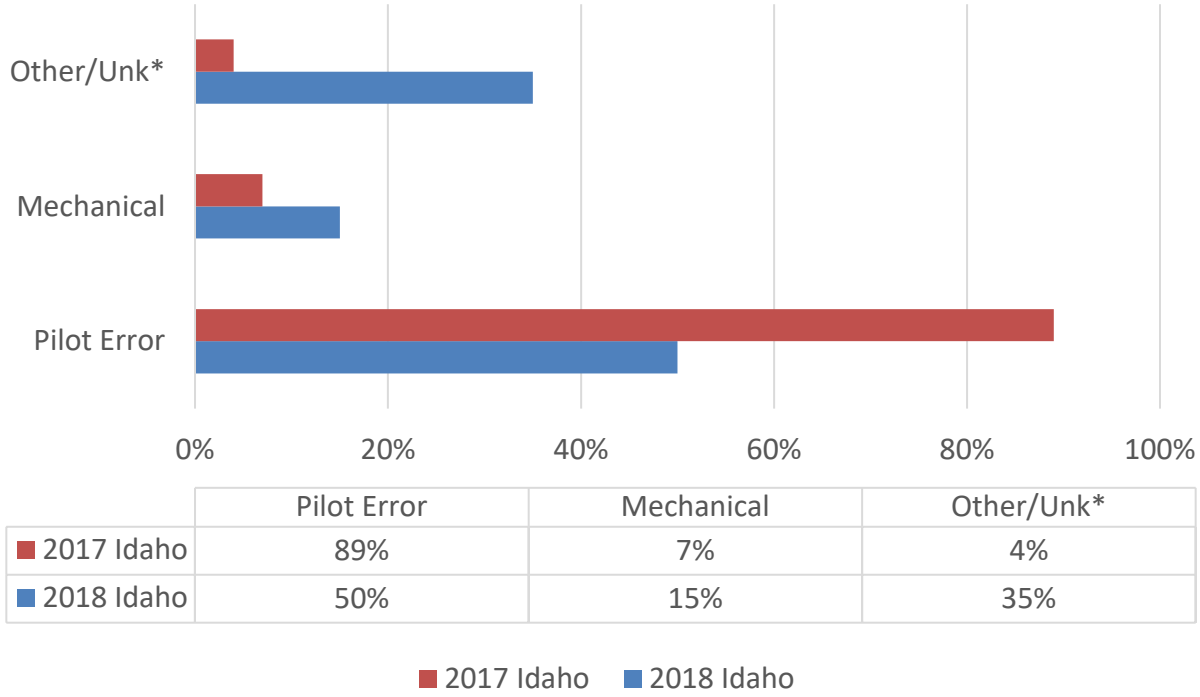


	Non-Commercial Fixed Wing	Commercial Fixed Wing	Non-Commercial Rotary Wing	Commercial Rotary Wing
Total Accidents	25	1	0	0
Fatal Accidents	3	0	0	0
Fatalities	5	0	0	0

In 2018 there were 26 general aviation accidents in Idaho with five fatalities in three fatal accidents.

Since 2012 the number of accidents in Idaho has trended down, as you can see indicated by the dotted blue line. This is a good trend, and is indicative of the good work done by our flying community through a variety of initiatives to improve safety in Idaho. We will further break down information of the accidents that have occurred to see what we can learn.

Probable Cause of Accidents



	Pilot Error	Mechanical	Other/Unk*
2017 Idaho	89%	7%	4%
2018 Idaho	50%	15%	35%

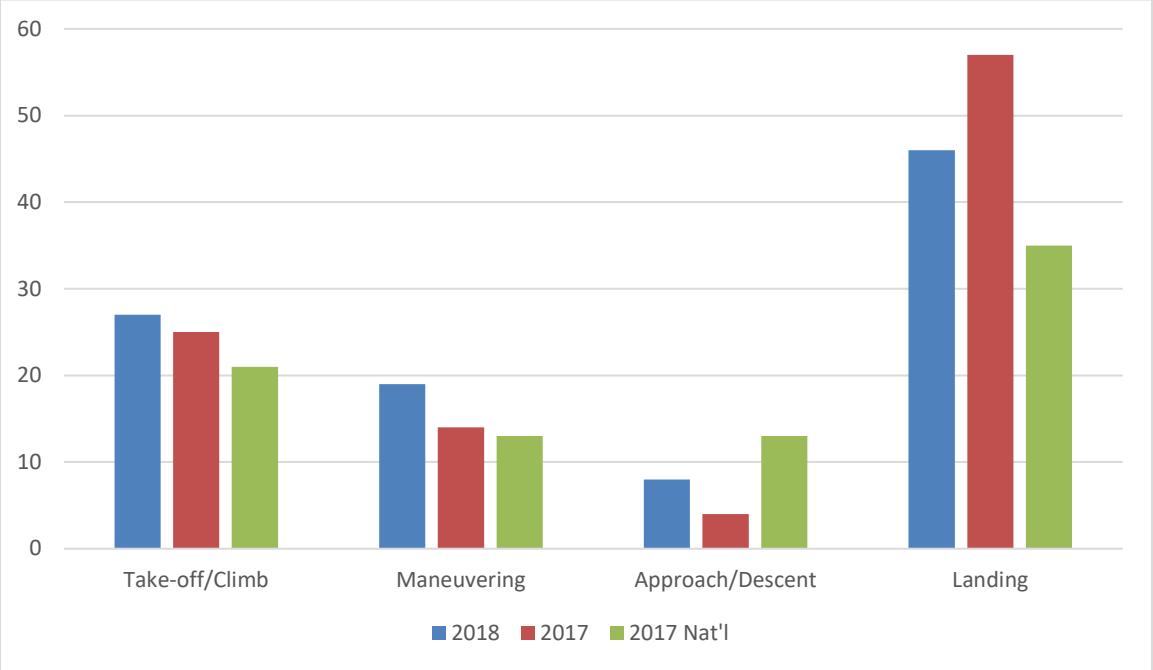
** NTSB Data for 2018 in Idaho still contains many incomplete investigations. The large number of unknown results is simply indicating incomplete data.*

The causes of Idaho accidents in 2018 fell into three categories for analysis:

- Pilot Related – accidents occurring from the improper actions or inactions of the pilot.
- Mechanical – accidents occurring from mechanical failure.
- Other/Unknown – bird strike, incapacitation and accidents with an undetermined cause according to the NTSB.

In 2018, mechanical failures of landing gear systems on both fixed and retractable gear aircraft increased. These failures included brake failures, strut failures and failure of landing gear to extend.

Accident Phase of Flight Idaho vs. Nationwide

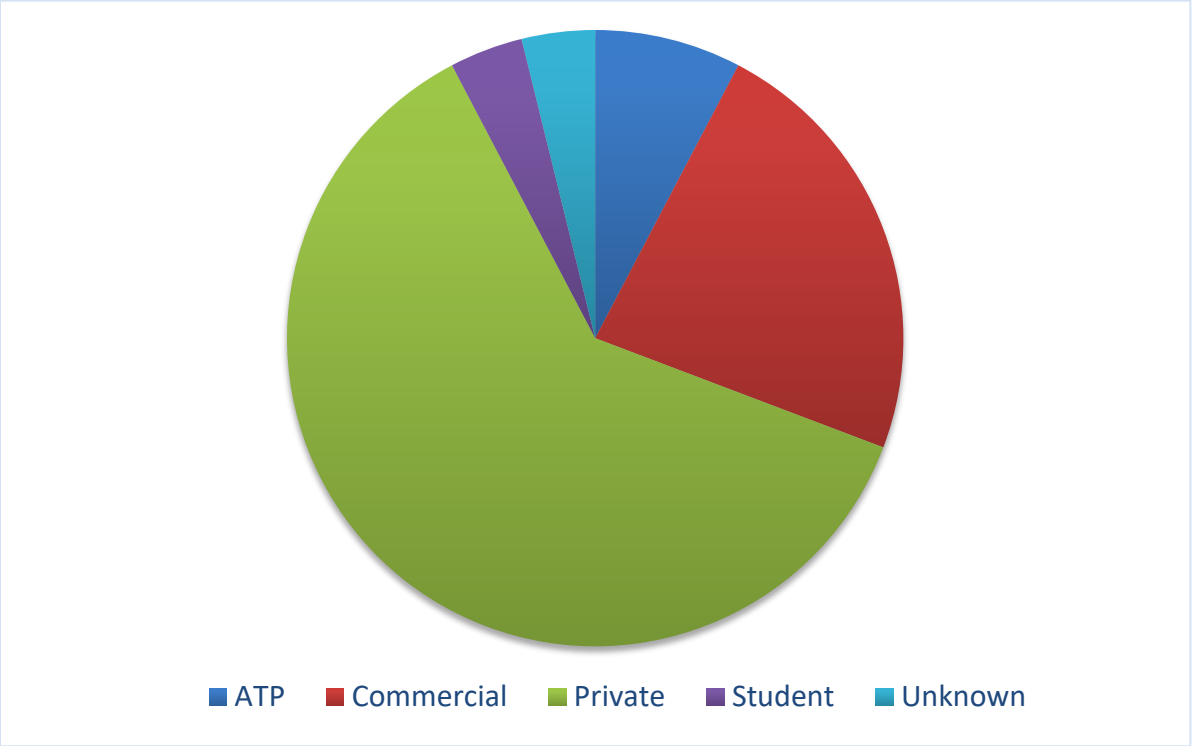


Phase of Flight	2018 Idaho	2017 Idaho	2017 Nationwide*
Landing	46%	57%	35%
Take-off/Climb	27%	25%	21%
Maneuvering	19%	14%	13%
Approach/Descent	8%	4%	13%

**** From NTSB 2017 Annual Review 10/31/2019***

Accidents by phase of flight in Idaho mirror the nationwide trend. Landing continues to be the leading accident phase in Idaho as well as the nation, while take-off/climb is the second leading phase of accidents across the board. **Compared to national data (most recently from 2017), we see that Idaho has a higher percentage of landing accidents than the national average.**

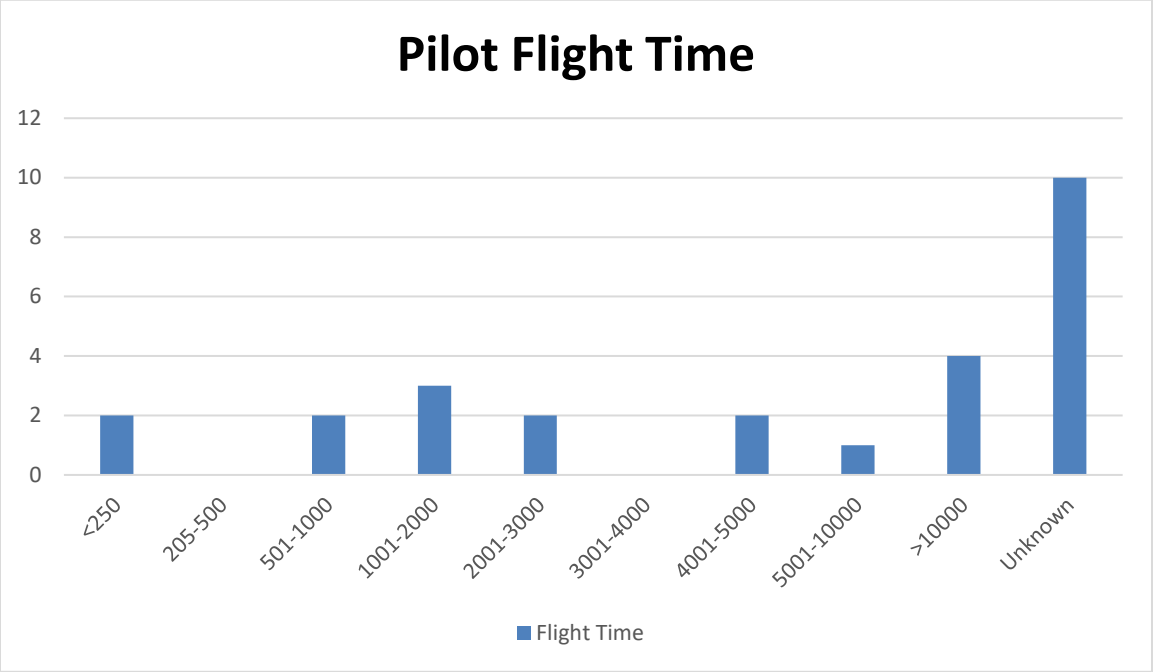
Pilot Qualification Idaho vs Nation



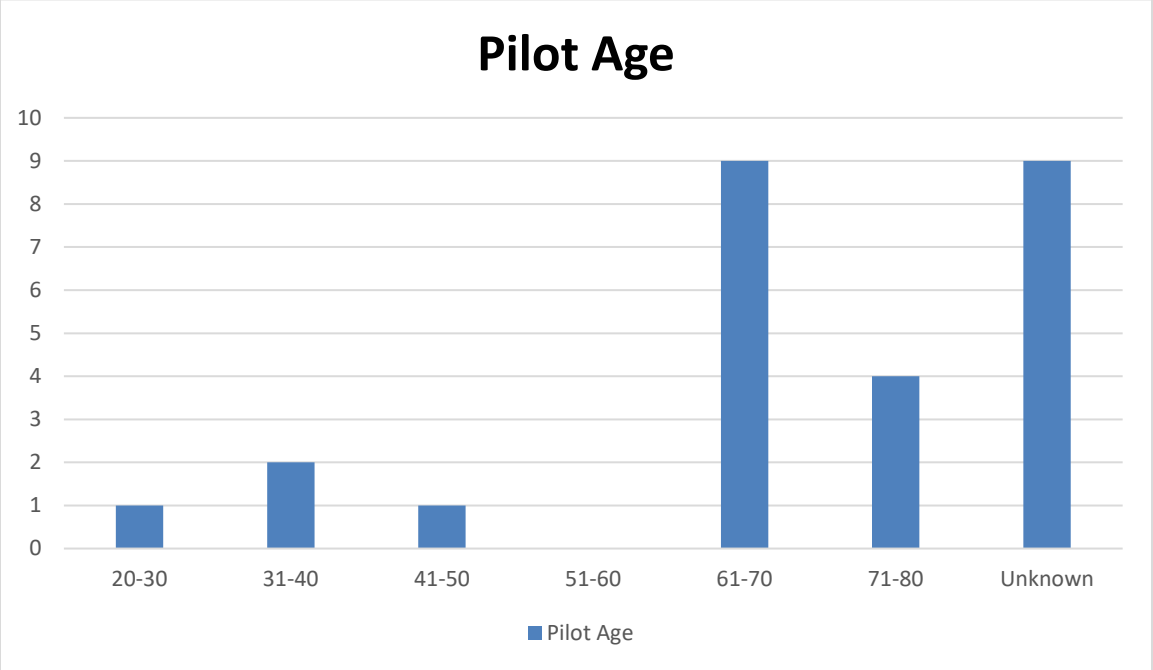
Pilot Qualification	Idaho 2018	Idaho 2017	National 2017*
ATP	8%	11%	14.9%
Commercial	23%	21%	24.8%
Private	62%	61%	48.6%
Sport	0%	0%	1.4%
Student	4%	4%	5.6%
Other/Unknown	4%	4%	4.0%

***From AOPA Accident Scorecard 2016-2017**

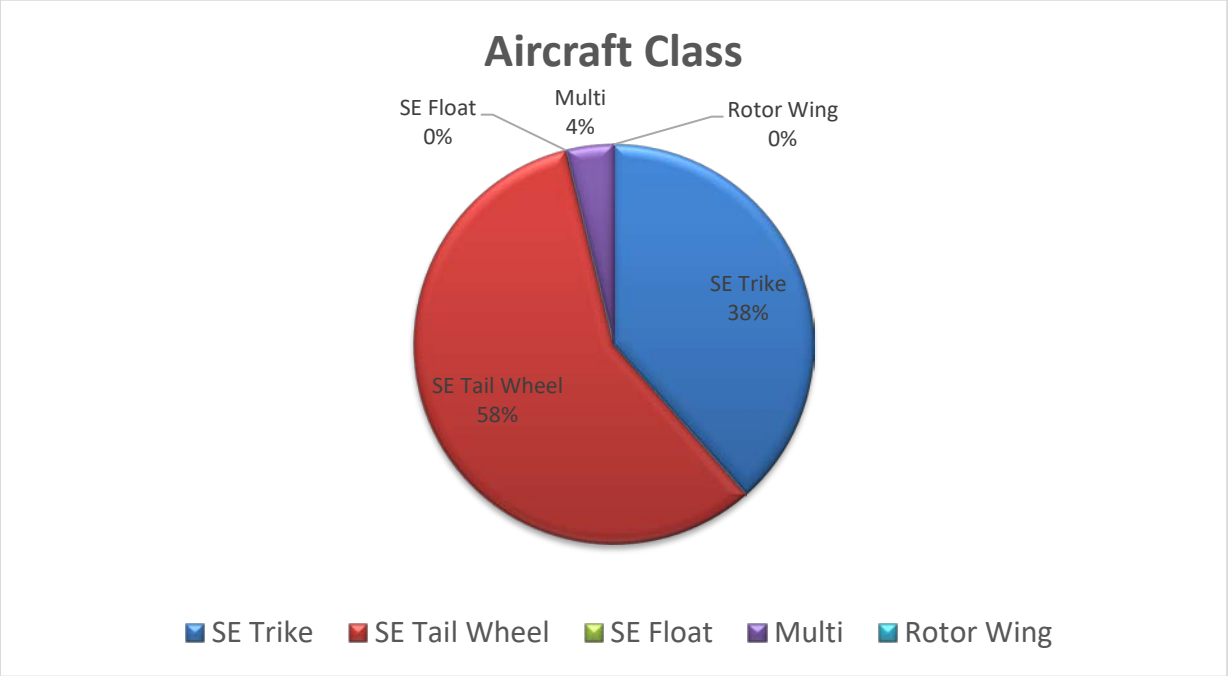
In Idaho, 62% of accidents were commanded by Private pilots, 23% were Commercial pilots and 8% were ATP. This is consistent in recent years, and compared to national numbers **in Idaho we have a larger percentage of accidents among private pilots**, and a corresponding lower percentages from pilots with a commercial or ATP rating.



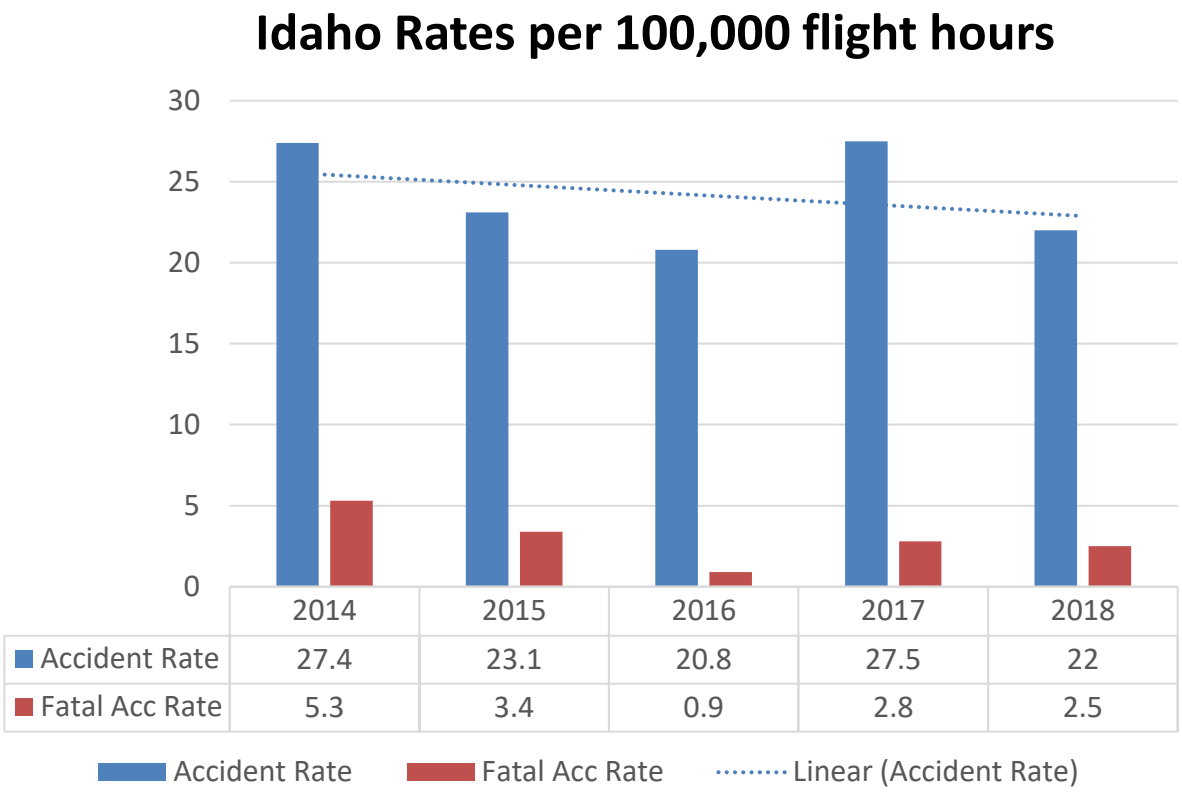
Due to the large amount of missing data, few conclusions can be drawn other than **accidents are spread out across the spectrum of experience**.



Pilots over the age of 61 years old account for 50% of the accidents. **This is consistent with previous years' trend of pilots over 61 being at increased risk.** We have no data on the numbers of pilots in each age group or their percentage of flying done each year, but of the accidents that do occur - more than half are pilots over 61.



Tailwheel aircraft were involved in 54% of all accidents and 13% of the tailwheel aircraft involved in accidents were homebuilt. The latest national data (2019 Nall Report) from 2016 indicated 42% of single-engine fixed-wing accidents occurred in tail wheel aircraft. **Idaho is above the national average for accidents in tail wheel aircraft.**

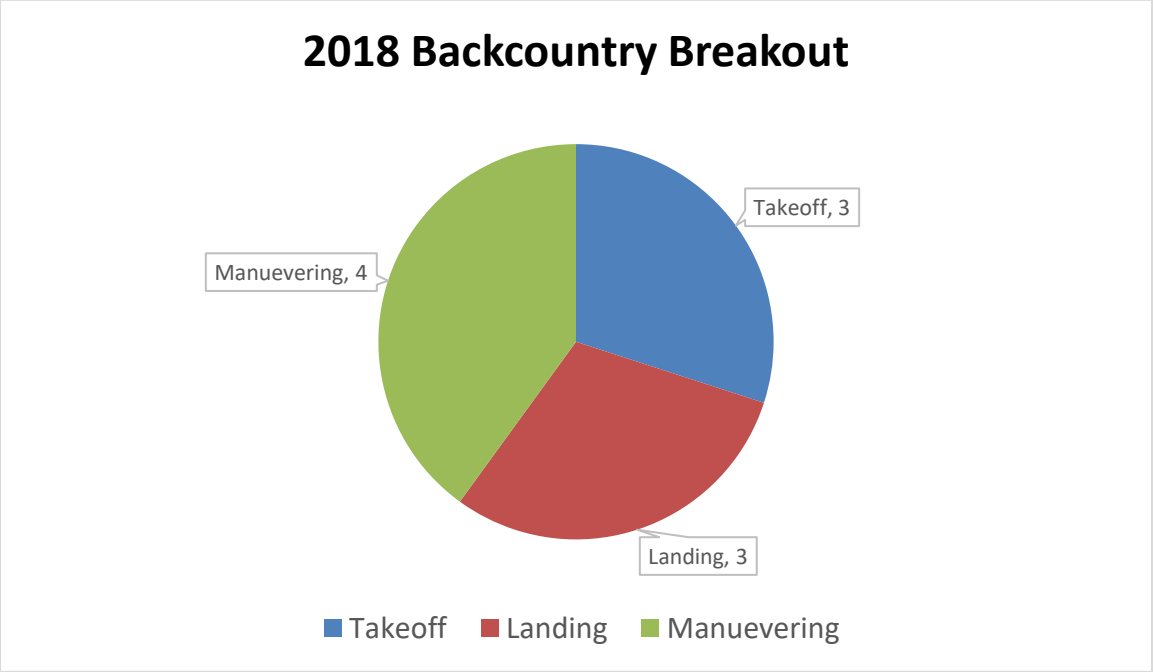


	2014	2015	2016	2017	2018
Total GA Hours	113K	117K	106K	105K	118K
Accidents	31	27	22	29	26
Fatal Accidents	6	4	1	3	3
Fatalities	7	9	1	3	5

Accident Rate Methodology

We calculated the GA accident rate based on total 100LL fuel purchased in the state of Idaho for the analysis year. Then using a fuel burn rate of 14.7 gallons per hour, we divided total gallons by 14.7 to give total flight hours flown for the analysis year. Then we took the number of accidents and number of fatalities and divided it by total hours flown and determined the equivalent rate per 100,000 hours flown. *(14.7 GPH per FAA 2018 Survey)*

The General Aviation accident rate in Idaho continues to trend downward. In 2018 the fatality rate increased from its low in 2016 where a single person died. 2018 had the same number of fatal accidents as 2017, but more passengers were involved in 2018. In general, in Idaho you can expect 30-40 aircraft accidents a year (trending downward). 10-15% of those accidents will involve a fatality. Our fatal accident rate is approximately 2.5 per 100,000 flight hours.



We have had several questions about backcountry specific accident trends. Ten of the 26 accidents in Idaho in 2018 occurred in/around the mountains or backcountry air strips. These 10 accidents were split pretty evenly between takeoff, landing and maneuvering phases of flight.

Maneuvering Accidents

Two fatal accidents occurred during maneuvering flight in mountainous terrain

- Maneuvering in mountains with low ceilings. Fatal. NTSB report WPR18FA141.
- Maneuvering in mountains with reported high-winds. Fatal. NTSB Report WPR18FA276.
- Maneuvering after go-around - documented in the Air Safety Institute video "**Real Pilot Story from the Field: No Go-Around - A lesson from the Backcountry**" available on the AOPA website and on YouTube.
- Forced landing shortly after departure in mountainous terrain.

Takeoff Accidents

- During takeoff on snow-covered strip, aircraft hit snow bank and nosed over (tailwheel).
- High density altitude, packed snow with a gusting tailwind – failed to attain flying speed and impacted a tree.

Landing Accidents

- Downdraft on final, hit fence short of runway.
- Landing with gusting tailwind, ran off runway and into trees.
- Veered left on landing hitting sprinkler and fence (tailwheel).

2018 Accident Review

Review of Fatal Accidents

Fatal accidents can often provide good lessons for all of us. Unfortunately, 2 of the 3 fatal accidents from 2018 are still under investigation. One aircraft crashed shortly after takeoff, killing the pilot, and very little data is available. As mentioned under the Backcountry section, two other fatal flights impacted terrain in areas where weather was a factor.

Low clouds and high winds in mountainous terrain can quickly put you in a situation where you run out of options, either due to limits of pilot skill and judgment or of aircraft performance.

Remaining Takeoff Accidents from 2018:

- Engine failure during a go-around resulted in ditching in a river.
- Aborted takeoff and was unable to stop before running off the end of the runway.
- Gusty crosswind takeoff (tailwheel), loss of directional control departed runway.
- Fatal accident on climbout. Near vertical impact. Cause unknown.

Remaining Landing Accidents from 2018:

- Mistook road for runway, landing off-airport and hit multiple obstruction.
- Loss of directional control on landing, exited runway (tailwheel).
- Failure of weld on main gear strut resulted in loss of directional control on landing.
- Engine failure during weather divert landed in freshly plowed field and flipped over.
- Crosswind landing (tailwheel) drifted right, nosed over.
- Gusty crosswind landing (tailwheel), late go-around nosed over.
- Gusty crosswind landing (tailwheel), ground-loop.
- Gear stuck in transition, led to intentional gear up landing. (Mechanical)
- Hydraulic failure of landing gear led to another gear up landing. (Mechanical)
- Mechanical failure of single brake led to loss of control on landing roll (tailwheel).
- Bounced landing (tailwheel) with late go-around impacted fence.

Summary of 2018 Accident Data

This IAASC data for 2018 shows that both the accident rate and the fatal accident rate are gradually declining in Idaho.

- The majority of 2018 accidents resulted from pilot error, however data also shows an uptick in mechanical failures – especially involving landing gear.
- A higher percentage of accidents occur during the landing phases than national average.
- Private Pilots account for a higher percentage of total accidents.
- More than half of all accidents involve pilots over the age of 61.
- Idaho is above the national average for accidents in tail wheel aircraft.

Focus for 2020: Takeoff and Landing Proficiency

Every year the Division of Aeronautics picks an area where we feel focused training can reduce the accident rate in Idaho. Takeoff and landing accidents remain the top two areas of concern for GA flying. This year in particular Covid-19 has further reduced the ability of many pilots to maintain proficiency.

Fortunately, many aviation safety organizations have stepped in to help with online classes, webinars and guides for proficiency flying. The AOPA Air Safety Institute (a common partner for us) has a two-page "Return-to-Flight Proficiency Plan", the Rusty Pilot course, and the Focused Flight Review. The FAA Safety Team has provided online training and the WINGS Program to help tailor your training to specific areas, while getting credit for a flight review. Additional resources and plans are available from the EAA, S.A.F.E, and organizations like PilotWorkshops Online to help focus and make your proficiency flying more productive.

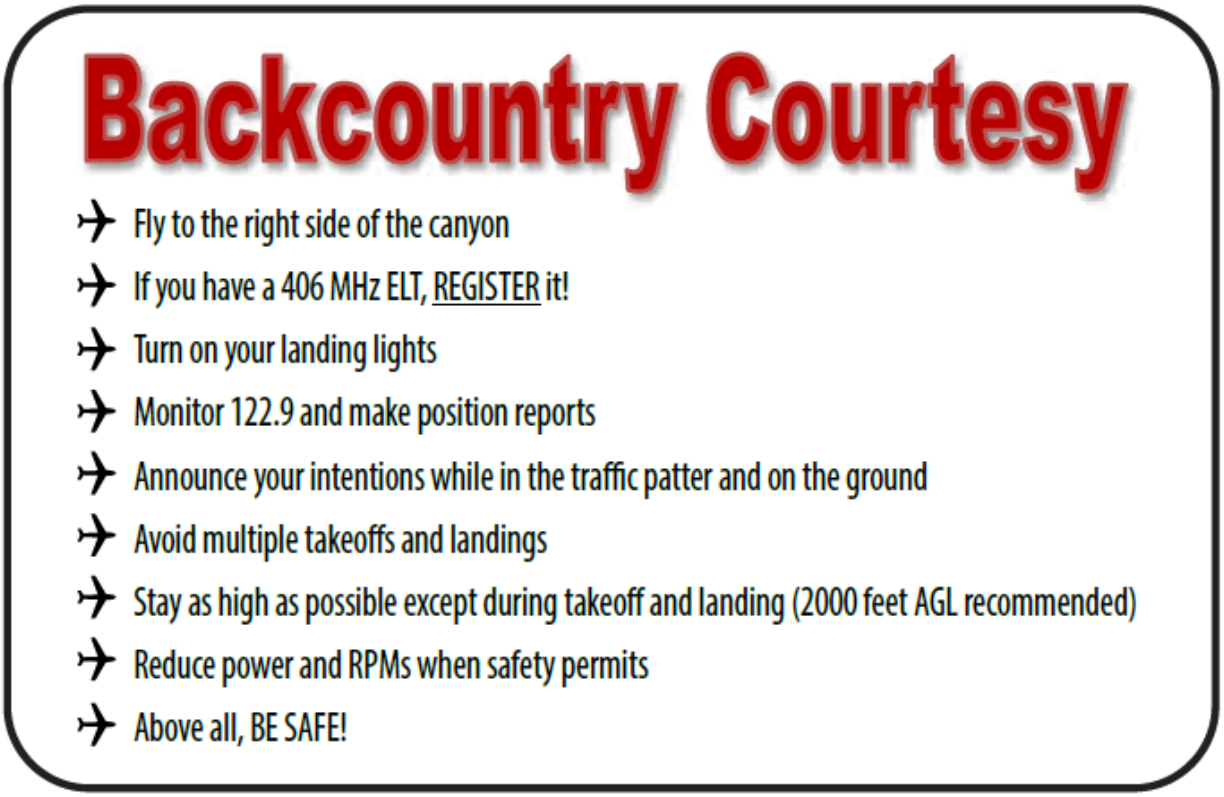
Some notable safety initiatives over the last few years that deserve review include the **"sterile cockpit"** and **"stabilized approach"**. You should brief your passengers to maintain a **"sterile cockpit"** to avoid distracting the pilot, during critical phases of flight. If you are not following a **"sterile cockpit"** policy, you should consider developing and briefing one whenever you fly with passengers. The concept of the **"stable approach"** came about as a way to help mitigate the risk of landing. How often do we try to save a botched approach? Just as in personal minimums, you should define, in advance, what your **"stable approach"** looks like, and if you don't meet your own standard, initiate a go-around. As an example, if you roll out on final and you are not on centerline, not on speed $\pm$ 5 knots at 300' then you will go around.

How do you define your "stable approach" and do you abide by your own standards? These concepts, when employed properly, can greatly reduce the possibility of an accident.

A summary of takeoff and landing accidents from 2018 is included next. This data is intended to highlight trouble areas and sharpen the focus of your training. Takeoffs, aborts, landings and go-arounds in a variety of wind conditions represent most of these accidents and can be a guide in building your plan for pattern proficiency. Remember the FAA Airman Certification Standards (ACS) can be a useful tool to revisit in building your training plan.

Continue to practice and train and if you are out of currency or trying something new get with a CFI, especially if you are flying in the backcountry for the first time or if you haven't done it recently.

Have a safe flying year - we look forward to seeing you at our annual Safety Stand Down.



Resources

Please follow us on Facebook at https://www.facebook.com/idahoaeronautics/
You can also find us on our webpage at https://itd.idaho.gov/aero/

Our webpage contains information on Idaho aircraft registration, our "Rudder Flutter" Newsletter, the "Welcome to Flying Idaho" guide, this IAASC Report, and Standard Operating Procedures for the following backcountry airstrips: https://itd.idaho.gov/aero/?target=publications

- Big Creek
- Cavanaugh Bay
- Garden Valley
- Johnson Creek
- Smiley Creek
- Stanley

Other Flight Safety Resources:
AOPA ASF: https://www.aopa.org/training-and-safety/air-safety-institute
EAA: https://www.eaa.org/eaa/pilots/EAA-pilot-proficiency
FAAST: https://www.faasafety.gov/
FAA WINGS: www.mywingsinitiative.org
NTSB Database: https://www.ntsb.gov/_layouts/ntsb.aviation/index.aspx
Pilot Workshops: https://pilotworkshop.com/
SAFE: https://www.safepilots.org/programs/pilot-proficiency-project™/

If you plan on flying in the backcountry, please get training as backcountry flying is very unforgiving. The Idaho Aviation Association has a listing of Instructors qualified to teach backcountry and tailwheel flying. You can find them online at:
https://idahoaviation.com/instructors

When flying in the backcountry, calculate your density altitude prior to your flight and understand how your performance will be affected. You can use an online Interactive Koch Chart to determine your density altitude at: https://www.takeofflanding.com/

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