

# Safety and the Private Aircraft Owner

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V1.2

# Aviation

The term aviation is generic and like a big burger it is made up of many different ingredients..



# Safety in Aviation

- Similarly, any examination of safety in aviation requires a separate analysis of each ingredient.
- This presentation takes a look at a sometimes forgotten corner of that big 'aviation burger'.

Let's look at safety in private flying,  
where the pilot is also the aircraft  
owner.

This excludes AOC holders

It is the purpose of the flight, not the aircraft or pilot, that determines whether the flight is private.

# Presentation Overview

- Private aircraft pilot & owner
- Operational safety environment
- Safety performance statistics
- Contributing factors
- Outlook

# Private Aircraft Owner

Operates an aircraft not for hire or reward -

- **Standard category aircraft**
- Amateur built aircraft
- Sport aircraft
- Microlights, etc



# I am a Private Aircraft Owner



(Piper Comanche PA24-250)



..and enjoy long range flying



(William Creek, SA)

# Dianna is a Private Aircraft Owner



(Dianna Stranger)

...and fly's this just for fun!



(L-139 Albatross 2000 )



# We are Private Aircraft Owners





...and enjoy safaris together



(Balalae Island, North Solomons)

As a rough estimate there are  
approximately 100,000 private aircraft  
owners worldwide.

90% operate on the FAA register

25% in sport category aircraft

10% are rotorcraft

(AOPA, EAA)



# Safety Environment (1)

## Hire & Reward Operations

- Organisational Structure
- AOC – Approved Exposition
- Senior Persons – Qualified / Experience
- Safety Audits – Ongoing
- Training & Checking - Mandatory
- SMS – Risk Identification & Mitigation
- Health & Safety - Programme
- Safety Culture – Actively encouraged

# Safety Environment (2)

## Private Aircraft Owner

- Compliance with Rules
- Competency Checks - IFR/General
- Training - Self Initiated
- Resources – Publications

# Summary

The private owner and pilot is invariably one-person solely accountable in law for every action or non-action concerned with the –

- Flight operation
- Aircraft airworthiness
- Licencing
- Aviation security
- Health & safety

# Overarching Rule

Safety for the Private Aircraft Owner relies, in the main, on self regulated compliance with all relevant requirements of rule Part 91 –

*Compliance with this rule ensures that the safe operation of aircraft is possible with the minimum endangerment to persons and property.* (CAA)

# Minefield of Other Rules

Part 1 Definitions and Abbreviations

Part 12 Accidents, Incidents and Statistics

Part 19 Transition Rules

Part 21 Certification of Products and Parts

Part 26 Additional Airworthiness Requirements

Part 39 Airworthiness Directives

Part 43 General Maintenance Rules

Part 47 Aircraft Registration and Marking

Part 61 Pilot Licences and Ratings

Part 91 General Operating and Flight Rules

Part 92 Carriage of Dangerous Goods

Part 93 Special Aerodrome Traffic Rules and Noise Abatement

**PLUS** – there's a library of Advisory Circulars,  
Airworthiness Directives, CAA Notices & more....

# Private Aircraft Safety

Safety and the private aircraft owner comes down to –

- Self regulated compliance with Part 91 and all of the other rules
- Self motivation & discipline
- Self preservation



# Collating Relevant Statistics

- Risk tolerance & consequence
- All operations are not equal
- Relevance of incidents & accidents
- Are fatalities the critical measure?
- Reporting formats
- Merged data (NZ, Aust, USA)

# Safety Performance (1)

Comparing the safety performance of private fixed-wing aircraft (Standard Category) with AOC holders....

## Fatal Accidents

## Private Ops

## Part 135 Ops

Pilot Related

73%

82%

Mechanical

9%

9%

Other / Unknown

18%

9%

(CAA, CASA, NTSB, FAA)

# Safety Performance (2)

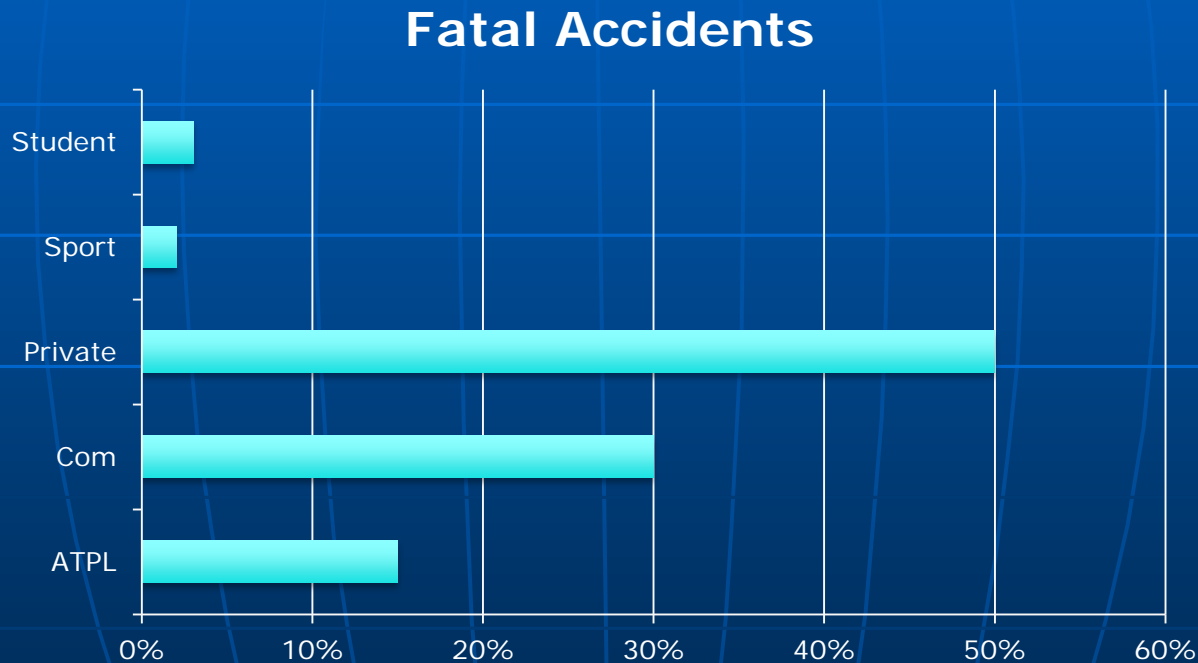
Fatalities by aircraft class in private fixed-wing operations -

Aircraft Class	Fatalities
Single-Engine / Fixed Gear	12%
Single-Engine / Tail Wheel	10%
Single-Engine / Retractable	25%
Single-Engine Turbine	26%
Multi-Engine / Piston	12%
Multi-Engine / Turbine	15%

(CAA, CASA, NTSB, FAA)

# Safety Performance (3)

Private fixed-wing fatal accidents according to PIC licence category



(CAA, CASA, NTSB, FAA)

# Safety Performance Overview

## Private Aircraft Owners

- Overall accident rate trending lower
- Fatal accident rate 1 per 100,000 flight hours (lowest ever)
- Comparable with Part 135 operations
- More than 75% of all accidents attributed to pilot-related causes

(CAA, CASA, NTSB, FAA)

# Seeking Safety Improvements for the Private Owner

**MUST** reduce pilot-related causes to obtain any further safety improvements

**RESULTS** in the area of human factors remain static after years of effort

**PILOTS** are unavoidably human



# Main Causal Factors

**HIGH  
RISK  
AREAS**

**Loss of control**

**Take-off**

**Landing**

**Go-around**

Leading  
causes  
of  
accidents  
for  
decades

(CAA, CASA, NTSB, FAA)

# Key Contributing Factors

**Failure to monitor  
Airspeed**

**Loss of Situational  
Awareness**

**Multitasking**

**Faulty Fuel  
Management**

**Distraction..?  
Uncertainty..?**

# What we irrevocably know...

*Once you start deviating from the rules, you are almost **twice** as likely to commit an error with serious consequences!*

(NTSB Reports)

# Personal Observation

*"During my career spanning more than 50 years, nearly every light aircraft accident investigation I have been associated with, there were one or more rule violations identified which if complied with the accident probably would not have occurred"*

(Barry Payne)

# The Bottom Line!

Rule non-compliance on its own rarely  
results in an accident;

**however...**

It always results in a greater risk for the  
operation!

# SIT to Improve Safety

**S** – SIMPLIFY

**I** – INNOVATE

**T** – TARGET



# Safety Outlook (1)

**Simplify** regulatory format for private aircraft owners to reduce uncertainties about relevant requirements and better focus the pilot on critical safety areas

# Safety Outlook (2)

**Innovate** for real improvements in the area of pilot distractions and situational awareness



# Safety Outlook (3)

**Target** safety education to emphasize positive outcomes from rule compliance

# How safe is Private Aircraft flying?

**Every flight is as safe as the owner pilot wants to make it..!**

# Mission Accomplished



(Major Sweeney)