Soaring Safety Foundation
2024 Safety Report Discussion

SOARING SAFETY FOUNDATION

Nov 1, 2023 – Oct 31, 2024

SAFETY REPORT

SOARING SAFETY FOUNDATION

Safety Report Discussion Agenda

Review and discuss 2024 SSF Safety Report

Discuss Chicago Glider Club safety concerns collected from legacy club members

What is the Soaring Safety Foundation?

Training and Safety Arm of the Soaring Society of America

Mission: "Safety Through Training"

1. Provide information and analysis of incident and accident trends in order to develop better training tools.
2. Provide instructors and pilots with the tools needed to teach/learn…skills needed to safely fly a glider.

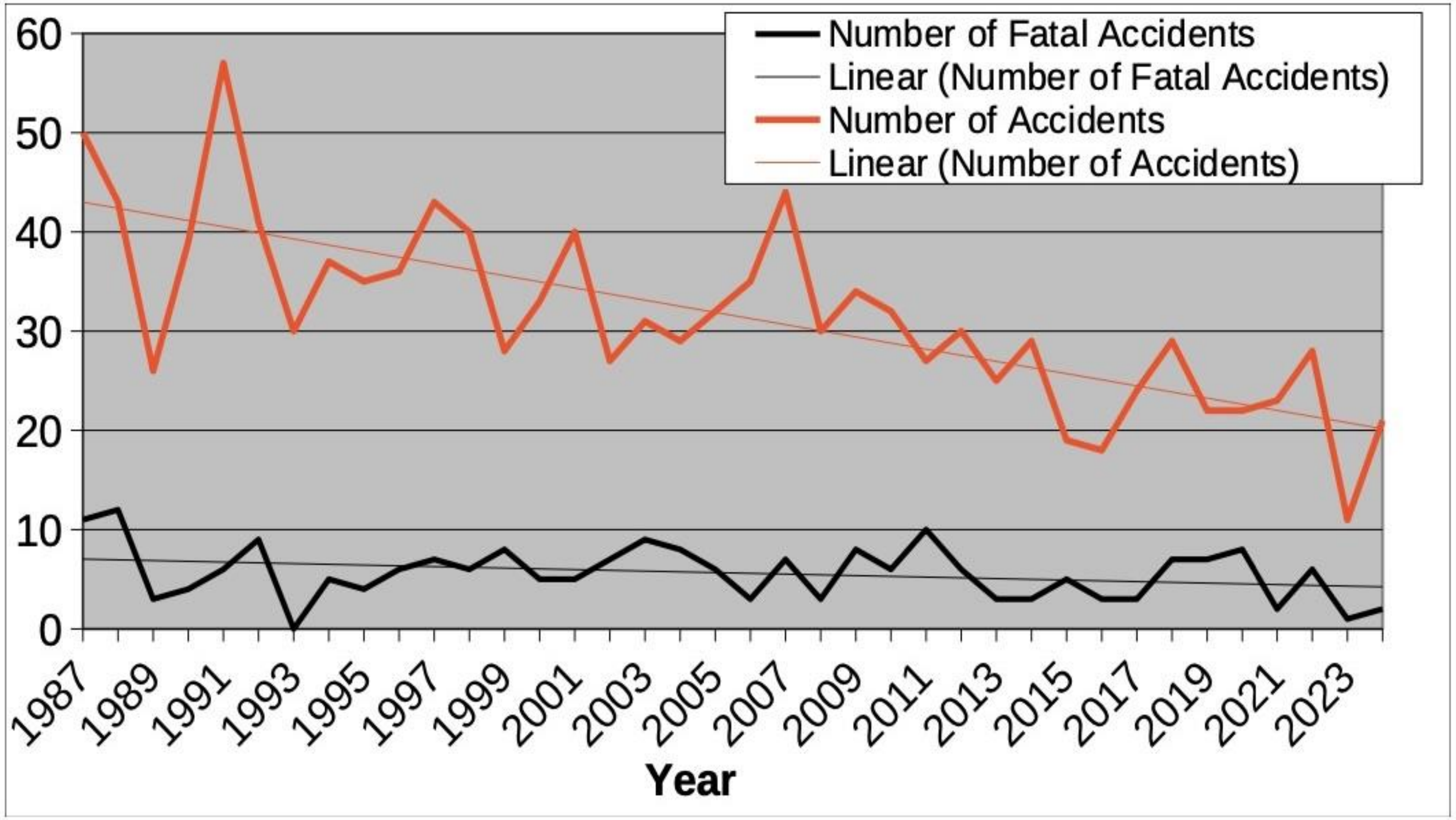
2024 Accident Summary

- 21accidents (2 fatal) involving 22 gliders
    - 12 gliders
    - 7 motor gliders
    - 1 light sport glider
    - 1 towplane
- 10 landing
- 5 launch
- 3 cruise
- 3 no probable cause yet

Historical Accident Data

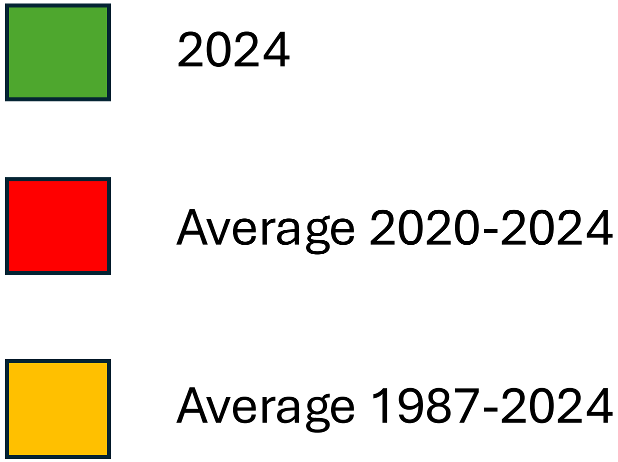
- ➢ Total number of accidents (red line) declining
- ➢ Fatal accidents (black line) showing a slight decline

Number of Accidents since 1987



Accident Data Most Recent 5 Years

- In line with 5-year historical average
- 91% Increase from 2023



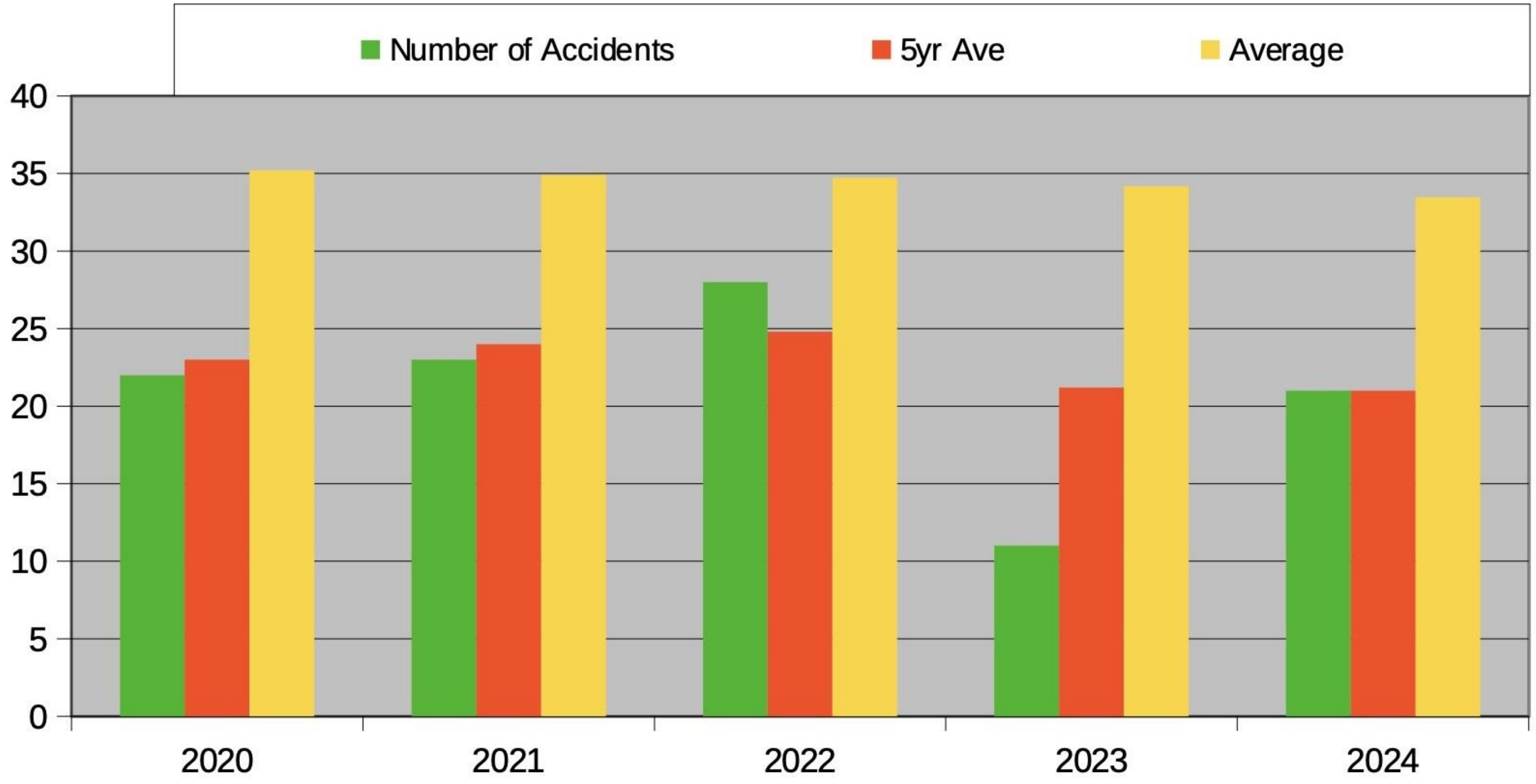
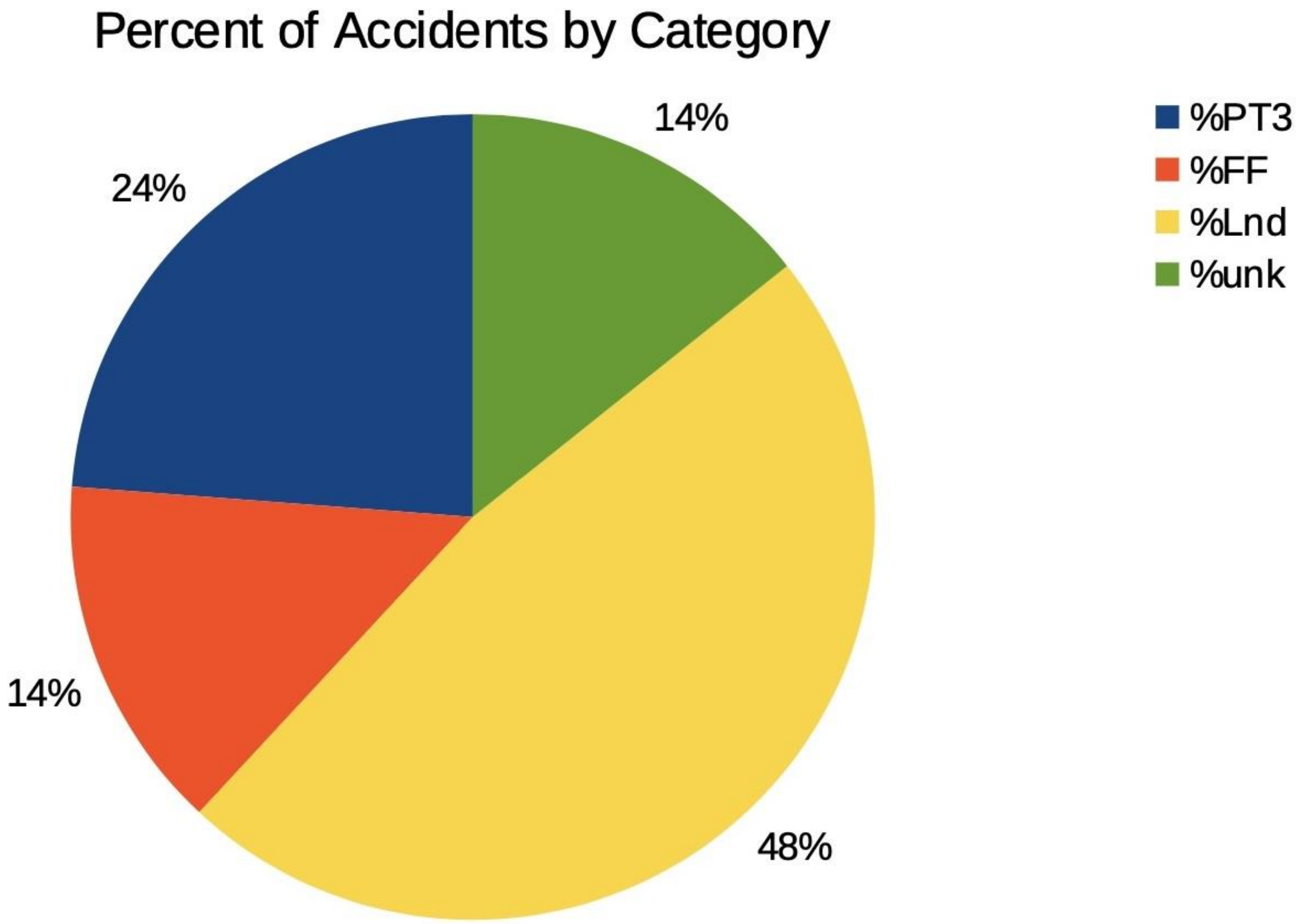


Figure 4 Number of accident, 5 year average FY20 - FY23

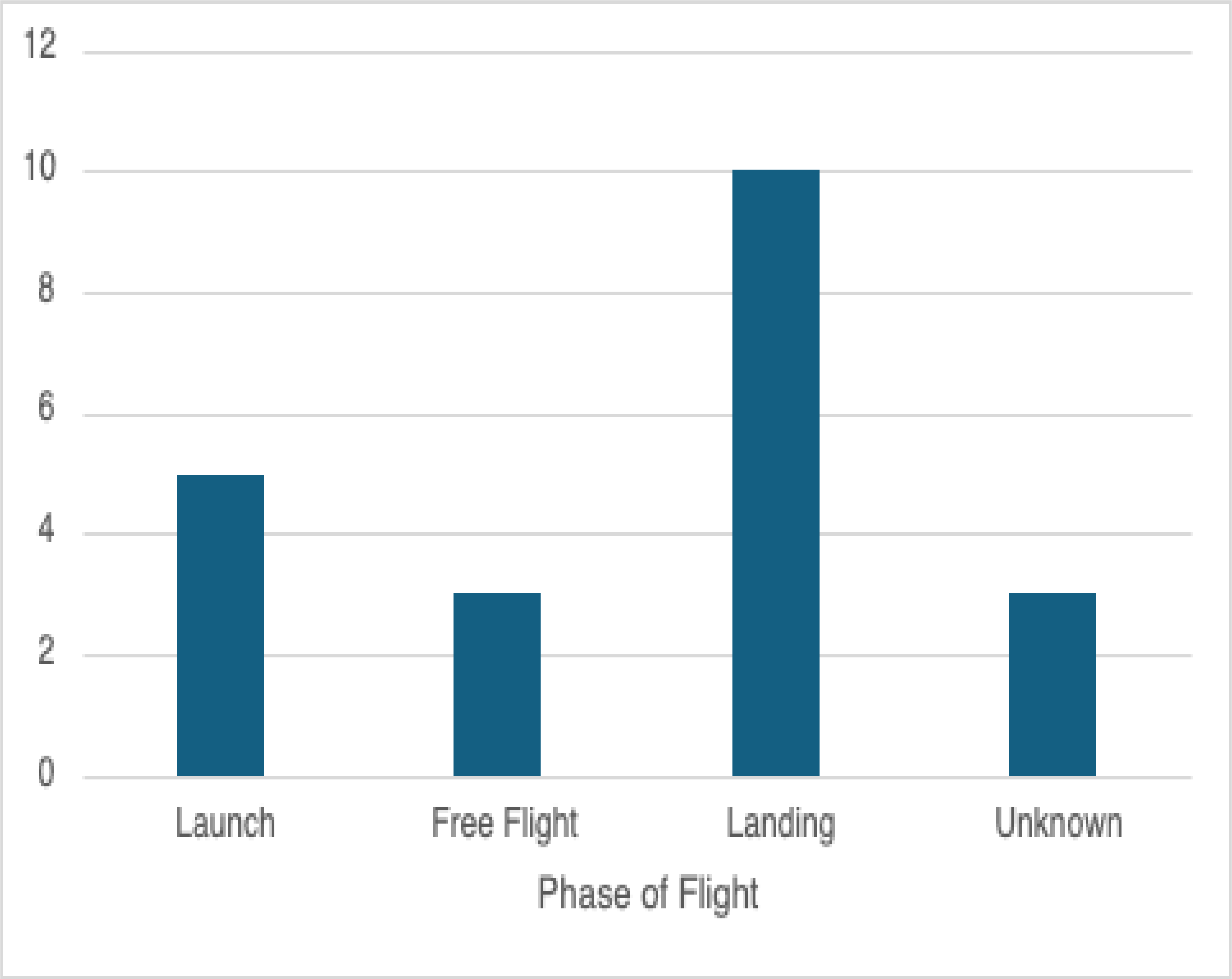
2024 Accidents: Phase of Flight

- In line with historical trends
- Landing accidents largest percentage



2024 Accidents by Phase of Flight

- Both 2025 Fatal Accidents in Launch Phase



Launch Phase Trends

Launch Phase Accident Trend

- 3-4 year trend: fatal accidents now occur more often in failed launches (previously free-flight)
- 3 of the 5 accident pilots in 2024 attempted 180° turnback at low altitude
- In the past 8 years 40 launch phase accidents (very few due to launch hardware malfunctions)
- "Accident reports (fatal and non-fatal) show a tendency to attempt to immediately (impulsively) turn around ***no matter what altitude*** when a rope beak occurs" (R Carlson, SSF Chairman)
- Low altitude maneuvering very high risk activity

Low Altitude Premature Termination of Tow Emergency

- Proper first action?
- CGC options?
- Warning signs that may have been present?
- How do we train for this?

Tom Knauff:

- ***Expect the emergency***
- ***Have a plan of action***
- ***React instantly***
- ***Get the nose down to a flying attitude***

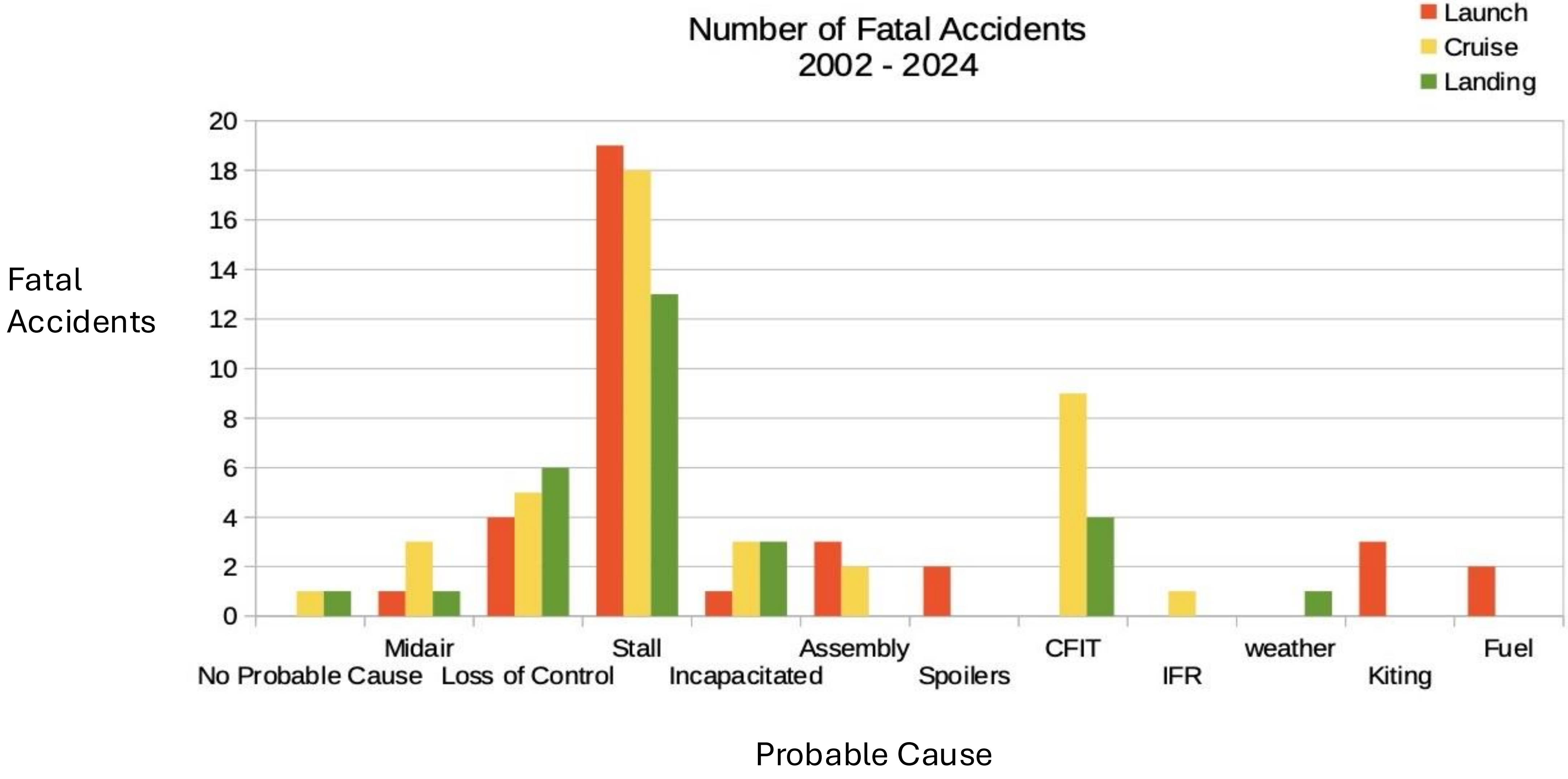
Free-Flight Accident Trends

Free Flight Accidents 2024

- Collision between 2 thermalling gliders
- 1 glider pilot impacted a tree with the left wing while ridge soaring

Majority of Fatal Accidents: Loss of Control Inflight

Low altitude maneuvering very high risk



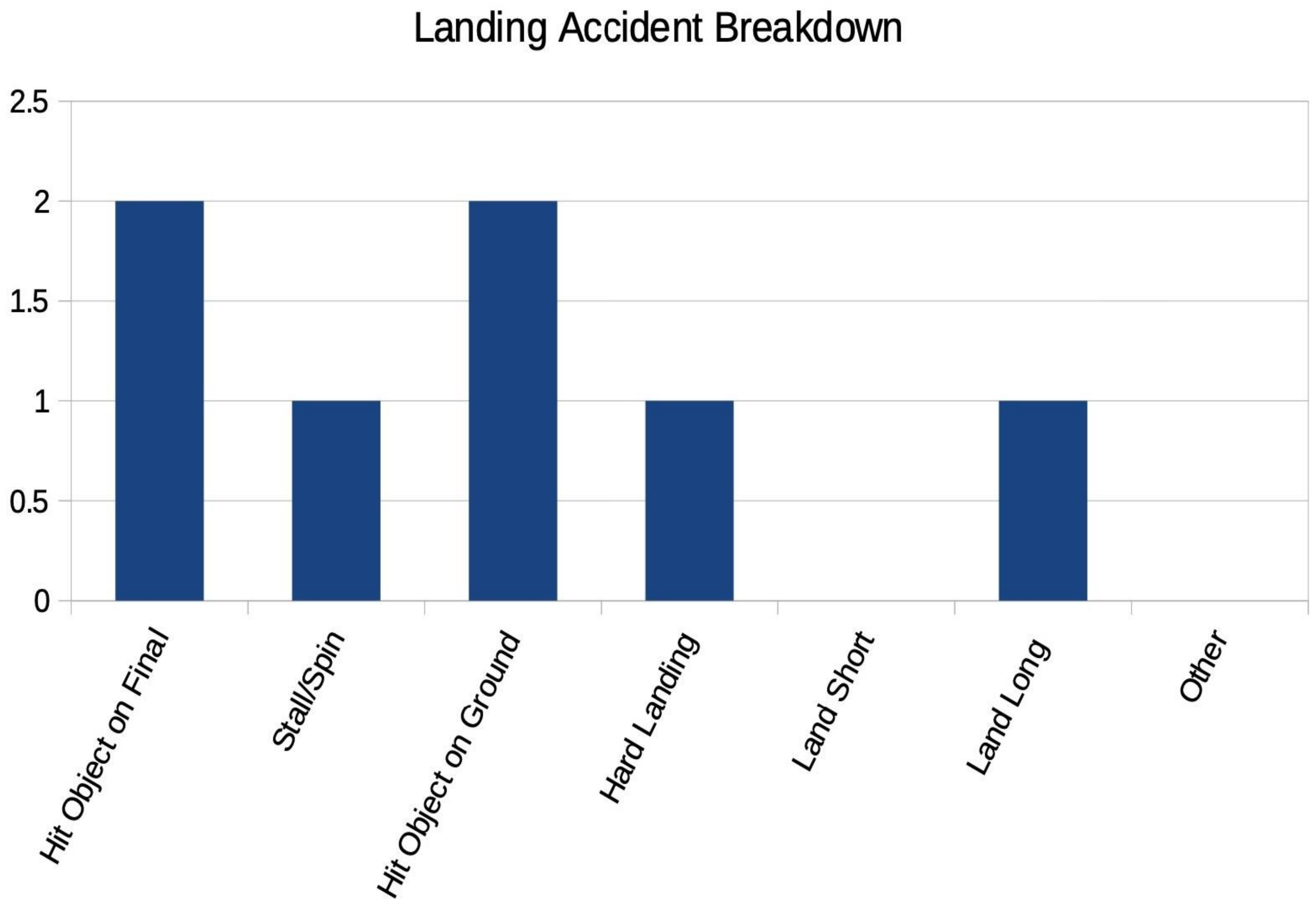
Landing Phase Accident Trends

2024 Landing Accident Trends

- Landing accidents accounted for majority of injuries to pilots and damage to gliders
- About half the accidents (60%) occurred at an airport
- Remainder (40%) occurred during an off-airport landing

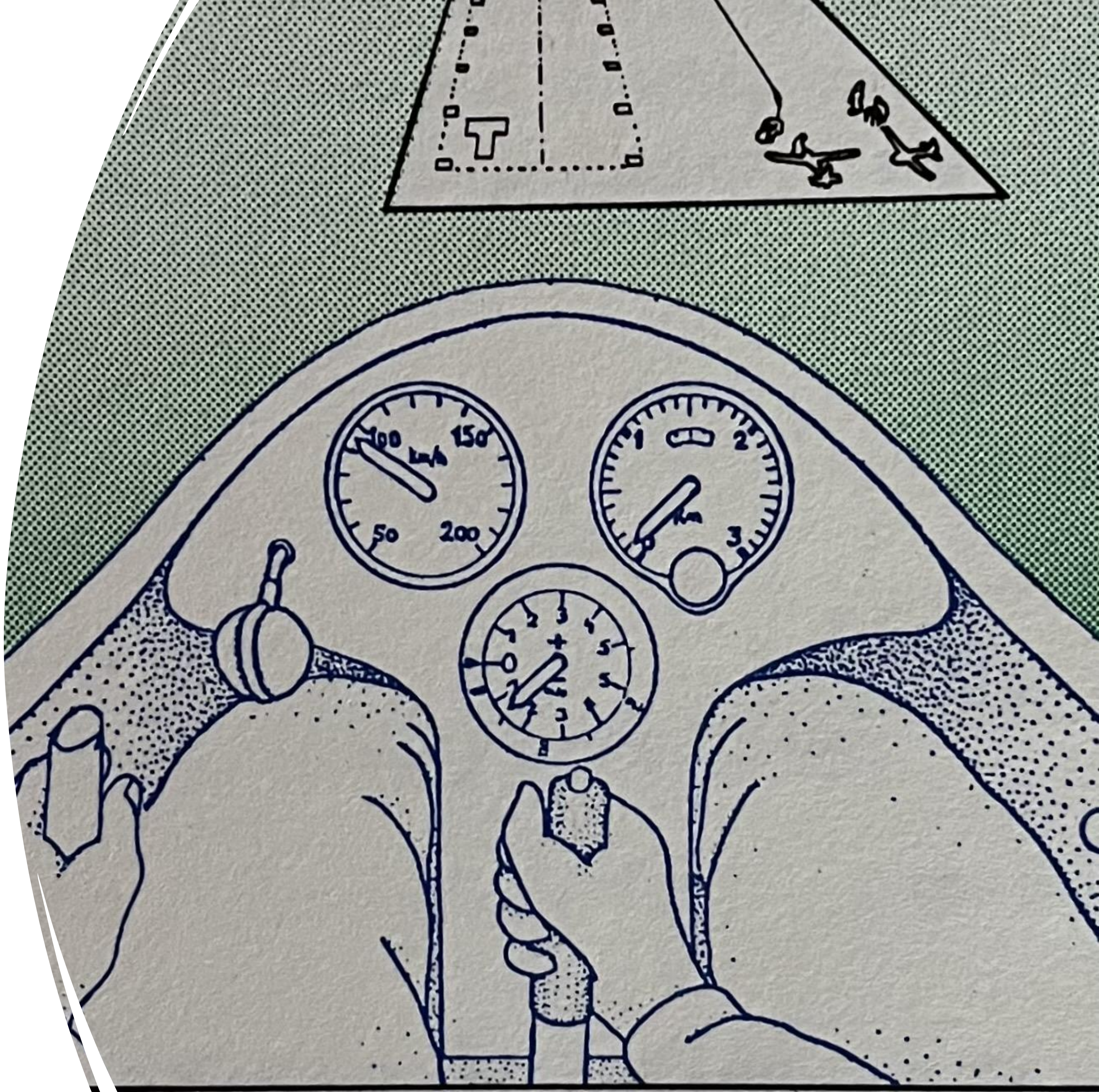
Landing Accidents 2024

- 10 landing accidents
- 6 at an airport, 4 off-airport
- Certificate level ranged from Student to ATP



Stabilized Approach

- Final landing configuration
- Half-open spoilers
- Constant final descent airspeed (pitch attitude!)
- On glide path to selected touchdown point

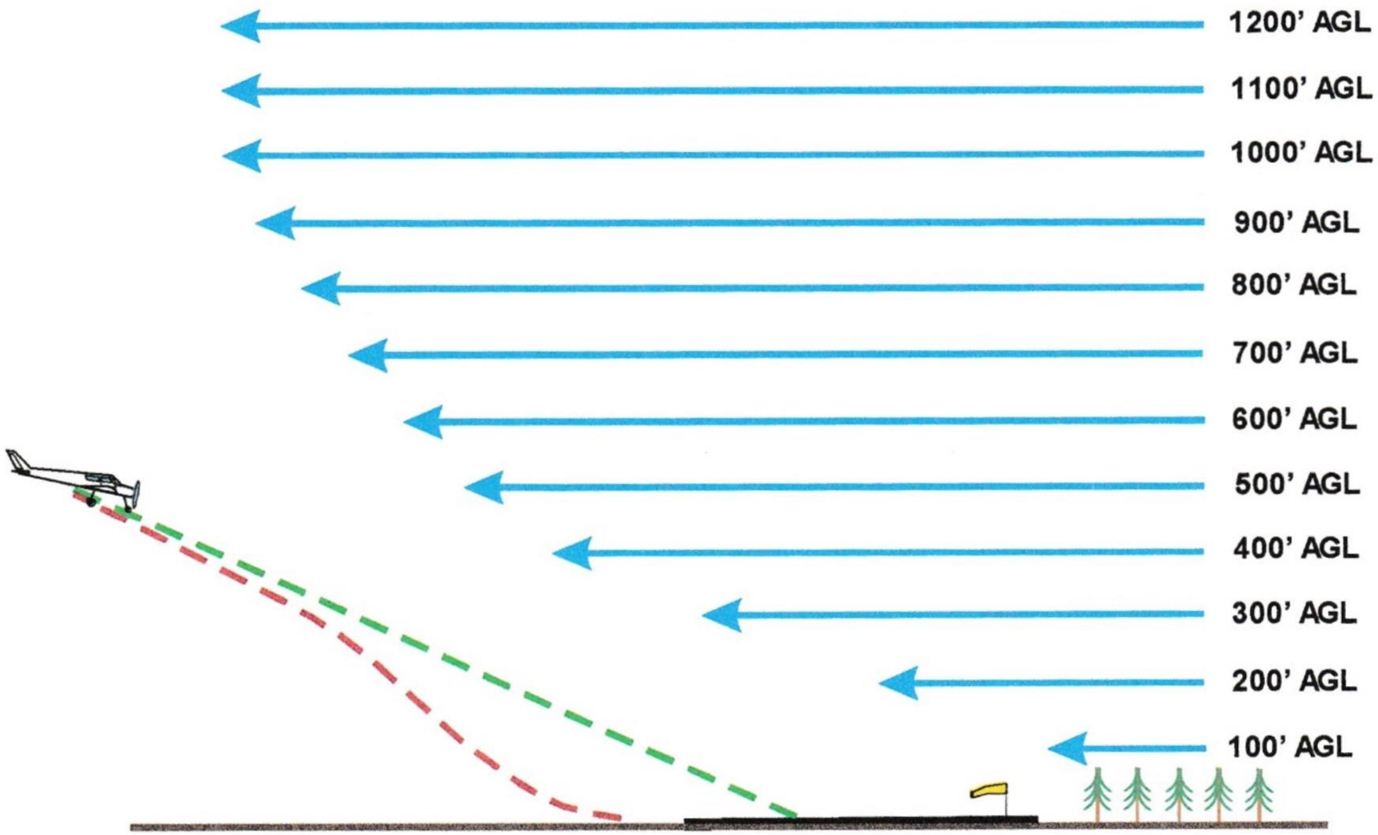


Wind Gradient

- Exists anytime headwind present
- Wind velocity varies with altitude
- Friction decelerates flow at surface
- Strategy?

➢ Increase airspeed?

➢ Aimpoint?



Legacy Members’ Concerns

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- Distractions
- Checklist management
- Weather hazards (eg wind shear, virga)
- Everyone needs to be a safety officer
  - It takes multiple people to launch a glider, so all need to assess the operation
- We have a very challenging runway environment: keep your traffic patterns goal oriented
- Maintain situational awareness
- Don’t be complacent

Legacy Members’ Concerns (con’t)

- Work on continuous education outside the cockpit
  - If you don’t have it in your head, you won’t have it in your hands (Knauff)
  - Minimum legal flight proficiency requirements may not be enough
- Be vigilant about traffic avoidance
  - Notify Lewis Tower of glider ops when appropriate
- Bell Road issues (glide path, tow rope)
- 2,000’ AGL have a field picked out: plan ahead. Time gets compressed, which could lead to bad outcomes
- Have a hard deck where you stop soaring and start landing
- Develop and stick to personal minimums
- Aerotow problems develop quickly: be vigilant and disciplined

Legacy Members’ Concerns (con’t)

Aging*

- Different pilots experience the aging process differently
- Individual factors (experience, proficiency, physical fitness, genetics play a bigger role than chronological age)

*AOPA: Aging and the General Aviation Pilot

Legacy Members’ Concerns (con’t)

Aging: Minimizing the toll

- Vision
- Hearing
- Strength, Flexibility, Endurance
- Memory (fly when fresh, heed cockpit warning devices)
- Decision making (fly when well-rested, increase preflight prep, chair fly emergencies)
- Proficiency
- “Right-Sizing” : Shorter flights, increase personal mins, bring along another pilot, consider slower/less-complex equipment

*AOPA: Aging and the General Aviation Pilot

Discussion Summary

Reviewed and discussed 2024 SSF Safety Report

Discussed Chicago Glider Club safety concerns collected from legacy club members

Questions/Comments?