

# Flight Safety



**SSF** Soaring Safety Foundation

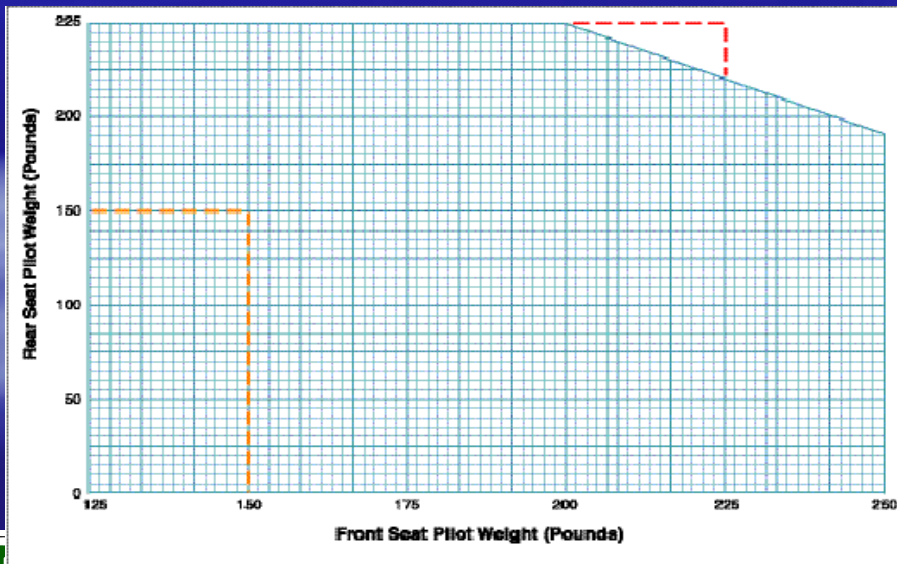
# Flight Safety

- An understanding of the causes of actual and potential accidents and incidents will most likely improve a pilot's ability to operate safely.
- This section will include –
  - Evaluation of weight and balance issues
  - Analysis of accident data
  - Discussion of prevention techniques
  - Review of flight safety publication resources
  - Instructor responsibilities



# Weight & Balance training

- Teaching Weight and Balance
  - Importance of W&B
  - Table method
  - $\text{weight} * \text{arm} = \text{moment}$
  - Demonstration



ITEM	WEIGHT (POUNDS)	ARM (INCHES)	MOMENT (INCH/POUNDS)
EMPTY WEIGHT	600	-20	12,000
FRONT SEAT PILOT	180	+30	+5,400
REAR SEAT PILOT	200	-5	-1,000
	980 Total Weight	-18.73	+16,400 Total Mom.

# Flight Safety

- **Part 830 accident reporting requirements, needed in the event of unsuccessful prevention, are covered in the FIRC unit on FARs.**
- **FLIGHT SAFETY Publications come in several categories –**
  - **Prevention media, including hard copy handouts, issued by the FAA – contact FAA FSDO/Flight Safety Counselor for information and supplies – in process of being superseded by on-line resources.**
  - **NTSB Accident and Incident Reports – [www.nts.gov/aviation/aviation.htm](http://www.nts.gov/aviation/aviation.htm). URL listed on p. 10 of dessert-sand FIRC Supplement book.**



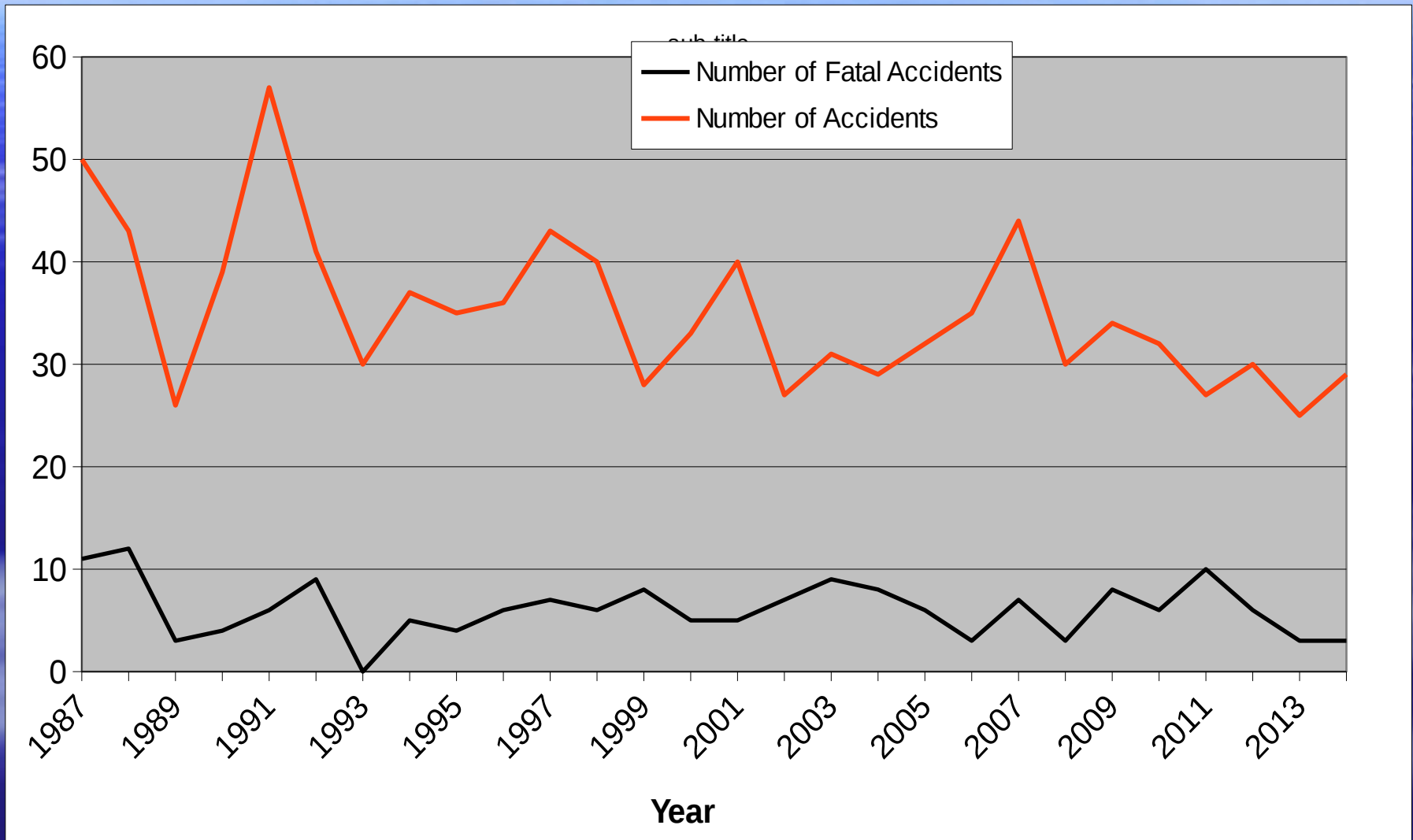


# Flight Safety

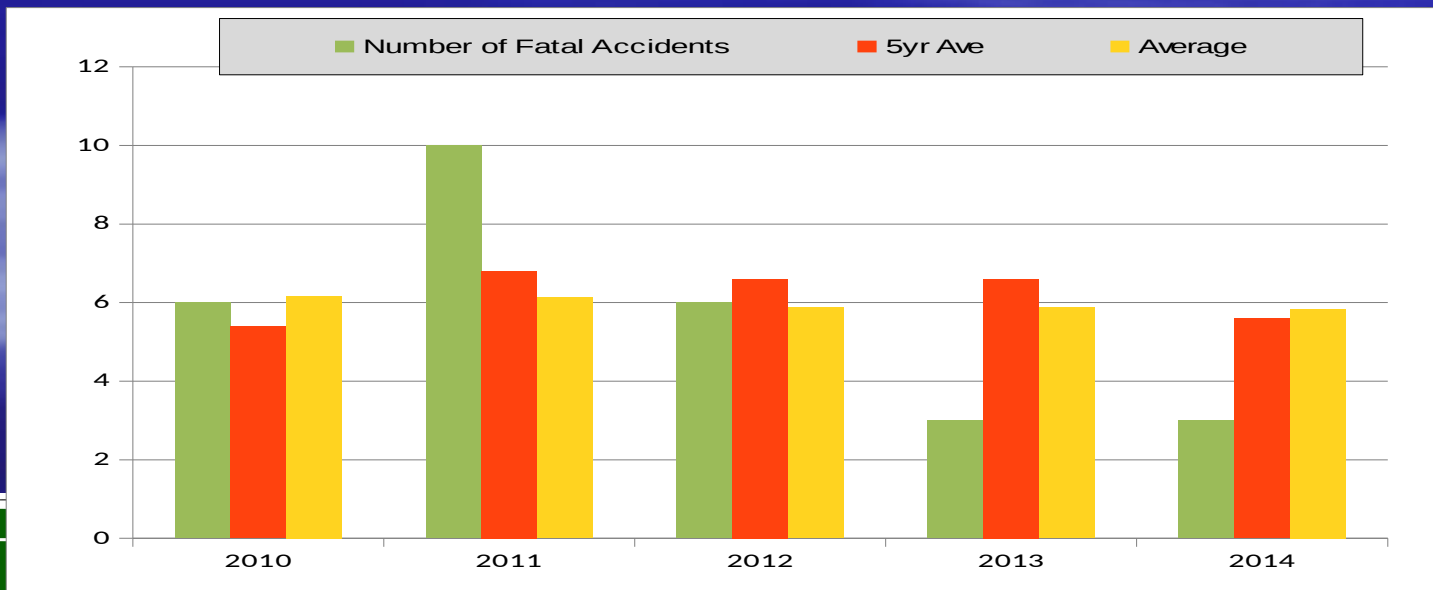
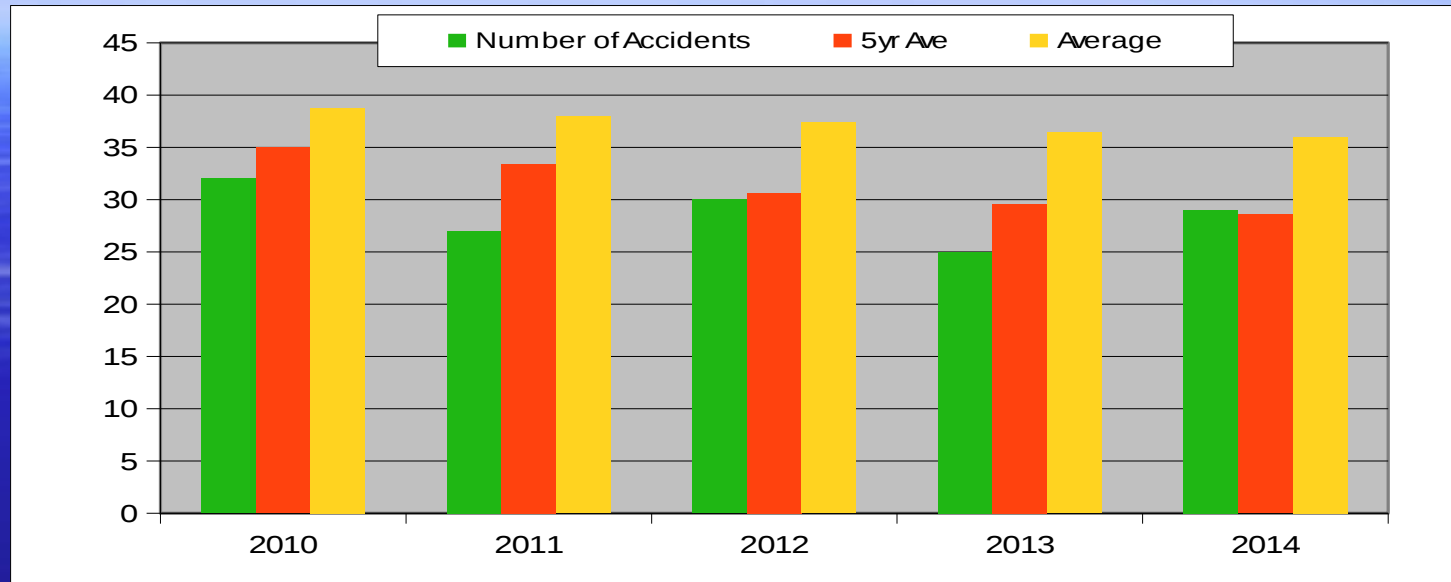
- **Flight Instructor as a:**
  - **Instructor**
  - **Coach**
  - **Mentor**
  - **Safety Officer**



# Number of Soaring Accidents



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# Flight Safety

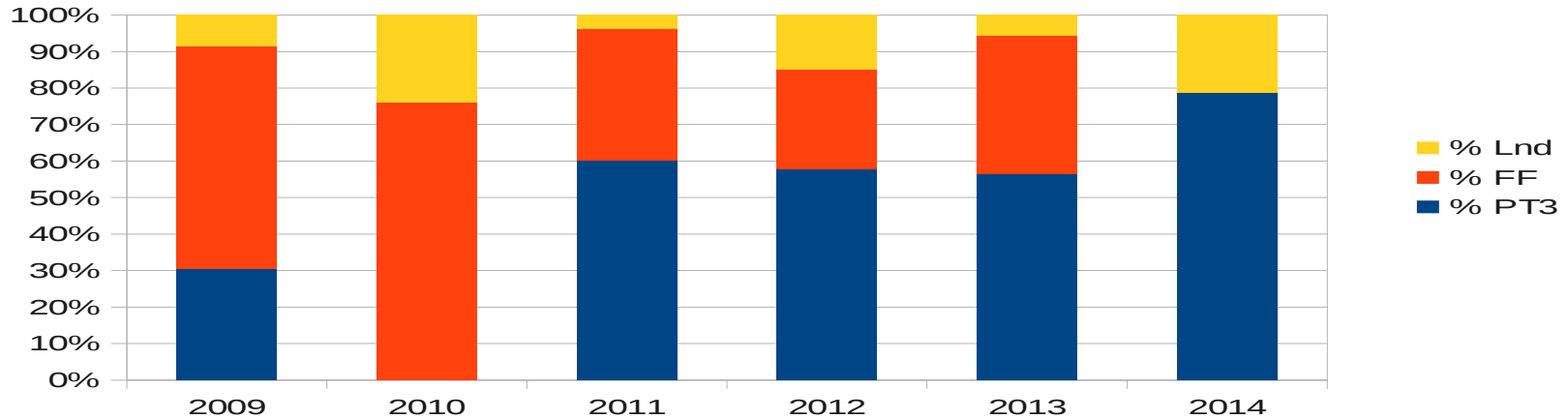
- Look at glider accidents (fatal and non-fatal) reported to the NTSB

	PT3-NF	PT3-F	FF-NF	FF-F	Lnd-NF	Lnd-F	Unk-NF	Unk-F	
2009	9	3	3	3	13	1	1	1	34
2010	4	0	4	2	17	2	0	3	32
2011	0	5	2	3	15	1	0	1	27
2012	4	3	4	0	16	2	0	0	30
2013	1	1	4	1	19	1	0	0	25
2014	5	1	0	0	21	1	0	1	29
	23	13	15	10	101	8	1	6	177

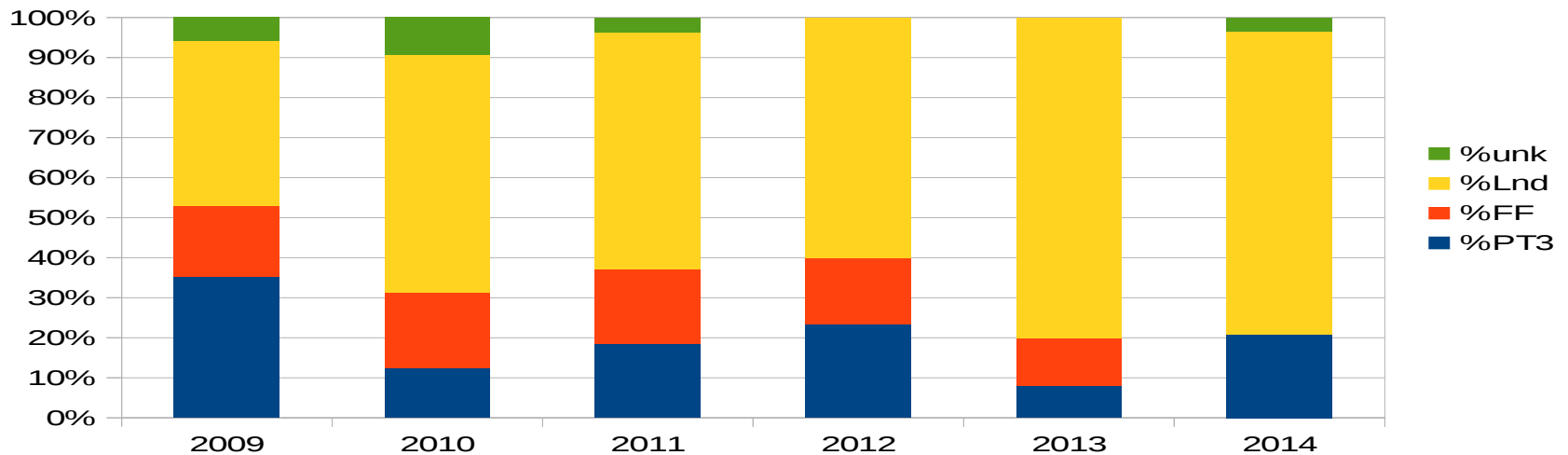


# Soaring Accidents by Category

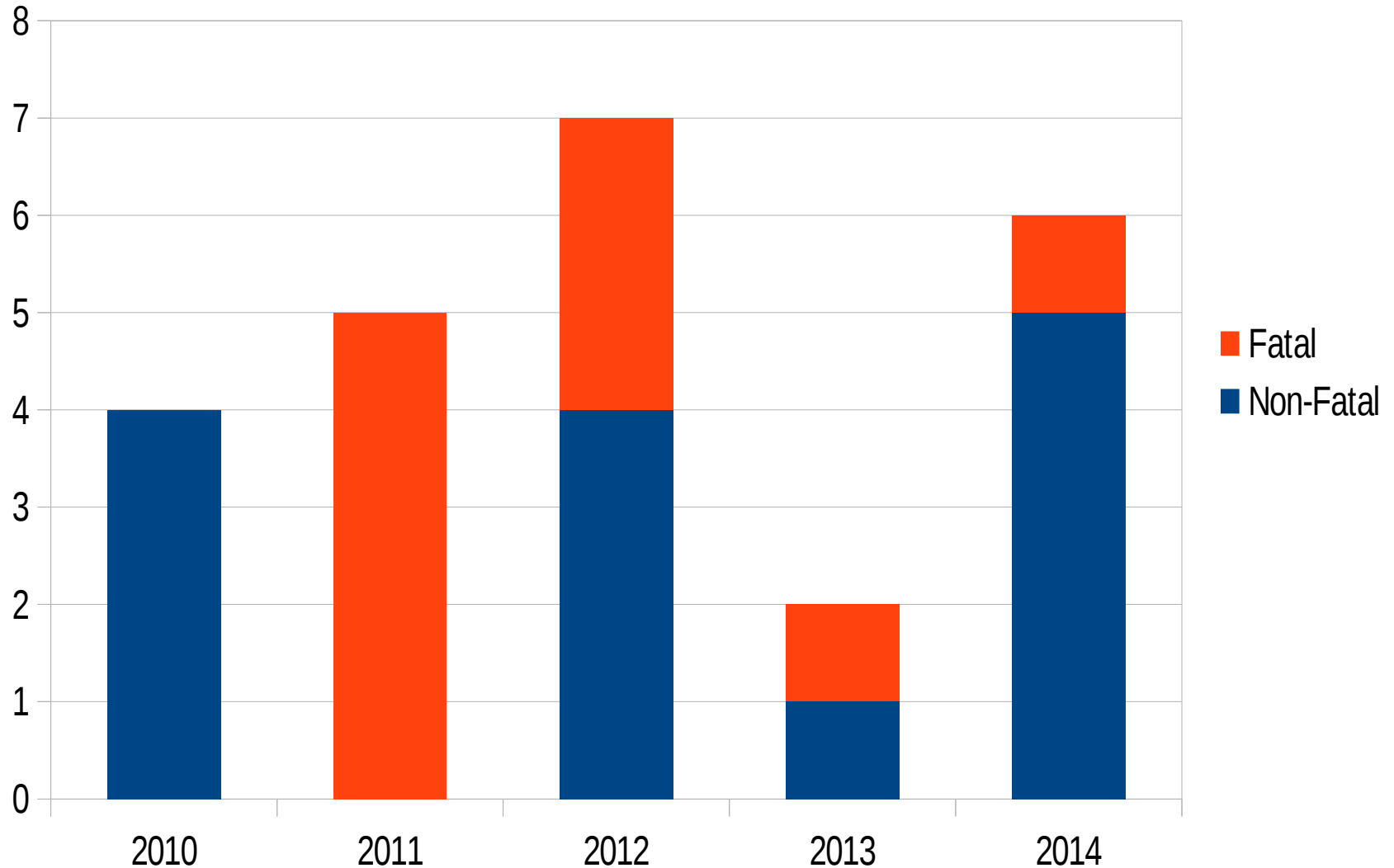
## Percentage of Fatal Accidents by Category



## Percentage of Accidents per Category



## Total Launch (PT3) Accidents

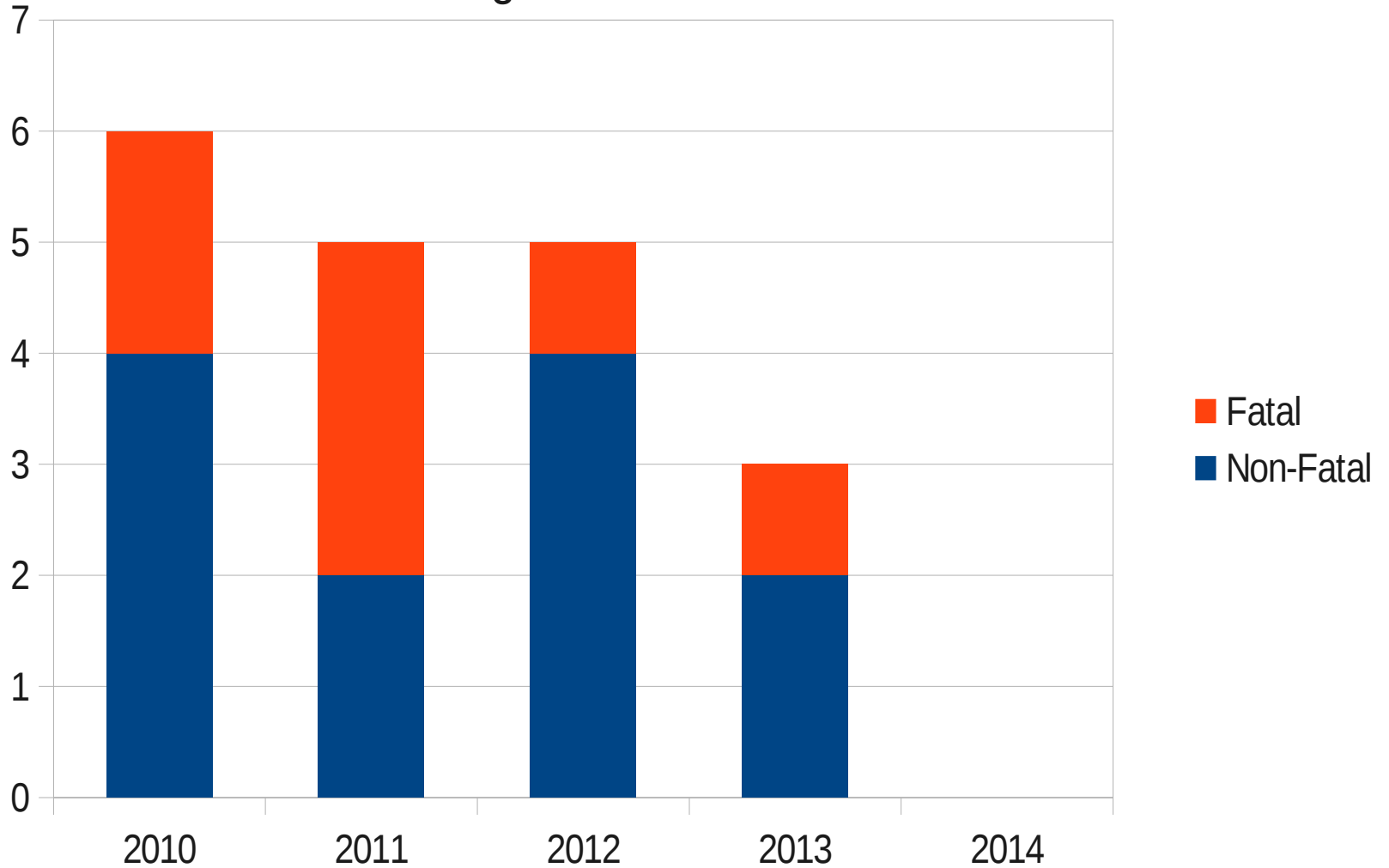


# Major Accidents

- 6 - Launch PT3 events
  - All aerotow, 2 *tow-planes*
- Zuni crashed after separating from tow line at 100'
- 2-33 kited on tow, causing tow-plane to crash
- Both glider and tow-plane turned right after aborting a launch



# Total Cruise Flight Accidents



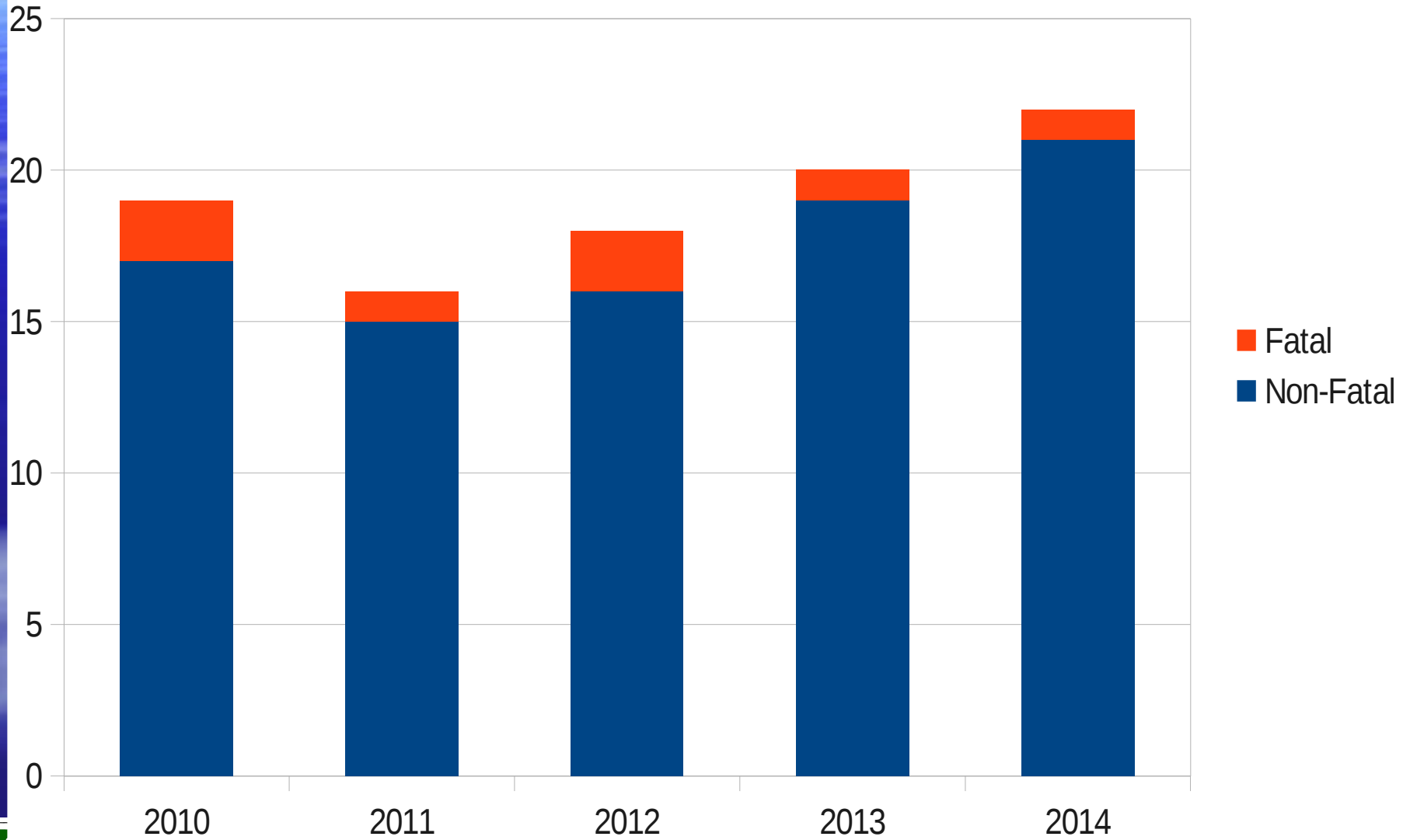
# Cruise Flight Accidents

- No Cruise flight accidents occurred in 2014





## Total Landing Accidents



Fatal  
Non-Fatal



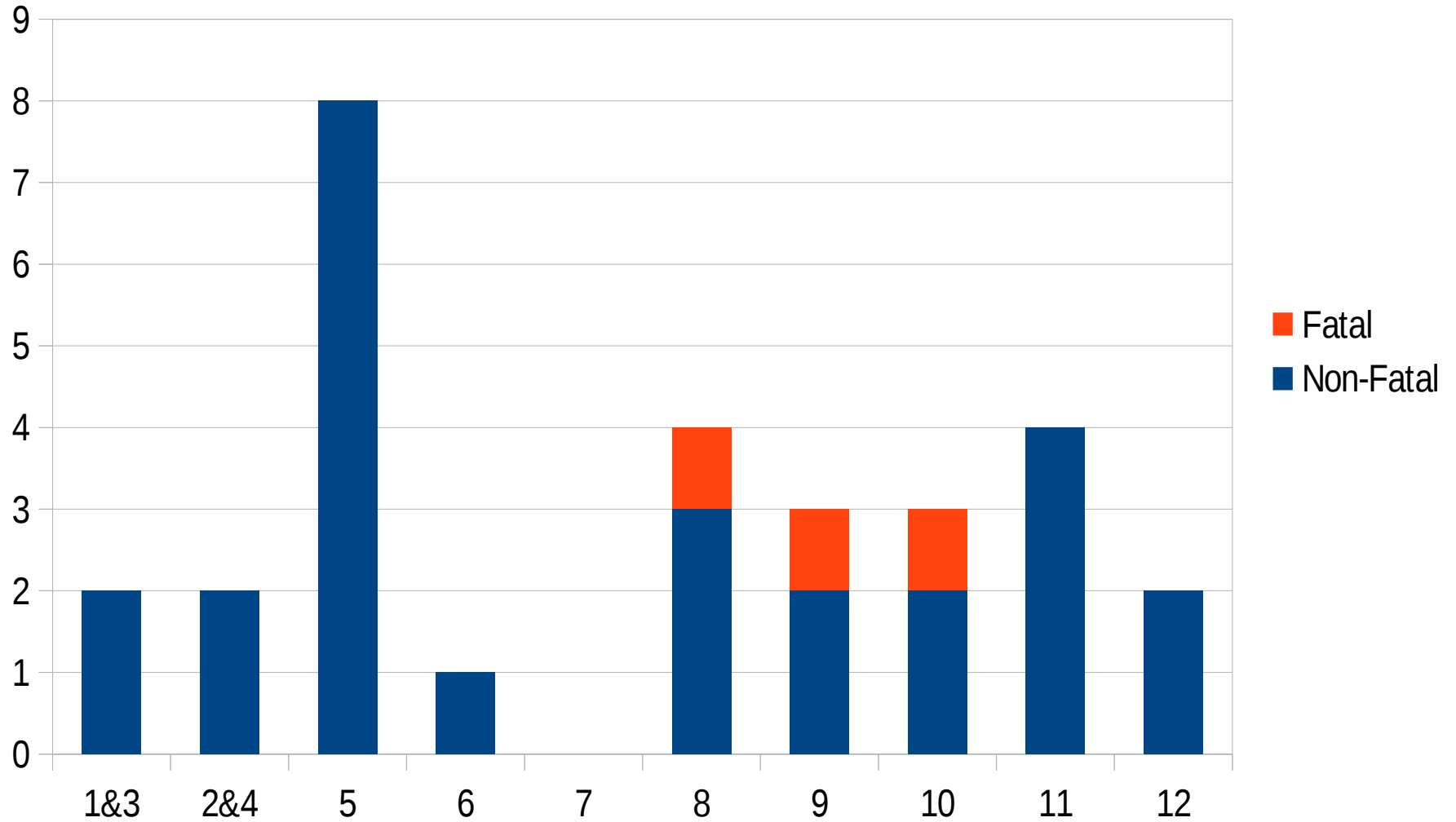
# Landing Accidents

## Major thrust for the past few years

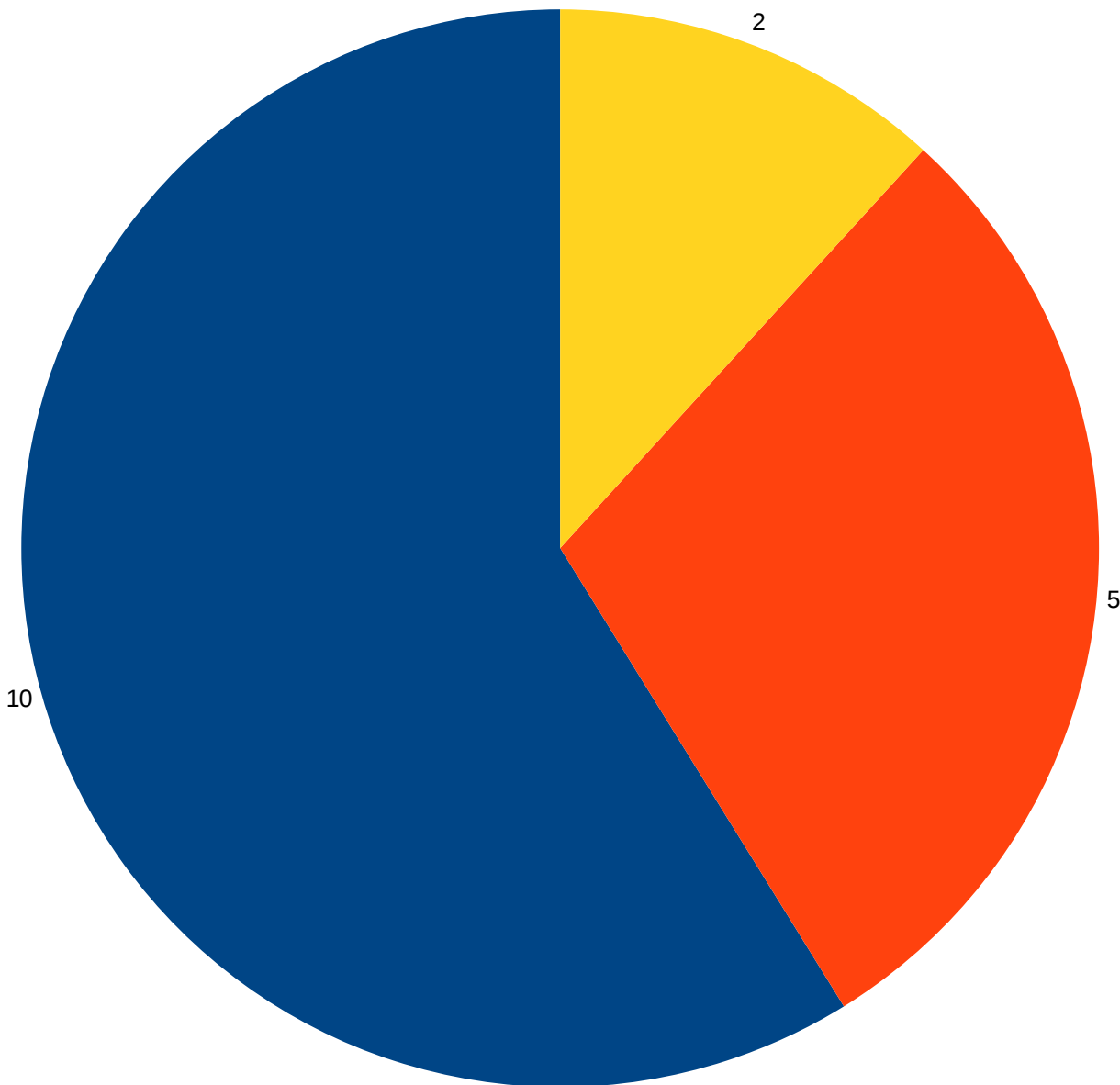
- Hit object on approach – 6
  - Stall/spin on approach -- 5
  - Hit object on ground -- 6
  - Hard landing -- 2
  - Land short (undershoot) -- 1
  - Land long (overshoot) -- 0
  - Other - 2
- 
- 59% of the landing accidents occurred at the home airport



## Accident by SSA Region



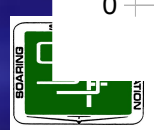
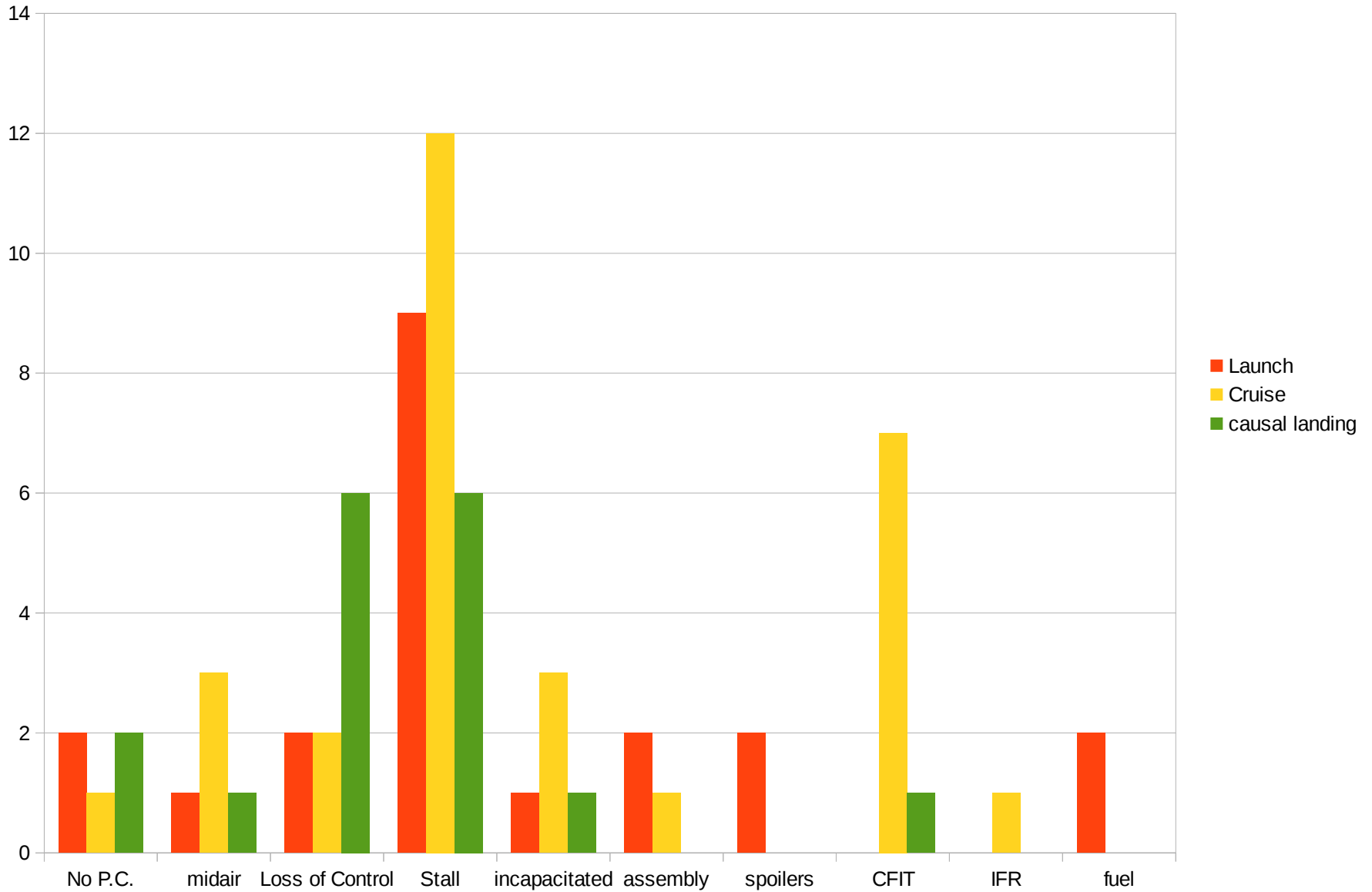
# Fatal Landing Accident Location



- Airport Landing
- Out-landing
- Unknown



# Number of Fatal Accidnets 2002 - 2013





# FAA Wings Program

- Can be used as a continuing Education program
  - Consider alternating ground and flight modules every other month, after completing 6 of them your flight review due date would keep moving forward as you complete the next module

Ground

Flight

Ground

Flight

Ground

Flight

Ground

Flight Review +24 CM

Flight Review extended  
2 CM



# Clinic Objective

- Provide you with a mechanism to:
  - Recognize a problem at your club or school
  - Use the PAVE model to organize your thoughts and create a scenario
  - Write or develop a scenario to guide the discussion with the pilot
  - Use the PAVE model to analyze the scenario and develop the mitigation strategies



# Accident Prevention Techniques

- Refocus on teaching Risk Management skills along with Aeronautical Decision Making Skills in addition to mechanical pilot skills
- Scenario based training that emphasizes RM/ADM skills
- Recognize that our task is to teach pilots to identify and manage risks, not just avoid them!



# Scenario Based Training

- Learn from the experiences and mistakes of yourself and others
- Take an incident or accident and anonymize it so you can talk about it openly
- Determine the causal factors, or guide the audience to the factors that you consider important
- Remember that the pilot was under stress and did not intend to experience this event





# Scenario Based Training

- Develop a scenario to focus on the training of a specific high-level task
  - RM/ADM skills
  - Stick & Rudder skills
- Use the P.A.V.E. Model to identify potential risks and mitigation strategies
- Use pre-written scenarios, video clips, or generate your own





# Scenario Based Training

- You are giving rides to a group of friends. As you are getting settled in for the 4<sup>th</sup> launch, the wing runner says “another glider is on downwind”. You expedite this launch so the runway will be clear for that landing. During the ground roll you realize that your shoulder straps are not fastened. What actions do you take?



# Scenario Based Training

- Pilot
  - Is this pilot exhibiting any behavior patterns that might be factors in this incident
  - What actions is the ground crew taking to assist the pilot's SPRM skills
- Aircraft
  - Are there any issues with the aircraft that influence the pilots decision making process
- Environment
  - How does the runway and staging area impact the situation
- External Pressures
  - Is the pilots desire to begin the flight a factor



# Flight Safety

- Don't be rushed
- Don't assume
- Structured uninterrupted preparation

