

# Safety Evening HGC

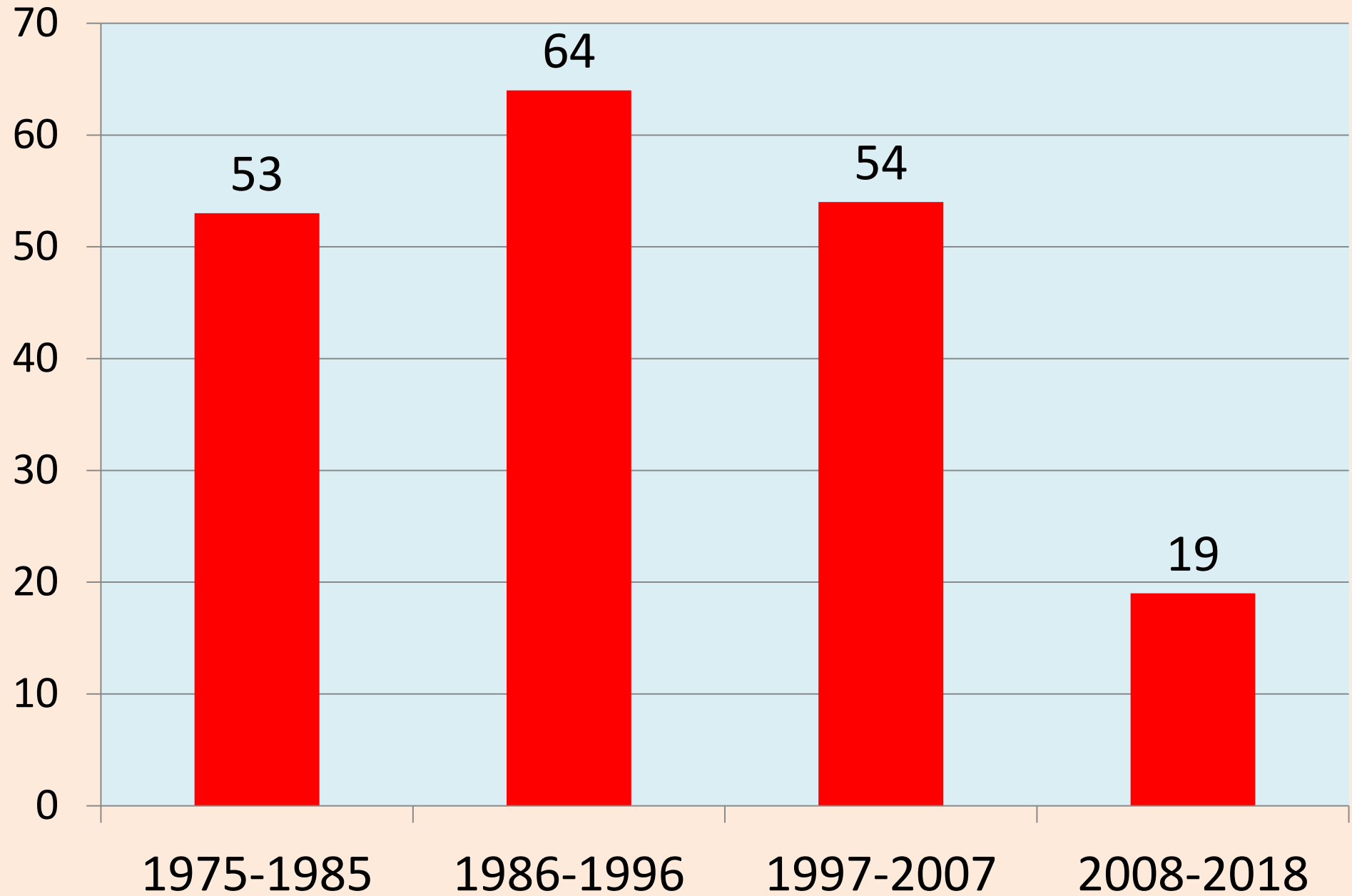
June 2019

# Accident review 2018

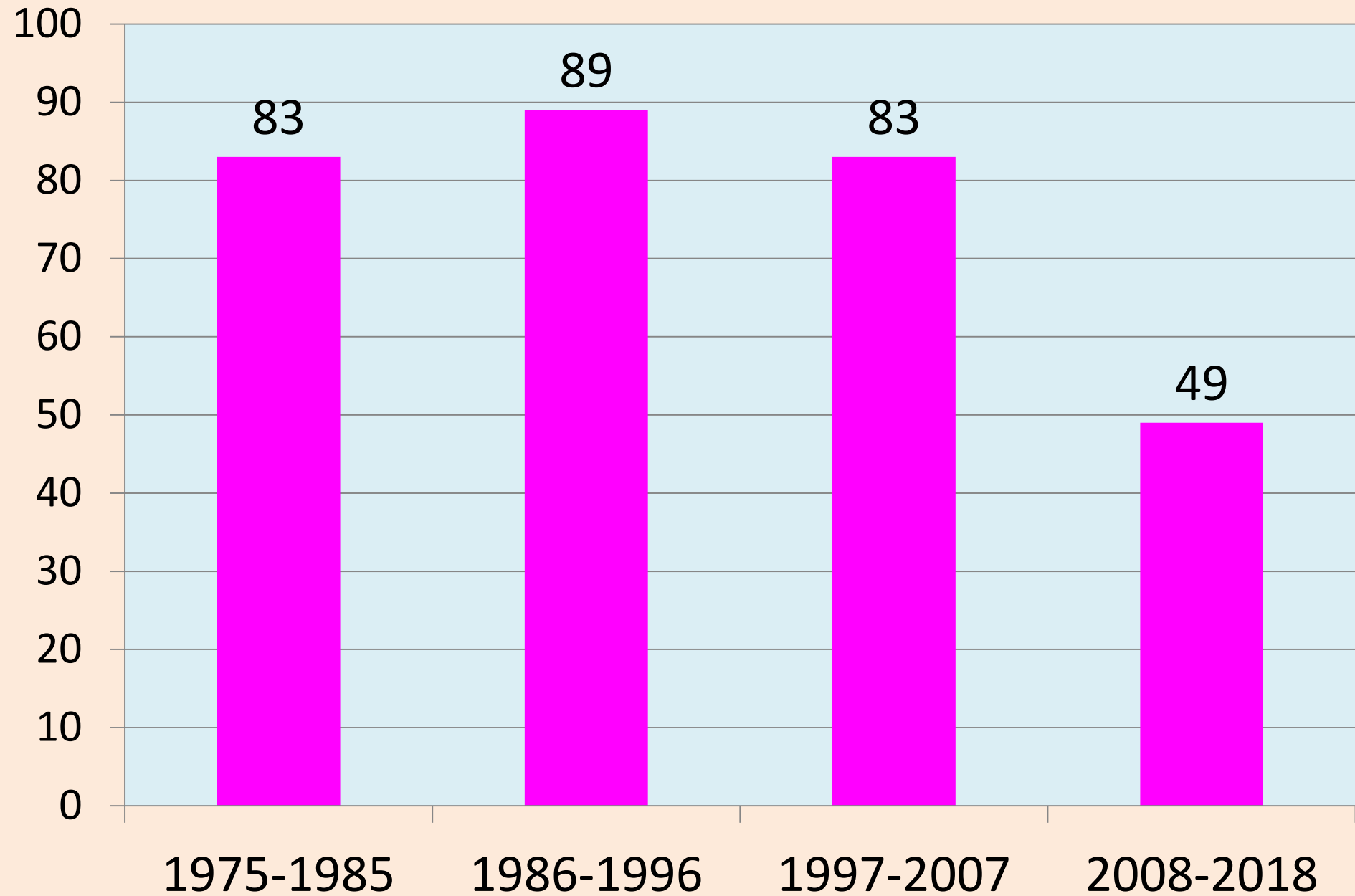
- serious accidents
- trial lesson/introductory flight
- instructing
- safety issues
  - collision
  - winch
  - stall/spin
  - ground
- action summary

# Serious accidents

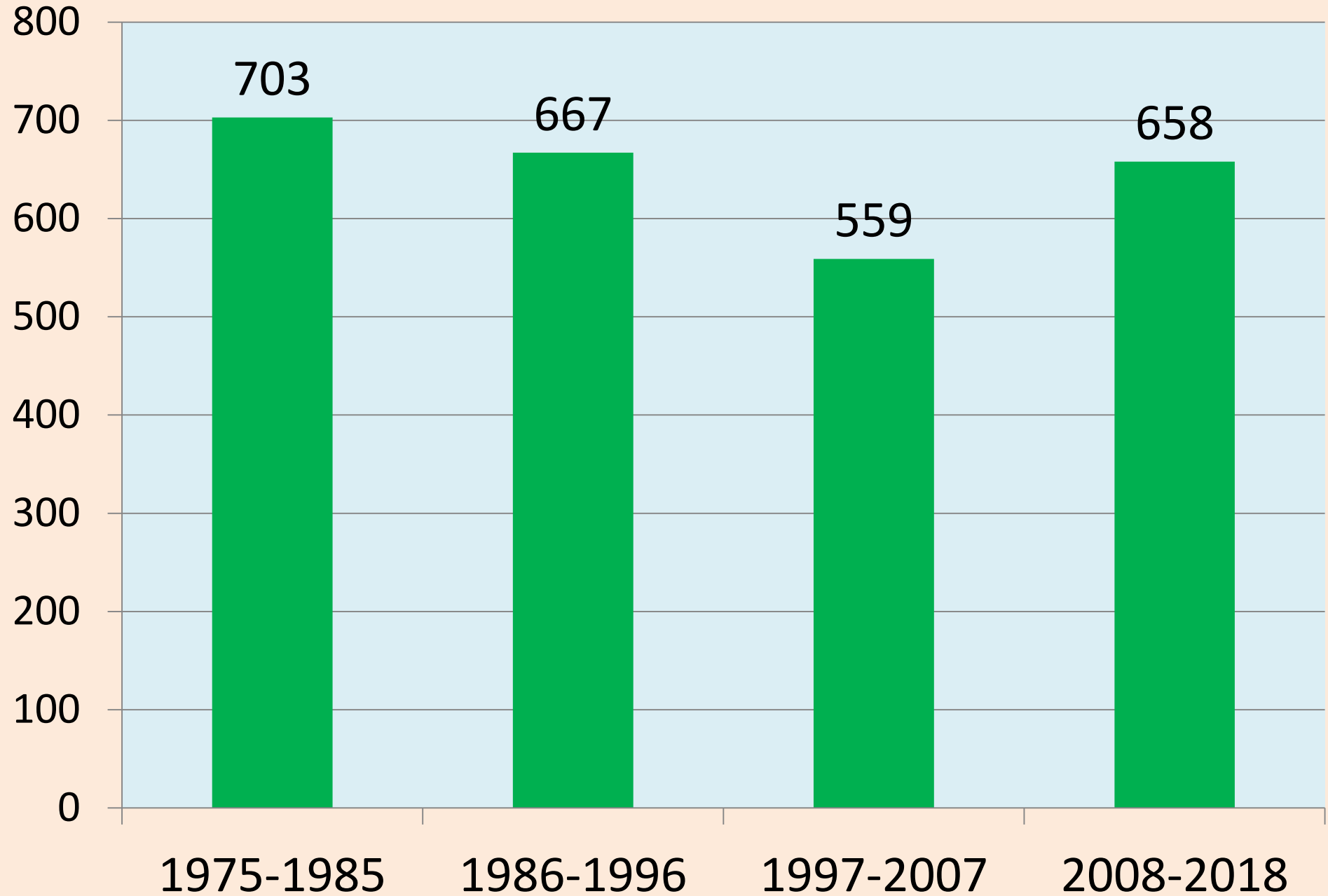
# Fatal Injuries in 11-year periods



# Serious Injuries in 11-year periods



# Substantial damage in 11-year periods



# Fatal TMG accident in 2018

- AAIB report is pending
- MOR states 'impacted tree(s) while landing'
- Simulated field landing??

# Serious injury accidents in 2018

Summary	Notes
Instructing flight, winch launch, wing started to drop, stop signal given, glider stalled at 30-50ft	Life changing injuries
Winch launch, wing drop, cartwheel, glider landed upside down	

# Accident Summary 2018

	fatal injury	serious injury	substantial damage
2018	2	2	50
2008-2017 average	1.7	5	61

# Serious accident annual averages

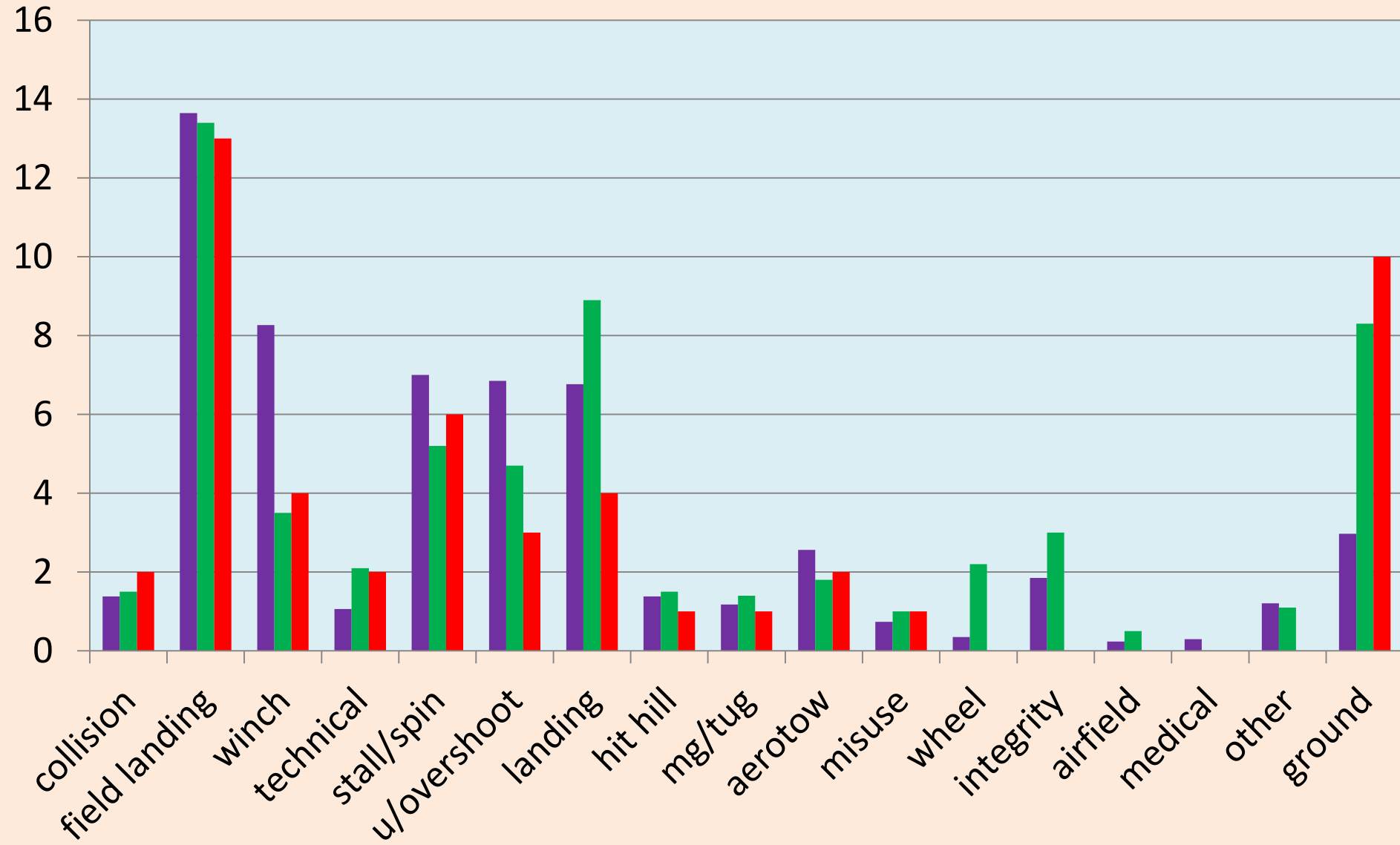
		fatal	serious injury	substantial damage
all	1974-2007	4.32	6.8	58
	2008-2018	1.45	4.4	60
gliders	1974-2007	3.65	6.4	53
	2008-2018	1.27	3.9	54
TMG	1974-2007	0.23	0.26	2.4
	2008-2018	0.18	0.27	3.9
Tug	1974-2007	0.44	0.12	2.3
	2008-2018	0	0.09	1.5

Since 2008:

- glider fatal down by 65%, serious injury down by 40%
- TMG fatal/serious injury unchanged; substantial damage up by 60%
- no airborne tug fatal/serious injury

# Substantial damage per year

1974-2007 avge    2008-2017 avge    2018



# TRIAL LESSON ACCIDENTS

# Trial lesson accidents/incidents

annual rates	fatal injury	serious injury	substantial damage	all
2018			2	12
2008-2017		0.1	1.8	6.8
1974-2007	0.3	0.4	2.1	5.9

# Serious trial lesson accidents 2018

## summary

Crashed on mountain in zero visibility. Stayed airborne to give value for money although showers approaching and other gliders seen returning to land. Rejected outlanding to avoid disrupting club operations.

failure to round out damaged the fuselage

# Other trial lesson accidents/incidents 2018

## Summary

Worn canopy hinge detected after landing

P2 ill, wheel up landing

u/c not locked, collapsed on landing

Wing caught crop landing, groundloop

Landed out

Wing drop after landing, minor damage

Overshot into hedge, landing, minor damage

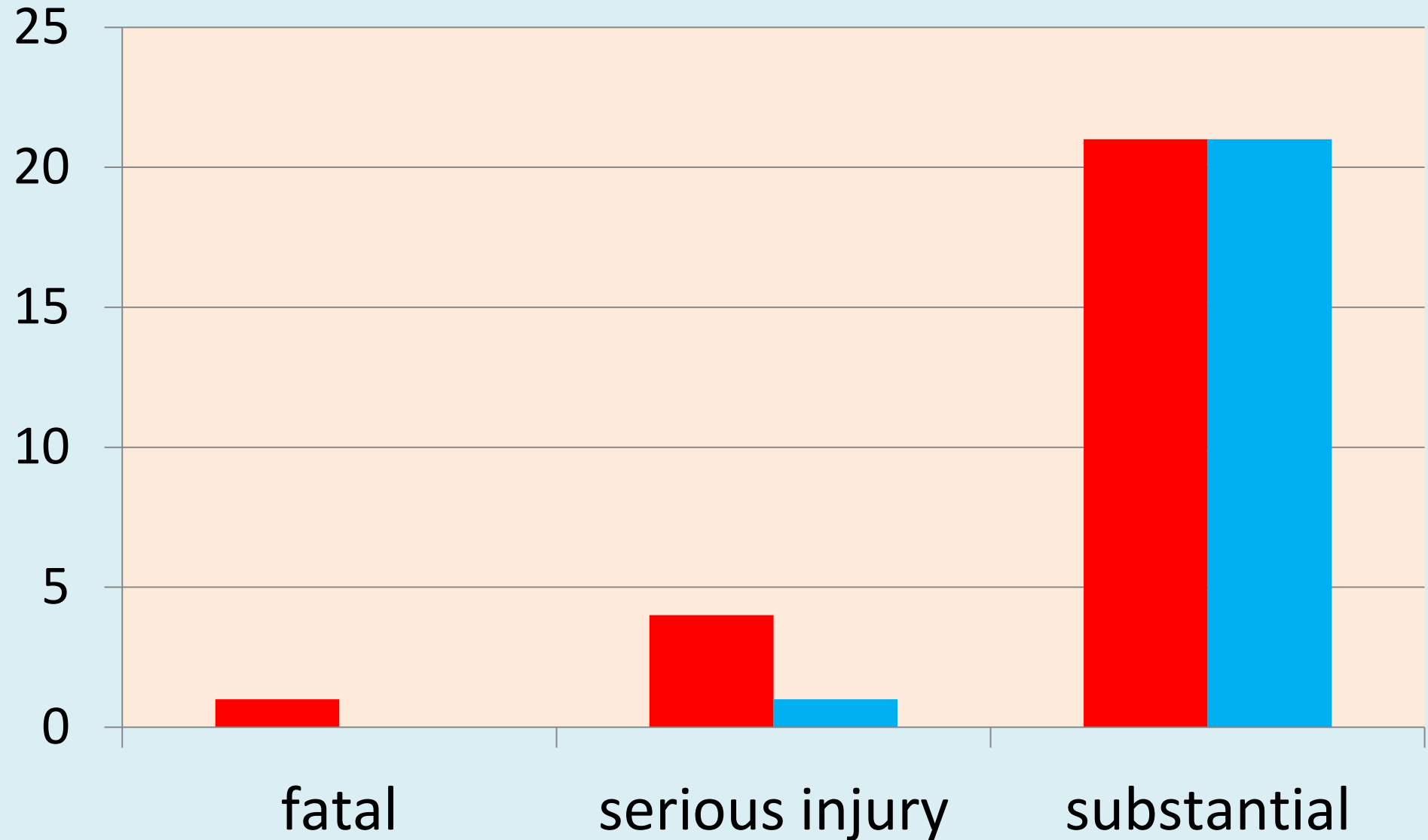
Airbrakes opened on tow

Visitor struck across back, ground handling

Members struck by launching glider

# Recent Trial Lessons

■ 1997-2007    ■ 2008-2018



# Trial lesson safety

- please make it your TOP safety priority
- useful guidance in Managing Flying Risk

# INSTRUCTING ACCIDENTS/INCIDENTS

# Instructing accidents/incidents

	fatal injury	serious injury	substantial damage	all
2018		1	5	20
2017			7	25
2016			6	23
2015		2	7	25
2014			4	20
2013			7	16
2012		1	7	18
2011			3	16
2010			4	13

# Take-Over Guidelines

1. Take over **IMMEDIATELY**, even if you are a very experienced instructor, if P2 makes a potentially dangerous error, for example:
  - on a simulated winch launch failure, does not lower the nose to the appropriate attitude, allows the speed to fall below the minimum approach speed, turns in the wrong direction, opens airbrakes before establishing adequate speed
  - fails to release on a launch with wing drop
  - low final turn
  - shallowing approach
  - fails to round out at an appropriate height
  - takes spin recovery action in a spiral dive
2. Demonstrate safe handling / manoeuvring
3. If near the ground, do not give control back to P2

In some of these circumstances the instructor's limit may be far away. *Immediate* take-over is nevertheless essential because allowing P2 to fly in an unsafe way sends the message that what P2 is doing is acceptable.

In many late take-over accidents the instructor allowed P2 to continue to fly the glider beyond the trigger for take-over, to provide better 'value for money'. This is never the right course of action. Take over and demonstrate. *That* is good value for money.

Many of us have had to change our take-over practices from allowing P2 maximum handling time, which was taught some decades ago. If you have been following that guideline, please make the change today.

## APPENDIX: ILLUSTRATIVE ACCIDENTS

The following three examples from accident reports show when instructor take-over could have prevented a serious accident.

In the first two examples, there were several opportunities to take over; in the third there was just one opportunity.

### 1. Winch Launch Failure at 400ft

#### P1 report

"The correct attitude was obtained (take over if the glider is not accelerating). P2 said he was turning right, which he did, with an airspeed of 42 knots (take over!!). P2 proceeded to fly downwind. No increase in airspeed had taken place which now showed 40kts (take over!!) when a right turn was initiated at far too low an airspeed (it is now too late to avoid the accident). At this stage I said I had control. As this action was taking place P2 over-ruddered right with the airspeed flicking back to 35kts. The glider spun causing serious injury."

### 2. Winch Launch failure at 150ft

#### P1 report

"I advised P2 that if a launch failure occurred the better option would be to turn left, if a landing ahead were not possible. At 150ft the speed decayed (take over!) and at 200ft P2 released (another opportunity to take over if the speed is unsafe). Without lowering the nose sufficiently (take over!!) P2 started a turn to the right. The glider spun causing serious injury. There was plenty of room to land ahead."

### 3. Winch wing drop

The wing dropped immediately the wing tip holder let go (take over instantly). The instructor was aware the wing had dropped but was waiting for the experienced P2 to pick the wing up. Groundloop and substantial damage.

# Instructing accidents/incidents 2018 (1)

injury	damage	Summary
	M	canopy opened on winch launch
	M	brake hose fouled u/c
	S	heavy landing**
		took off with tail dolly attached
M		wing drop, instructor grabbed airbrake to release, near cartwheel
M	S	teaching landings, stalled
S	S	wing drop, stop signal, stall 30-50ft
		wheel up landing

Late take over ? \*\*Stated in report

# Instructing accidents/incidents 2018 (2)

injury	damage	Summary
		tug hit fence on take off
	S	cable break, groundloop in crop
		control checks, rudder jammed, cable off pulley
	S	mid air collision with tug
		TMG, control column detached in flight, refitted

Late take over ? \*\*Stated in report

# Instructing accidents/incidents 2018 (3)

injury	damage	Summary
	M	TMG, prop strike on take-off**
	M	wheel up landing
	M	simulated launch failure, glider stall in climb, cable over wing**
	M	canopy opened on aerotow
		rope break at low level**
	M	heavy landing**
		winch low level demo, groundloop

Late take over ? \*\*Stated in report

# Avoiding instructing accidents

- please ensure ALL your instructors follow the BGA take-over policy

# Supervision of young pilots

- they may have impeccable handling
- but school is a highly structured environment with little scope for taking important decisions
- please ensure your young pilots have INDIVIDUAL supervision

Extract from Sept 2018 circular

To all BGA CFIs

## **SUPERVISION OF GLIDER PILOTS**

### *Young solo pilots*

Pilots under the age of 18 may have exemplary handling skills but a different attitude to risk and little experience of taking important decisions. Clubs should provide their young pilots with individual supervision. This will ensure the club's child protection measures include awareness of young people's needs in terms of active supervision of flying.

In last 5 years, 12 accident/incident reports with P1 age <18. In only one instance, with a 14-year old P1, did the club take vigorous action to enhance supervision

# Accident Issues

# Collision

# Collisions

	all	glider fatalities	glider fatalities >1400'	glider fatalities <1400'
1975-1985	17	7	3	4
1986-1996	15	8	6	2
1997-2007	22	12	4	8
2008-2018	11	1	1	0

Reduction from 12 to 1 from no low collisions and bailing out  
BUT A lucky escape from a potential 4-fatality collision.

Need to reinforce advice:

BGA collision avoidance, Soaring Protocol, Parachuting after  
a mid-air collision

Be prepared!!!

Winch launching

# Winch Accidents: stall/spin

	fatalities	serious injuries	substantial damage
2018		1	1
1975-1985	12	21	62
1986-1996	11	23	56
1997-2007	8	13	32
2008-2018	1	3	10

Fewer stall/spin is where we have improved

# Winch Accidents: wing drop

	fatalities	serious injuries	substantial damage
2018		1	1
1975-1985		2	14
1986-1996			13
1997-2007	1	2	22
2008-2018	1	1	15

No improvement in wing drop

# Winch Accidents

- now in 14<sup>th</sup> year of safe winch launching
- that is pre-history for some members
- can you ensure ALL your members are familiar with the BGA guidance?
- the BGA website has been updated
- please ask your members to view 'safe winch launching part 1' which is a movie with a professional voiceover

Stall/spin

# Accidents 2008-2018

	fatal injury	serious injury	only substantial damage	all
instructing			3	3
trial lesson			3	3
competition		3	5	8
solo/mutual	5	9	28	42
all	5	12	39	56

Predominantly solo

# Accident circumstances 1975-2018

P1 hours	<20	20-499	500+
field landing	1	47	38
trying to return	7	35	5
circuit/wind	2	12	5
local ridge	3	10	3
other distractions	5	26	12
no distractions	15	15	7
all	33	145	70

Distractions!!

# Experienced pilots: thinking ahead

“What? So what? Then what?” (CRM/TEM/six Ps)

## 1 SPOT HIGH-STRESS SITUATIONS before you're in them

- difficult soaring
- marginal glide/low altitude
- fatigue
  - Some may be foreseeable at flight-planning stage
- poor visibility/turbulence/rotor
- airspace/ATC
- hunger/dehydration/full bladder
- Deteriorating conditions? Pressing on? Starting the engine? Landing out?

## 2 IDENTIFY HOW STRESS could affect YOU

- speed control/handling
- reduced control sensitivity
- less ability to analyze
  - Is your glider particularly sensitive to mishandling or misconfiguration?
- glide computer more frustrating to program
- decision-making harder
- difficulty recognizing the inevitable

## 3 TAKE MITIGATING ACTION

- reduce distractions; set instruments
- stow articles; eat/drink something
- fly faster? manoeuvre more gently?
- SPIN risk: monitor speed/balance/altitude
- prepare mentally: expect hard decisions
- **avoid state of denial**
- evaluate risks; beware field landings
- AVIATE – navigate – communicate

# Avoiding stall/spin accidents

- please ensure all your pilots know:
  - inadvertent stall/spin accidents invariably occur to EXPERIENCED pilots in situations of high workload and stress
  - it is necessary to take mitigating action EARLY
  - it is crucial to avoid a state of denial

# Accidents without flight

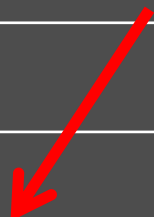
# Accidents without flight 2009-2018

	substantial damage	all
towed glider	41	83
wind	17	38
all other	34	123

# Towed glider accidents

	substantial damage	all
1974-1978	0	2
1979-1983	0	2
1984-1988	1	1
1989-1993	1	6
1994-1998	3	14
1999-2003	2	19
2004-2008	3	14
2009-2013	21	39
2014-2018	20	44
all	51	141

Why ?



# Accidents without flight

- rarely hurt anyone
- but cost much money
- can you help reverse the increasing trend?

# Priorities: summary

- SAFE TRIAL LESSONS
- all instructors adopt BGA take-over policy
- individual supervision of young pilots
- reinforce collision avoidance/parachuting
- reinforce safe winch launch guidance
- avoidance of stall/spin accidents
- care when towing gliders