51ST INTERNATIONAL CONGRESS OF AVIATION AND SPACE MEDICINE
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An Introduction to Airsports Medicine

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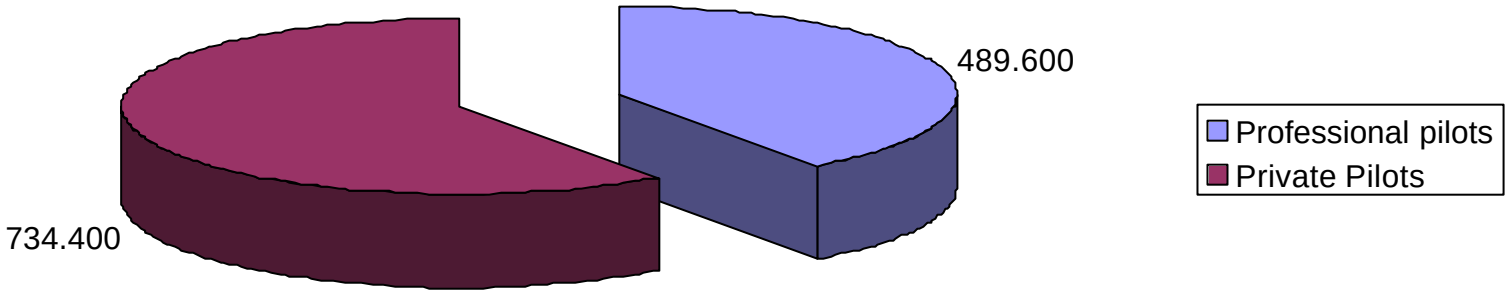
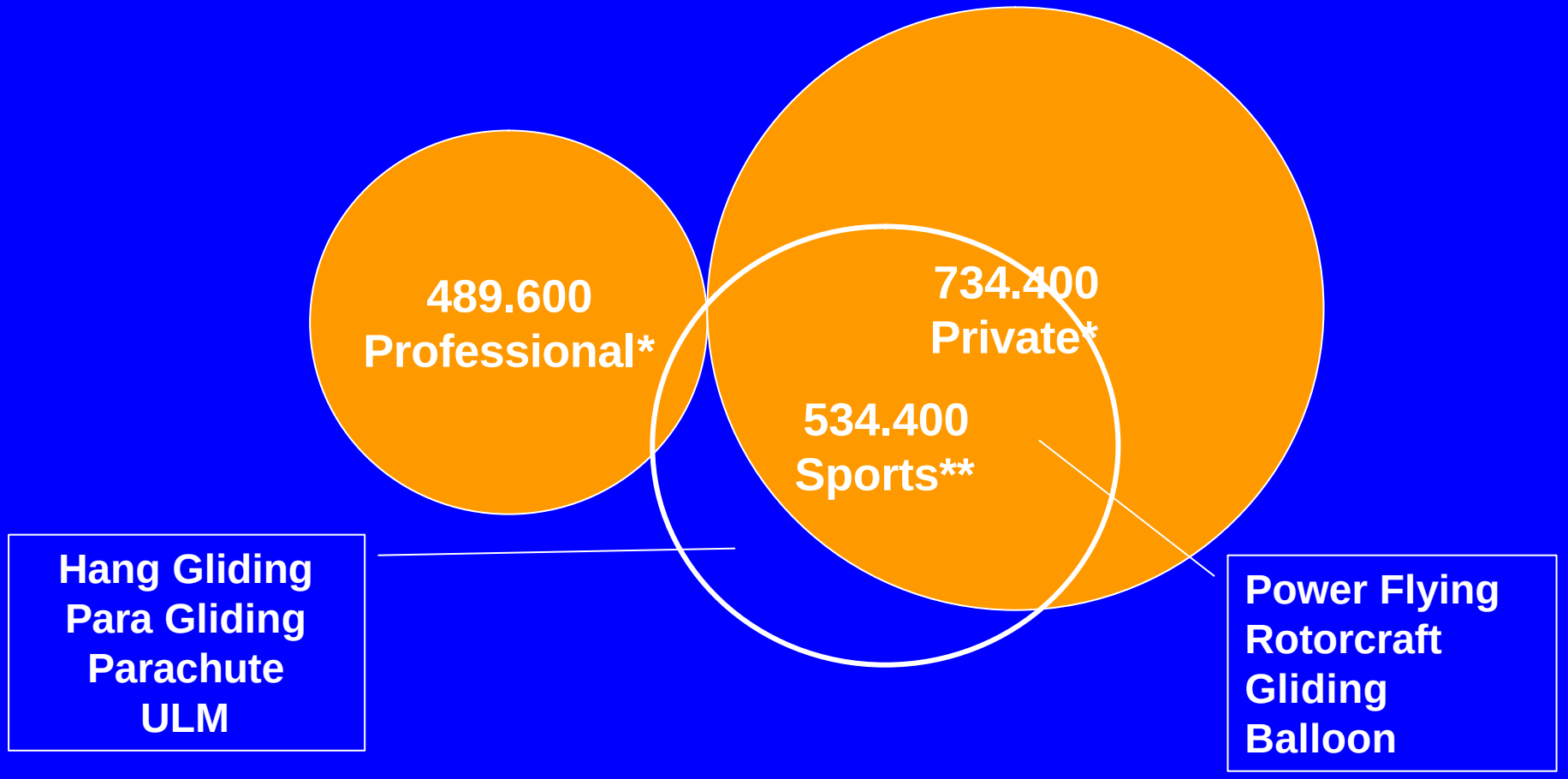
Why “Airsports Medicine” ?

Because there are flyers with specific problems

Pilots in 1999 (ICAO)





Type of Pilots in the World in 1999
(Source ICAO * and FAI**)

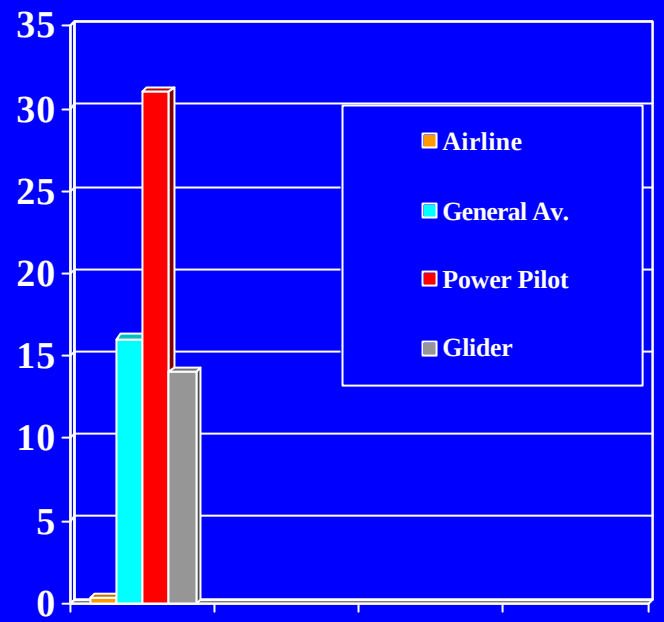
Risks vary widely

Airliners:
0,34 fatal crash/Million flight hours

General Aviation:
16 fatal crashes/Million flight hours

Power Pilot flying 100 h/year:
31 fatal crashes/Million flight hours*

Glider Pilot flying 30 h/year:
14 fatal crashes/Million flight hours*



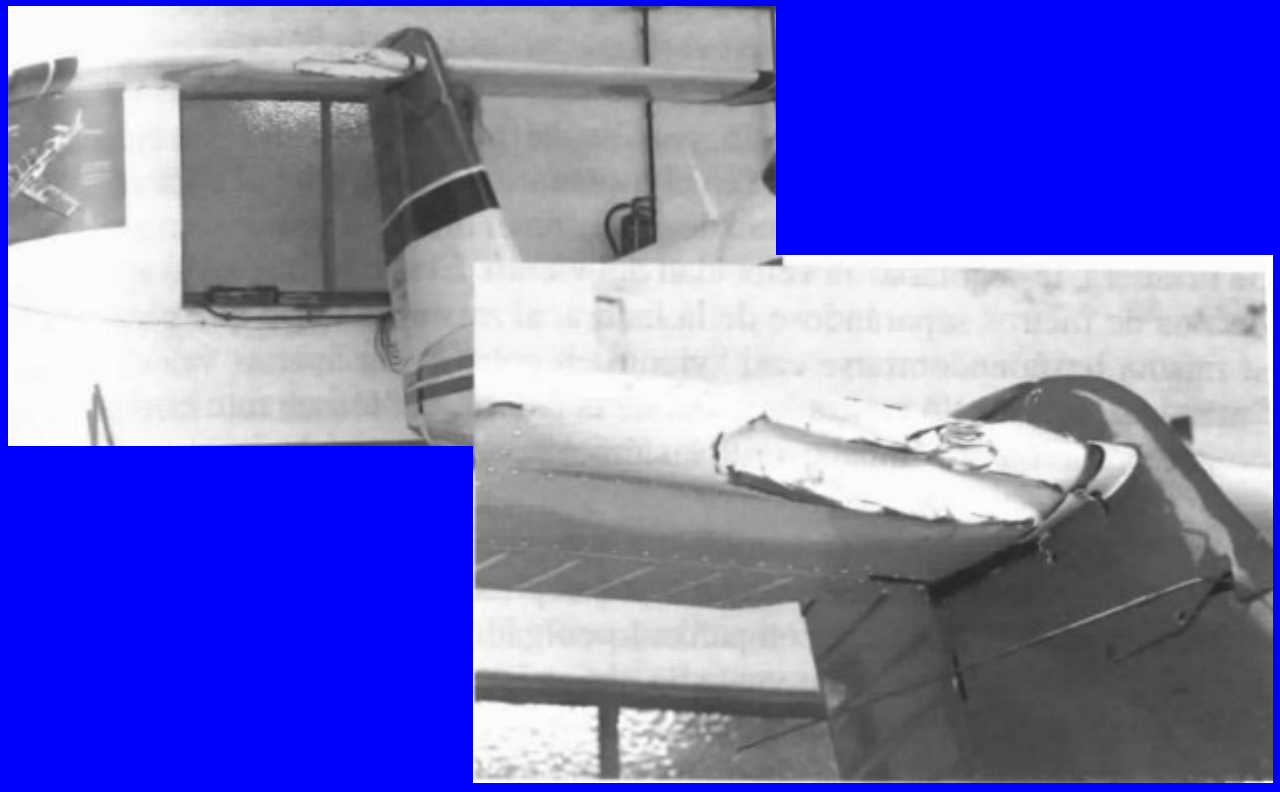
(Sources: FAA and estimation from FAI data)
* Mfh is not an unit used in airsports

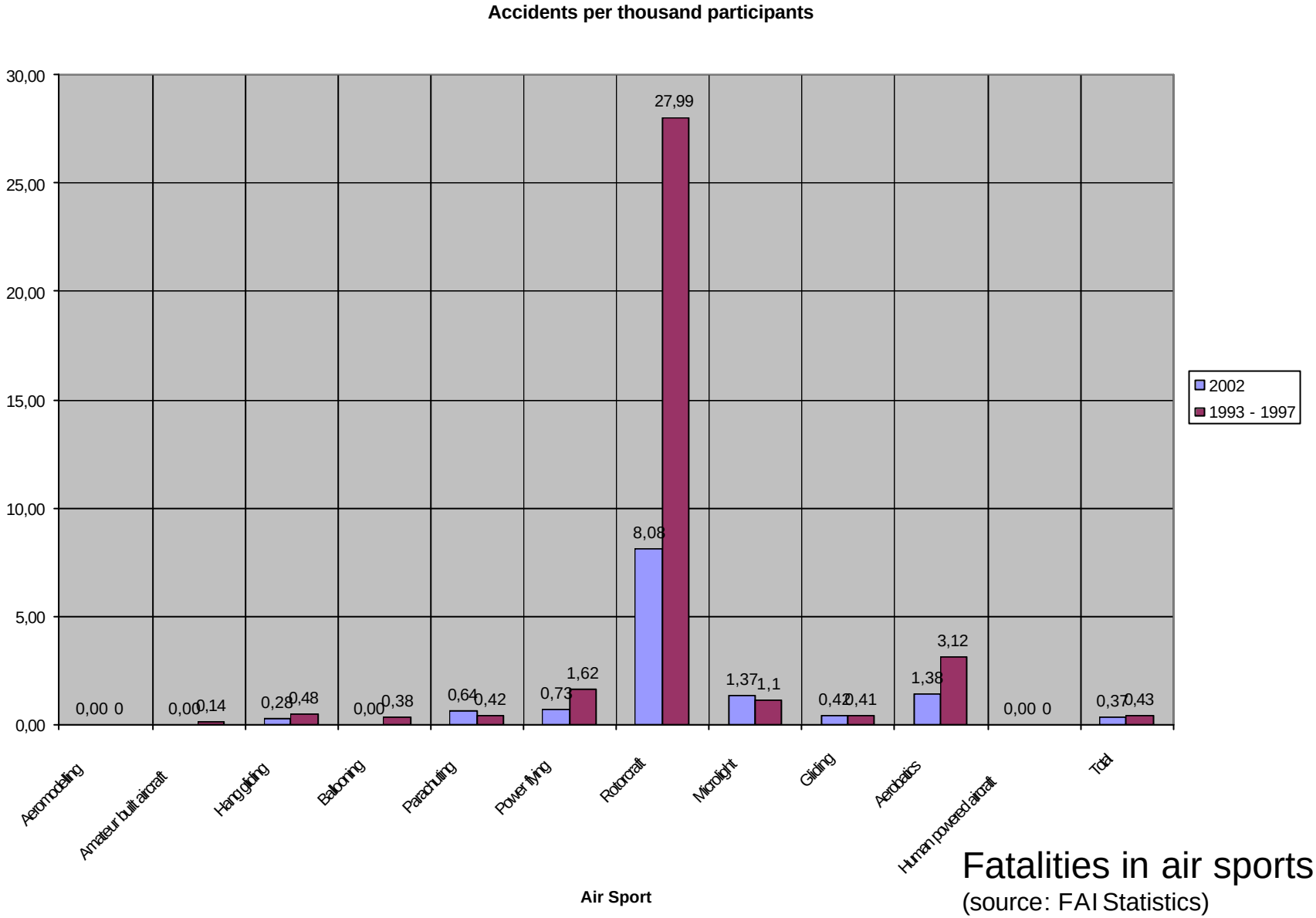
The highest fatal accident rate is found in rotorwing: 166/Million flight hours*

(Source: Estimation from FAI data / * Mfh is not an unit used in airsports)

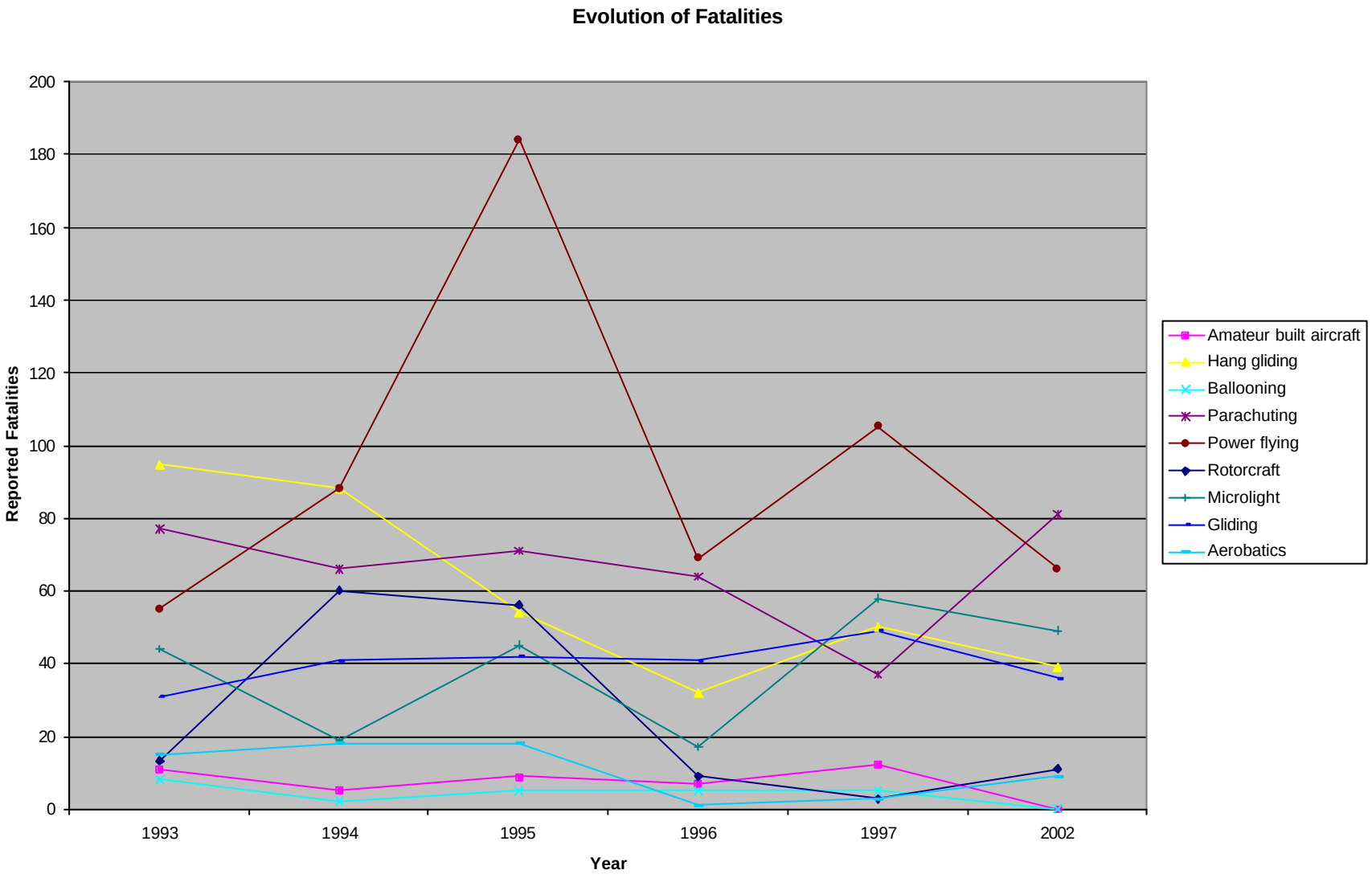
The lowest rate is in aeromodelling though ...

- Some fatal accidents have been recorded
- Air models may be a danger for aviation safety





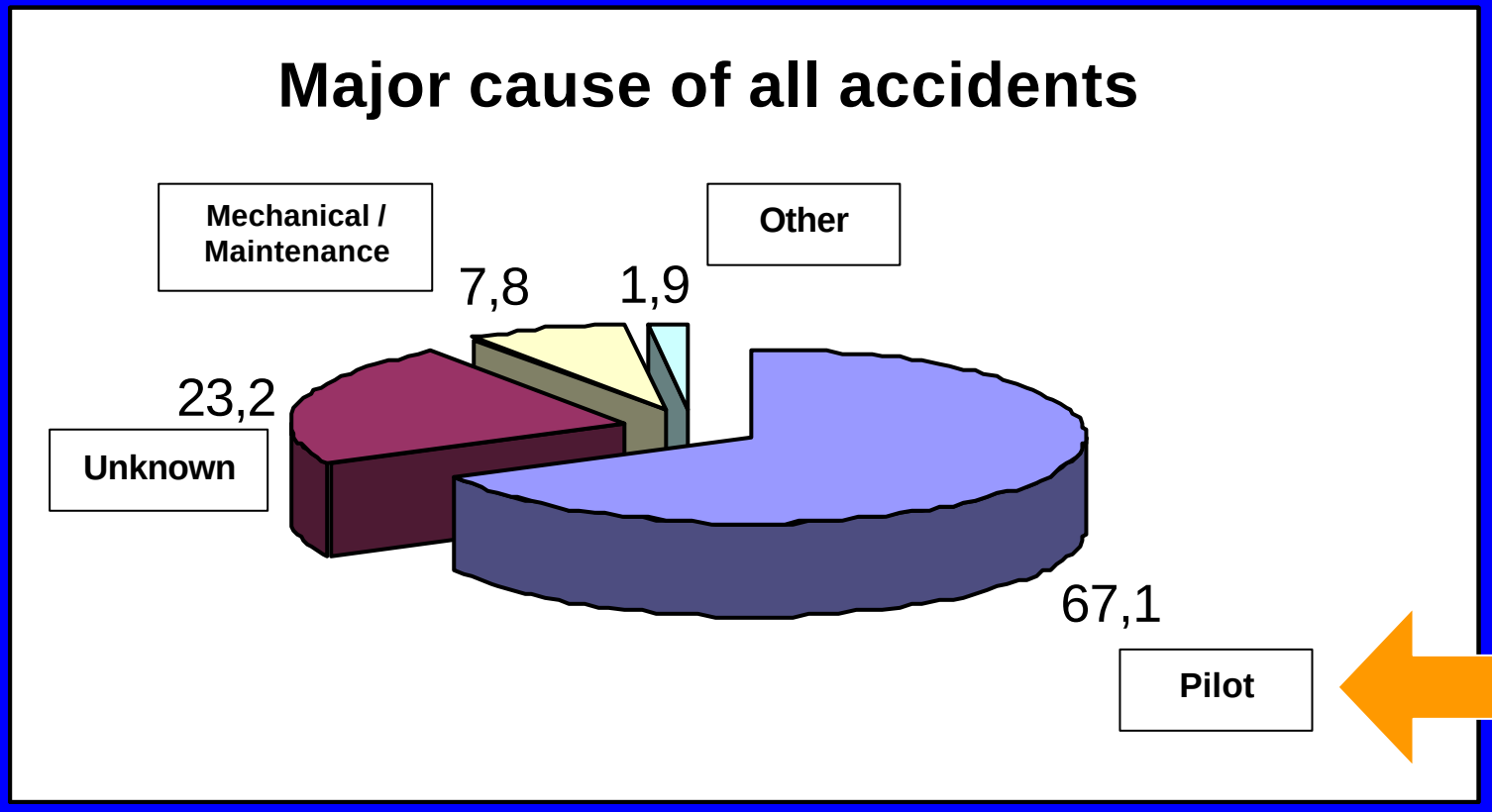
Fatalities in air sports
(source: FAI Statistics)


Evolution of Fatalities
Reported Fatalities
200
180
160
140
120
100
80
60
40
20
0
1993
1994
1995
1996
1997
2002
Year
Amateur built aircraft
Hang gliding
Ballooning
Parachuting
Power flying
Rotorcraft
Microlight
Gliding
Aerobatics

The causes of the airsports accidents are similar to the ones found in other air activities

Major cause of all accidents in power flying

(source NTSB - AOPA Air Safety Foundation)



What are Doctors doing ?

- Medicals ++++

- Teaching / assessing

- Research

Comparison of accident rates vs. need of medical evaluation in USA

	Accidents due to medical incapacitation
Glider / Balloon (no medicals required)	0,33%
GA FAR Part 91 (FAA Certificate for PIC)	0,36%

Source: AOPA ASF - NTSB Data 1983 -2000 on GA 37946 accidents


D-6013
NOTARZT

Medicals and accidents in Gliding 2002

	Medical	**Pilots**
US	None	19600
UK	Self Declaration	9166
Germany	ICAO 2	35650
Accidents	With Severe Injuries	Fatal
US	7	6
UK	5	1
Germany	18	20
Rates	Severe/1000	Fatal/1000
US	0,36	0,31
UK	0,55	0,11
Germany	0,50	0,56

- Medicals ++++

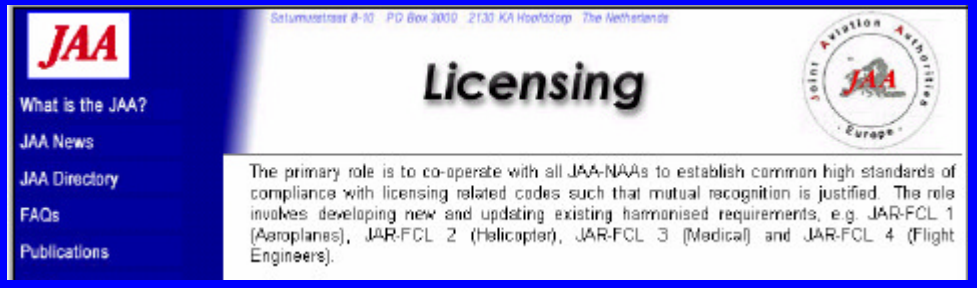
- Teaching / assessing

- Research


CIMP
Comission Internationale Médico-Physiologique
Fédération Aéronautique Internationale

Lobbying...


U.S. Department of Transportation
FEDERAL AVIATION ADMINISTRATION
PILOT MEDICAL CERTIFICATION
FEDERAL AVIATION

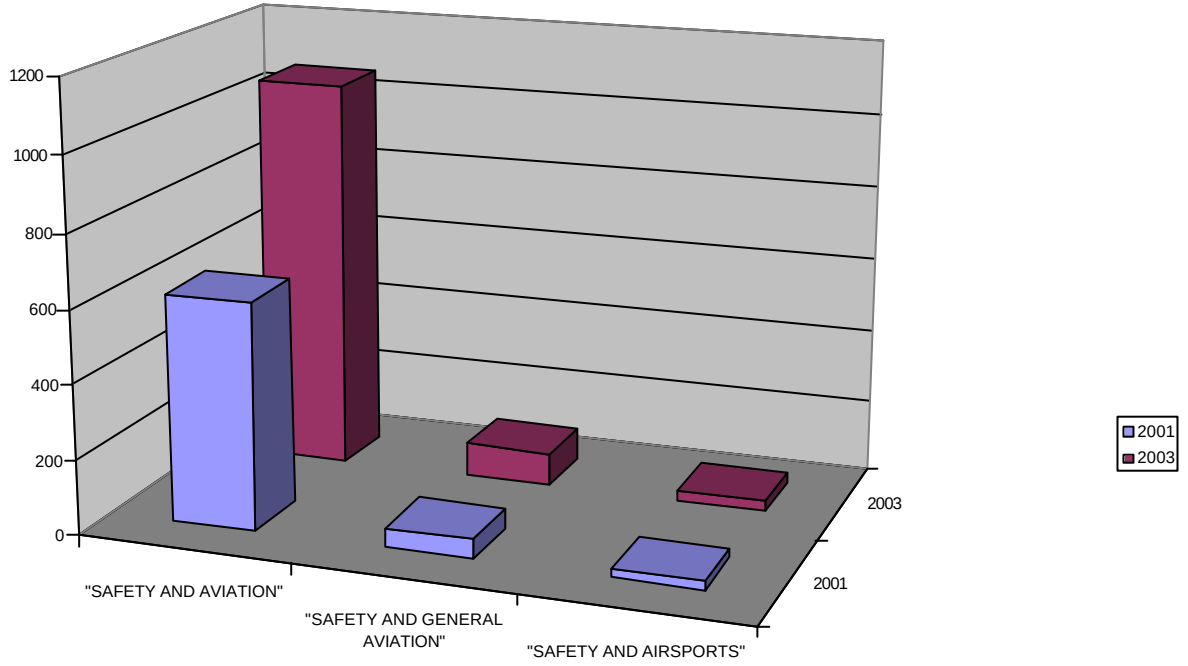

JAA
What is the JAA?
JAA News
JAA Directory
FAQs
Publications
Licensing
Joint Aviation Authorities
Europe
The primary role is to co-operate with all JAA-NAAs to establish common high standards of compliance with licensing related codes such that mutual recognition is justified. The role involves developing new and updating existing harmonised requirements, e.g. JAR-FCL 1 (Aeroplanes), JAR-FCL 2 (Helicopter), JAR-FCL 3 (Medical) and JAR-FCL 4 (Flight Engineers).

- Medicals ++++

- Teaching / assessing

- Research

Medline references on air sports safety



	"SAFETY AND AVIATION"	"SAFETY AND GENERAL AVIATION"	"SAFETY AND AIRSPORTS"
2001	614	54	22
2003	1061	90	31

3!

Proposals for an AirSports Doctors (ASDr) implication in preventing accidents

Research

- Almost all our knowledge comes from the direct aplication of military and commercial medical investigation; specific studies are not easy to realise, but some kind of validation may be done (implementation of practices valid in other areas and study of the results)

- There is a need of quality statistics (what can not be measured can not be managed)

Better practices

ASDrs active in recommending:

- Safety seminars & training
- Regular flying
- Regular maintenance of the machine
- Safer competition rules

Medicals

- Risk - adapted medical licensing rules
- Regular information to airsports pilots on medical issues important to airsports (what is not understood, is not easily put in practice)

TRAINING !!

- Teaching Human Performance Limitations in Airsports
- Adaptation of aviation human factors models (SHEL)
- Aging sports pilots concerns: coping with the end of flying

Aircraft's Design*

- Safer aircraft cells
- Enhanced seats and harnesses
- Helmets
- Developpment of safety simulators for airsports?

* eg. Dr Segal's contributions in gliders

Conclusions
(AOPA Safety Foundation)

ASDr

- A careful maintenance of both the aircrafts' and pilots' skills, good preflight planning and adherence to good operating practices, particularly regarding weather conditions on the planned route and the fuel level.

ASDr

- Periodic refresher courses very important.

ASDr

- Managing the remaining risks: crosswind, traffic, eventual equipment defaults, etc. A good attitude and judgement are needed in these circumstances: the pilot is a risk manager.

Merci de vôtre attention!
Thanks for your attention!