

PILOT OR PENSIONER?

AEROMEDICAL RISK AND FLIGHT SAFETY IN A MATURING POPULATION

Anthony S. Wagstaff

MD D AvMed PhD MBA

President ESAM

Director, Institute of Aviation Medicine, Oslo, Norway

Full professor, University of Oslo



UNIVERSITETET I OSLO
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Background for my views

- Institute of Aviation Medicine Oslo 27 years
- Aviation medicine and occupational health
- Military and civilian aircrew (AME, teaching, research, advice)
- ESAM – with national organisations, EASA cooperation and international partners

Some ideas for discussion

What is ESAM?

46 member
associations
34 countries

Aerospace medicine
professionals including
AMEs, Government,
AMCs, Space, Military,
research and others



Overview

- Background - ESAM involvement in issue so far
- Aeromedical risk
- The pilot population
- Some perspectives on flight safety



ICASM 2017



ESAM panel: Flight in an Ageing Society

“Expanding the Aeromedical Envelope in Europe.”

Location:

ESAM Lunchtime Meeting
The Monet Room.
12 noon to 2 pm.
Wednesday 9th May 2018.
Coffee, English tea and European snacks for tasting.
All welcome.

Personal invitation
AGE 60 - Rule Workshop
HEMS operations

16.-17. March 2017

Hotel NH Danube City
Wagramer Strasse 21
1220 Vienna / AUSTRIA

6th **ECAM**
6th European Congress of Aerospace Medicine



Trust & Care
in aviation safety
PRAGUE 20-23 September 2018





Mayakovskiy:
Congress hall: www.mayak.ru
Saturday
Gala Dinner: www.francouzskarestaurace.cz

A cooperation between
ESAM, AsMA, the Czech Aeronautical Institute &
the Czech Association of Aerospace Medicine
Accreditation foreseen in the EU and US system





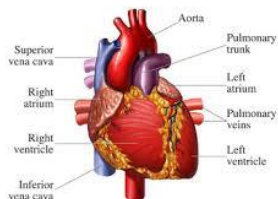

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Follow us soon on Facebook
6th ECAM 2018



Aeromedical risk

(vulnerabilities vs stresses of flight)

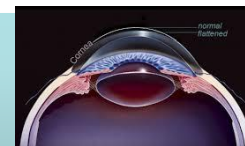


1% Sudden
incapacitation

< 1% of accidents

80% “Subtle
incapacitation”

70-80% of accidents



Sudden incapacitation 1% rule

Assumption	Acceptable risk	Single pilot helicopters?
acceptable» airline accident rate	1×10^{-7}	1×10^{-5}
10% human failure	1×10^{-8}	1×10^{-6}
10% medic	1×10^{-9}	1×10^{-7}
1% of incapacitations cause accidents	1×10^{-7}	1×10^{-7} (all incap cause acc?)
10% of flight is critical	1×10^{-6}	1×10^{-7} (all flight critical?)
10000 Hours in a year,	1%/10000 hrs	0,1 % of 10000 hrs

Pilot or pensioner?

Flight safety
Medical risk
Experience
Cost for society
Market for pilots



Our population

- Life expectancy Norw men 1988=73, 2018=81 (Central beaurau of statistics Norway)
- Pilot mortality for cardiovascular disease SMR - 0.46 **
- Clinical tests of single functional characteristics may underestimate cockpit function *
- Most incapacitations are not age-related

*[Aviat Space Environ Med.](#) 1990 Jan;61(1):52-5.
Hearing loss and radiotelephony intelligibility in civilian airline pilots.
[van Deelen GW](#)¹, [Blom JH](#).

**Hammer GP, et al. *Occup Environ Med* 2014;71:313–322.
doi:10.1136/oemed-2013-101395 (93771 crew members from 10 countries followed over a mean of 21 years)

Individual differences



Safety management

1. Medical risk assessment
2. Prioritisation of risk
3. Risk reduction measures



WATSON DB. *Aeromedical decision-making: an evidence-based risk management paradigm.* Aviat Space Environ Med 2005; 76:58–62.

NAVATHE P, DRANE M, PREITNER C. *Aeromedical decision making: from principles to practice.* Aviat Space Environ Med 2014; 85: 576–80.

Future of aviation medicine?

- Less resources for health checks of pilots with no problems
 - Computer algorithms?
- More resources on difficult decision-making and follow-up of pilots

Thank you for your attention!



ICAM 2020

1ST INTERNATIONAL CONFERENCE OF AEROSPACE MEDICINE
68TH INTERNATIONAL CONGRESS OF AVIATION AND SPACE MEDICINE, ICASM 2020
7TH EUROPEAN CONGRESS OF AEROSPACE MEDICINE, ECAM 2020

24-26 SEPTEMBER 2020

CENTRE DES CONGRES DE LA VILLETTE
PARIS, FRANCE



European Society of Aerospace Medicine

ESAM