Introduction and recent changes to ICAO provisions and guidance

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Plan

• What is ICAO
• What are ICAO SARPs
• What is the current main aeromedical risk to flight safety
• ICAO Manual of Civil Aviation Medicine
• Mental and physical conditions
International Civil Aviation Organization: ICAO
- UN specialized agency created in 1944. Sets international standards in:
  - Safety
  - Security
  - Environmental protection
Air France also operated Concorde…. Solution?
ICAO – Medical Section

• Small section - one person!
  – Relies on support from outside ICAO e.g.
    • Dr Jarnail Singh (CAA Singapore)
    • Dr Ewan Hutchison (CAA UK)
    • Dr Silvio Finkelstein (past ICAO Chief Aviation Medicine)
  – Sets and develops international medical Standards & Recommended Practices (SARPs) for pilots air traffic controllers and other licence holders
  – Develops public health planning SARPS & guidance for aviation
  – Develops training requirements/guidelines for designated (authorized) medical examiners
‘Chicago’ Convention (1944) – 191 signatories

96 Articles

Convention on International Civil Aviation
Convention relative à l’aviation civile internationale
Convenio sobre Aviación Civil Internacional
Конвенция о международной гражданской авиации

19 Annexes to the Convention - ‘Standards and Recommended Practices’ SARPs

• Governments
  Regulatory Aviation Authorities
  e.g.
  • Romanian Civil Aviation Authority
  • Federal Aviation Administration (US)
  • Transport Canada
  • UK CAA
18 ICAO Annexes to the Convention - contain ‘SARPs’

• **Annex 1 Personnel Licensing**
  – Annex 2 Rules of the Air
  – Annex 3 Meteorological Service for International Air Navigation
  – Annex 4 Aeronautical Charts
  – Annex 5 Units of Measurement to be Used in Air and Ground Operations
  – Annex 6 Operation of Aircraft
  – Annex 7 Aircraft Nationality and Registration Marks
  – Annex 8 Airworthiness of Aircraft
  – Annex 9 Facilitation
  – Annex 10 Aeronautical Telecommunications
  – Annex 11 Air Traffic Services
    • Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM)
  – Annex 12 Search and Rescue
  – Annex 13 Aircraft Accident and Incident Investigation
  – Annex 14 Aerodromes
  – Annex 15 Aeronautical Information Services
  – Annex 16 Environmental Protection
  – Annex 17 Security: Safeguarding International Civil Aviation Against Acts of Unlawful Interference
  – Annex 18 The Safe Transport of Dangerous Goods by Air
  – Annex 19 Safety Management
Annex 1

to the Convention on
International Civil Aviation

Personnel Licensing

This edition incorporates all amendments adopted by the Council prior to 5 March 2011 and supersedes, on 17 November 2011, all previous editions of Annex 1.

For information regarding the applicability of the Standards and Recommended Practices, see Foreword.

Eighth Edition
July 2011

International Civil Aviation Organization
**Standard - Definition**

- *Standard*: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38.
• **Recommended Practice**: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as *desirable* in the interest of safety, regularity or efficiency of international air navigation, and to which Contracting States will *endeavour* to conform in accordance with the Convention.
6.3.3.2 Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better.
6.4.2.6.2 Recommendation.— Electrocardiography should form part of the heart examination for the first issue of a Medical Assessment. (Class 2)

Compare with:

6.3.2.6 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment. (Class 1)
1.2.4.9 If the medical Standards prescribed in Chapter 6 for a particular licence are not met, the appropriate Medical Assessment shall not be issued or renewed unless the following conditions are fulfilled:

a) **accredited medical conclusion** indicates that in special circumstances the applicant’s failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence applied for is not likely to jeopardize flight safety;

b) **relevant ability, skill and experience** of the applicant and operational conditions have been given due consideration; and

c) **the licence is endorsed** with any special limitation or limitations when the safe performance of the licence holder’s duties is dependent on compliance with such limitation or limitations.
Guidance is available from the ICAO public website

Manual of Civil Aviation Medicine
   • http://www.icao.int/publications/pages/publication.aspx?docnum=8984
   • Google: “ICAO Medicine Manual”
I. Licensing Practices
   - Chapter 2: Medical requirements

II. Aviation Physiology

III. Medical Assessment

IV. Aviation Pathology

V. Aviation Medical Training

VI. Public Health Emergencies and Aviation
Where do the most important aeromedical hazards lie - physical or mental conditions?

Show me the evidence....
### Medical cause fatal accidents 1980-2000

Global, 2-pilot aircraft, over 5700 kg

<table>
<thead>
<tr>
<th>Year</th>
<th>Aircraft</th>
<th>Medical problem</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>DC 8</td>
<td>Schizophrenia *</td>
<td>High</td>
</tr>
<tr>
<td>1982</td>
<td>Citation</td>
<td>Alcoholic impairment *</td>
<td>High</td>
</tr>
<tr>
<td>1982</td>
<td>Metro</td>
<td>Vomiting (P2) *</td>
<td>High</td>
</tr>
<tr>
<td>1983</td>
<td>Learjet</td>
<td>Use of marijuana (P1 &amp; P2)*</td>
<td>High</td>
</tr>
<tr>
<td>1988</td>
<td>Metro</td>
<td>Use of cocaine</td>
<td>High</td>
</tr>
<tr>
<td>1989</td>
<td>FH 227</td>
<td>Alcohol (P2)</td>
<td>High</td>
</tr>
<tr>
<td>1990</td>
<td>Learjet</td>
<td>Slurred speech, ? cause *</td>
<td>Medium</td>
</tr>
<tr>
<td>1993</td>
<td>Learjet</td>
<td>Alcohol/cocaine (P1)</td>
<td>High (private)</td>
</tr>
<tr>
<td>1994</td>
<td>ATR 42</td>
<td>Suicide *</td>
<td>Low</td>
</tr>
<tr>
<td>1999</td>
<td>An 26</td>
<td>Alcohol (P1 &amp; P2) *</td>
<td>Medium</td>
</tr>
</tbody>
</table>

- Primary Cause
- Excluding hypoxia, fumes, fatigue
What has ICAO done?

- ICAO provisions emphasise need to more fully address mental health issues in pilots
- Guidance on how the routine examination can be adjusted is available (ICAO Manual of Civil Aviation Medicine)
- Aim to promote a culture shift to increase emphasis on mental health fitness (including problematic use of psychoactive substances) issues and on preventative medicine
- Focus more on physical conditions in the older age groups

(60) Mental health aspects of fitness discussed
Yes ☐ No ☐

(61) Behavioural aspects of fitness discussed
Yes ☐ No ☐

(62) Physical aspects of fitness discussed
Yes ☐ No ☐

(63) Preventive health advice given:
Yes ☐ No ☐
1.2.4.2 Recommendation.— States should apply, as part of their State safety programme, basic safety management principles to the medical assessment process of license holders, that as a minimum include:

- a) routine **analysis of in-flight incapacitation events** and **medical findings during medical assessments** to identify areas of increased medical risk; and
- b) continuous re-evaluation of the medical assessment process to **concentrate on identified areas of increased medical risk**.
Summary

• Described ICAO and ICAO SARPs
• Considered the current main aeromedical risk to flight safety
• Described ICAO Manual of Civil Aviation Medicine
• Considered the role of preventative medicine
• Considered the importance of mental/behavioural conditions
• Mentioned new SARP on aeromedical safety management
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What value do we get from aeromedical examinations?

Show me the evidence....