Problematic Use of Substances

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ICAO European Regional Civil Aviation Medicine Seminar/Workshop

București
11-15 November 2013
Topics

- LEGAL ASPECTS
- CLINIC PROTOCOL
- AUDIT OF THE CLINIC
- LABORATORY TESTING
- AMERICAN EXPERIENCE
Problematic Use of Substances in Aviation

- ICAO Annex 1 and 2
- ‘Manual on Prevention of Problematic Use of Substances in the Aviation Workplace’ (Document 9654)
“Problematic use” is defined as follows:

- The use of one or more psychoactive substance by aviation personnel in a way that:
  
  a) Constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or
  
  b) Causes or worsens an occupational, social, mental or physical problem or disorder.
1.2.7.3 **Recommendation.**— *Contracting States should ensure, as far as practicable, that all licence holders who engage in any kind of problematic use of substances are identified and removed from their safety-critical functions. Return to the safety-critical functions may be considered after successful treatment or, in cases where no treatment is necessary, after cessation of the problematic use of substances and upon determination that the person’s continued performance of the function is unlikely to jeopardize safety.*
Annex 2 – Rules of the air

- 2.5 Problematic use of psychoactive substances

No person whose function is critical to the safety of aviation shall undertake that function while under the influence of any psychoactive substance, by reason of which human performance is impaired.

No such person shall engage in any kind of problematic use of substances.
National Legislation

e.g. Air Navigation Order article 65

(1) A person shall not enter an aircraft when drunk, or be drunk in any aircraft

(2) A person shall not, when acting as a member of the crew of any aircraft or being carried in any aircraft for the purpose of so acting, be under the influence of drink or a drug to such an extent as to impair his capacity so to act

Railways & Transport Safety Bill

- Adopts 20mg/100ml limit
- Empowers police to enter aircraft and take sample
- Allows engineers to work with BAC up to 80mg/100ml
- Excludes military aircraft
- Up to 2yrs imprisonment
- Post accident/incident or Due cause
Annex IV EASA Part MED.B.055

- ...disorder due to alcohol or other use or abuse of psychotropic substances shall be assessed as unfit pending recovery and freedom from substance use and subject to satisfactory psychiatric evaluation after successful treatment
A fit assessment may be considered after a period of 2 years documented sobriety or freedom from substance use. At revalidation or renewal a fit assessment may be considered earlier with a multi-pilot limitation.

Treatment may include inpatient treatment for some weeks followed by:

- Review by a psychiatric specialist
- Ongoing review including blood testing and peer reports which may be required indefinitely
Class 1/2 Alcohol/Substance Misuse and Addictions Assessment Process

- Confirmed Diagnosis of Alcohol/Substance Misuse
  - Unfit
    - May continue flying
    - Diagnosis of alcohol or substance misuse
      - Appropriate treatment Documented abstinence
        - Note 3
      - Results acceptable to AMS
        - Class 1 OML
        - Class 2 unrestricted or OSL
          - Follow-up as specified
            - Note 4
      - 18 months Class 1 1 year Class 2
        - Fit class 1 or 2 unrestricted
          - Follow-up as specified by AMS
            - Note 5

- Drink Driving conviction Notification
  - Note 1
    - Further enquiries
    - Concern
      - No diagnosis or evidence of alcohol or substance misuse

- 3rd Party Notification
  - Note 1

NOTES
1) If diagnosis is uncertain (eg first drink driving conviction) fitness may be maintained after discussion with AMS. A 3rd party notification should be investigated - discussion with the individual/AME/GP may help to verify. AME may wish to review. Pilot should be reviewed by specialist if reasonable suspicion or allegation substantiated.

2) By CAA specialist advisor in alcohol and addiction disorders (Class 1) or local psychiatrist (Class 2). To include bloods: MCV, GGT and % CDT (for alcohol misuse) and hair analysis for cannabis, amphetamines, methamphetamine, cocaine, opiates and benzodiazepines (for substance misuse) and alcohol questionnaires (eg 'Severity of Alcohol Dependence Questionnaire', 'The Alcohol Problems Questionnaire' and 'Alcohol Use Disorders Identification Test (AUDIT)').

3) Depending on the individual case and at the discretion of the AMS, treatment and review may include in-patient treatment of some weeks followed by periodic specialist review, and blood/hair testing and buddy reports at each review.

4) A fit assessment may be considered by the AMS after a period of two years documented sobriety or freedom from substance use. At revalidation or renewal a fit assessment may be considered earlier and a multi-pilot (Class 1 'OML') or safety pilot limitation (Class 2 'OSL') may be appropriate.

5) Follow up may be required indefinitely in severe cases. If relapse occurs, a further period of grounding is required, pending further assessment/treatment. More than one episode of relapse is disqualifying.

PLEASE PRINT THIS DOCUMENT AND TAKE TO YOUR SPECIALIST ADVISOR
Clinic Protocol

- Initial Consult 1hr
- Follow Up Consult 1/2hr
- Alcohol History
- Have they required in-patient treatment
- Identify a ‘buddy’
- Consent for a general practitioner/family doctor report
- Samples taken
- Questionnaires
Questionnaires Used

- Severity of Alcohol Dependency Questionnaire
- The Alcohol Problems Questionnaire
- Alcohol in the Workplace Questionnaire
Clinic Protocol

- Return to flying with multi-pilot limitation after no sooner than 6 months
- Follow up initially every 3 months
- At 18 months consider unrestricted certificate
- Ensure ongoing support e.g AA
Rx in Recovery

- CBT
- Relaxation training
- Anger management
- Psychodrama
- Drugs
**Pharmacotherapy**

- Disulfiram-blocks ALDH, S/E’s> halitosis & impotence also psychosis
- Naltrexone-opioid antagonist, reduced euphoria  S/E’s chest pain
- Acamprosate-pre-synaptic GABA$_A$ binding
Case Finding

- Only ¼ of high risk excessive drinkers correctly identified by GPs
- Not knowing what to look for
- Lack of vigilance
- Embarrassment at asking questions
- Not knowing what to do with pilot
- Denial/Evasion
If it walks like a duck and it talks like a duck, it’s probably a ________.

Trust your intuition.
Drink driving charges

- 1 offence – 10% chance of alcohol dependence
- 2 Offences – 30% chance
## Lab Testing for Alcohol

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCV</td>
<td>20-50%</td>
<td>55-100%</td>
<td>Slow fall</td>
</tr>
<tr>
<td>γGT</td>
<td>20-90%</td>
<td>55-100%</td>
<td>Rapid fall</td>
</tr>
<tr>
<td>CDT</td>
<td>60-70%</td>
<td>95%</td>
<td>Herald effect</td>
</tr>
<tr>
<td><strong>HAEMATOLOGY</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-----------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>HAEMOGLOBIN</strong></td>
<td>17.3 g/dL</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HCT</strong></td>
<td>49.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RED CELL COUNT</strong></td>
<td>4.42 x 10^12/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MCV</strong></td>
<td>111.4 fL</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MCH</strong></td>
<td>39.2 pg</td>
<td></td>
<td></td>
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<tr>
<td><strong>MCHC</strong></td>
<td>35.2 g/dL</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RDW</strong></td>
<td>14.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PLATELET COUNT</strong></td>
<td>268 x 10^9/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WHITE CELL COUNT</strong></td>
<td>6.7 x 10^9/L</td>
<td></td>
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</tr>
<tr>
<td>Neutrophils</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lymphocytes</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monocytes</td>
<td>6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eosinophils</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basophils</td>
<td>3%</td>
<td></td>
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</tr>
</tbody>
</table>

**BLOOD FILM REPORT**

Red cells show slight macrocytosis. Normal white cell and platelet populations. Staffed.

<table>
<thead>
<tr>
<th><strong>BIOCHEMISTRY</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BILIRUBIN</strong></td>
<td>143 mmol/L</td>
</tr>
<tr>
<td><strong>ALKALINE PHOSPHATASE</strong></td>
<td>5.9 mmol/L</td>
</tr>
<tr>
<td><strong>ASPARTATE TRANSFERASE</strong></td>
<td>78 mmol/L</td>
</tr>
<tr>
<td><strong>ALANINE TRANSFERASE</strong></td>
<td>107 mmol/L</td>
</tr>
<tr>
<td><strong>LDH</strong></td>
<td>48 IU/L</td>
</tr>
<tr>
<td><strong>CK</strong></td>
<td>10 IU/L</td>
</tr>
<tr>
<td><strong>BIOCHEMISTRY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL PROTEIN</strong></td>
<td>78 g/L</td>
</tr>
<tr>
<td><strong>ALBUMIN</strong></td>
<td>48 g/L</td>
</tr>
<tr>
<td><strong>GLOBULIN</strong></td>
<td>30 g/L</td>
</tr>
<tr>
<td><strong>CALCium</strong></td>
<td>2.48 mmol/L</td>
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<tr>
<td><strong>Corrected Calcium</strong></td>
<td>2.36</td>
</tr>
<tr>
<td><strong>PHOSPHATE</strong></td>
<td>0.88 mmol/L</td>
</tr>
<tr>
<td><strong>URIC ACID</strong></td>
<td>423 mmol/L</td>
</tr>
<tr>
<td><strong>RANDOM BLOOD GLUCOSE</strong></td>
<td>5.8</td>
</tr>
<tr>
<td><strong>TRIGLYCERIDES</strong></td>
<td>2.23 mmol/L</td>
</tr>
<tr>
<td><strong>CHOLESTEROL</strong></td>
<td>6.70 mmol/L</td>
</tr>
<tr>
<td><strong>IRON</strong></td>
<td>41 umol/L</td>
</tr>
</tbody>
</table>

**ESR**

- 143 mmol/L
- 5.9 mmol/L
- 78 mmol/L
- 107 mmol/L
- 48 IU/L
- 10 IU/L
- 78 g/L
- 48 g/L
- 30 g/L
- 2.48 mmol/L
- 2.36
- 0.88 mmol/L
- 423 mmol/L
- 5.8
- 2.23 mmol/L
- 6.70 mmol/L
- 41 umol/L
Lab Testing for Drugs

- Hair best for a regulator
- Looks at a 3/12 window

- Standard UK CAA screen:
  - Cannabis
  - Amphetamines
  - Methamphetamines
  - Cocaine
  - Opiates
  - Benzodiazepines
A Year in the life of the Substance Misuse Clinic 2012

- Held every other Friday
- 102 Consultations
  - 19 Initial Assessments
  - 83 Follow-ups
Mode of Referral

- AME 24%
- Drink/Driving (3 police 2 newspaper) 17%
- Fleet manager 13%
- Pilot/ATCO-self referral 13%
- Cardiologist or other CAA specialist 10%
- Positive Flight Deck Breath test 10%
- Peer tip offs 7%
- Employee assistance programme 3%
- Other-Fighting just prior to duty 3%
Sex and Substance

- 93% Men
- 90% Alcohol
- 10% Drugs

Cocaine
Ecstasy
GHB
Cannabis
LSD
Relapses

- 7% and 7% decide to stop flying and continue drinking

Treatment

- In –patient 20%
- Out-patient 17%
American Experience

- FAA random testing for alcohol in pilots (over 40mg/100ml)

<table>
<thead>
<tr>
<th>Year</th>
<th>Results</th>
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</thead>
<tbody>
<tr>
<td>2001</td>
<td>9 positives</td>
</tr>
<tr>
<td>2002</td>
<td>22 positives</td>
</tr>
</tbody>
</table>
| 2003 (up to OCT)  | 9 positives
But 15 positives for drugs |
## US Aviation Industry Drug Testing 2001

<table>
<thead>
<tr>
<th>TYPE TEST</th>
<th>TOTAL TESTS</th>
<th>TOTAL POSITIVES</th>
<th>RATE %</th>
</tr>
</thead>
<tbody>
<tr>
<td>RANDOM</td>
<td>117,339</td>
<td>694</td>
<td>0.59*</td>
</tr>
<tr>
<td>REASONABLE SUSPICION</td>
<td>288</td>
<td>27</td>
<td>9.4</td>
</tr>
<tr>
<td>POST ACCIDENT</td>
<td>460</td>
<td>9</td>
<td>2.0</td>
</tr>
<tr>
<td>PRE-EMPLOYMENT</td>
<td>136,862</td>
<td>2,047</td>
<td>1.5</td>
</tr>
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</table>

*NOT COUNTING REFUSALS*