

# Medical reasons for definitive unfitness of ATCO's at EUROCONTROL

Dr Vermeiren, Head medical Service

# Applicable legal rules from may 2008 on

- European Directive 2006/23/EC, Article 12:
- “The issuing of medical certificates shall be **consistent** with the provisions of **Annex I** to the Chicago Convention on International Civil Aviation and the Requirements for **European Class 3 Medical Certification** of Air Traffic Controllers laid down by **Eurocontrol**.”

# Applicable harmonisation rules from 2006 on

- **EUROCONTROL** :The Human Resources Team of the Member States released these **European Class 3 Medical requirements for ATC** in 2006 as a “European Air Traffic Management deliverable”.
- For immediate use by all Member States as an “**acceptable means of compliance**” in the context of the EUROCONTROL Safety Regulatory Requirements ( **ESARR's** ) for ATM Services' Personnel.
- Will be replaced by a reviewed **EUROCONTROL « specification »** , as part of an European Regulation in 2011
- **EASA class 3 implementing rules** should be ready for 2013

# A lot of new rules...



# Aviation medical services and medical certificates

- Medical examinations by authorised doctors (AMS/AMC/AMEs) and appeal procedure
- Requirements and guidance for specific training of AMEs: advanced certificate in aviation medicine + class 3 assessment qualification training, including examination and refreshers
- Art 15.1 of the EU Directive: “... each Member State shall recognise licenses ... of another Member State ... as well as the accompanying medical certificates”

# AME Class 3 training

- [Advanced certificate in aviation medicine](#), training in aviation rules and regulations, medical subjects and psychology
- [ATC-related topics](#):
  - organisation and structure of ATC and international organisations
  - familiarisation with ATC working positions and tasks
  - aviation psychology relevant to ATC
  - human factors in ATC, including TRM
  - current and future systems in ATC
- [Practical work](#) - experience in ATC simulation
- Followed by an [examination](#)
- Authorisation for a [specific period](#) of time

# Team resource management



# AME cl 3 Refresher Training

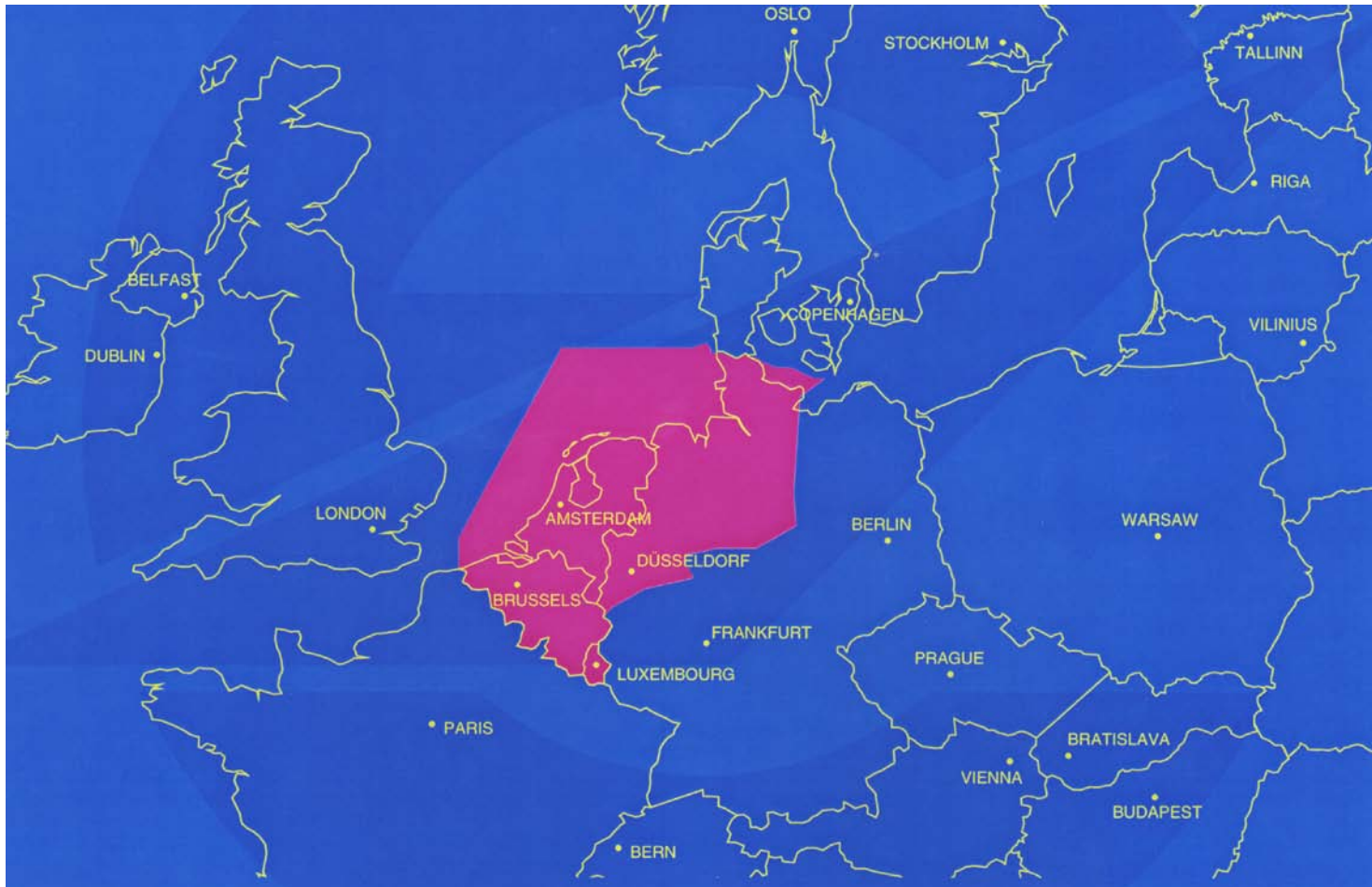
- On a **regular** basis
- Lectures on **advances** in aviation medicine
- Changes in the ATC working **environment**
- **Practical** exercises ( simulation )
- Examination **may** follow



# The area controlled by EUROCONTROL MUAC

- Delta-Coastal sectors :  
part of the North sea, The Netherlands, Northern Germany
- Brussels sectors : Belgium, Luxemburg, part of Northern France until Nancy
- Hannover sectors : Mid – /Western Germany
- Above 24.500 feet, (7.5 km)
- Approximately 1.5 million controlled flights per year, 5000/day

# controlled zone



# History of Rules regarding Medical fitness at Eurocontrol

- Internal “Rule 26” applicable , according to ICAO standards
- Adapted : no colour-deficiency allowed !
- Non compliants went on pension or put in corridor-functions
- Later : development of European class 3 rules by EUROCONTROL
- “Translated” into New internal EUROCONTROL Rule 26 in 2002
- Thus no EEG anymore, colour-deficiency problem was already solved

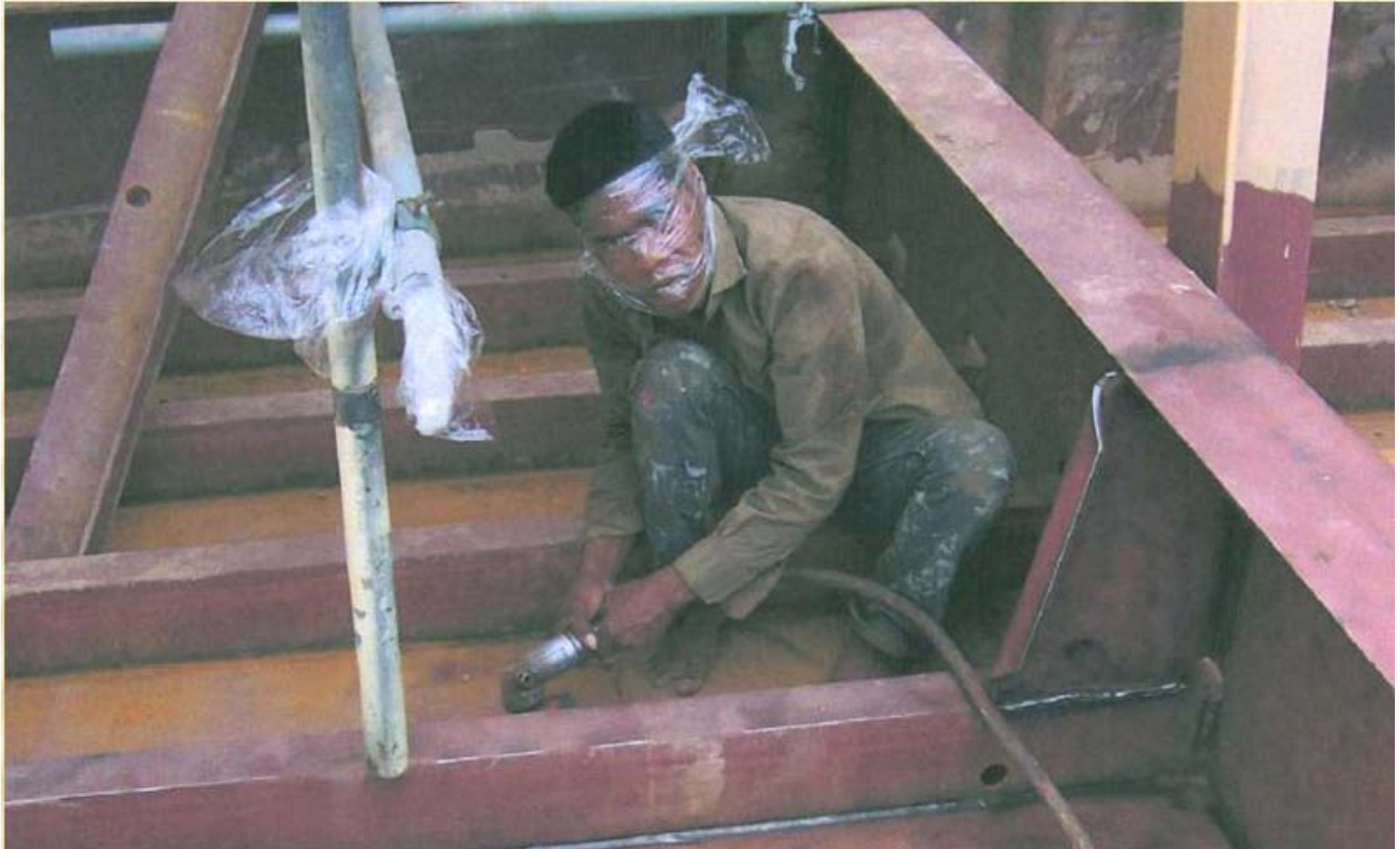
# extra Eurocontrol examinations

- Drugscreening at initial aeromedical examination
- extensive bloodtesting at each revalidation ( on demand of ATC's representatives )
- By security team : random testing for alcohol- and drugs ( with blow-pipe and saliva-smear, positive results to be confirmed by breath analyser or blood-tests); started after social dialogue
- Extensive questionary regarding ophthalmological condition (to be filled in by ophthalmologist ) before invitation for initial aeromedical examination

# Certificate of visual performance

- To be completed by a medical dr, *specialised in ophthalmology*
- Abnormalities of the function, active pathological condition ( acute or chronic ), eye surgery or eye trauma ?
- Visual acuity R, L, binocular : distant, intermediate and near
- Refraction
- Convergence
- Accomodation
- Binocular vision, stereopsis
- Muscular balance ( heterophoria's )
- Fusional reserve
- Fields of vision
- Colour vision
- Biomicroscopy
- Optic fundi
- tonometry

# Check for eye lesions



# INVALIDITIES for AIR TRAFFIC CONTROL functions

**FROM 1989 TO 2010, population +/- 300 ATC : 22 cases / 21 years**

- from 1989 until 1999 : 17 cases
- from 2000 until 2010 : 5 cases ( last in 2005 )
- 6 cases over 55 years old
- 8 cases over 50 years old
- 4 cases over 45 years old
- 1 case over 40 years old
- 2 cases under 40 years old
- ( 1 unknown age )

## 1989: 2 cases

- 1
  - a) age : unknown
  - b) years of service : 20
  - c) diagnosis : **post-accidental** : orthopaedic ( back )
  
- 2
  - a) age: 57
  - b) years of service : 25
  - c) Diagnosis : **multifactorial** :
    - Pulmo: asthma, CARA, emphysema, allergy
    - Endocrino: diabetes II not insulino-dependent, obesity
    - Urogenital : kidney stones
    - Cardial: arrhythmia (ventr + supraventr), ES
    - Psychological : burn out, stress intolerance, palpitations, depressive reactions



# 1991: 1 case

- a) age: 57
- b) years of service : 31
- c) diagnosis: **psychological** :  
depression + abuse of alcohol and medication

## 1993: 1 case

- a) age: 22
- b) ATCO student for 1 year
- c) diagnosis: **psychological** :  
anorexia nervosa

# 1995: 4 cases

- a) age: 49
  - b) years of service : 22
  - c) diagnosis : **neurological** :  
spondylodiscitis with epidural abscess leading to transversal lesion with spasms, paraplegia
- 

- a) age: 48
- b) years of service : 16
- c) diagnosis : **multifactorial** :
  - endocrino: non insuline-dependent diabetes
  - psychiatric: aggressive/manic psychosis
  - alcohol abuse with cirrhosis and oesophageal varices

## 1995 (continued )

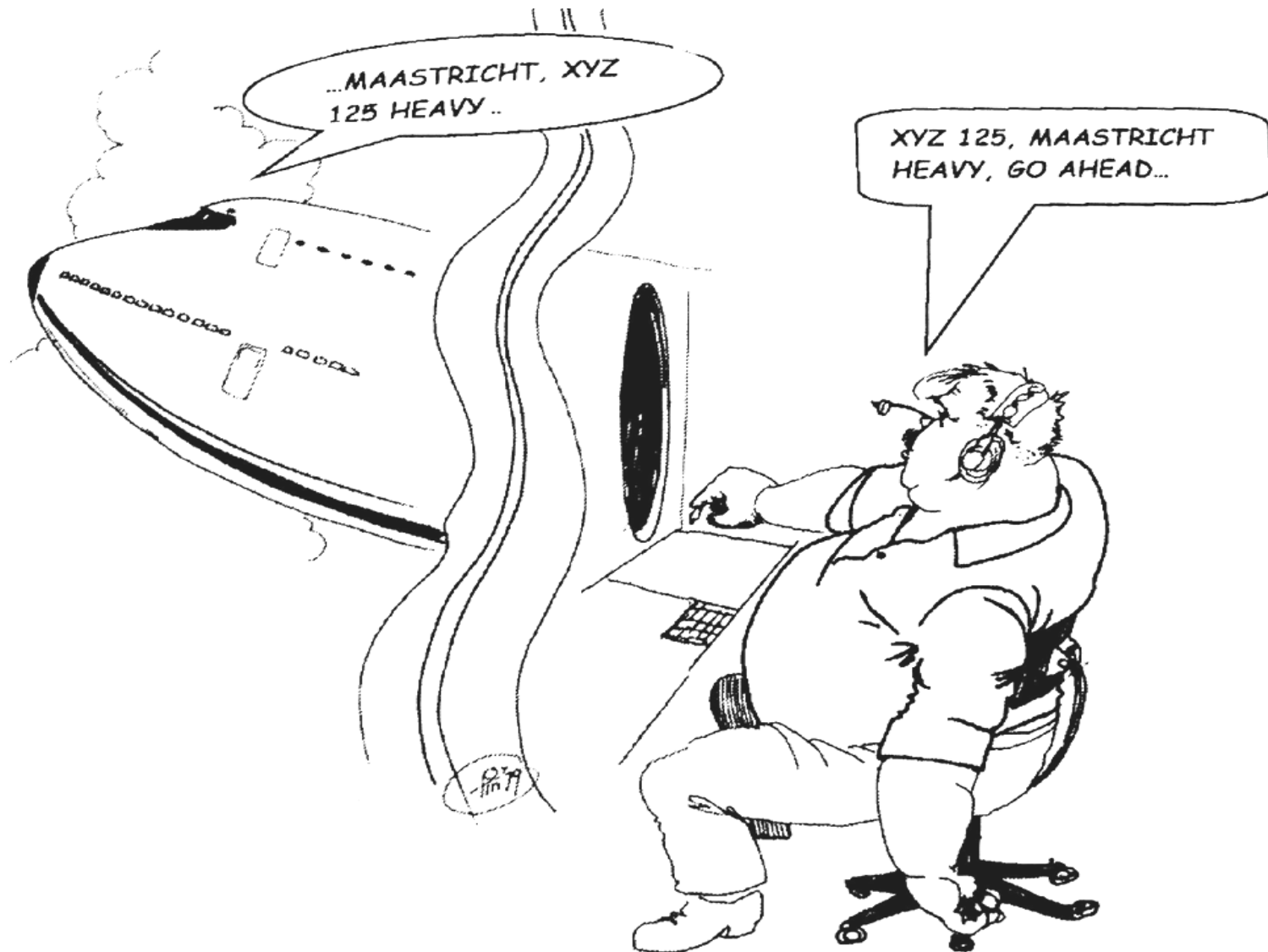
- a) age: 52
  - b) years of service: 26
  - c) diagnosis : **cardial** :  
coronaropathy with angina pectoris
- 

- a) age: 56
- b) years of service: 26 (flight data supervisor)
- c) diagnosis: **psychological**:  
vital depression + intolerance to shifts  
+ alcohol abuse

## 1996: 1 case

- a) age: 52
- b) years of service: 24
- c) diagnosis : **cardial** :  
coronaropathy / infarction / angina pectoris

# Risk factors in the job....



## 1997: 2 cases

- a) age: 49
  - b) years of service: 23
  - c) diagnosis : **cardial** :  
coronaropathy - hypertension
- 

- a) age : 52
- b) years of service: 25
- c) diagnosis: **psychological**:  
sleep disorders and intolerance to shiftwork

## 1998: 3 cases

- a) age: 54
  - b) years of service: 26 ( assistant ATC )
  - c) diagnosis : **psychological** :  
burn out / depression / alcohol abuse
- 

- a) age: 54
  - b) years of service: 28
  - c) diagnosis : **ENT** :  
larynx carcinoma with transplant
- 

- a) age : 43
- b) years of service: 5 (air traffic flow manager )
- c) diagnosis : **ophthalmo**:
  - -chorioretinitis serosa
  - -metamorphopsia
  - -in 1 eye atrophic scars on macula from laser therapy



## 1999: 3 cases

- a) age: 56
  - b) years of service ( flight data assistant ): 28
  - c) diagnosis : **cardial** : pathological hypertension
- 

- a) age: 53
  - b) years of service : 28
  - c) diagnosis : **multifactorial**
    - -**ENT** : hearing loss
    - -**psychological** : recurrent depressions
- 

- a) age: 53
- b) years of service : 27
- c) diagnosis : **psychological** :  
stress intolerance, mental overload + spastic colon

## 2001: 2 cases

- a) age : 52
  - b) years of duty :
  - c) diagnosis : **cardio + psychological**
    - infarctus + angina pectoris + cardiac rythm disorder
    - posttraumatic depression / burnout
- 

- a) age : 49
- b) years of duty : ( flow controller )
- c) diagnosis : **orthopaedic** :
  - severe back problems due to herniae → sleep problems
  - > shiftwork intolerance

## 2002: 2 cases

- a) age : 55
  - b) years of service :
  - c) diagnosis : **psychological**
    - burnout ( depression + surmenage )
    - compulsory personality
- 

- a) age : 33
- b) years of service : 7
- c) diagnosis : **immunological**
  - « multiple sensitivity syndrome »
  - ( intolerance to quasi all food – vitamines depletion )

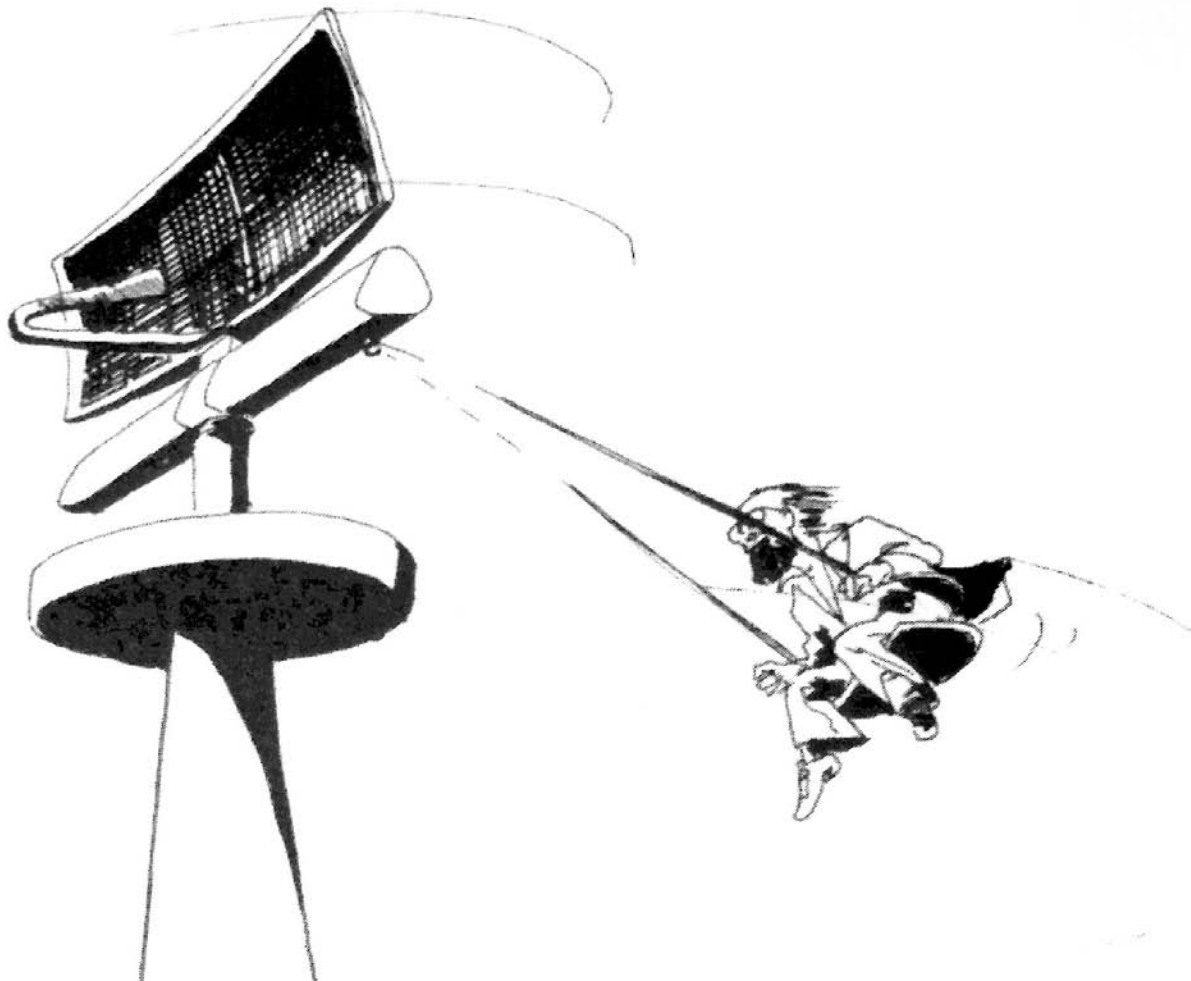
## 2005: 1 case

a) age : 52

b) years of service : 11 ( air traffic flow controller )

c) diagnosis : [alcoholism](#)

# need for psycho-social support



# IN TOTAL from 1989 until 2009

Over 21 years : 22 cases = 1,1 per 300 ATC per year

Population : +/- 200 ATC + 50 flight data operators + 60 ATFM

## **diagnoses :**

- psy : 10
- cardio : 6 (4x coronaro , 2x hypertension)
- alcohol : 4
- orthopaedic : 2
- endocrino (diabetes): 2
- ENT: 2
- pulmonary : 1
- urogenital : 1
- neuro : 1
- ophthalmo: 1
- Immuno : 1

# Comparison with the general Eurocontrol staff

1989 – 2008 : 193 INV on 2100 staff  
= +/- 9,6 per year  
= 1,4 per 300 staff members per year

## **DIAGNOSES :**

- 1) psy : 101
- 2) orthop : 41
- 3) neuro : 27
- 4) cardio : 25
- 5) cancer : 17
- 6) alcohol : 12

( Multiple causes : 50 )

# Additional information from AME's

- 1 on 4 consultations has to do with **work environment**
- 2 on 3 of these are **psycho-social**
- Most recurrent problems :
  - psychological constraints in the job
  - organisation and management



# Coping with stress...



# Comparison of unfitness numbers

• Provider A :	12 years :	1656 exams :	19
• Provider B :	8 years :	4000 ATC :	13
	2008 :	5000 ATC :	13
	2009 :	5000 ATC :	6
• Provider C :	1998 :	4500 ATC :	18
	1999 :	4500 ATC :	11
• Provider D :	2 years :	12.500 OPS :	147
• Provider E :	7 years :	367 ATC :	7
• Provider F :	2006 :		1
	2007 :	728 ATC :	1
	2008 :	728 ATC :	2
Eurocontrol :	15 years :	300 ATM :	22

**In general : 1 to 2 ATC unfit per year per 300 ATC**

# Diagnoses for ATCO unfitness

- EUROCONTROL      1) psy                      2) cardio                      3) alco
- Provider A              1) neuropsych              2) ENT                      3) ophth
- Provider B              1) neuro                      2) cardiovasc
- Provider B :  
   - initials :              1) ophthalmo  
   - renewals :              1) psy                      2) neuro
- Provider C 1998 :      1) headache              2) mood fluct              3) cardiopulm
- Provider D :              1) BP - cardio              2) psy                      3) coronary
- Provider E :              1) psy                      2) ENT
- Provider F 2006 :      1) psy                      2) neuro                      3) cardio
- 2007 :              1) psy                      2) internal
- 2008 :              1) ophtha ( init )      2) cardio                      3) psy

Globally

1) psy

2) cardio

3) neuro

# Conclusions

- for Eurocontrol ( international ) ATC :  
1,1 definitive unfitness per 300 ATC per year
- This is comparable with other service providers :  
1 to 2 unfitness per 300 ATC per year
- Slightly lower than the general ( international ) Eurocontrol population  
1,4 invalidities per 300 staff per year

# Conclusions

- First reason undoubtedly **psychological – psychiatric**  
second reason **cardiological**
- Is **similar** to the general Eurocontrol population : first reason **psychological** but here second is orthopaedical
- For initial examinations **ophthalmology** is an important reason, unless you screen them out before ( as in Eurocontrol )
- Be aware for **alcohol** abus
- Sharp **decline** in unfitness for Eurocontrol ATC over the last years probably due to **early retirement** scheme

# The end...



## EARLY RETIREMENT