



Møte i
Samarbeidsforum for helikoptersikkerhet på norsk kontinentalsokkel
Sola Standhotell 11. juni 2015

BLEED AIR I HELIKOPTER;
Helse- og sikkerhetsrisiko fra turbinolje med organofosfater
(MIL-PRF-23699)

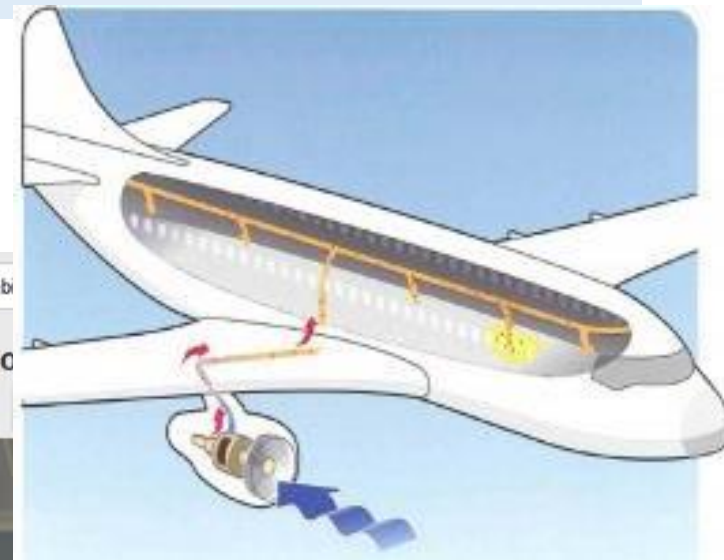
STØY



Halvor Erikstein
organisasjonssekretær/
yrkeshygieniker SYH
halvor@safe.no

Oljearbeidere, flypassasjerer og flymannskap eksponeres for turbinoljer

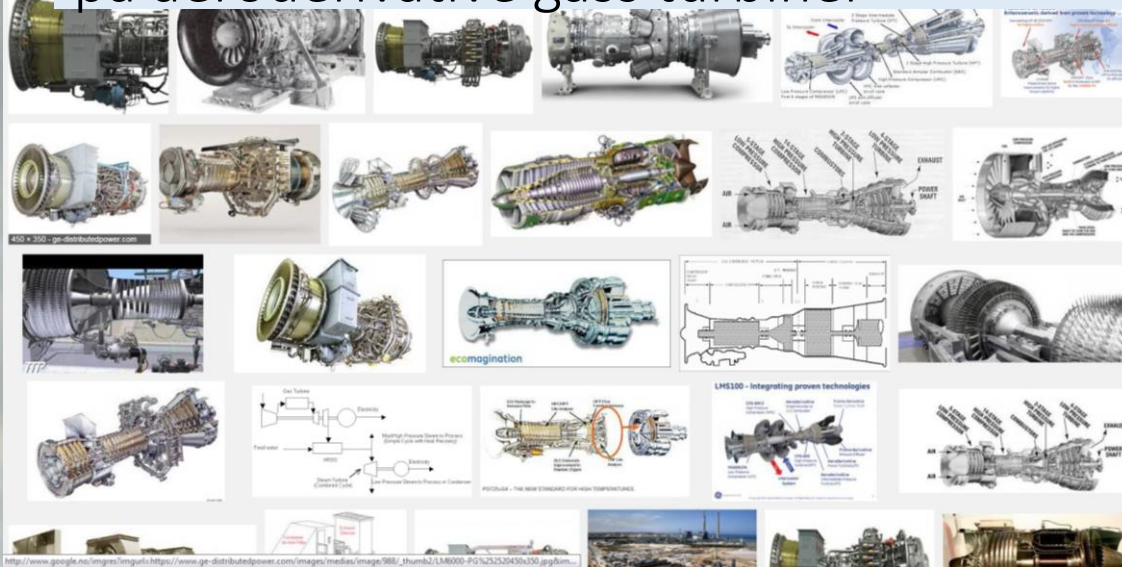
Turbinoljedamp



www.youtube.com/watch?v=AZqeA32Em2s
www.youtube.com/results?search_query=aerotoxic&page=1

MIL - L (PRF) – 23699....

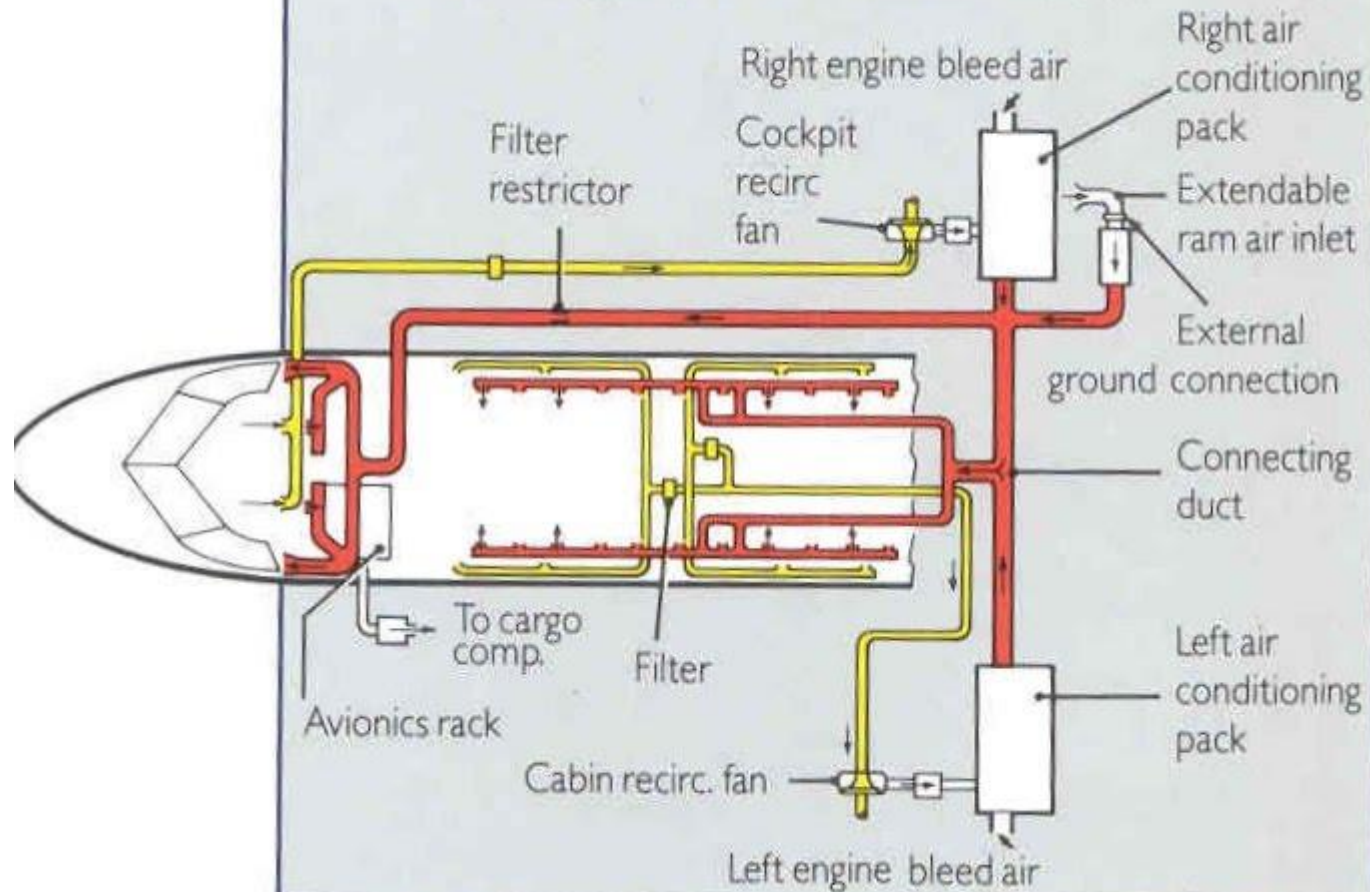
Syntetiske oljer med organofosfater benyttes både i luftfart og på aeroderivative gass turbiner



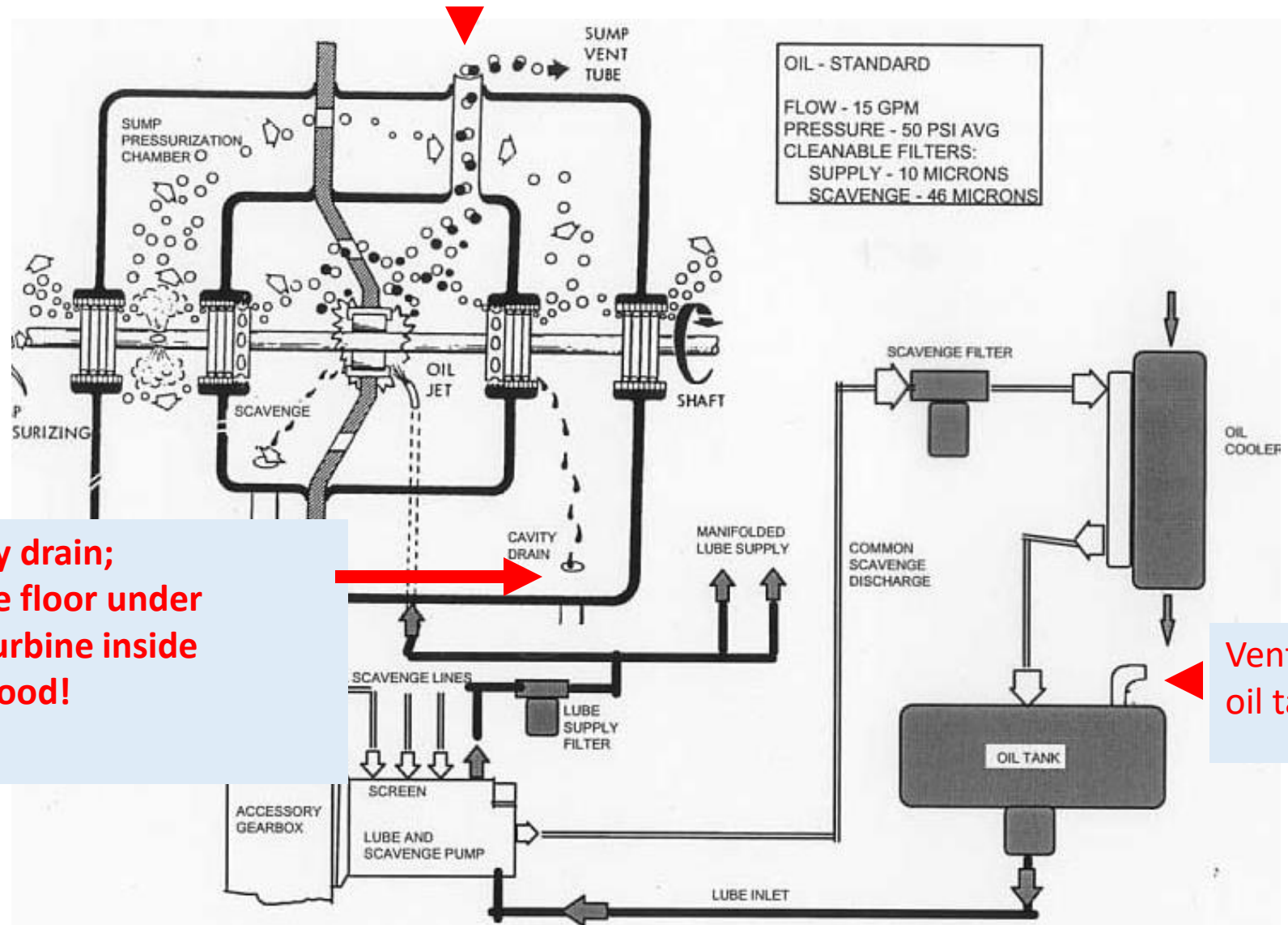
<https://www.google.no/#q=aeroderivative+gas+turbine>

https://www.google.no/search?q=googe&gws_rd=cr&ei=YHwnVZbuFcO4sQGcjYCwAQ#q=mil+prf+23699&start=50

AIR CONDITIONING DISTRIBUTION SYSTEM



Sump vent into the **exhaust**. Earlier routed "out"



Cavity drain;
To the floor under
the turbine inside
the hood!

All seals leaks, but the amount varies

Forgiftning av flymannskap

Passengers' lives ARE at risk from toxic fumes in cabin, coroner investigating death of BA pilot tells airline chiefs

- Sheriff Stanhope Payne has warned of dangers of exposure to cabin fumes
- Senior coroner for Dorset said regulars could face 'damage to their health'
- Mr Payne is investigating death of 43-year-old BA pilot Richard Westgate
- He has written to BA and Civil Aviation Authority asking for 'urgent action'
- Coroner has outlined five matters of concern over fumes in plane cabins

By BEN SPENCER and ANDY DOLAN FOR THE DAILY MAIL

PUBLISHED: 10:36 GMT, 22 February 2015 | UPDATED: 01:58 GMT, 23 February 2015



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Airlines must take action to prevent passenger deaths from toxic fumes inside aircraft cabins, a coroner has warned.

Pressurised air tainted with jet fuel is risking the lives of everyone travelling on planes, Sheriff Payne said.

Demanding an urgent response from airline bosses, the Dorset coroner said: 'In my opinion there is a risk that future deaths will occur unless action is taken.'

Scroll down for video



Krav ti British Airways og Britisk
Luftfartstilsyn om å stille på høring
om forgiftning og forebygging av
forgiftning hos flymannskap og
passasjerer

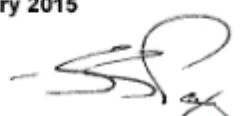


Sheriff Stanhope Payne,
Senior Coroner for The County of Dorset

REGULATION 28: REPORT TO PREVENT FUTURE DEATHS (2)

	<p>REGULATION 28 REPORT TO PREVENT FUTURE DEATHS</p> <p>THIS REPORT IS BEING SENT TO:</p> <ol style="list-style-type: none"> 1. Chief Executive – British Airways 2. Chief Operating Officer – Civil Aviation Authority
1	<p>CORONER</p> <p>I am Sheriff Stanhope Payne, senior coroner, for the coroner area of Dorset</p>
2	<p>CORONER'S LEGAL POWERS</p> <p>I make this report under paragraph 7, Schedule 5, of the Coroners and Justice Act 2009 and regulations 28 and 29 of the Coroners (Investigations) Regulations 2013.</p>
3	<p>INVESTIGATION</p> <p>On 27th December 2012 I commenced an investigation into the death of RICHARD MARK WESTGATE, aged 43. The investigation has not yet concluded and the inquest has not yet been heard.</p>
4	<p>CIRCUMSTANCES OF THE DEATH</p> <p>On 12th December 2012 Richard Mark Westgate was found deceased in his room at the Bastion Hotel in Bussum, Netherlands. His body was repatriated to Dorset. He was a British Airways pilot who had been on medical leave since September 2011 suffering cognitive dysfunction, ataxia & other deficits. Post mortem examinations gave causes of death of either Pentobarbital toxicity or lymphocytic myocarditis, individually or in combination. Testing of samples taken both prior to and after death disclosed symptoms consistent with exposure to organo-phosphate compounds in aircraft cabin air. Such exposure can cause lymphocytic myocarditis.</p>

Stafford Road, Bournemouth, Dorset, BH1 1PA
Tel 01202 454910 | Fax 01202 780423

5	<p>CORONER'S CONCERNS</p> <p>During the course of the investigation my inquiries revealed matters giving rise to concern. In my opinion there is a risk that future deaths will occur unless action is taken. In the circumstances it is my statutory duty to report to you.</p> <p>The MATTERS OF CONCERN are as follows. –</p> <ol style="list-style-type: none"> (1) That organo-phosphate compounds are present in aircraft cabin air. (2) That the occupants of aircraft cabins are exposed to organo-phosphate compounds with consequential damage to their health. (3) That impairment to the health of those controlling aircraft may lead to the death of occupants. (4) There is no real time monitoring to detect such compounds in cabin air. (5) That no account is taken of genetic variation in the human species, such as would render individuals tolerant or intolerant of the exposure.
6	<p>ACTION SHOULD BE TAKEN</p> <p>In my opinion urgent action should be taken to prevent future deaths and I believe your organisation has the power to take such action.</p>
7	<p>YOUR RESPONSE</p> <p>You are under a duty to respond to this report within 56 days of the date of this report, namely by 13th April 2015. I, the coroner, may extend the period.</p> <p>Your response must contain details of action taken or proposed to be taken, setting out the timetable for action. Otherwise you must explain why no action is proposed.</p>
8	<p>COPIES and PUBLICATION</p> <p>I have sent a copy of my report to the Chief Coroner and to the following Interested Persons, Frank Cannon of Cannons Law Practice acting on behalf of the family of the deceased.</p> <p>I am also under a duty to send the Chief Coroner a copy of your response.</p> <p>The Chief Coroner may publish either or both in a complete or redacted or summary form. He may send a copy of this report to any person who he believes may find it useful or of interest. You may make representations to me, the coroner, at the time of your response, about the release or the publication of your response by the Chief Coroner.</p>
9	<p>16th February 2015</p> <p></p> <p>Sheriff Stanhope Payne Senior Coroner for Dorset</p>

Februar 2015, England

minute walks...

human rights', say...

Cutting down on sugar?
Try these tasty sweet
alternatives

Chocolate, sex and
Top 10 ways to keep
heart healthy

We'll be looking for TOMBSTONES: A Boeing engineer's DEADLY warning about toxic cabin air

A SENIOR engineer at aircraft giant Boeing warned bosses they would be "looking for a tombstone" unless they tackled the potentially deadly issue of toxic fumes on board passenger planes, a bombshell email reveals.

By TED JEORY

Published: 04:01, Sun, April 13, 2014

SHARE



TWEET



10

15

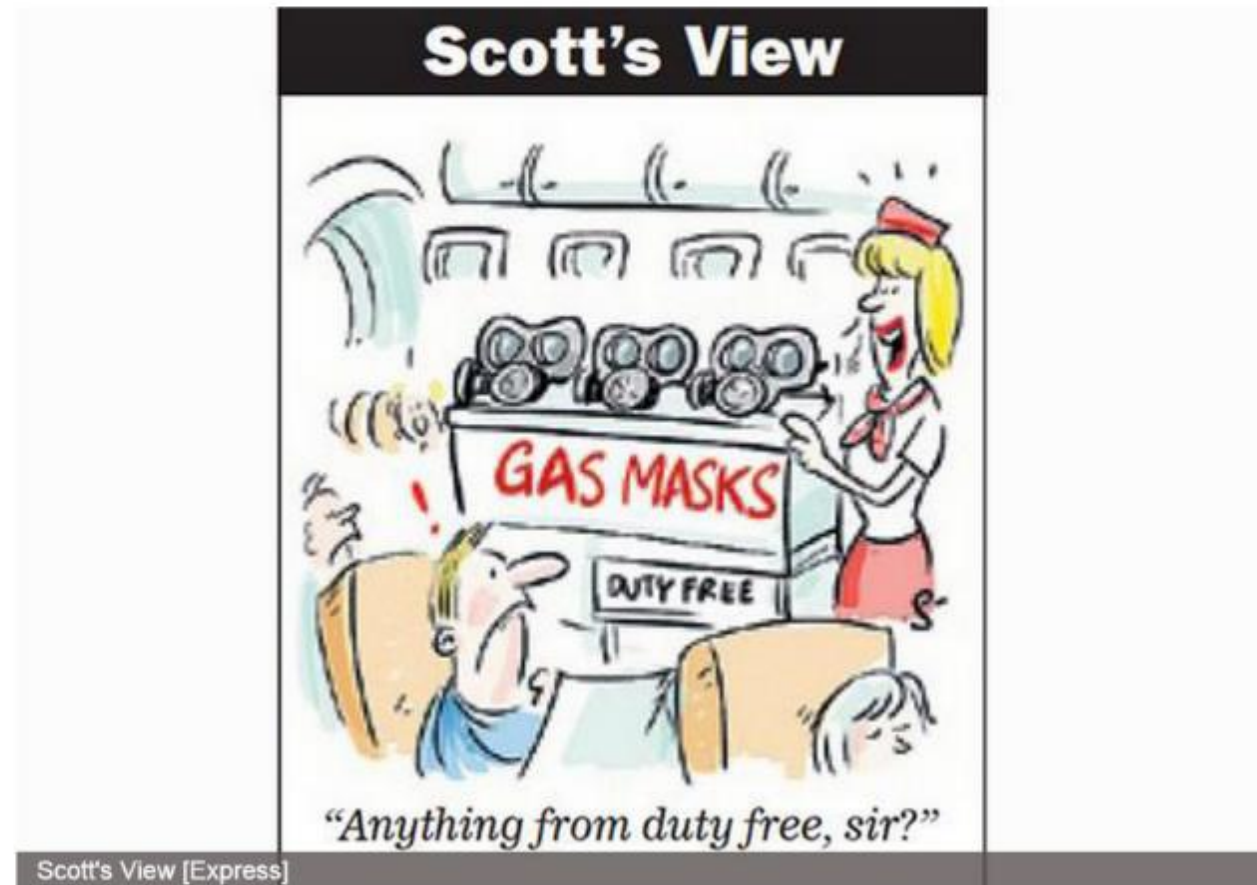


Scott's View



The official report states the "entire crew" was taken to hospital for toxicology tests after landing and that the "captain noticed some difficulty in completing the tech log.

It continues: "Eyes were smarting...balance was affected to a slight degree."



Two days later, similar symptoms were reported on another Airbus.



FORURENSET KABINLUFT: Noen ganger er det synlig røyk, andre ganger ikke. Noen ganger lukter det som sure sokker, andre ganger er det luktfritt. Dette bildet viser hvordan det artet seg da passasjerer og bestening ble utsatt for en giftgasshendelse i september 2010 på en amerikansk flygning. Tom Heradstveit i Flygerforbundet vil at myndighetene skal ta grep. Foto: Privat

Norsk pilot om giftige gasser i fly: - Kollega lå rett ut og rørte seg ikke på et år

Norsk Flygerforbund mener britisk pilot-død må få myndighetene til å ta grep.



ASLE HANSEN
ash@dagbladet.no

GCAQE møte London 25. februar 2015

GCAQE Members & Invited Guests Only		* inc Q&A	
08:30-09:00	Registration	08:30-09:00	Registration
09:00-09:30	Quick Introductions	09:00-09:15	Welcome - CoM
09:30-10:30	Admin and appointment of officers	09:15-09:30	Tristan Loraine
		09:30-09:45	Dr. Susan Michaelis
		09:45-10:00	Judith Anderson
10:30-11:00	Three Testimonials	10:00-10:30	Prof. V. Howard Toxicologist
		10:30-11:00	Dr. Michel Mulder Aviation Doctor
		11:00-11:30	Coffee Break
11:30-11:45	Tools - Health	11:30-12:15	Prof Abou-Donia Organophosphates & exposure markers
11:45-12:00	Tools - Events	12:15-13:00	Dr. J M López Biomarkers & P450
12:00-12:15	Tools - Education		
12:15-12:45	12 Action points for your union		
12:45-13:00	EU update	13:00-14:00	Lunch
13:00-14:00	Lunch	14:00-14:30	Prof Clem Furong Biomarkers
14:00-14:15	Biomarkers explained	14:30-15:00	Ms. V. Hausherr Low level exposure
14:15-14:30	Capt. John Hoyer J. Anderson USA update	15:00-15:30	M. Rawlinson QC Toxic exposures
15:00-15:30	Strategy Debate	15:30-16:00	Tea Break
15:30-16:00	Tea Break	16:00-16:30	REACH: Review of chemicals
16:00-17:00	Working Groups	16:30-17:00	Prof CG Bornehag Endocrine Disruptors
17:00-17:30	Open Floor	17:00-17:30	Dr. Fennrich & Finger Inflammatory test
19:00			

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GCAQE

Global Cabin Air Quality Executive

DID YOU KNOW?

- Cabin breathing air on all aircraft apart from the Boeing 787 is taken directly from the engines and provided unfiltered to the aircraft. This is known as 'Bleed Air'.
- Bleed air is known to become contaminated with engine oils and/or hydraulic fluids...
- Contaminated bleed air events have been recognised as occurring since the 1950s.
- No aircraft currently flying has any form of detection system fitted to warn when these events occur.
- Flight safety is being compromised by contaminated air events.
- Crew and passengers have been reporting short and long term health effects as a consequence of exposure to contaminated air.
- Contaminated air events are not rare and known to be under reported.

The GCAQE is the lead international organisation attempting to address these matters on behalf of aircrew worldwide.

Members of the GCAQE include:

ACPA - [Air Canada Pilot's Association](#); Aeropers - [Swiss Air Line Pilots Association \(Swiss ALPA\)](#); AFA - [Association of Flight Attendants](#); AIPA - [Australian and International Pilots Association](#); ALAFA - [The Australian Licensed Aircraft Engineers' Association](#); CUPE - [Canadian Union of Public Employees](#); FIT CTSL - [Italian Transport Federation](#); FSC-CCOO - [Federation of Citizen Services](#); Icelandic ALPA - [Icelandic Air Line Pilots Association](#); IPA - [Independent Pilots Association](#); NF - [Norsk Flygerforbund - Norwegian Airline Pilots Association](#); PARAT - [SAFE Norwegian Union of Energy Workers](#); SNPL - [Syndicat National des Pilotes de Ligne](#); SNPNC - [Syndicat National du Personnel Navigant Commercial](#); SWEALPA - [Svensk Pilot Förening](#); TWU - [Transport Workers Union](#); UFO - [Unabhängige Flugbegleiter Organisation - Independent Flight Attendant Organisation](#); Unite - [Unite The Union](#); Vereinigung Cockpit - [German Airline Pilots Association](#); VERDI - [Vereinte Dienstleistungsgewerkschaft](#); VNC - [Vakbond Van Nederlands Cabinpersoneel](#); HTW - [Holiday Travel Watch](#)

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GCAQE er en internasjonal koalisjon av fagforeninger arbeider mot forgiftning fra turbinoljer.

Professor Abou-Donia, GCAQE London 25. februar 2015

Chemical Exposure
Cockpit

Over the past 50 years, numerous reports
have documented neurological complaints
among commercial and military cabin crew
members after flying for several years.

Journal of Biological Physics and Chemistry **14** (2014).
**“Autoantibody markers of neural degeneration are
associated with post-mortem histopathological
alterations of a neurologically-injured pilot”**

www.boerenlandvogels.nl/sites/default/files/autoantibody%20markers%20westgate.pdf

Om prof. Abou-Donia: www.dibs.duke.edu/research/profiles/80-mohamed-bahie-abou-donia

SAFE har sammen med mange andre støttet forskning på helserisiko fra turbinoljer. Prosjekt startet i 2006 og nytt i 2014. University of Washington, Seattle.

NYCO har gått inn med store ressurser til forskning på helsefare fra organofosfater.
Forskningen til University of Washington dokumenterte at også organofosfattilsetningen i TurboNycoil 600 kunne ha nevrotoksiske effekter. NYCO tok forskningen på alvor og advarte den den Europeiske luftfartsmyndigheten EASA om farene og de oppdaterte HMS-databladene.
NYCO jobber kontinuerlig med å finne mindre helsefarlige tilsetninger
NYCO et forbilde på smøroljeprodusent som tar forskning og helsefare på alvor!

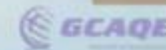
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3839637/>

http://aerotoxic.org/wp-content/uploads/2014/05/Nyco-letter-to-EASA_engine-oil-tox_24Nov09.pdf

www.nyco.fr/en

GCAQE møte London 25. februar 2015

The people.....



www.susanmichaelis.com/about.htm

www.susanmichaelis.com/phd.html

REACH på GCAQE møte London 25. februar 2015



har gitt RIVN www.rivm.nl/en/ i Nederland oppgaven koordinere oppfølging av REACH-regelverket på turbinoljer benyttet i luftfart og på aeroderivative turbiner

n REACH: www.miljodirektoratet.no/no/Tema/For-naringsliv/Kjemikalier regelverket-REACH/



Aim and focus plan of action

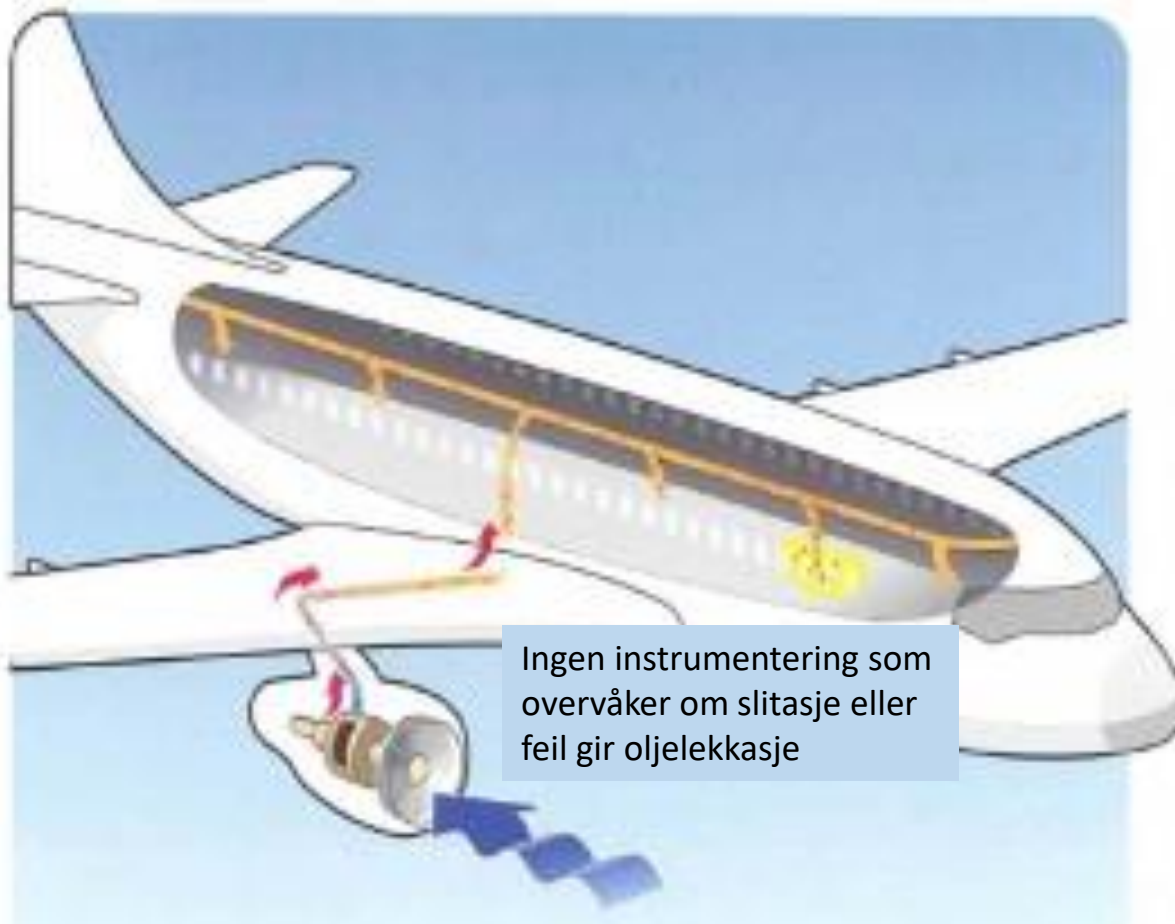
RIVM: coordinating role (not performing research)

Focus:

- Scope:
 - › Aviation: pilots, cabin crew, passengers and ground technicians
 - › Other sectors where jet engines are used, e.g. drilling rigs, power stations, marine
- Effects:
 - › not only neurotoxicity, but also biological (effect) monitoring, environmental monitoring;
- Substances:
 - › not only TCPs, but also other chemicals, and stressors like ozone concentration, disrupted circadian rhythm, stress, hypoxia.

CEN/TC 436. Europeisk krav om utvikling av en reell standard på «cabin air quality» og kjemisk eksponering i fly

Bleed Air Fume Event



Ingen instrumentering som overvåker om slitasje eller feil gir oljelekkasje

Oppstartsmøte Bryssel 20. april 2015

CEN/TC 436 Cabin Air Quality in Commercial Aircrafts – Chemical Agents



CEN/TC 436 «Project Committee – Cabin Air Quality on commercial aircraft – Chemical Agents»

DECISION BT 66/2014

Subject: Creation of a new CEN/TC 'Project Committee - Cabin Air Quality on commercial aircraft – Chemical Agents'

BT/TCMG, on behalf of BT,

- having considered
 - the proposal for a new field of technical activity submitted by AFNOR as included in BT N 9662 and circulated as draft BT C83/2014;
 - the voting results and fundamental disagreement from DS thereon and subsequent discussions at the 51st BT/TCMG;
 - that the following members have expressed commitment to participate:
AFNOR, ASI, NBN, NSAI, DIN, SN, SIS and BSI;
- decides:
 - to create a new Project Committee, CEN/TC 436 'Project Committee – Cabin Air Quality on commercial aircraft – Chemical Agents' to develop a European Standard or a set of standards dealing with the quality of air on commercial aircraft concerning chemical agent such as: bleed-air, environmental control system (ECS) processed air, cabin air;
 - that the Project Committee shall report after each meeting to the CEN Technical Board;
 - that any proposed deviation on the part of the new Project Committee from the provisions in the Form A, be reported to CEN/BT for endorsement;
 - to allocate the Secretariat of CEN/TC 436 to AFNOR;
 - to ask the new CEN/TC 436 to submit its programme of work for BT approval by 2015-06-30.

This decision is applicable as from: 2014-12-16

Oppstartmøte 20. april
2015 med 33 deltagere.
Nytt møte 1. juli

GCAQE møte London 25. februar 2015

Hormonhermere i arbeidsmiljøet.
Organofosfatforbindelsen TCP på listen
over **The Dirty Dozen** -



Carl-Gustaf Bornehag
Professor in Public Health Sciences
Karlstad University, Sweden



Professor Carl-Gustaf Bornehag, Universitet i Karlstad og Harvard Public Health

Litt underlag: www.byggvarubedomningen.se/documents/public/BVB-forum/CarlGustaf_Bornehag.pdf



"...the only thing filtering this toxic soup out of the cabin are the lungs of the passenger and crew"

Alisa Brodkowitz, US Attorney

1 in 2000 flights is recorded as a 'fume event', where toxic oil from the jet engines leaks into the cabins

Airlines and governments are aware of the dangers and risks but provide no warnings to passengers or aircrew

Exposure to jet engine oil fumes in a confined space is poisonous to humans - the effects can be deadly

Support the Cause

Become a member today

Medical and Legal Contacts

10% discount in the shop

A new live FAQ section

Free Download of **"Aerotoxic Syndrome - Aviation's Darkest Secret"**

JOIN TODAY

Film Premiere



View all Screenings >



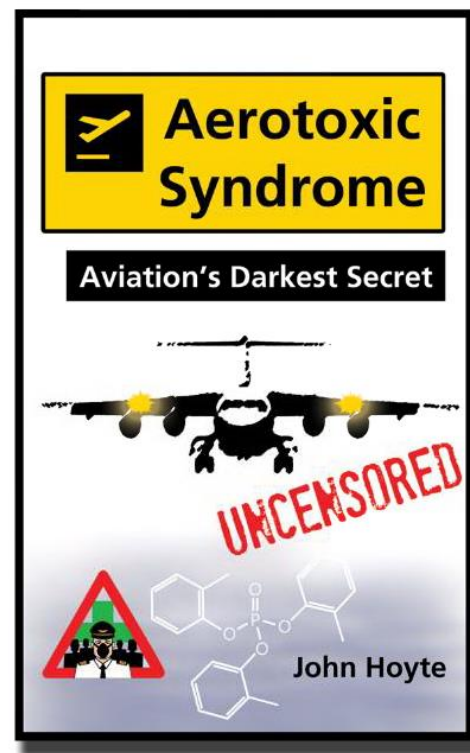
Svært bra og nyttig bok!



Aerotoxic Association

Supporting those affected by Aerotoxic Syndrome

[HOME](#) [ABOUT](#) [SHOP](#) [LATEST](#) [FAQS](#) [MEDIA](#) [CONT.](#)



1/2 Aerotoxic Syndrome: Aviation's Darkest Secret [front cover]

<http://aerotoxic.org/product/aerotoxic-syndrome-aviations-darkest-secret/>

<http://aerotoxic.org/wp-content/uploads/2014/06/Foreword-David-Learmount-minpro.pdf>

Filmen «A Dark Reflection»

A DARK REFLECTION

[Home](#) [The issue](#) [Partners](#) [Press](#) [Screenings](#) [Book](#) [Documentary](#)

ISSUE



THE ISSUE

"In 2006, at the peak of my career as an airline captain, I was ill health retired following repeated exposure to contaminated air in the cockpit of the Boeing 757 I flew. The medical evidence I presented to the UK Civil Aviation Authority was accepted without question and my licence to fly was suspended.

The toxic organophosphate tricresyl phosphate (TCP), used in jet engine oils, was found in my blood following a contaminated air exposure in-flight. TCP causes neurological damage, risk to the unborn child and possible infertility problems.

This is a very real flight safety issue, which is harming passengers and crews around the world, and one most are totally unaware of.

The legal precedent that inhaling oil fumes is harmful was set in the High Court of Australia on the 5 May 2009, in the case Joanne Turner v. Eastwest Airlines. The Australian courts found in favour of Ms. Joanne Turner in her case for compensation against her former employers for injuries resulting from exposure to heated jet engine oils."

Tristan Lorraine
Producer/Director

The film 'A Dark Reflection' is a fact based investigative thriller. A journalist digs deep into the world of aviation and discovers

www.adarkreflection.com/issue.html

www.factnotfictionfilms.com/doco.html

Organofosfateksponering godkjent som årsak til yrkessykdom i England

Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

STATUTORY INSTRUMENTS

2012 No. 647

SOCIAL SECURITY

The Social Security (Industrial Injuries) (Prescribed Diseases) Amendment Regulations 2012

Made - - - - 1st March 2012
Laid before Parliament 6th March 2012
Coming into force - - 30th March 2012

The Secretary of State for Work and Pensions makes the following Regulations in exercise of the powers conferred by sections 108(2), 122(1) and 175(1) and (3) of the Social Security Contributions and Benefits Act 1992(1).

The Secretary of State for Work and Pensions is satisfied that the conditions referred to in section 108(2) of that Act are met.

In accordance with section 172(2) of the Social Security Administration Act 1992(2), reference has been made to the Industrial Injuries Advisory Council.

Citation and commencement

1. These Regulations may be cited as the Social Security (Industrial Injuries) (Prescribed Diseases) Amendment Regulations 2012 and come into force on 30th March 2012.

Amendment of Schedule 1 to the Social Security (Industrial Injuries) (Prescribed Diseases) Regulations 1985

2.—(1) Part I of Schedule 1 to the Social Security (Industrial Injuries) (Prescribed Diseases) Regulations 1985(3) (list of prescribed diseases and the occupations for which they are prescribed) is amended as follows.

(2) For the entry relating to prescribed disease A4(4) (task-specific focal dystonia) substitute—

(1) 1992 c.4. Section 122(1) is an interpretation provision and is cited for the definition of the word "prescribe". Section 175(1) was amended by paragraph 29 of Schedule 3 to the Social Security Contributions (Transfer of Functions, etc.) Act 1999 (c.2).
(2) 1992 c.5.
(3) 1985 c.5.

Document Generated: 2015-03-10

Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

"A4.	Task-specific focal dystonia of the hand or forearm.	Prolonged periods of handwriting, typing or other repetitive movements of the fingers, hand or arm."
------	--	--

(3) At the end of the entry relating to prescribed disease A14(5) (osteoarthritis of the knee) add—

		"Work wholly or mainly fitting or laying carpets or floors (other than concrete floors) for a period of, or periods which amount in aggregate to, 20 years or more."
--	--	--

(4) For the entry relating to prescribed disease C3 (poisoning by phosphorus or inorganic and organic phosphorus compounds) substitute—

"C3. (a)	Phossy Jaw.	Work involving the use or handling of, or exposure to, white phosphorus.
C3. (b)	Peripheral polyneuropathy or peripheral polyneuropathy with pyramidal involvement of the central nervous system, caused by organic compounds of phosphorus which inhibit the enzyme neuropathy target esterase.	Work involving the use or handling of, or exposure to, organic compounds of phosphorus."

Signed by authority of the Secretary of State for Work and Pensions.

1st March 2012

Frend
Parliamentary Under-Secretary of State,
Department for Work and Pensions

5 turbinteknikere fra Statfjord

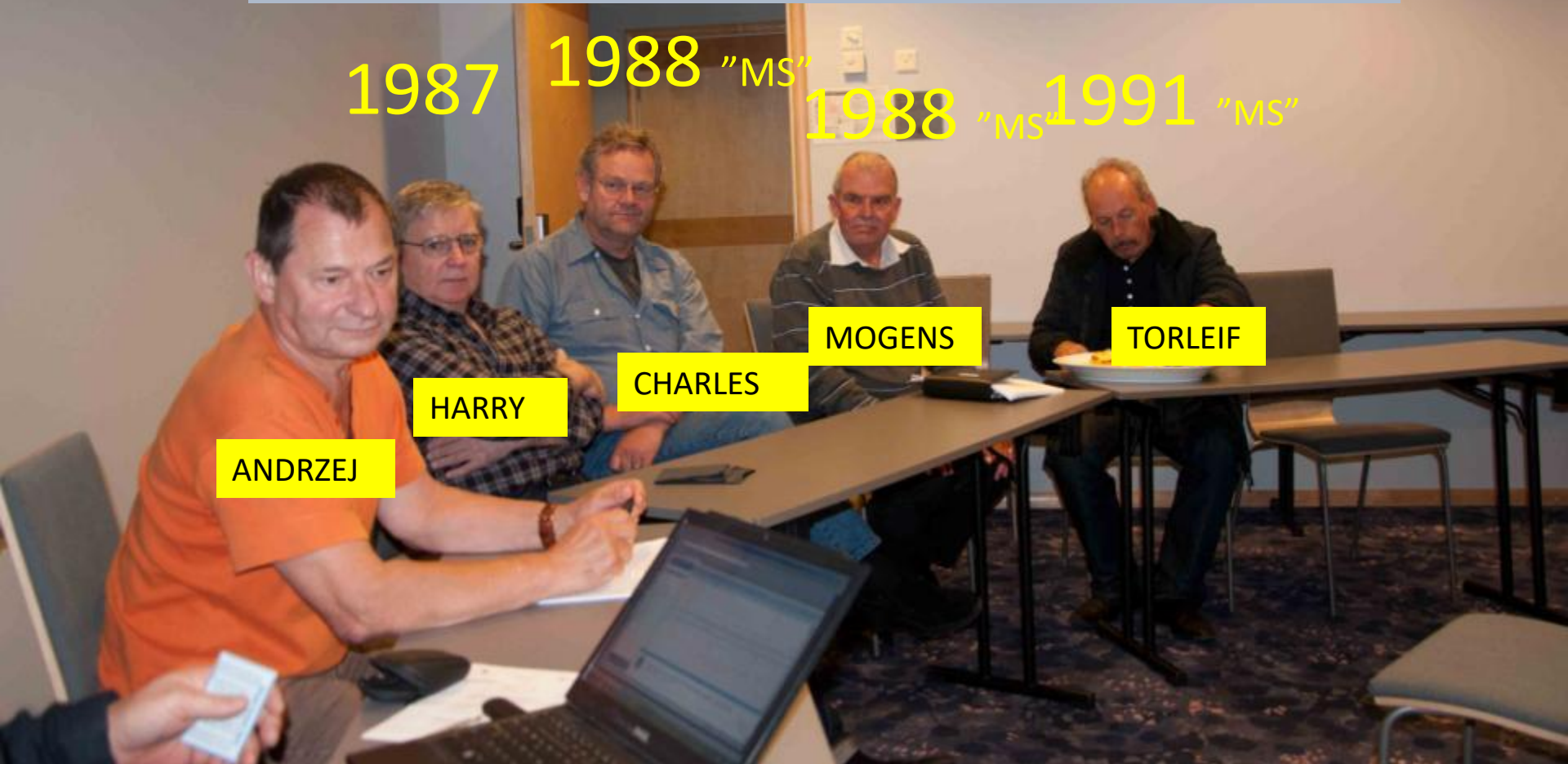
Tre levd med multiple sclerose (MS) diagnoser i mer enn 20 år, men mener de er feildiagnostisert.

To ble sendt til undersøkelse med mistanke om MS.

Alle er sikre på at det jobben som har forårsaket helseskadene

Avvist som yrkesbetinget fordi det vi vet i dag ikke var kjent.

1987 1988 "MS" 1988 "MS" 1991 "MS"



Når skal ny kunnskap bli tatt på alvor?



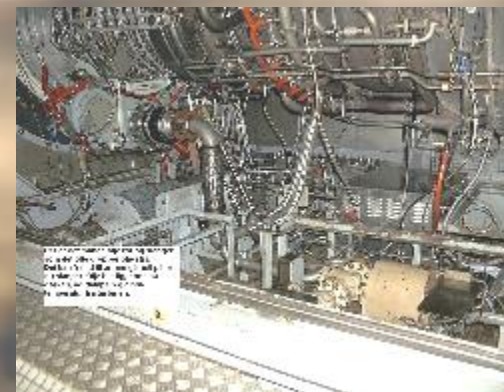
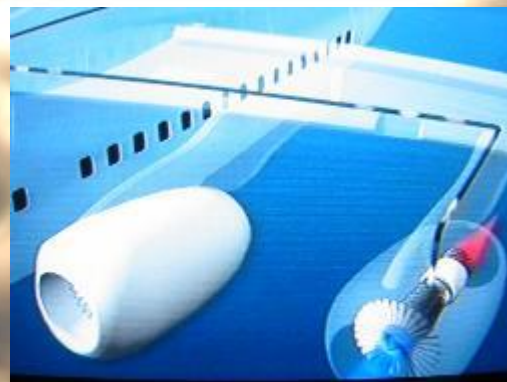
www.dagbladet.no/nyheter/2006/12/20/4866661.html



<http://www.dagbladet.no/nyheter/2006/12/20/486671.html>

- - Skulle det bli vitenskapelig dokumentert klare sammenhenger mellom arbeidsmiljøet på Statfjord A og helseskader, vil vi selvsagt ta tak i denne nye informasjonen.
- Statoil har forståelse for at Harry Brevik og hans kolleger ikke er tilfreds med at denne saken har pågått i snart 15 år, men det er i løpet av disse 15 årene ikke påvist noen kjent sammenheng mellom symptomene og arbeidsmiljøet på Statfjord A, sier informasjonssjef Geir Gjervan i Statoil. (Dagbladet 12.12.2006)

www.dagbladet.no/nyheter/2006/12/12/485834.html

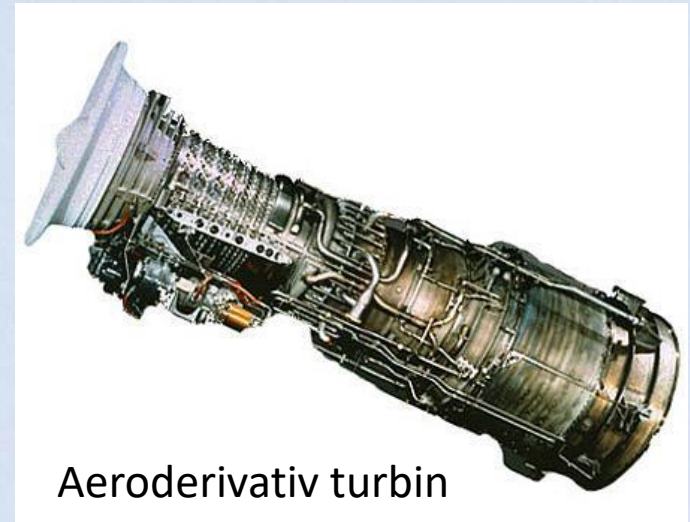


Informasjon til Sikkerhetsforum. Oppfølging etter møte 26. januar 2010
Aerotoxic Syndrome = samme som "MS-saken" offshore?

Informasjon til Sikkerhetsforum

Oppfølging etter møtet 9. april 2015

Helsefare fra smøroljene MIL-PRF-23699 benyttet i luftfart og på aeroderivative gassturbiner.



Aeroderivativ turbin