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Interests and the Shaping of an Occupational Health and Safety Controversy: The BAe 146 Case

A thesis submitted in fulfilment of the requirements for the award of the degree

Doctor of Philosophy

from

University of Wollongong

by

Nickolas Vakas, BA (Hons)

School of Social Sciences, Media and Communication

2007

Certification

I, Nickolas Vakas, declare that this thesis, submitted for the award of Doctor of Philosophy in the School of Social Sciences, Media and Communication, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Nickolas Vakas

13 April 2007

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Abbreviations

AMRA	Aerospace Medical Research Association
AAIB	Air Accidents Investigation Branch
APSA	Airline Passenger Safety Association
AAAI	American Academy of Allergy and Immunology
ACC	American Chemistry Council
ACSH	American Council of Science and Health
ASHRAE	American Society for Heating, Refrigeration, Air-conditioning Engineers
ADA	American Disabilities Act
APA	Ansett Pilots Association
AFA	Association for Flight attendants
ALF	Atlantic Legal Foundation
AD	Airworthiness Directive
AFAP	Australian Federation of Air Pilots
ATSB	Australian Transport Safety Bureau
ASCIA	Australasian Society of Clinical Immunology and Allergy
APU	auxiliary power unit
AHI	Aviation Health Institute
AOPIS	Aviation Organophosphate Information Site
ASRC	Aviation Rulemaking Advisory Committee
ASF	Aviation Safety Forum
BNA	beta-naphtylamine
BA	British Aerospace
BALPA	British Air Line Pilots Association
BASI	Bureau of Air Safety Investigations
BTCE	Bureau of Transport and Communications and Economics
CO	carbon monoxide
CMA	Chemical Manufactures Association
CFC	Chronic Fatigue Syndrome
CAAP	Civil Aviation Advisory Publication
CAA	Civil Aviation Authority
CAR/s	Civil Aviation Regulation/s
CASA	Civil Aviation Safety Authority
CAQPCCA	Committee on Air Quality in Passenger Cabins of Commercial Aircraft
CAIR	Confidential Air Incident Reports
CJC	Consumer Justice Centre
CAPC	Contaminated Air Protection Conference
DOCP	di-ortho-cresylphosphate
DVT	Deep Vein Thrombosis
EI	Environmental Illness
ESRI	Environmental Sensitivities Research Institute
EU	European Union

FAA	Federal Aviation Authority
FAR/s	Federal Aviation Regulation/s
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FAAA	Flight Attendants' Association of Australia
FODCOM	Fight Operations Department Communication
HISS	Hazardous Substances Information System
HLSCI	House of Lords Select Committee Inquiry
IEI	Idiopathic Environmental Intolerances
IARC	International Agency for Research on Cancer
ILO	International Labour Organisation
IPCS	International Program on Chemical Safety
ISF	Intolerance to smells and fumes
the List	List of Designated Hazardous Substances
MCA	Manufacturers Chemists' Association
MSDB	Material Safety Data Bulletins
MSDS	Material Safety Data Sheets
MCRS	Medical Claims Review Services
MJO	Mobil Jet Oil II
MJO291	Mobil Jet Oil 291
MOCP	mono-ortho-cresyl phosphate
MCS	Multiple Chemical Sensitivity
NAS	National Academy of Sciences
NCAHF	National Council Against Health Fraud
NJS	National Jet Systems
NASDAC	National Aviation Safety Data Analysis Centre
NHMRC	National Health and Medical Research Council
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
NIOSH	National Institute for Occupational Health and Safety
NMAS	National Medical Advisory Service
NOHSC	National Occupational Health and Safety Commission
NRC	National Research Council (US)
NTSB	National Transport Safety Board
NTE	neuropathy target esterase
OHS	Occupational Health and Safety
OP	organophosphate
OPIDN	organophosphorus ester-induced delayed neurotoxicity
OPICN	organophosphorus ester-induced chronic neurotoxicity
PAN	phenyl-alpha-naphtylamine
PBN	phenyl-beta-naphtylamine
PET	Positron Emission Tomography
PR	public relations

RSI	Repetitive Strain Injury
SVOC	semi volatile organic chemicals
SSK	Sociology of Scientific Knowledge
SHK	Swedish Board of Accident Investigation
SLAPP	Strategic Lawsuit Against Public Participation
TLV	Threshold Limit Values
TVOC	total concentration of volatile organic compounds
TOCP	tri-ortho-cresyl phosphate
TCP	tricresyl phosphate
TMPP	trimethylolpropane phosphate
UNEP	United Nations Environment Programme
VOC	volatile organic compounds
WHO	World Health Organisation

Abstract

This thesis examines the controversy surrounding aircraft cabin air contaminated with oil. The focus is on the British Aerospace BAe 146 aircraft in Australia and the Australian Senate Inquiry which examined this aircraft. The aim is to examine bias in assessment and decision making processes surrounding health and safety by key stakeholders. The methodology utilises an interests-based approach drawing on two broad research disciplines, science and technology studies and the sociology of medicine. A number of stakeholders are scrutinised in order to better understand the health and safety implications for aircraft crew and passengers.

Aviation industry deregulation is evaluated to provide a historical context to the often competing interests in aviation. The roles of the Civil Aviation Safety Authority and the Australian Transport Safety Bureau are assessed both in terms of their obligations and claims. The hazard posed by Mobil Jet Oil II, the key cabin contaminant, is examined via research, publications such as Material Safety Data Sheets and government classification. British Aerospace assertions of aircraft safety are examined via its interpretation of a number of studies.

The findings of the Australian Senate Inquiry are compared to the UK House of Lords Inquiry into cabin air quality and the US National Research Council study into cabin air quality. Finally the debates surrounding long term health implications such as Multiple Chemical Sensitivity are examined and research undertaken by pilots associations and other researchers asserting health problems is assessed.

This thesis argues that key industry, government and regulatory stakeholders have shown significant bias in recognising and responding to the health and safety issues of cabin contamination. The consequences of such neglect, particularly when numerous other aircraft have been found to have similar problems, are increased risks to crew, passengers and aircraft. The risks of cabin fume exposure include short term health problems and long term illness, disease and disability.

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