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IMPACT FACTORS OF ULTRA LONG
RANGE FLIGHTS ON CABIN CREW
AND PASSENGERS

“Pushing the plane – pushing the people”

by

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

Master of Aviation

Massey University

Palmerston North

New Zealand

2006

Abstract

Long distance flight is an entrenched transportation mode that has brought with it a range of issues and impacts on the human cabin occupants. Development of ultra long range aircraft allows a single airline flight to last more than 16 hours in flight time which will have added impact on cabin crew and passengers.

This study was conducted to analyse the varied and diverse issues that ultra long range flights present in relation to the cabin and its occupants. Research included two surveys, one survey to international airlines from around the world and one survey to New Zealand based cabin crew who operate on international flights. Both surveys analysed current long range flight impacts and allowed respondents to identify new ultra long range flight issues.

The survey to organisations was responded to by seven airlines with three of the respondents currently operating ultra long range flights. The seven respondents rated operational issues as areas to be addressed including cabin crew issues related to duties, training and in-flight rest. Passenger related areas were mainly in relation to customer comfort.

The cabin crew survey had 119 respondents with a range of international cabin crew experience up to 36 years and averaging 5.7 long range flights per month. The respondents rated their cabin safety role as extremely important but did not believe their employers rated their safety role as highly. Respondents rated fatigue, sleep and dehydration as the main health impacts from long haul flights and 97.3% believed these health impacts will increase with ultra long range flight. In regard to rest and rest facilities 62% of respondents believed the current rest periods provided were inadequate and 70.7% believed the current rest facilities were inadequate. There was found to be a strong statistical relationship between rest adequacy and rest facilities adequacy. In relation to ultra long range flight respondents rated in-flight rest facilities as the foremost item to address for cabin crew and cabin air quality as the foremost item to address for passengers.

In general the survey of cabin crew identified the cabin environment, fatigue and lack of management emphasis on cabin crew as areas to be addressed for ultra long range flight. For passengers the cabin environment, facilities, and seating issues need addressing for ultra long range flight.

Further analysis based on the survey results found that ultra long range flight research has focussed on aircraft performance, engine reliability and the impacts of extended flight time on flight crew. Study on the impact of ultra long range flight on cabin crew and passengers are limited and lack the depth of research given to flight crew.

This study has identified that aircraft manufacturers and airline operators need to research and address a range of issues related to the cabin, in particular impacts related to cabin crew and passengers. Aviation regulators need to address many areas to improve regulations related to cabin crew and passenger health and safety. These areas need to be researched and addressed to ensure the impacts of ultra long range flight are reduced.

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Acknowledgments

The author wishes to thank Professor Alan Williams and Doctor Bernie Frey for their guidance and support during my learning journey. Special thanks to my wife Phyllis for her support and patience especially her assistance in proof reading all my assignments. To my daughter Kaitlin who has grown up along with my aviation studies, thanks for assisting her Dad and understanding that I had my “homework” to do.

Thanks to my work colleagues at the Civil Aviation Authority Rules Unit whose support, guidance and knowledge were important components of my thesis. The Civil Aviation Authority for its ongoing support and assistance. Claire Mistry, the CAA Librarian, an invaluable source of research material and whose happy disposition was always appreciated.

Thanks to work mates and friends at Christchurch International Airport who put up with me during my early studies and who both assisted and supported me.

A special acknowledgement to Hugh McCarroll, whose support started me on my journey, and who has been a mentor to me.

Glossary

ACI – Airports Council International. An international association of airport operators.

Airbus – Airbus Industries. European airliner manufacturer.

Air operator – An organisation certificated and approved by an aviation regulatory authority to conduct air transport or commercial transport operations e.g. an airline.

ASHRAE – American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc.

Boeing – Boeing Commercial Airplane Group. United States airliner manufacturer.

Cabin crew – Persons assigned by an air operator to a safety role in the cabin area of an aircraft. Also known as Flight Attendants or Cabin Attendants.

cfm – cubic feet per minute.

Circadian rhythm – The internal body biological clock that regulates human physiological functions according to the time of day through external cues and is reset every 24-25 hours.

CO – Carbon Monoxide. Carbon monoxide is an odourless, colourless and toxic gas.

CO² - Carbon Dioxide. Carbon dioxide is a colourless odourless gas.

CRM - Crew Resource Management. An airline training programme on team interaction and human factors.

DVT – Deep Vein Thrombosis. The formation of a blood clot within a vein.

EASA – European Aviation Safety Agency. An agency of the European Community tasked to further develop the work that the JAA performs in regard to setting aviation safety standards and regulations.

ETOPS - Extended Twin Operations Performance Standards. Regulatory aircraft operational performance requirements for twin engine airliners that operate further than 60 minutes from a suitable diversion airport.

FAA - The United States Federal Aviation Authority.

FARs – The United States Federal Aviation Regulations.

Flight crew – Persons assigned by an air operator to operate an aircraft. Includes Pilots and Flight Engineers.

FRMS - Fatigue Risk Management System. An integrated safety management system designed to ensure crew alertness and performance is not impaired due to fatigue.

GPS – Global Positioning System. Satellite based navigation system.

IATA – International Air Transport Association. An international organisation whose represents member airlines and air operators.

ICAO – International Civil Aviation Organisation. The specialized agency of the United Nations whose mandate is to ensure the safe, efficient and orderly evolution of international civil aviation. ICAO co-ordinates and establishes safety and technical standards for international civil aviation regulations with contracting states through establishment of standards and recommended practices.

IFALPA – International federation of airline pilot associations. The international organisation representing airline pilots.

JAA - Joint Aviation Authorities. Associated body of European civil aviation authorities which aims to set common safety standards and regulations.

JAR - Joint Aviation Regulations. Aviation regulations established by the JAA.

Long Range Flights – Aircraft flights of 10 to 16 hours in duration.

LROPS - Long Range Operations Performance Standards. Proposed new regulatory aircraft operational performance requirements for twin, triple and quad engine airliners that operate more than 180 minutes from a suitable airport.

MEL – Minimum equipment list. A list of equipment that must be installed and operable for the aircraft to be considered airworthy to operate.

nm - Nautical mile. A nautical mile is 1,852 metres, or 1.852 kilometres. In the English measurement system, a nautical mile is 1.1508 miles, or 6,076 feet.

NIOSH – National Institute for Occupational Safety and Health (United States). The main US federal agency responsible for conducting research into occupational safety and health matters.

NOTAM – Notice to airmen. Publication to inform pilots of new or changed aeronautical facilities, services, procedures, or hazards, temporary or permanent.

NPRM – Notice of Proposed Rule Making. An aviation regulator document detailing proposed changes to a rule or regulation which is published for public comment on the proposal.

NTSB – National Transport Safety Board of the United States of America. An independent US federal agency charged with investigating every civil aviation accident in the United States.

O³ - Ozone gas. Ozone is a pale blue gas irritating to the nose and throat.

ppm – Parts per million.

Relative Humidity – The amount of water vapour in the air expressed as a percentage of the maximum water vapour that air at that temperature can hold.

SARPS - ICAO prescribed Standards and Recommended Practices. A Standard is required to be complied with by ICAO member states. A Recommended Practice is not mandatory for ICAO member states but they should endeavour to comply with it.

Seat Pitch - The distance from the back of an aircraft seat to the same position on an aircraft seat directly behind.

ULR - Ultra Long Range Flights. Aircraft flights of greater than 16 hours in duration.

WHO – World Health Organisation. The United Nations specialised agency for health.