Aircrew Personality and the Impact of Crew Resource Management Training on Hazardous Attitudes

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Abstract

It has been established that poor non-technical skills, such as crew communication and coordination, in aircrew, are antecedents to accidents and incidents in aviation. Crew Resource Management (CRM) training has developed over the last 20 years in response to the need to educate crews in resource management, decision-making, situational awareness and other human factors related topics. This current study sought to evaluate the CRM training currently administered by the Royal New Zealand Air Force (RNZAF). Evaluation was made on three of Kirkpatrick's levels; reaction, learning and behaviour. Personality as a mediator in the relationship of CRM attitudes to behaviour was also investigated. Finally personality differences in the sample were identified. Results showed that the RNZAF CRM training was perceived by aircrew as useful and 100% of trainees felt this training should be offered to all aircrew. At the learning level of evaluation the results revealed a positive attitude change in one scale of the Cockpit Management Attitudes Questionnaire - 'Recognition of Stressors'. The personality trait Agreeableness was found to mediate the relationship between attitudes and behaviour post CRM training. Agreeableness and Conscientiousness also explained 25% of the variance in scores of CRM behaviours. Finally it was established that pilots display higher levels of Instrumentality and lower levels of Neuroticism than non-pilot aircrew. Officers display higher levels of Extroversion and lower levels of Expressivity than Non Commissioned Officers. The results are discussed in terms of their implication for future RNZAF research and training. Limitations of the current study and areas for future research are presented.

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'So let us come boldly to the throne of our gracious God, there we will receive his mercy, and we will find grace to help us when we need it.' Heb 4 v 16.

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Glossary

Aircrew Roles, Abbreviations and Descriptions:

AEOP	Air Electronics Operator: Operates the radio and radar stations on a P3-K Orion.
ALM	Air Load Master: Responsible for loading and unloading of cargo and passengers from the C-130 Hercules. Also responsible for all international customs and MAF type requirements.
AOM	Air Ordnanceman: Responsible for all weapons, search stores and air droppable packages on the P3-K Orion. Also carries out photography and video during flight.
HCM	Helicopter Crewman: Manages the cargo area of the helicopter, loading cargo, supervising passengers, operating rescue hoist and machine gun. Helicopter crewmen also give the pilots a verbal picture of what is going on in the back and all around the outside of the aircraft.
NAV	Navigator/ Tactical Coordinator: Responsible for mission planning, interpreting tactics and procedures and completing post flight mission reporting. Also involved in route and fuel planning.
AIRENG	Air Engineer: Responsible for the mechanical side of the aircraft while it is airborne. Manages fuel, power settings and any emergency and minor repairs while on deployment.

Aviation Abbreviations and Terms:

CAA	Civil Aviation Authority: Government organisation that regulates the aviation industry and air traffic within New Zealand.
FAA	Federal Aviation Authority: Federal Government authority that regulates aviation in the U.S.A.
LOFT	Line Oriented Flight Training: Training programme set in a high fidelity aircraft simulator that allows an entire aircraft to fly a simulated flight (Helmreich & Foushee, 1993).
Go Around	A go around is the process of converting the approach into a departure i.e. apply full or climb power, clean up the aircraft configuration (gear up, flaps -climb/up) and fly away and either join the visual circuit, or position for another approach.
NCO	Non Commissioned Officer, from rank of corporal to Master Air Crewman.
Squadron	Unit or division of an Air Force.
SOP	Standard Operating Procedures: a mandatory way of accomplishing a task.
Sortie	Operational flight made by a military aircraft.
Situational Awareness	Situational awareness is the accurate perception of the factors and conditions affecting the aircraft and the flight crew (Williams, 1998).