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**Developing Proficiency in Air Transport Pilots:
The Case for the Introduction of Non-Technical Skills
in Basic Pilot Training Programmes**

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Abstract

This study examines the differences between the skills and competencies of New Zealand flight school graduates and the types of skills and competencies believed to define a proficient air transport pilot. In New Zealand the training of professional pilots is directed towards meeting the requirements laid down by the New Zealand Civil Aviation Authority for the licensing of professional pilots. However, some evidence suggests that competence for licensing purposes does not necessarily meet the requirements of the airlines and the types of skills that they require as a prerequisite to airline training. Although not clearly defined, this shortfall has been recognised for several decades and traditional thinking is that extra flying experience gained as a general aviation pilot will develop the skills necessary for entry into airline pilot training.

The importance that pilots of differing experience levels attach to technical and non-technical skills and their perception of the training effectiveness of those skills and how deficiencies in those skills contributed to aircraft accidents was explored by a four stage study including: i) a review and analysis of flight test results obtained from graduate pilots on a university air transport pilot programme; ii) the analysis of responses to questionnaires supplied to three pilot groups within the New Zealand aviation industry; iii) the analysis of air transport aircraft accidents and their primary and contributing causes; and iv) interviews with qualified airline pilots working for New Zealand airlines.

The results indicated that throughout the spectrum of experience and qualifications, from student pilot to airline pilot, the technical skill of aircraft handling was highly valued and the training in this skill was considered by all pilots to be satisfactory. In contrast, while non-technical skill deficiencies were found to be primary or contributing factors in many aircraft accidents, less importance was attached to non-technical skills by all pilot groups. The training effectiveness of these skills was rated as only moderately effective or of minimal effectiveness.

The findings are discussed and recommendations are made for the improvement of basic flight training. In addition, a model is proposed for the fast tracking of flight school graduates into the airline training schools. Several areas for future research are also proposed.

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Dedicated to
Nicholas, Katharine, Jenny, and Nina
"every post a winning post"

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