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PILOT ERROR:
COGNITIVE FAILURE ANALYSIS

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ABSTRACT

Rasmussen (1982) suggested that there was a need for a taxonomy of human errors based on the operator performing the task, rather than upon the task itself; the "internal human malfunction" (p. 323). This proposal was adopted by O'Hare, Wiggins, Batt & Morrison (1994) in a study of pilot errors derived from the New Zealand official Accident Reports.

O'Hare et al. (1994) found differences in the types of errors that led to major and minor accidents. These differences were at variance with the proposition by Billings and Reynard (1981) that the errors in accidents and incidents came from a common population, the outcome being due to chance. The results of O'Hare et al. (1994) cast some doubt on the validity of investigating incidents as a means of forestalling accidents.

Some of the accident reports used by O'Hare et al. (1994) had not been the result of independent investigation, but were self-reports by the pilots involved. The inclusion of these reports had the potential to produce the apparent dichotomy between the distributions of error types in major and minor accidents, found by O'Hare et al. (1994). It was therefore decided to revisit their work, using as a database the entire population of New Zealand official Accident Reports since 1965, which had been the subject of official investigation.

With the large database available, variability in the distribution of error types was also examined between different classes of aircraft, and between pilots of different levels of experience.

Some variability between major and minor accidents was found, but not enough to be of practical significance. No variability was found between pilots of different levels of experience. There was little difference between classes of aircraft, except in the case of fixed-wing agricultural aircraft. In the latter case, the difference in the distribution of error types from other classes of aircraft was marked, and further study to identify the reasons might assist in reducing the accident rate for agricultural aircraft.

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