Garbage in, garbage out

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NEXT WEEK

e Our Paris Special provides a complete guide to the show, with supporting features
on leading European projects including Airbus A320, BAe 146 and Ariane. Addi-tional features cover microlight aircraft and
the sales boom in the business jet and turboprop market.

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HE startling Royal Commis-sion report on the Air New
Zealand DC-10 Antarctic crash (see page 1592) contains im-portant lessons for the aviation community beyond those it ap-parently sets out to teach. Per-haps the most important of these is the old computer programmer's adage "garbage in, garbage out." The Commission, though its re-port is liberally laced with quali-fications—"In my opinion ... it seems to me ... I am not sure that it also did not . . ."—has determined that the flight plan computer for this route was for a long time programmed with navi-gational co-ordinates near Mount Erebus that did not tally with the place names they were supposed to locate. An inertial navigation system (INS) understands only the co-ordinates programmed into it, and when linked to an auto-pilot will fly the aeroplane to them whether they are correct or not. The INS has no choice.
The human brain has a choice — whether or not to accept the in-formation presented to it. The Commission reports that Capt Simpson, a pilot who flew the Antarctic route two weeks before the disaster, noted during his study of topographical charts in his flight planning that some com-puter flight plan co-ordinates did not tally with the navaid on Ross Island that they were supposed to represent. He checked this out during the flight, found his cal-culations correct and reported the discrepancy. What happened as a result of his report is not the subject of this particular treatise, nor is any of the alleged mismanagement in Air New Zealand's operations department. The world can pass judgement on those matters from the avail-able reports and the many yet to come. Mr Justice Mahon, in the Royal Commission report, says: "It is clear this flight plan change would still not have resulted in disaster had it not been for co-incidental occurrence of a white-out phenomenon ... In my opinion neither Capt Collins nor First Officer Gregory Cassin, or the flight engineers, made any

errors which contributed to the disaster and were not responsible for its occurrence ... "
Capt Simpson had a healthy mistrust of his INS and an aware-ness of human capacity to make mistakes, so he checked. Will air-crew continue to do this, as aero-planes are fitted with more* automation, and as the equipment becomes yet more reliable?
In their arguments for reduced crew complements airlines are insisting that the reliability of new computerised equipment, and the accuracy with which it can control and direct aircraft, make a reduced crew comple-ment safe. They may well be right, but the vehemence with which they argue the reliability of the new kit is highly disturb-ing. It is still made, programmed, and operated by humans. Air-crew must still be "programmed" with as much scepticism, during their training and continuation training, as they ever were. They must still refer to topographical charts when they fly to places like Antarctica. The word "airman-ship" must still mean something. Pilots should not descend below safety altitude in instrument meteorological conditions, trust-ing purely to their INS when all other clues—lack of radio con-tact with ground station, negative DME readout when in range of a TACAN, unexpected glimpses of land, and weather radar re-turns—tell them that the INS, or their understanding of it, is wrong. D.L.

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