

In other words, Captain Collins had seen that according to his own instruments he had only 30 miles to run, and despite the abnormally clear air of Antarctica he still could not see in the distance such obvious features as the long peninsula running out to the west from Ross Island. Therefore, he had come to suspect the accuracy of the DME of his aircraft, and what he wanted was confirmation from the TACAN or from the Ice Tower of the true distance to run, because he knew that the distance to the TACAN would only vary from the distance to the Dailey Island waypoint by about 2 miles. All this leads to the necessary conclusion that both Captain Collins and First Officer Cassin believed that their vision extended for at least 40 miles ahead. But they could not reconcile the absence of any landmarks with the fact that their own DME function told them that there was 30 miles to run. So the question of visibility was not involved. The visibility was clear enough. But I cannot think it coincidental that Captain Collins decided to climb away immediately after he had failed to obtain from McMurdo their information as to how far he was from the Ice Tower.

#### *Conclusion*

333. Such is the story of the descent as I deduce it from the evidence. It is not in any sense a complicated tale. This descent to a level which would take the aircraft under a cloud base of 2000 feet would have been performed by Captain Collins on hundreds of occasions when making approaches to airport runways. In this case, as I said previously, he had no need for any radio beacon when arriving at the head of McMurdo Sound because he knew that the aircraft was flying on track and must inevitably take it into the centre of the wide expanse of the Sound.

334. As I say, I can see nothing remarkable at all in the way in which this simple descent was carried out, and there are two features about it which it is essential to keep in mind:

- (1) The CVR transcript records that at all times during the descent Captain Collins and First Officer Cassin were engaged in the sole task of monitoring the transitions from one flight level to another, and at a later stage, the aircraft's response to the changing headings and altitudes of the two orbits, and at the same time were keeping Mac Centre advised of every proposed change of altitude and course during the orbiting sequence. There are no less than 13 references made by one pilot to the other confirming that the aircraft was flying VMC.
- (2) Neither before nor after the decision was made at 26 miles out to fly away is there any remark made by either pilot referring to worsening visibility, and indeed if they had been approaching any area of impaired visibility there certainly would not have ensued the non-committal discussion between the two pilots as to whether they would climb out to the left or to the right.

335. A study of the discussions between the two pilots and whichever flight engineer was on the panel at the time, all set out in the CVR transcript, demonstrates a most careful adherence right throughout the last half hour of the flight to every detail of flight deck discipline and procedure, except for an inadvertent delay in resetting the altimeters. Every time there was a new setting for the altitude, speed, rate of descent, adopting of heading select and subsequent re-engagement of the nav track, there is verbal confirmation from the other pilot of the changed instrumental settings. There is not the slightest indication from the

recorded communications between the pilot and co-pilot that either of them took any notice of, or even heard, the running sequence of indistinct cross-talk between the various persons at the rear of the flight deck and in the galley.

336. The fact that a visual sweep was being maintained by the pilots in all directions as the aircraft completed its orbits is verified by the constant references to flying VMC and the changes in heading which were required in order to maintain VMC. This strict flight deck discipline was being maintained by the pilots at every stage, and they were preoccupied to the exclusion of all else with monitoring and negotiating the descent from 17 000 feet to 2000 feet. First Officer Cassin certainly spent some time unsuccessfully attempting to raise the Ice Tower on VHF but this was not a continuous process and, as the evidence before the Commission demonstrated, would interfere to only a minimal extent with his other flight deck duties. No pilot who gave evidence before the Commission, whether testifying on behalf of the airline or on behalf of ALPA, has questioned in any respect the dedicated vigilance of this air crew during the last stages of its flight.

337. Those who have attempted to invest this conventional and unremarkable descent procedure with a series of clouded uncertainties and ingenious complications, are those who between them have put forward this extraordinary variety of pilot errors which they contended had been made, but in respect of which, in most cases, no decisive pilot error seemed to be alleged. I have been asked, so far as I can see, to accept any one of the many theoretical varieties which were offered. So long as I could be persuaded to accept one material theory of pilot error, the aircraft radar theory for example, then that presumably would satisfy the executive personnel of the airline and those personnel of Civil Aviation Division who wished thereby to obliterate the effect of their own mistakes.

#### **POST-ACCIDENT CONDUCT OF AIR NEW ZEALAND**

338. I have already described the decision of the chief executive, when he learned of the disaster, that all documents relating to the Antarctica flights and to this flight in particular were to be impounded. The procedure adopted to achieve this purpose was that a special committee was set up comprised of certain airline officials and they were charged with the responsibility of collecting all Antarctica documents. Mr Oldfield, the airline's safety manager, was constituted secretary of the committee. He was the man who carried out the further instructions of the chief executive that any surplus documents were to be destroyed through the airline's shredder.

339. I have already referred to the reason given by the chief executive for giving this instruction. He felt that spare copies of documents might be handed by some employee to the news media, a result which the chief executive was anxious to avoid. But he insisted that, according to his instructions, only "surplus copies" of documents were to be destroyed in this manner. As will readily be apparent, there was an inherent weakness in this system. The various divisions and departments of the airline would hand over the documents to Mr Oldfield, and, as he said, he would then attach to the committee investigation file all relevant documents and would destroy all those which appeared to be copies of existing

documents. But Mr Oldfield could not know what test had been applied by the person handing in the documents as to which of them were relevant. In other words, it was left to numbers of persons who might be anxious over their own possible connection with the disaster to select for themselves what documents they would deliver to Mr Oldfield.

340. In the result, a substantial file was accumulated by this special investigating committee convened under the instructions of the chief executive, and they accumulated a variety of documents. It appears to have been part of the terms of reference of this committee that they were to prepare for the management a "preliminary statement of facts" known in regard to flight TE 901 up to the time of the accident, then they were directed to assemble and examine all data and documents available relating to planning and training for antarctic flights, together with operational briefing and flight documentation for flight TE 901.

341. I have gone through all the documents which the committee collected over the space of a few days before its proceedings were brought to an inconclusive end when the chief inspector returned from Antarctica and commenced his own enquiries. The file consisted, for the most part, of briefing documents, operations specifications and the like, together with preliminary transcripts of the CVR tape. But apart from certain reports or preliminary reports prepared by the committee itself, I could find not one original document on its file. Every document, so carefully collected by Mr Oldfield on behalf of the committee, seemed to be a copy of some other document. In other words, the contents of this investigation file were wholly innocuous and the committee's inquiries led to nothing. If, therefore, the "investigation file" was supposed to contain all documents relevant to the Antarctica flights, then it contained nothing except a copy of RCU briefing documents which shed any light at all upon the subject matter of the inquiry, and seeing that all pre-accident documents assembled on the file were copies, then where were the originals?

342. This instruction by the chief executive for the collection of all Antarctica documents had some unfortunate repercussions. Captain Gemmell, the chief pilot, had gone to Antarctica with the Chief Inspector of Air Accidents, and with other officials, at about midday on 29 November 1979. It was alleged by counsel for ALPA that while Captain Gemmell was at Antarctica he had collected a quantity of documents from the crash site and brought them back to Auckland. It was pointed out that of the documents collected at the wreckage site and produced to the Commission, there were only three which had been part of the flight documents carried by Captain Collins. These three documents were:

- (a) The RNC chart which set out track and distance diagrams for QANTAS and for Air Force flights but not for Air New Zealand, and which conveyed information as to various radio frequencies.
- (b) A sample flight plan printed in October 1977 which contained among the list of co-ordinates the latitude and longitude of the NDB at McMurdo.
- (c) The piece of paper containing Captain Johnson's notification on 8 November 1979 that the NDB facility was withdrawn and including a notification that the minimum safe altitude in the McMurdo area was 6000 feet.

343. It was suggested by counsel for ALPA that it was curious to find that the only flight documents recovered from the ice were each in favour of the case which the airline was now attempting to advance. The RNC chart gave information about radio frequencies. The 2-year-old sample

flight plan gave the co-ordinates of the McMurdo NDB. Captain Johnson's memorandum contained a reminder that the minimum safe altitude was 6000 feet.

344. It was pointed out that the following documents, which clearly had been carried in the flight bag of Captain Collins, along with the three just specified, had not been recovered:

- (a) A map or maps upon which he had been working with plotting instruments the night before the fatal flight.
- (b) The thick and heavy atlas upon which he had been working with plotting instruments the night before the fatal flight.
- (c) The large topographical map issued to him by Flight Despatch on the morning of the flight.
- (d) The briefing documents handed to Captain Collins on 9 November 1979, which would have contained his own notations.
- (e) The notebook which he almost certainly brought with him to the briefing of 9 November 1979 along with his atlas.
- (f) The track and distance diagram showing the flight path to be down McMurdo Sound (Annex G to the chief inspector's report).
- (g) Another track and distance diagram also showing the flight path to be down McMurdo Sound (Annex H to the chief inspector's report).
- (h) The Antarctica Strip Chart showing the military track down the centre of McMurdo Sound (Annex I to the chief inspector's report).

It was suggested that each of the documents just listed, but not located, would have tended to support the proposition that Captain Collins had relied upon the incorrect co-ordinates.

345. Captain Gemmell was cross-examined about all this. He denied that he had recovered any documents relevant to the flight which had not been handed over to the chief inspector. It was pointed out to Captain Gemmell that it was common knowledge in the Flight Despatch Section and within the Flight Operations Division of the airline on the night of the disaster that the co-ordinates for the destination waypoint had been changed without the knowledge of Captain Collins, and it was also suggested to Captain Gemmell that he knew this before he left for Antarctica at about noon on the following day. But Captain Gemmell denied that he knew about the changed co-ordinates. He asserted that he had not found out about them until after he returned from Antarctica some days later. He said that when he found out these facts upon arrival back in Auckland, that the news came as a "bombshell".

346. The suggested inference by ALPA therefore was that because there had been an instruction by the chief executive, immediately after the disaster, that all documents relating to Antarctica flights and to this flight in particular were to be impounded, that one of Captain Gemmell's duties upon arrival at Antarctica had been to carry out this very task. But, as I say, he denied all this.

347. It happened that one of the people who went to Antarctica with the chief inspector and Captain Gemmell had been First Officer Rhodes, an accident inspector who was authorised to be at the scene as a representative of ALPA. After he had given evidence as a witness for ALPA, he was recalled at a later stage by counsel for the airline. In response to questions by Mr Brown, leading counsel for the airline, First Officer Rhodes agreed that he had now offered to give supplementary evidence relating to activity at the Mt. Erebus crash site. He went on to say:

"Our discussion with Captain Eden last Friday indicated this would be appreciated."

First Officer Rhodes was then asked what he had to say regarding the conduct of Captain Gemmell in the course of Captain Gemmell's duties at the crash site. First Officer Rhodes then replied:

"I have no reason to doubt Captain Gemmell in any way, shape or form."

When cross-examined, however, First Officer Rhodes went on to add this:

"The envelopes which Captain Gemmell returned to New Zealand with may have contained some documentation from the crash site, which was beginning to return in significant quantities from the various people on the crash site including the Police.

Q. And in casual conversation some time later did you learn that Captain Gemmell had some of those documents with him which were sought then by the accident inspector?

A. Yes.

Q. Tell us about that?

A. I was asked by the Chief Inspector of Air Accidents to pursue through Air New Zealand the collation of the technical crew's flying records, the collection of log books, licences, and other relevant documentation. I did this by making a telephone call to Air New Zealand from Mr Wylie's office where I was working during this period.

Q. Did you encounter difficulty in dealing with Air New Zealand in getting consent to release these items?

A. There was reluctance initially to release this to me as it was not clear at that stage in many people's minds what my duties were. And Mr Chippindale later made my position clear, and Air New Zealand made available their facilities for me to carry out subsequent investigative duties such as the use of the computers for the calculation of weight and balance data and other information in support of Mr Chippindale's inquiry.

Q. And Air New Zealand and Captain Gemmell released to you the material which you had previously sought?

A. Correct." (T 1838)

348. Captain Eden is at present the director of flight operations for the airline. He appeared in the witness box to be a strong-minded and aggressive official. It seemed clear from this further production of First Officer Rhodes as a witness that it had been suggested to him by Captain Eden that he should either make a direct allegation against Captain Gemmell or else make no allegation at all, and that since First Officer Rhodes seemed to have no direct evidence in his possession, he was therefore obliged to give the answer which Captain Eden had either suggested or directed. However, First Officer Rhodes was not entirely intimidated because as will be observed from the evidence just quoted, he insisted on saying that Captain Gemmell had brought an envelope containing documents back to Auckland.

349. Then, as the Inquiry proceeded, there were other queries raised. It seemed that Captain Collins' flight bag had been discovered on the crash site. It was a bag in which he was known to have carried all his flight documents. It was said to have been empty when found, a fact which was incidentally confirmed by a mountaineer who had seen the flight bag before Captain Gemmell arrived at the crash site. The flight bag was

rectangular and constructed of either hard plastic or leather, and had the name of Captain Collins stamped on it in gold letters. It was evidently undamaged.

350. Then there was the question of First Officer Cassin's flight bag. It had a name tag attached by a leather buckle to its handle, and the name tag and buckle, both entirely undamaged, had been returned to Mrs Cassin at some stage by an employee of the airline. She had not been told how the undamaged buckle had come to be detached from her husband's flight bag, and under what circumstances. Neither flight bag was ever returned to the widow of the owner.

351. Then there was the question of the diaries of Captain Collins. According to Mrs Collins, her husband had two diaries. One was a small pocket diary and the other was a black ring-binder notebook. He used to carry the small diary in his breast pocket, and the ring-binder loose-leaf notebook was carried by him in his flight bag. This latter notebook was believed to have been taken by Captain Collins to the briefing on 9 November 1979. It appeared that the chief inspector had obtained possession of the small pocket diary, but it did not contain any particulars relating to Antarctica flights.

352. As to the ring-binder notebook, it had been returned to Mrs Collins by an employee of the airline, but all the pages of the notebook were missing. Captain Gemmell was asked about this in evidence. He suggested that the pages might have been removed because they had been damaged by kerosene. However, the ring-binder notebook itself, which was produced at the hearing, was entirely undamaged.

353. After the evidence given before the Commission had concluded, I gave some thought to the matters just mentioned. I knew that the responsibility for recovering all property on the crash site lay exclusively with the New Zealand Police Force, and that they had grid-searched the entire site. All property recovered had been placed in a large store at McMurdo Base, which was padlocked, and access to the shed was only possible through a senior sergeant of Police. I asked counsel assisting the Commission to make inquiries about the flight bags which had been located on the site but which had not been returned to Mrs Collins or Mrs Cassin.

354. The Royal New Zealand Air Force helicopter pilot who flew the property from the crash site to McMurdo remembered either one or two crew flight bags being placed aboard his helicopter, and he said that they were then flown by him to McMurdo. This was independently confirmed by the loadmaster of the helicopter, who recollected seeing the flight bags. The senior sergeant of Police in charge of the McMurdo store was spoken to, and he recollected either one or two flight-bags among other property awaiting packing for return to New Zealand. He said that personnel from Air New Zealand had access to the store, as well as the chief inspector, and the senior sergeant said that he thought that he had given the flight bags to the chief inspector and that the chief inspector was the sole person to whom he had released any property. The chief inspector was then interviewed on 11 December 1980 by telephone, being at that time in Australia, but he said that no flight bags were ever handed to him.

355. When the Police compiled their inventory of property in the store to be sent in Police custody to New Zealand, the inventory did not refer to the flight bags which had evidently been in the store, nor did it contain any reference to the name tag of First Officer Cassin which was later returned to Mrs Cassin by an employee of the airline.

356. As for the diaries of Captain Collins, there appeared on the Police property sheet in respect of Captain Collins an item "Diaries (2)" but one of these, so it was said, in fact belonged to a deceased flight stewardess and was ultimately delivered to her family. The other diary referred to in the Police property sheet must have been the ring-binder notebook because this was handed to Mrs Collins by Captain Crosbie of Air New Zealand, who said that he obtained it from Mr Hambly (also of Air New Zealand) who signed for it on the Police property sheet when he took possession of it in Auckland. However, Mr Hambly got in touch with counsel assisting the Commission after Captain Crosbie had given this evidence, and Mr Hambly said that he had never seen the ring-binder notebook which had not been the "diary" handed to him by the Police, and he had not given it to Captain Crosbie at all.

357. Then it was ascertained that the officer-in-charge of the Police party at McMurdo, Inspector Mitchell, had been given the ring-binder notebook (which had Captain Collins' name printed on it) at McMurdo Base, and he had examined it at the base, and could remember that all the pages were missing.

358. If I had thought that there was anything conclusive arising out of these further inquiries, I would have reconvened the hearing and had the witnesses called. But I could see no point in doing so.

359. The following facts seemed to emerge:

- (1) The two flight bags were lodged in the Police store at McMurdo and would have been returned in due course to Mrs Collins and Mrs Cassin by the Police. But they were taken away from the store by someone and have not since been seen.
- (2) The name tag with the leather buckle belonging to First Officer Cassin had never appeared on any Police inventory or property sheet, and had been returned by an airline employee to Mrs Cassin.
- (3) If Mr Hambly (who signed for the property of Captain Collins on the Police property sheet) is correct in saying that he did not obtain the empty ring-binder notebook from the Police, then this was another item returned to Mrs Collins by the airline and not by the Police.
- (4) Captain Gemmell had brought back some quantity of documents with him from Antarctica, and certain documents had been recovered from him by First Officer Rhodes on behalf of the chief inspector.

360. It therefore appears that there were sundry articles and perhaps documents which had been in the possession of the aircrew which came back to New Zealand otherwise than in the custody of the Police or the chief inspector. Captain Gemmell asserted that when he went to Antarctica he was unaware of the changed co-ordinates, and the inference was that he would have had no motive for searching for any documents relating to that matter. I do not accept that Captain Gemmell did not know about the changed co-ordinates before he went to Antarctica. It was common knowledge among the flight despatch officers and among the Navigation Section, and it is inconceivable that the chief pilot would not also have been apprised of this fact. It seems clear that the chief inspector was not aware until he had returned to Auckland on about 11 December 1979 that the destination co-ordinates for the flight had been changed. I gather from his evidence that he heard about this in Auckland and then was shown **Exhibit 16**, which is Captain Johnson's explanation as to why the crew had not been told. If, therefore, Captain Gemmell knew about

the changed co-ordinates before he left Auckland, or if he was so advised by radio-telephone call to Scott Base a day or two after he arrived in Antarctica, then it is clear that he did not divulge this significant fact to the chief inspector. According to the evidence of the chief inspector (T. 128-129), he had ordered the personnel at the crash site to recover "all papers relevant to the flight" as they were "advised by Air New Zealand representatives". That is to say, the chief inspector quite correctly left it to Captain Gemmell to assess the relevance of such documents which were recovered, it being expected that all relevant documents would be handed over to the chief inspector in due course. But on this basis, there was only one person in Antarctica who knew about the changed co-ordinates, and that was Captain Gemmell. It was therefore a singular mischance that Captain Gemmell, who plainly kept this significant fact to himself, was to be the arbiter of which documents were relevant. The opportunity was plainly open for Captain Gemmell to comply with the chief executive's instructions to collect all documents relevant to this flight, wherever they might be found, and to hand them over to the airline management. However, there is not sufficient evidence to justify any finding on my part that Captain Gemmell recovered documents from Antarctica which were relevant to the fatal flight, and which he did not account for to the proper authorities.

361. I have mentioned previously the briefing documents of First Officer Cassin which he left at home when he departed to join the fatal flight. They were collected from his home the next morning by an employee of Air New Zealand, and according to Mrs Cassin, who is herself a qualified pilot, she had seen three pages of notes in her husband's handwriting which were in the same envelope as his briefing documents. First Officer Cassin's flight documents therefore, as I have previously stated, certainly found their way into the custody of the airline on the day following the disaster, and have not been seen since. Presumably they were destroyed.

362. As will be seen, it was certainly a grave error on the part of the chief executive to have directed the destruction of any Antarctica documents, whether "surplus copies" or not. An opportunity was thereby created for people in the airline to get rid of documents which might seem to implicate airline officials as being responsible for the disaster, and the whole episode very plainly engendered bitter feelings among the relatives of the dead flight crew and among their fellow pilots, particularly having regard to the character of the only three documents said to have been located. I can quite understand the difficulty in recovering loose documents from this desolate mountain side, although the heavy atlas was not in this category, but the failure to recover any of the maps and documents which would have justified the flight decisions of Captain Collins was an unlucky event. Even more so was the apparent destruction of the flight documents of First Officer Cassin which he had left at his home.

363. It is evident by now, I am sure, that all documents in possession of the airline relating to these Antarctica flights should have been retained and handed over to the Chief Inspector of Air Accidents. Likewise, all documents and articles at the crash site belonging to the flight crew or appearing to relate in any way to the fatal flight ought to have been handed over at McMurdo either to the Police or to the chief inspector and to no one else. Had these simple steps been taken, a great deal of bitterness and distress and justifiable suspicion would have been avoided.