



**NO. 94-003**

**BOEING 747-400**

**ZK-NBU**

**ATLANTIC OCEAN**

**3 JANUARY 1994**

## **ABSTRACT**

This report relates to the incapacitation of the First Officer on Boeing 747-400 ZK-NBU over the Atlantic Ocean on 3 January 1994. No safety issues were identified during the investigation

# TRANSPORT ACCIDENT INVESTIGATION COMMISSION

## AIRCRAFT INCIDENT REPORT 94-003

<b>Aircraft Type, Serial Number and Registration:</b>	Boeing 747-400, 25605, ZK-NBU
<b>Number and Type of Engines:</b>	Four Rolls Royce RB 211 -524G
<b>Year of Manufacture:</b>	1992
<b>Date and Time:</b>	3 January 1994 0355 hours*
<b>Location:</b>	Over the Atlantic Ocean
<b>Type of Flight:</b>	Scheduled Air Transport
<b>Persons on Board:</b>	Crew: 17 Passengers: 444
<b>Injuries:</b>	Crew: Nil Passengers: Nil
<b>Nature of Damage:</b>	Nil
<b>Pilot in Command's Licence:</b>	Air Transport Pilot Licence (Aeroplane)
<b>Pilot in Command's Total Flying Experience:</b>	14300 hours 600 on type
<b>Information Sources:</b>	Transport Accident Investigation Commission field investigation
<b>Investigator in Charge:</b>	R Chippindale

\* All times in this report are in UTC.

## 1. NARRATIVE

1.1 Prior to the flight at about 2045 hours on 2 January 1994, the First Officer felt a tearing sensation and severe pain in his back when he bent over to pick up a suitcase. The pain eased gradually but returned with certain movements and radiated down into his right leg.

1.2 Boeing 747-400, ZK-NBU departed from Los Angeles at 2255 hours, as Flight NZ 2, to Gatwick. The flight deck crew consisted of the Captain, the First Officer and a Second Officer. In addition there were 14 cabin crew and 444 passengers on board.

1.3 The First Officer felt no further pain and had no problem meeting the physical requirements of the take-off as pilot not flying.

1.4 Some five hours after the aircraft departed from Los Angeles the First Officer's pain returned and he experienced numbness and loss of function in his right leg.

1.5 A doctor on board the aircraft pronounced the First Officer as unfit for further flying duties and administered the appropriate medication for a suspected prolapsed disc. The injury was later found to be limited to a back strain and the First Officer returned to full flying duties after a short convalescence in New Zealand.

1.6 The Second Officer took over the First Officer's duties for the remaining nine hours of the flight.

1.7 As the operator's policy at the time was not to permit Second Officers to occupy a pilot seat below 20000 feet the Captain applied for and received clearance from the operator for the Second Officer to continue his assistance during the approach and landing at Gatwick.

1.8 The operator's training programme included regular consideration of the action to be taken by the remaining technical crew members if one of their number became subtly incapacitated. The appropriate response to such situations was practised during simulator training.

1.9 The action to be taken in cases of more obvious incapacitation was listed in Standard Operating Procedures and the flight deck Quick Reference Handbook as follows:

“Standard Operating Procedures

FLIGHT CREW INCAPACITATION

Incapacitation of a crew member may not be immediately apparent and proper monitoring will ensure that partial or total incapacitation is not ignored. When doubt exists, question the individual concerned, twice if necessary, and if no reasonable response is received incapacitation is to be assumed and positive control indicated by stating “I have control”.

The first action is to maintain a safe flight path making maximum use of the autopilot. Remaining crew should occupy the crew seats appropriate to their qualifications until the end of the landing roll. Obtain the maximum assistance from the ground and declare an emergency. Supernumerary or passenger crew may be used to carry out any duties consistent with their training and qualifications.”

Quick Reference Handbook (QRH)

“PILOT INCAPACITATION

Take over if appropriate stating “I have control”.

Ensure safe flight path. Use autopilot.

Summon assistance.

Declare an emergency.

Ascertain whether there are medically qualified passengers and type qualified technical crew available. Reorganise duties.

Follow Standard Procedures.”

1.10 On this occasion the pilot in command did not declare an emergency even though the standard operating procedure gave no latitude in this decision.

1.11 The QRH's last item “Follow Standard Procedures” was of little assistance as the standard procedure added nothing to the guidance given in the check list.

1.12 It would not have been practical for detailed instructions to be formulated for the various potential flight management decisions required in the large variety of situations which could have arisen. For example, a further crew incapacitation before the completion of the flight, the necessity to divert for emergency medical assistance or the need to decide whether to turn back or not.

1.13 While it appeared that the decision as to whether an emergency should be declared was not left to

the discretion of the remaining crew member(s), it was apparent that the crew resource management programmes

already in place provided adequate training for the crew to make the appropriate decision.

## 2. FINDINGS

2.1 The First Officer made a reasonable assumption, prior to reporting for duty, that his apparently transient injury would not result in a deterioration of his fitness to complete the flight.

2.2 The Pilot in Command managed the flight competently after the incident occurred.

2.3 The company's training and guidance material were appropriate and adequate for situations involving in-flight incapacity of the flight deck crew.

2.4 The safety of the flight was not affected significantly by the incapacitation of the First Officer.

3 May 1994

M F Dunphy  
Chief Commissioner

## GLOSSARY OF ABBREVIATIONS USED IN THIS REPORT

<b>AUW</b>	All up weight
<b>kg</b>	Kilograms
<b>km</b>	Kilometres
<b>m</b>	Metres
<b>NM</b>	Nautical miles
<b>NZDT</b>	New Zealand Daylight Time
<b>POB</b>	Persons on Board
<b>UTC</b>	Coordinated Universal Time