

**Aircraft Accident Preliminary Investigation Report**

**KNKT/09.16.04.05**

**NATIONAL  
TRANSPORTATION  
SAFETY  
COMMITTEE**

**DORNIER 328-100**

**PK-TXN**

**PT. TRAVEL EXPRESS (EXPRESSAIR)**

**TANAH MERAH AIRPORT, BOVEN DIGUL, PAPUA  
REPUBLIC OF INDONESIA**

**14 JUNE 2009**



**NATIONAL TRANSPORTATION SAFETY COMMITTEE  
MINISTRY OF TRANSPORTATION  
REPUBLIC OF INDONESIA  
2009**



This Preliminary Factual Report was produced by the National Transportation Safety Committee (NTSC), Karya Building 7<sup>th</sup> Floor Ministry of Transportation, Jalan Medan Merdeka Barat No. 8 JKT 10110, Indonesia.

The report is based upon the initial investigation carried out by the NTSC in accordance with Annex 13 to the Convention on International Civil Aviation, Indonesian Law (UU No. 1/2009), and Government Regulation (PP No. 3/2001).

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## GLOSSARY OF ABBREVIATIONS

<b>AD</b>	: Airworthiness Directives
<b>AGL</b>	: Above Ground Level
<b>AMSL</b>	: Above Mean Sea Level
<b>AOC</b>	: Air Operator Certificate
<b>ATC</b>	: Air Traffic Control
<b>ATPL</b>	: Air Transport Pilot License
<b>CPL</b>	: Commercial Pilot License
<b>CSN</b>	: Cycles Since New
<b>CVR</b>	: Cockpit Voice Recorder
<b>DGAC</b>	: Directorate General of Air Communications
<b>DME</b>	: Distance Measuring Equipment
<b>F/O</b>	: first officer / copilot
<b>DFDR</b>	: Digital Flight Data Recorder
<b>hrs</b>	: time (24 hour clock)
<b>IFR</b>	: Instrument Flight Rules
<b>IIC</b>	: Investigator-In-Charge
<b>ILS</b>	: Instrument Landing System
<b>kg</b>	: kilogram(s)
<b>km</b>	: kilometer(s)
<b>kts</b>	: knots (nm/hour)
<b>mm</b>	: millimeter(s)
<b>MTOW</b>	: Maximum Take-Off Weight
<b>nm</b>	: nautical mile(s)
<b>NTSC</b>	: National Transportation Safety Committee
<b>°C</b>	: degrees Celsius
<b>PIC</b>	: Pilot in command
<b>QFE</b>	Height above airport elevation (or runway threshold elevation) : based on local station pressure
<b>QNH</b>	: Altitude above mean sea level based on local station pressure
<b>RPM</b>	: Revolutions Per Minute
<b>S/N</b>	: Serial number
<b>TS/RA</b>	: thunder storm and rain
<b>TSN</b>	: Time Since New
<b>TT/TD</b>	: ambient temperature/dew point
<b>UTC</b>	: Universal Time Co-ordinated
<b>VFR</b>	: Visual Flight Rules
<b>VMC</b>	: Visual Meteorological Conditions



## **SYNOPSIS**

On 14 June 2009, a Dornier 328-100 aircraft, registration PK-TXN, was being operated by PT. Travel Express (Expressair), flight number XN-9001, on a scheduled passenger flight from Jayapura to Tanah Merah. The flight departed from Jayapura at 22:30 UTC (07:30 local time) with an estimated arrival time at Tanah Merah of 00:17 UTC. There were 36 people on board; two pilots, one cabin crew, 33 passengers. The pilot in command (PIC) was pilot flying and the copilot was the support/monitoring pilot.

The crew flew the aircraft overhead Tana Merah and joined left downwind at 900 feet. Final approach was reported to have been normal with VREF 105 knots.

The aircraft touched down at 00:17, towards the departure end of the runway 25 touch-down zone at Tanah Merah Airport, Boven Digul, Papua. The crew reported that the touched down was normal.

During the landing roll the PIC used reverse thrust to slow the aircraft. After a landing roll of approximately 500 meters, reverse thrust was reduced and the condition levers were selected to minimum. The crew reported that without warning, the aircraft diverged abruptly to the right and they were not able to arrest the swing using full left rudder and left brake. The aircraft left the runway and stopped on the shoulder approximately 10 meters away from the edge of runway, and approximately 600 meters from touchdown area.

The right wheels sank into the soft ground of the runway shoulder, and the left wheels and the nose wheels were on the shoulder. The right propeller blades fractured as they struck the ground and the propeller assembly was torn from the engine and came to rest approximately 4.5 meters from the right engine. The right engine was substantially damaged.

The investigation is continuing and will include a detailed review of flight recorder data, and operational procedures to determine if they may have contributed to this accident. The State of Manufacture and the Dornier Type Certificate holder are assisting the investigation.

# **1. FACTUAL INFORMATION**

## **1.1 History of the Flight**

On 14 June 2009, a Dornier 328-100 aircraft, registration PK-TXN, was being operated by PT. Travel Express (Expressair), flight number XN-9001, on a scheduled passenger flight from Jayapura to Tanah Merah. The flight departed from Jayapura at 22:30 Coordinated Universal Time (UTC)<sup>1</sup> (07:30 local time) with an estimated arrival time at Tanah Merah of 00:17 UTC. There were 36 people on board; two pilots, one cabin crew, 33 passengers. The pilot in command (PIC) was pilot flying and the copilot was the support/monitoring pilot.

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<sup>1</sup> The 24-hour clock is used in this report to describe the local time of day, Eastern Indonesia Standard Time (Waktu Indonesia Timur (WIT)) as specific events occurred. Eastern Indonesian Standard Time is Coordinated Universal Time (UTC) + 9 hours.



**Figure 1: PK-TXN, Dornier 328-100 at Sentani Airport on 14 June 2009**

An emergency evacuation was performed while the left propeller was still wind milling after engine shut down. All but three occupants disembarked through the aircraft's passenger door (L1) and used the air stairs. Three passengers left the aircraft through the left emergency exit L2. There were no injuries.

The investigation did not find defects recorded in the maintenance log book that would have contributed to the landing accident at Tanah Merah.



**Figure 2: Wheel marks on the muddy runway shoulder**



**Figure 3: Tire marks on runway starting to roll to right**



**Figure 4: Final position of the aircraft**

## **1.2 Injuries to Persons**

Injuries	Crew	Passengers	Others	<b>TOTAL</b>
Missing/ Fatal	0	0	0	<b>0</b>
Serious	0	0	0	<b>0</b>
None	3	33	0	<b>36</b>
<b>TOTAL</b>	<b>3</b>	<b>33</b>	<b>0</b>	<b>36</b>

### 1.3 Damage to aircraft

The right engine and propeller were substantially damaged and the right wing tip was resting on the ground.



**Figure 5: Right engine without propeller**



**Figure 6: Propeller position 4.5 meters away from the engine**



**Figure 7: Right propeller and section of the propeller gear box**



**Figure 8: Right wing tip damage, no wrinkles on wing**



**Figure 9: Right side of the aircraft**

## 1.4 Other damage

There was no damage to other property.

## 1.5 Personnel information

### 1.5.1 Pilot in command

Gender : Male  
Date of birth : 4 June 1952  
Nationality : British  
Date of joining company : 24 March 2009  
License : UK/ATPL/200012A/A  
Val.2/1129/KAOPS/LIC/VI/09  
Valid to : 24 March 2009  
Type rating : Dornier 328  
Instrument rating : Yes  
Date of last medical : 8 January 2009  
Medical certificate valid to : 8 January 2010  
Last line check : 19 May 2009  
Last proficiency check : 24 March 2009  
FLIGHT TIME  
Total time : 9,880 hours  
This make & model : 1,300 hours  
Last 90 days : 133 hours 41 minutes  
Last 60 days : 133 hours 41 minutes  
Last 24 Hours : 1 hour

### 1.5.2 Copilot

Gender : Male  
Date of birth : 7 December 1978  
Date of joining company : March 2007  
License : ATPL 5141  
Valid to : 30 June 2009  
Type rating : Dornier 328  
Instrument rating : Yes  
Date of last medical : 31 December 2008  
Last line check : February 2009  
Last proficiency check : May 2009  
FLIGHT TIME  
Total time : 5,600 hrs

This make & model : 500 hrs  
Last 90 days : 260 hours  
Last 60 days : 157 hours 13 minutes  
Last 24 Hours : 1 hour

## **1.6 Aircraft Information**

### **1.6.1 Aircraft Data**

Registration Mark : PK-TXN  
Manufacturer : Dornier  
Country of Manufacture : Germany  
Type/ Model : Dornier 328-100  
Serial Number : 3030  
Date of manufacture : January 1995  
Certificate of Airworthiness : 2535  
Issued : 5 December 2008  
Valid to : 5 December 2009  
Certificate of Registration : 2535  
Issued : 4 December 2008  
Validity : 3 December 2009  
Category : Transport  
Crew (Cockpit/Cabin) : 2 / 1  
Time Since New : 24,706 hours  
Cycles Since New : 22,363 cycles  
Last C-4Check : 26 November 2008 (TSN=23,852 hrs)

### **1.6.2 Engine Data**

Manufacturer : Pratt and Whitney  
Type/Model : PW 119B  
Engine 1 (Left)

- Serial Number : 116084
- Time Since New : 23,736 hrs.
- Cycles Since New : 21,452 cycles

Engine 2 (Right)

- Serial Number : 116041
- Time Since New : 19,495 hrs
- Cycles Since New : 21,481 cycles

### 1.6.3 Weight and Balance

Load and centre of gravity were within the allowable limits for the landing.

### 1.6.4 Maintenance

Records indicated that maintenance had been carried out in accordance with the operators approved maintenance schedule.

## 1.7 Meteorological Information

	00:00 UTC
Wind	Calm 300/4 knots
Visibility	8,000 m
Weather	Sctr/210 m
Cloud	BKN 1,000

## 1.8 Aids to Navigation

Not relevant to this accident.

## 1.9 Communications

Not relevant to this accident.

## 1.10 Aerodrome Information

### 1.10.1 General

Aeronautical Information Publication Amdt 3 dated 10 November 2006, current at the time of drafting the Preliminary Factual Report, listed the following data:

Airport Name : Tanah Merah Airport  
Airport Identification : WAKT  
Coordinate : 06°06'07" S, 140°16'00E  
Elevation : 25 meters (82 feet) above sea level  
Airport Operator : DGCA  
Class : ALA  
Runway Direction : 07 / 25  
Runway Length : 1,050 meters  
Runway Width : 25 meters  
Surface : Gravel  
Address : Tanah Merah Airport  
Boven Digul, Papua

The investigation found data from other airline operators that was a variance with the AIP data. Specifically, aerodrome coordinates, runway surface and dimensions, and aerodrome elevation.

## 1.11 Flight Recorders

The flight recorders were recovered from the aircraft on 14 June 2009 under the supervision of NTSC investigators. The data download was conducted by Aero Nusantara Indonesia (ANI) at Curug facility, witnessed by NTSC investigators, on 25 June 2009.

The investigation has made a preliminary examination of the recorded data. Further detailed analysis is ongoing.

### 1.11.1 Digital Flight Data Recorder (DFDR)

Manufacturer	: Fairchild L3 Com
Type/Model	: FA 2100
Part Number	: 2100-4043-00
Serial Number	: 000121912

### 1.11.2 Cockpit Voice Recorder (CVR)

Manufacturer	: Fairchild
Type/Model	: A1001
Part Number	: 93-A100-80
Serial Number	: 61998

## 1.12 Wreckage and impact information



**Figure 10: Propeller hit an earth hump (underneath the front of RH gear)**



**Figure 11: Wreckage taken from the air**



**Figure 12: Final position 600 meters from touch down area**

### **1.13 Medical and Pathological Information**

Not relevant to this accident.

### **1.14 Fire**

There was no fire.

### **1.15 Search and survival aspects**

The investigation noted that the company standard operating procedures did not provide guidance or instruction for the cabin crew in the event of an evacuation to ensure passengers were directed away from turning propellers.

## **1.16 Test and Research**

Not relevant to this accident.

## **1.17 Organizational and Management Information**

### **1.17.1 PT. Travel Express (Expressair)**

Aircraft Operator : Expressair  
Address : Jl. Benjamin Suaeb blk A11-12 Kemayoran  
Jakarta Pusat 10630  
Certificate Number : AOC 121

## **1.18 Additional Information**

Information found during the investigation with respect to check and training and simulator training revealed a number of differing operational procedures. Some of the differences noted were in relation to checklists in the area of engine controls and aircraft landing roll speeds.

The investigation is continuing and will include a detailed review of flight recorder data, and operational procedures to determine if they may have contributed to this accident. The State of Manufacture and the Dornier Type Certificate holder are assisting the investigation.