

PRELIMINARY
KNKT.10.01.01.04

**NATIONAL
TRANSPORTATION
SAFETY
COMMITTEE**

Aircraft Serious Incident Investigation Report

PT. Manunggal Air Service

Antonov AN-26B; 4L-IFE

Wamena Airport, Wamena, Papua

Republic of Indonesia

28 January 2010



**NATIONAL TRANSPORTATION SAFETY COMMITTEE
MINISTRY OF TRANSPORTATION
REPUBLIC OF INDONESIA
2010**

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

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

Readers are advised that the NTSC investigates for the sole purpose of enhancing aviation safety. Consequently, NTSC reports are confined to matters of safety significance and may be misleading if used for any other purpose.

As NTSC believes that safety information is of greatest value if it is passed on for the use of others, readers are encouraged to copy or reprint for further distribution, acknowledging NTSC as the source.

When the NTSC makes recommendations as a result of its investigations or research, safety is its primary consideration. However, the NTSC fully recognizes that the implementation of recommendations arising from its investigations will in some cases incur a cost to the industry.

Readers should note that the information in NTSC reports and recommendations is provided to promote aviation safety. In no case is it intended to imply blame or liability.

TABLE OF CONTENTS

| | |
|--|------------|
| TABLE OF CONTENTS | i |
| FIGURES | iii |
| GLOSSARY OF ABBREVIATIONS | iv |
| SYNOPSIS | 1 |
| 1 FACTUAL INFORMATION | 3 |
| 1.1 History of the Flight | 3 |
| 1.2 Injuries to Persons | 3 |
| 1.3 Damage to Aircraft..... | 3 |
| 1.4 Other Damage | 5 |
| 1.5 Personnel information | 6 |
| 1.5.1 Pilot in command..... | 6 |
| 1.5.2 Copilot | 6 |
| 1.5.3 Maintenance Engineer | 7 |
| 1.6 Aircraft information | 8 |
| 1.6.1 Aircraft Data | 8 |
| 1.6.2 Engines | 8 |
| 1.6.3 Propellers | 8 |
| 1.6.4 Weight and Balance (W&B)..... | 9 |
| 1.6.5 Aircraft performance calculations | 10 |
| 1.7 Meteorological Information | 11 |
| 1.8 Aids to Navigation | 12 |
| 1.9 Communications | 12 |
| 1.10 Aerodrome Information | 12 |
| 1.11 Flight Recorders | 13 |
| 1.12 Wreckage and Impact information..... | 14 |
| 1.13 Medical and Pathological Information | 14 |
| 1.14 Fire | 14 |
| 1.15 Survival Aspects..... | 14 |
| 1.16 Tests and Research | 14 |
| 1.17 Organisational and Management Information | 14 |

| | | |
|----------|---|-----------|
| 1.18 | Additional Information..... | 15 |
| 1.19 | Useful or Effective Investigation Technique | 15 |
| 2 | ANALYSIS..... | 17 |
| 3 | CONCLUSIONS | 18 |
| 3.1 | FINDINGS | 18 |
| 3.2 | CAUSES | 18 |
| 4 | SAFETY ACTIONS AND RECOMMENDATIONS | 19 |
| 4.1 | SAFETY ACTIONS | 19 |
| 4.2 | RECOMMENDATIONS | 19 |
| 4.2.1 | Recommendation to Directorate General of Civil Aviation (DGCA) | 19 |
| 4.2.2 | Recommendation to Directorate General of Civil Aviation (DGCA) | 19 |
| 4.2.3 | Recommendation to PT. Manunggal Air Service..... | 19 |

FIGURES

| | |
|---|----|
| Figure 1: The damaged right wing tip..... | 4 |
| Figure 2: The nose landing gear..... | 4 |
| Figure 3: The right propeller blades were bent..... | 5 |
| Figure 4: The aerodrome perimeter fence..... | 5 |
| Figure 5: Load sheet used on the flight..... | 10 |
| Figure 6: Aircraft Performance – Runway Analysis Landing sheet used by the crew ... | 11 |
| Figure 7: The Flight Data Recorder | 13 |
| Figure 8: The Cockpit Voice Recorder | 13 |
| Figure 9: The substantially damaged aircraft..... | 14 |

GLOSSARY OF ABBREVIATIONS

| | | |
|--------|---|---|
| AD | : | Airworthiness Directive |
| AFM | : | Airplane Flight Manual |
| AGL | : | Above Ground Level |
| ALAR | : | Approach-and-Landing Accident Reduction |
| AMSL | : | Above Mean Sea Level |
| AOC | : | Air Operator Certificate |
| ATC | : | Air Traffic Control |
| ATPL | : | Air Transport Pilot License |
| ATS | : | Air Traffic Service |
| ATSB | : | Australian Transport Safety Bureau |
| Avsec | : | Aviation Security |
| BMG | : | Badan Meterologi dan Geofisika |
| BOM | : | Basic Operation Manual |
| °C | : | Degrees Celsius |
| CAMP | : | Continuous Airworthiness Maintenance Program |
| CASO | : | Civil Aviation Safety Officer |
| CASR | : | Civil Aviation Safety Regulation |
| CPL | : | Commercial Pilot License |
| COM | : | Company Operation Manual |
| CRM | : | Cockpit Recourses Management |
| CSN | : | Cycles Since New |
| CVR | : | Cockpit Voice Recorder |
| DFDAU | : | Digital Flight Data Acquisition Unit |
| DGCA | : | Directorate General Civil Aviation |
| DME | : | Distance Measuring Equipment |
| EEPROM | : | Electrically Erasable Programmable Read Only Memory |
| EFIS | : | Electronic Flight Instrument System |
| EGT | : | Exhaust Gas Temperature |
| EIS | : | Engine Indicating System |
| FL | : | Flight Level |
| F/O | : | First officer or Copilot |
| FDR | : | Flight Data Recorder |
| FOQA | : | Flight Operation Quality Assurance |
| GPWS | : | Ground Proximity Warning System |
| hPa | : | Hectopascals |
| Hrs | : | Hours |

| | | |
|-----------|---|--|
| ICAO | : | International Civil Aviation Organization |
| IFR | : | Instrument Flight Rules |
| IIC | : | Investigator in Charge |
| ILS | : | Instrument Landing System |
| Kg | : | Kilogram(s) |
| Km | : | Kilometer(s) |
| Kts | : | Knots (nm/hours) |
| Mm | : | Millimeter(s) |
| MTOW | : | Maximum Take-off Weight |
| NM | : | Nautical mile(s) |
| KNKT/NTSC | : | Komite Nasional Keselamatan Transportasi / National Transportation Safety Committee |
| PIC | : | Pilot in Command |
| QFE | : | Height above airport elevation (or runway threshold elevation) based on local station pressure |
| QNH | : | Altitude above mean sea level based on local station pressure |
| RESA | : | Runway End Safety Area |
| RPM | : | Revolution per Minutes |
| R/W | : | Runway |
| ROV | : | Remotely Operated Vehicle |
| SCT | : | Scattered |
| S/N | : | Serial Number |
| SSCVR | : | Solid State Cockpit Voice Recorder |
| SSFDR | : | Solid State Flight Data Recorder |
| TS/RA | : | Thunderstorm and rain |
| TAF | : | Terminal Aerodrome Forecast |
| TPL | : | Towed Pinger Locator |
| TSN | : | Time since New |
| TT/TD | : | Ambient Temperature/Dew Point |
| UTC | : | Universal Time Coordinate |
| VFR | : | Visual Flight Rules |
| VMC | : | Visual Meteorological Conditions |

SYNOPSIS

On 28 January 2010, an Antonov AN-26B aircraft, registered 4L-IFE, operated by PT. Manunggal Air Service as an unscheduled cargo flight, departed from Sentani Airport (DJJ), Jayapura for Wamena Airport (WAJW), Wamena. The flight was planned in accordance with the visual flight rules (VFR). There were three persons on board; two pilots and one flight engineer.

The accident flight was the third flight for the day over the route in 4L-IFE for this crew. The flight departed Jayapura at 03:05 UTC and landed at Wamena at 03:51. The Pilot in Command (PIC) reported that during the landing roll he was unable to prevent the aircraft from over-running the runway. It stopped in a ditch about 200 meters from the end of runway 15.

The aircraft had been leased to Ukraine – Air Alliance and in December 2009 was sub-leased to PT. Manunggal Air Service to be operated in Indonesia under Special Permit Number: DKUPPU/49621/OPS/2009 dated 23 December 2009.

The investigation is continuing and will include further examination and analysis of aircraft weight and balance and performance data, and operational approvals and certification.

1 FACTUAL INFORMATION

1.1 HISTORY OF THE FLIGHT

On 28 January 2010, an Antonov AN-26B aircraft, registered 4L-IFE, operated by PT. Manunggal Air Service as an unscheduled cargo flight, departed from Sentani Airport (DJJ), Jayapura¹ for Wamena Airport (WAJW)², Wamena. The flight was planned in accordance with the visual flight rules (VFR). There were three persons on board; two pilots and one flight engineer.

The accident flight was the third flight for the day over the route in 4L-IFE for this crew. The flight departed Jayapura at 03:05 UTC³ and landed at Wamena at 03:51. The Pilot in Command (PIC) reported that during the landing roll he was unable to prevent the aircraft from over-running the runway. It stopped in a ditch about 200 meters from the end of runway 15.

1.2 INJURIES TO PERSONS

Table 1: Injuries to persons

| Injuries | Flight crew | Passengers | Total in Aircraft | Others |
|--------------|-------------|------------|-------------------|----------------|
| Fatal | - | - | - | - |
| Serious | - | - | - | - |
| Minor | - | - | - | Not applicable |
| Nil Injuries | 3 | - | 3 | Not applicable |
| TOTAL | 3 | - | 3 | - |

1.3 DAMAGE TO AIRCRAFT

The nose landing gear, right wing tip, lower fuselage, and right propeller were extensively damaged.

¹ Sentani Airport, Jayapura, Papua, will be called as Jayapura for the purpose of this report.

² Wamena Airport, Wamena, Papua will be called as Wamena for the purpose of this report.

³ The 24-hour clock in Coordinated Universal Time (UTC) is used in this report to describe the local time as specific events occurred. Local time in the area of the accident, East Indonesia standard Time (Waktu Indonesia Timur (WIT)) is UTC +9 hours.



Figure 1: The damaged right wing tip



Figure 2: The nose landing gear

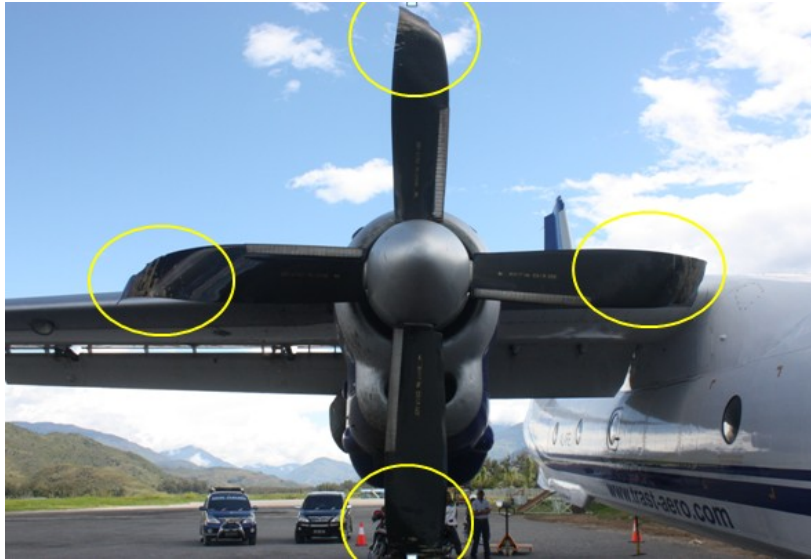


Figure 3: The right propeller blades were bent

1.4 OTHER DAMAGE

The aerodrome perimeter fence was damaged due to impact by the aircraft's right wing tip.



Figure 4: The aerodrome perimeter fence

1.5 PERSONNEL INFORMATION

1.5.1 Pilot in command

Gender : Male
Date of birth : 2 November 1962
Nationality : Ukraine
License : Airline Transport Pilot
License No: 004548

Date of issue : 17 July 2009
Valid to : 21 September 2010
Aircraft type rating : AN 24/26 and AN 32
Medical certificate : Class 1
Date of medical : 21 October 2009
Valid to : 21 October 2010
Last proficiency check : 2 September 2009
Total hours : 17,000 hours
Last 90 days : 151 hours
Last 7 days : 35 hours
Last 24 hours : 6 hours 40 minutes
This flight : 46 minutes

1.5.2 Copilot

Gender : Male
Date of birth : 30 December 1971
Nationality : Moldova
License : Commercial Pilot License
MDCA N0260/MD FU 0023

Date of issue : 25 August 2009
Valid to : 25 August 2010
Aircraft type rating : CP AN-24/26
Medical certificate : Class 1

Date of medical : 25 August 2009
Valid to : 25 August 2010
Last proficiency check : 28 October 2009
Total hours : 700 hours
Last 90 days : 70 hours
Last 7 days : 35 hours
Last 24 hours : 6 hours 40 minutes
This flight : 46 minutes

1.5.3 Maintenance Engineer

Gender : Male
Date of birth : 4 November 1957
Nationality : Belaruss
License : AMEL 00080
Aircraft ratings : Aircraft TU-154M
Aircraft AN-24R/RV
Certificate of Maintenance Approval : Maintenance Approval

1.6 AIRCRAFT INFORMATION

1.6.1 Aircraft Data

Aircraft manufacturer : Antonov
Aircraft model/type : AN-26B
Serial number : 127-03
Year of manufacture : 16 December 1982
Aircraft registration : 4L-IFE
Certificate of Registration : No.430
Valid to : 1 December 2010
Certificate of Airworthiness : No.430
Valid to : 1 December 2010
Total time since new (TSN) : 16,795 hours

1.6.2 Engines

Engine type : Turbo-propeller engine
Manufacturer : UKRAINA MOTOR SICH
Model : Ai24VT
Engine number 1 (Left)
Serial Number : H484BT114
Total Time Since New : 4,303 hours
Total Time Since Overhaul : 470 hours
Engine number 2 (Right)
Serial Number : H484BT114
Total Time Since New : 5,180 hours
Total Time Since Overhaul : 470 hours

1.6.3 Propellers

Propeller type : AV-72T 02A Series
Manufacturer : Stupino Machine-Building
Development Company JSS
Model : Constant Speed Propeller
Propeller number 1 (Left)

Serial Number : C72L471
Total Time Since New : 4,718 hours
Total Time Since Overhaul : 533 hours
Propeller number 2 (Right)
Serial Number : C61L322
Total Time Since New : 7,028 hours
Total Time Since Overhaul : 533 hours

1.6.4 Weight and Balance (W&B)

The operator provided the following completed weight and balance sheet that was used for the accident flight.

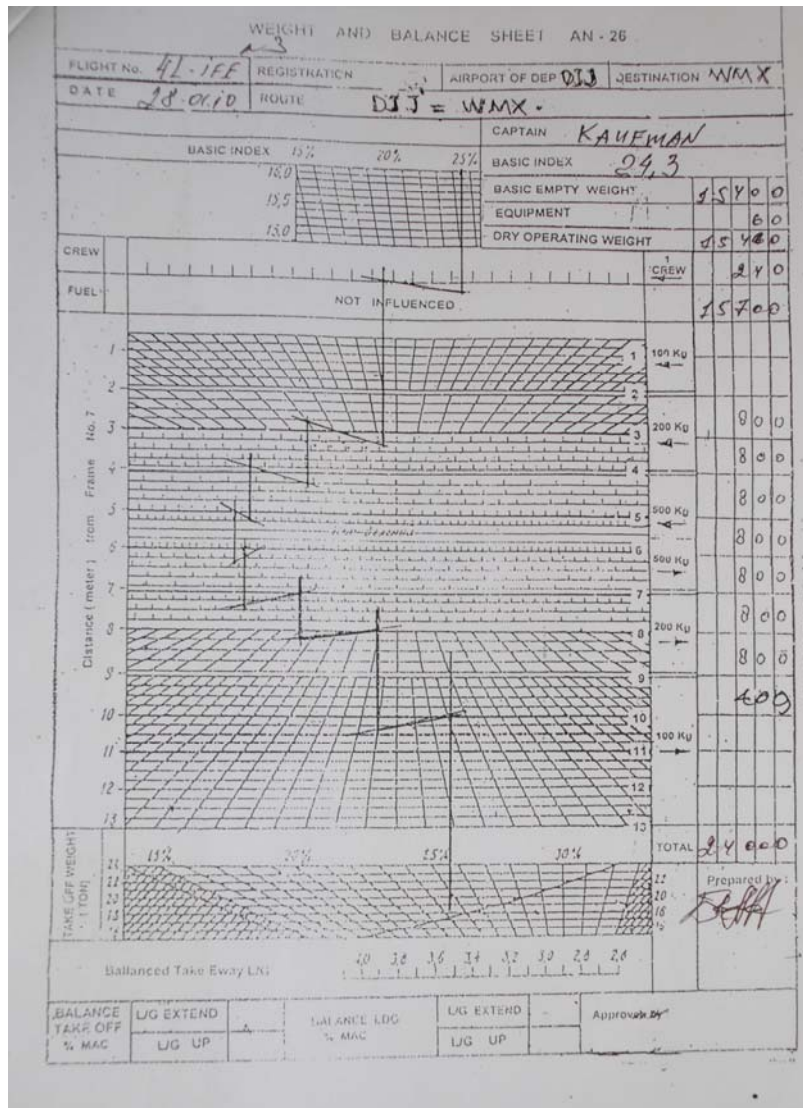


Figure 5: Load sheet used on the flight

1.6.5 Aircraft performance calculations

The following Aircraft Performance – Runway Analysis Landing calculation sheet was provided by the operator as the aircraft performance data used by the crew for the accident flight. The incorrect aerodrome elevation was used by the operator. On 1 December 2009, the Directorate General of Civil Aviation issued a NOTAM that amended the aerodrome elevation from 5,084 feet to 5,430 feet.

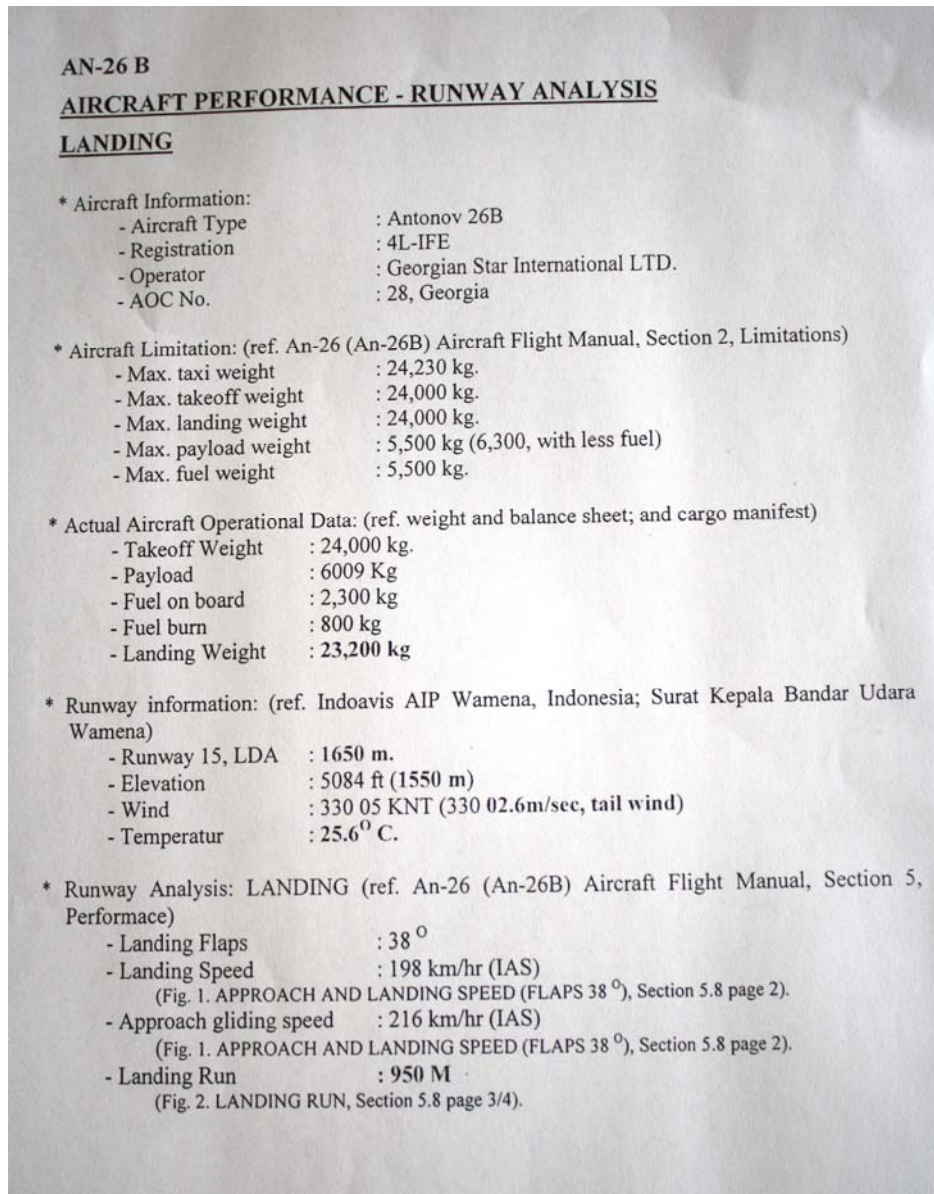


Figure 6: Aircraft Performance – Runway Analysis Landing sheet used by the crew

1.7 METEOROLOGICAL INFORMATION

The weather in the area of the flight at 0300 was reported to have been mostly clear in the valleys, with cloud on the mountains and slopes.

The Wamena Airport weather was reported as:

Surface wind : 330/05 Kts
 Visibility : 12 Km

Present weather : NIL
Cloud : SCTCU⁴ 450
Temperature : 25 C
Dew Point : 16
QNH : 1004.6 Mbs
QFE : 831.4 Mbs

1.8 AIDS TO NAVIGATION

Not relevant to this accident investigation.

1.9 COMMUNICATIONS

Communication was normal and the crew had no difficulty communicating with the Wamena Advisory Flight Information Service during the flight.

1.10 AERODROME INFORMATION

Aerodrome Code : WAJW
Airport Name : WAMENA
Airport Address : Jl.Gatot Subroto, Wamena village
Jayawijaya – Papua 99511 post box 150
Airport Class : II
Airport Authority : DGCA
Airport Service : No Information
Coordinates : 04° 05’ 51” S, 138° 57’ 04” E
Elevation : 5,430 feet
Runway Length : 1,650 meters
Runway Width : 30 meters
Azimuth : 15/33
Surface : Asphalt

⁴ SCTCU is scattered cumulus cloud.

1.11 FLIGHT RECORDERS

The aircraft was equipped with a Flight Data Recorder (FDR) and a Cockpit Voice Recorder (CVR). Search and Rescue personnel recovered the FDR and CVR from the wreckage and handed them over to NTSC investigators.



Figure 7: The Flight Data Recorder



Figure 8: The Cockpit Voice Recorder

1.12 WRECKAGE AND IMPACT INFORMATION

The aircraft overran the departure end of runway 15 and stopped in a ditch. It was substantially damaged.



Figure 9: The substantially damaged aircraft

1.13 MEDICAL AND PATHOLOGICAL INFORMATION

No medical or pathological investigations were conducted on the flight crew.

1.14 FIRE

There was no pre- or post- impact fire.

1.15 SURVIVAL ASPECTS

None of the aircraft's occupants were injured.

1.16 TESTS AND RESEARCH

No tests or research were performed up to the date of issuing the Preliminary Report.

1.17 ORGANISATIONAL AND MANAGEMENT INFORMATION

The aircraft was owned by Aquiline International Corporation, United Arab Emirates, and was operated by Georgian Star International LTD (Air Operator Certificate Number: 028) prior to being sub-leased to Air Alliance and subsequently PT. Manunggal Air Service.

The aircraft was leased to Ukraine – Air Alliance and in December 2009 was sub-leased to PT. Manunggal Air Service to be operated in Indonesia under Special Permit Number: DKUPPU/49621/OPS/2009 dated 23 December 2009.

Aircraft Owner : Aquiline International Corp. UAE
Original Operator : Georgian Star International LTD (Air Operator Certificate Number: 028)
Lease broker : Ukraine – Air Alliance
Aircraft Operator : PT. Manunggal Air Service
Halim Perdanakusuma Airport
Terminal Building, 1st Floor, Room 67 Jakarta
13610 Republic Indonesia

1.18 ADDITIONAL INFORMATION

At the time of finalising the Preliminary Report, the investigation had not found any evidence of a proving flight having been conducted in Papua, specifically to and from Wamena Airport, for the operation of this aircraft type.

The investigation is continuing and will include further examination and analysis of aircraft weight and balance and performance data, and operational approvals and certification.

1.19 USEFUL OR EFFECTIVE INVESTIGATION TECHNIQUE

The investigation is being conducted in accordance with NTSC approved policies and procedures, and in accordance with the Standards and Recommended practices of Annex 13 to the Chicago Convention.

2 ANALYSIS

To be included in the Final Report

3 CONCLUSIONS

3.1 FINDINGS

To be included in the Final Report

3.2 CAUSES

To be included in the Final Report

4 SAFETY ACTIONS AND RECOMMENDATIONS

4.1 SAFETY ACTIONS

At the time of issuing this Preliminary Factual Accident Investigation Report, the National Transportation Safety Committee had not been informed of any safety actions resulting from this accident.

4.2 RECOMMENDATIONS

As a result of this investigation to date, the National Transportation Safety Committee issues the following recommendations.

4.2.1 Recommendation to Directorate General of Civil Aviation (DGCA)

The National Transportation Safety Committee recommends that the Directorate General of Civil Aviation should urgently review the procedures for issuing Flight Approvals to operators that propose operating aircraft that are not listed on their approved Air Operator's Certificate.

4.2.2 Recommendation to Directorate General of Civil Aviation (DGCA)

The National Transportation Safety Committee recommends that the Directorate General of Civil Aviation should urgently review the Operational Specifications for the Antonov AN26 aircraft type operating in Indonesia.

- Particular attention should be given to the Operational Specifications for this aircraft type operating in Papua.

4.2.3 Recommendation to PT. Manunggal Air Service

The National Transportation Safety Committee recommends that the PT. Manunggal Air Service should review its procedures for operating aircraft that are not on their approved Air Operator's Certificate, to ensure that all Operational Specifications and other technical and operational safety requirements are met.