

FINAL

KNKT 10.12.19.04

**NATIONAL
TRANSPORTATION
SAFETY
COMMITTEE**

Aircraft Serious Incident Investigation Report

Collision on the Ground

**PT. Manunggal Air Service And PT. Trigana Air Service
Antonov AN-26B Twin Otter
4L-IFE PK-YRU**

**Sentani Airport, Jayapura Papua
Republic of Indonesia
02 December 2010**



**NATIONAL TRANSPORTATION SAFETY COMMITTEE
MINISTRY OF TRANSPORTATION
REPUBLIC OF INDONESIA
2013**

This Final Report was produced by the National Transportation Safety Committee (NTSC), Transportation Building 3rd Floor, Jalan Medan Merdeka Timur No. 5, Jakarta 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 Organization, Aviation Act (UU No.1/2009), and Government Regulation (PP No. 3/2001).

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GLOSSARY OF ABBREVIATIONS

AFM	Airplane Flight Manual
AOC	Air Operator Certificate
ATC	Air Traffic Control
ATPL	Air Transport Pilot License
ATS	Air Traffic Service
BMG	Badan Meterologi dan Geofisika
°C	Degrees Celsius
CAMP	Continuous Airworthiness Maintenance Program
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
DGCA	Directorate General of Civil Aviation
F/O	First officer or Co-pilot
FDR	Flight Data Recorder
ICAO	International Civil Aviation Organization
IIC	Investigator in Charge
Kg	Kilogram(s)
Km	Kilometer(s)
Kt	Knots (NM/hour)
Mm	Millimeter(s)
MTOW	Maximum Take-off Weight
NM	Nautical mile(s)
KNKT / NTSC	<i>Komite Nasional Keselamatan Transportasi</i> / National Transportation Safety Committee
PIC	Pilot in Command
QFE	Height above aerodrome elevation (or runway threshold elevation) based on local station pressure
QNH	Altitude above mean sea level based on local station pressure
RPM	Revolution Per Minute
S/N	Serial Number
SSCVR	Solid State Cockpit Voice Recorder
SSFDR	Solid State Flight Data Recorder

TS/RA	Thunderstorm and rain
TSN	Time Since New
UTC	Coordinated Universal Time
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

INTRODUCTION

SINOPSIS

On 2 December 2010 at 23:27 UTC¹ an Antonov AN-26B aircraft registered 4L-IFE operated by PT. Manunggal Air Service on taxi out from parking stand number 12 of Sentani Airport on the intention to fly to Wamena.

During taxi out, the aircraft right wing collided with a DHC 6 Twin Otter registered PK-YRU operated by PT. Trigana Air Service which was parked on the parking stand number 9, at the other side of the apron. The distance was 144 meters from parking stand number 12.

The Antonov aircraft 4L-IFE cancelled the flight and returned to parking stand number 10.

There was no marshaller to guide the 4L-IFE during taxing out. The width of taxi way (52.30 meters) and there were no taxi guide line.

There were 3 persons on board consist of two pilots and one flight mechanic.

No one was injured in this serious incident.

¹ The 24-hour clock in Coordinated Universal Time (UTC) is used in this report to describe the local time as specific events occurred. *Waktu Indonesia Timur* (WIT) is UTC +9 hours.

1. FACTUAL INFORMATION

1.1 History of the flight

On 2 December 2010 at 2327 UTC an Antonov AN-26B aircraft registered 4L-IFE operated by PT. Manunggal Air Service on taxi out from parking stand number 12 Sentani Airport on the intention to fly to Wamena Airport. This was the second flight of the day to Wamena for the crew and the aircraft. .

On the parking bay number 9, a DHC 6 Twin Otter, registered PK-YRU operated by PT. Trigana Air Service was parked on preparation to fly. Parking bay number 9 was located on the other side of the apron, in front of parking bay number 10.

4L-IFE taxi out of parking bay number 12 to taxiway Bravo. Eyewitness informed that the aircraft was taxi faster than any other aircraft normal taxi speed. There were no marshaller to guide the Antonov aircraft taxing out and there were no taxi guide line on this area of the apron.

At abeam parking bay number 9, the right wing of the 4L-IFE collided with left engine and propeller of the PK-YRU.

4L-IFE cancelled the flight and continued to taxi to parking bay number 10.

There were 3 persons on board consist of two pilots and one flight mechanic.

No one was injured in this serious incident.

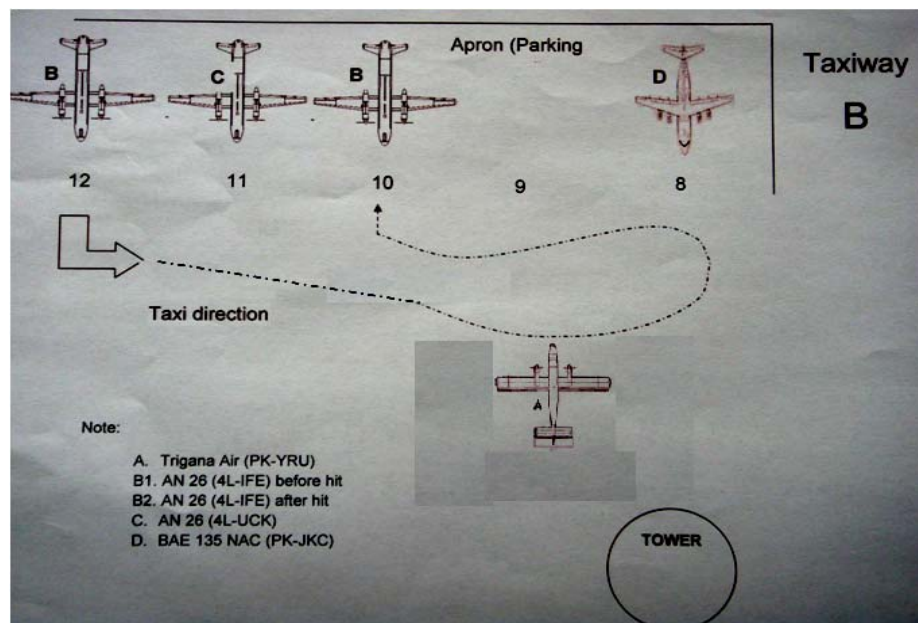


Figure 1: Sketch of the parking area

1.2 Injuries to persons

Injuries	Flight crew	Passengers	Total in Aircraft	Others
Fatal	-	-	-	-
Serious	-	-	-	-
Minor/None	3	-	3	not applicable
TOTAL	3	-	3	-

1.3 Damage to aircraft

1.3.1 4L-IFE

Right wing leading edge was dent at position about 2 meters from the wing tip.

The right aileron was damage and removed for repair.

Right Navigation light cover was broken.



Figure 2: Damage on the right wing leading edge



Figure 3: Lower skin of the right aileron scratched

1.3.2 PK-YRU

The left engine nacelles were damage, upper surface of the sta 125.55- 200.55 inches of datum scratched and the skin at Right hand upper of the engine cowling was wrinkled.

Both engine nacelles were bent down, and the skin of the right engine nacelle was wrinkle.

One of the propeller blades from left engine was scratch, and one of the right propeller blades were dent at the leading edge.



Figure 4: An upper surface left nacelle scratched



Figure 5: Left propeller blade scratched



Figure 6: Right propeller blade leading edge dent

1.4 Other Damage

There is no other damage reported.

1.5 Personnel information

1.5.1 Pilot in Command

Age : 50 years
Gender : Male
Nationality : Russia
Type of licence : Airline Transport Pilot Licence,
Valid to : 15 January 2011
Rating : AN-26, AN-24, AN-34
Medical Certificate : Class 1
Valid to : 15 January 2011
Last line check : 15 June 2010
Last proficiency check : 15 June 2010
Total flying time : ~ 14,000 hours (TBA)
Total on this type : ~ 10,000 hours (TBA)
Total last 90 days : 250 hours
Total on type last 90 days : 165 hours
Total last 30 days : 6 hours 40 minutes
Total on the type last 24 hours : 2 hours 6 minutes
Medical limitation :

1.5.2 Co-pilot

Age : 52 years
Gender : Male
Nationality : Russian
Type of licence : Airline Transport Pilot Licence,
Valid to : 31 August 2009
Rating : AN-24, AN 26
Medical certificate : Class 1
Valid to : 3 September 2011
Last line check : 20 November 2011
Last proficiency check : 19 November 2011

Total flying time : ~ 14,500 hours (TBA)
Total on this type : ~ 10,000 hours (TBA)
Total last 90 days : 70 hours
Total on type last 90 days : 70 hours
Total on the type last 24 hours : 6 hours 40 minutes

1.6 Aircraft Information

1.6.1 4L-IFE

Registration Mark : 4L-IFE
Manufacturer : Ukraine
Country of Manufacturer : Ukraine
Type/ Model : AN-26B
Serial Number : 127-03
Date of manufacture : 16 December 1982
Certificate of Airworthiness : 358/1
Validity : 13 November 2010

Antonov AN-26B dimension Wing span 29.64m (97ft 3in), length 23.71m (77ft 10in), height 8.55m (28ft 1in). Wing area 75.0m² (807sq ft).

1.6.2 PK-YRU

Registration Mark : PK-YRU
Manufacturer : De Havilland Canada
Country of Manufacturer : Canada
Type/ Model : DHC6-300 Twin Otter
Serial Number : 685
Years of manufacture : 1980
Certificate of Airworthiness
Validity : 01 January 2011

DHC-6-300 dimension - Wing span 19.81m (65ft 0in), length 15.77m (49ft 6in), height 5.94m (19ft 6in). Wing area 39 m² (420sq ft).

1.7 Meteorological information

Weather conditions were not a factor in this serious incident.

1.8 Aids to navigation

Not relevant to this serious incident.

1.9 Communications

All communication between ATS and the crew were recorded by ground-based automatic was normally.

1.10 Aerodrome information

Airport Name	:	Sentani Airport
Airport Identification	:	DJJ / WAJJ
Airport Certificate No	:	Adm OC/047/2006
Coordinate	:	02°34' 12.24" S, 140°30' 46.03" E
Elevation	:	189,00 feet AMSL
Airport Operator	:	Directorate General of Civil Aviation
Runway Direction	:	12 / 30
Runway Length	:	2,180 meters
Runway Width	:	45 meters
Surface	:	Asphalt

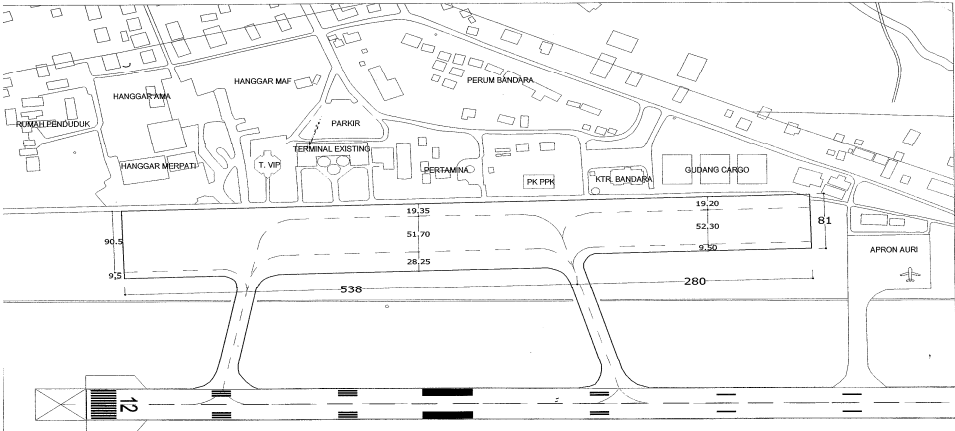


Figure 7: apron layout

1.11 Flight Recorders

1.11.1 Flight Data Recorder (FDR)

Model : P3TA N412 Rostov Don
Part number : BP-4T
Serial number : 645451151

1.11.2 Cockpit Voice Recorder (CVR)

Model : Mars +Bur, and P3TA N412 Rostov
Don Russia
Part number : 215017
Serial number : 7A-10 M and model Mars+ Bur.

Both recorders data were not be able to be downloaded in Indonesia. The facility to download the data is in Russia.

Consider the importance of the recorder data and the difficulty to download the data, the investigation consider that the downloading the recorder data will not be necessary.

1.12 Wreckage and Impact Information

There were no wreckage, all parts were intacked at the aircraft

1.13 Medical and Pathological Information

About three hours after the serious incident, the flight crew urine was tested for any alcohol or drugs trace. This urine test was initiated by the operator, and requested to local police authority. The results of the test were negative.

1.14 Fire

There was no evidence pre-or post- serious incident fire.

1.15 Survival Aspects

Not relevant to this serious incident.

1.16 Tests and Research

Not relevant to this serious incident.

1.17 Organizational and management information

1.17.1 PT. Manunggal Air

The aircraft owned by Aquiline International Corp. UAE (United Arab Emirates).

The aircraft was leased to Ukraine – Air Alliance and sub-leased to PT. Manunggal Air Service to be operated in Indonesia under Special Permit Number: DKUPPU/49621/OPS/2009 dated December 23, 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
Rajawali Building, Jln Rajawali Raya Halim
Perdanakusuma, Jakarta 13610 Republic
Indonesia

1.17.2 Trigana Air Services

Aircraft Owner : PT. Trigana Air Services
Aircraft Operator : PT. Trigana Air Services
Kompleks Puri Sentra Niaga
Jl. Wiraloka Blok D 68-69-70, Kalimalang
Jakarta 13620, Republic of Indonesia.
AOC : 121-006

1.18 Additional Information

Apron:

- Apron width is 52,30 meters (aircraft parked distance)
- There was no taxi marking on the surface.
- At the time of the occurrence there was no marshaller.

Aircraft:

- Wing span AN 26 B is 21 meters

Medical report:

- The Pilot was sent for toxicological examination at health of laboratories Jayapura at 13.10 WIT (21.30 UTC) of the incident. Medical report showed that the driver was not under influence of alcohol.

1.19 Useful or Effective Investigation Techniques

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

During taxing out from the parking stand number 12 the PIC of Antonov AN 26B registered 4L-IFE did not see the Twin Otter aircraft PK-YRU, and suddenly the copilot saw the impact and he asked the PIC to taxi back to parking stand number 10.

The investigation revealed, that at the time of occurrence, there were no marshaller to guide the Antonov aircraft taxing out and there were no marking on the taxi surface.

The width of taxi way (52.30 meters) from the taxi stand is wide enough for the aircraft taxing out from the parking stand with slow speed taxi.

The damages of both aircraft were an evidence of the Antonov aircraft 4L-IFE taxing out from parking stand was too high.

3. CONCLUSIONS

During taxiing out from the parking stand number 12 the PIC of Antonov An 26B registered 4L-IFE did not see the Twin Otter aircraft PK-YRU finally Antonov 26B collided with Twin Otter Aircraft

3.1 Findings

- The aircraft Antonov 26B 4L-IFE was maintained in accordance with approved Russian schedule of maintenance.
- The Pilot in Command (PIC) was appropriately licensed as pilot in command of the Antonov 26B aircraft, by Russian Authority.
- The co-pilot was appropriately licensed as a co-pilot of the Antonov 26B aircraft.
- The PIC did not follow correct procedures to taxi out from parking stand; taxi out speed was higher than normal.
- The PIC did not coordinate with co pilot during taxi out from parking stand 12.
- There were no marking on the taxi way surface.
- At the time of the occurrence there was no marshaller.
- ATC gave clearance to Antonov 26B 4L-IFE Taxi out from parking stand 12 to runway 12 via taxiway A.
- After Antonov 26B collided with Twin Otter Aircraft, Antonov aircraft continued taxiing back to parking stand 10.

4. SAFETY RECOMMENDATIONS

As a result of the investigation, the National Transportation Safety Committee issues the recommendations as follows.

4.1 Recommendation to PT. Manunggal Air Service

The National Transportation Safety Committee recommends that PT. Manunggal Air Service should review and implement the approved standard operating procedure including Antonov leased aircraft.

4.2 Recommendation to Directorate General Civil Aviation cq. Sentani Airport Authority

The National Transportation Safety Committee recommends that the Directorate General Civil Aviation cq. Sentani Airport Authority to:

- a. Shall have the aircraft marshaled enough to park the aircraft and to taxi out from the parking stand.
- b. Have the parking and taxi out marking in accordance with approved airport marking standard.

5. APPENDIXES

APPENDIX A: Operation of the antonov 26 letter by PT Manunggal Air Service



Att : Bpk MANZI

**DEPARTEMEN PERHUBUNGAN
DIREKTORAT JENDERAL PERHUBUNGAN UDARA**

Jalan Medan Merdeka Barat No. 8 | Telepon : 3505136 - 3505137 | Fax : 3505135 - 3505139
Jakarta 10110 | | 3507144
Kotak Pos 1389
Jakarta 10013

Nomor : DKURUU/4062/OPS/AD09 | Jakarta, 22 Desember 2009
Klasifikasi : -
Lamp. : -
Perihal : Pengoperasian Antonov 26
oleh PT. Manunggal Air Service | Kepada

Yth. Direktur Angkutan Udara

di

JAKARTA

1. Mengacu kepada Nota Dinas Direktur Angkutan Udara No. 1306/DAU/DIR/XI/09 Tanggal 30 Nopember 2009 perihal Ijin Khusus Penerbangan untuk mengangkut beras ke Wamena dengan menggunakan pesawat Antonov 26 registrasi asing oleh PT. Manunggal Air Service, dengan ini disampaikan seperti dibawah ini.
2. Berdasarkan data awal yang disampaikan oleh PT. Manunggal Air Service dan hasil evaluasi dari aspek teknis kedua pesawat Antonov 26 tersebut adalah laik udara mengacu kepada Certificate of Airworthiness yang diterbitkan oleh State of Registrar (Ministry of Transportation of Georgia). Masa berlaku C of A An 26 Serial Number 79-09 registrasi 4L-UCK berlaku sampai dengan tanggal 02 Desember 2010 dan untuk Serial Number 127-03 registrasi 4L-IFE berlaku sampai dengan 21 Nopember 2010. License Crew yang mengoperasikan pesawat tersebut semuanya masih berlaku. Selama pesawat Antonov 26 tersebut beroperasi di Papua continuous airworthinessnya dikontrol oleh State Register (Authority Georgia).
3. Mempertimbangkan butir 1 dan 2 diatas dari aspek teknis, Direktorat Kelaikan Udara dan Pengoperasian Pesawat Udara tidak berkeberatan PT. Manunggal Air Service mengoperasikan kedua pesawat Antonov 26 tersebut untuk keperluan pengangkutan kargo bahan pokok dengan waktu terbatas yakni tidak melebihi masa berlaku C of A yang diterbitkan oleh State Register.
4. Setiap orang/crew yang mengoperasikan pesawat AN26 tersebut wajib memiliki kemampuan dan kompetensi dibidangnya sesuai dengan peraturan yang berlaku di Indonesia

5. Direktorat Kelaikan Udara dan Pengoperasian Pesawat Udara akan melaksanakan evaluasi dan inspeksi terhadap kelaikaudaraan, limitasi-limitasi sebelum pesawat tersebut dioperasikan oleh PT. Manunggal Air Service
6. Berhubung Pesawat Udara tersebut dioperasikan dengan registrasi asing maka disarankan adanya kajian dari aspek hukum.
7. Demikian disampaikan atas perhatiannya diucapkan terima kasih.


MURLI HASIBUAN
Pembina Utama Muda (IV/c)
NIP. 19590914 198603 1 001

Tembusan:

- Direktur Jenderal Perhubungan Udara
- Sekretaris Jenderal Perhubungan Udara
- Kepala Bagian Hukum Ditjen Perhubungan Udara
- Direktur Utama PT. Manunggal Air

APPENDIX B: Medical report



PEMERINTAH PROVINSI PAPUA
DINAS KESEHATAN
BALAI LABORATORIUM KESEHATAN JAYAPURA
Jl. Kesehatan Komplek RSUD Dok. II, Jayapura - 99113, Tlp. 0967-532615, Fax. 0967-534304

LAPORAN HASIL UJI SPESIMEN MANUSIA

No : 001 / LHU / BLK-JPR / XII / 10

Nomor FPFS : 002 / FPFS / BLK-JPR / XII / 10
 Nomor Laboratorium : 002 / KL- FOR / XII / 10
 Nama Pelanggan : **BANDARA SENTANI**
 Alamat Pelanggan : Jl. Yabaso Sentani Distrik Sentani Kota Kabupaten Jayapura
 Telp / Fax : HP. 0812 4831 3825
 Nama Pemohon : **BANDARA SENTANI**
 Alamat Pemohon : Jl. Yabaso Sentani Distrik Sentani Kota Kabupaten Jayapura
 Telp / Fax : HP. 0812 4831 3825
 Jenis Sampel : URINE SEGAR
 Deskripsi Sampel : Urine milik Tn. OLEG, 52 Thn, Laki-laki
 Tanggal/Jam Sampling : 02 Desember 2010 Jam 13.10 WIT
 Tanggal/Jam Penerimaan : 02 Desember 2010 Jam 13.15 WIT
 Tanggal/Jam Pengujian : 02 Desember 2010 Jam 13.15 WIT s/d selesai
 Petugas Sampling : **PETUGAS BLK JAYAPURA**

Hasil Pengujian

No	PARAMETER	JENIS SAMPEL	HASIL UJI	SPESIFIKASI METODE	
1	GOLONGAN DARAH	Barang Buati			
		Darah			
		Rambut			
		Sperma			
2	IDENTIFIKASI DARAH	Barang Buati			
3	IDENTIFIKASI SPERMA	Barang Buati			
		Cairan Vagina			
IDENTIFIKASI OBAT					
4	IDENTIFIKASI OBAT	4.1. Chloroquin	Cairan Lambung		
		4.2. Kina	Cairan Lambung		
		4.3. Methampiron	Cairan Lambung		
		4.4. Golongan Alkohol	Cairan Lambung		
		4.5. Formaldehid	Cairan Lambung		
		4.1. Chloroquin	Cairan Lambung		
		4.2. Kina	Cairan Lambung		
		4.3. Methampiron	Cairan Lambung		
		4.4. Golongan Alkohol	Cairan Lambung		
		4.5. Formaldehid	Cairan Lambung		
		4.1. Chloroquin	Darah		
		4.2. Kina	Darah		
		4.3. Methampiron	Darah		
		4.4. Golongan Alkohol	Darah		
		4.5. Formaldehid	Darah		
		4.1. Chloroquin	Urine		
		4.2. Kina	Urine		
		4.3. Methampiron	Urine		
		4.4. Golongan Alkohol	Urine	NEGATIF (-)	IKM/5.4.152/BLK-JPR (Mikrodiffusi G. Dubowski)
		4.5. Formaldehid	Urine		
5	IDENTIFIKASI CYANIDE	Cairan Lambung			
		Darah			
		Muntahan			
		Sisa Makanan			
		Urine			

Catatan

- Hasil pengujian ini hanya berlaku untuk sampel yang diuji
- Laporan Hasil Uji ini terdiri dari 1 halaman
- Laporan Hasil Uji ini **TIDAK BOLEH DIGANDAKAN**, kecuali secara lengkap dan sejin tertulis dari BLK Jayapura
- Laporan Hasil Uji ini tersimpan di BLK Jayapura selama 3 (tiga) bulan terhitung sejak tanggal dikeluarkan.
- Pengambilan sampel diluar tanggung jawab BLK Jayapura

Jayapura, 03 Desember 2010
a.n. KEPALA BALAI LABORATORIUM KESEHATAN JAYAPURA
Manajer Teknik Kesehatan Lingkungan

Andi Hajrah
NIP. 19701122 199101 2 002

DP/5.10.4/BLK-JPR

Terima kasih atas kepercayaan anda kepada kami

Halaman 1 dari 1