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NATIONAL TRANSPORTATION SAFETY COMMITTEE

Aircraft Accident Investigation Report

PT. Sinar Mas Super Air
Fletcher FU24-950 ; PK–PNX
Ketapang, West Kalimantan
Republic of Indonesia

31 December 2009

NATIONAL TRANSPORTATION SAFETY COMMITTEE
MINISTRY OF TRANSPORTATION
REPUBLIC OF INDONESIA
2012

This Final Report was produced by the National Transportation Safety Committee (NTSC), Ministry of Transportation Building 3rd Floor, Jalan 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, the Indonesian Aviation Act (UU No. 1/2009) and Government Regulation (PP No. 3/2001).

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GLOSSARY OF ABBREVIATIONS

AOC	Air Operator Certificate
ATC	Air Traffic Control
°C	Degrees Celsius
CASR	Civil Aviation Safety Regulation
CPL	Commercial Pilot License
CSN	Cycles Since New
DGCA	Directorate General of Civil Aviation
ICAO	International Civil Aviation Organization
Kg	Kilogram(s)
Km	Kilometer(s)
Kt	Knots (NM/hour)
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 aerodrome elevation (or runway threshold elevation) based on local station pressure
QNH	Altitude above mean sea level based on local station pressure
SCT	Scattered
S/N	Serial Number
TSN	Time Since New
TT/TD	Ambient Temperature/Dew Point
UTC	Coordinated Universal Time

INTRODUCTION

SYNOPSIS

The Fletcher FU24-950 aircraft, registered PK-PNX operated by PT.Sinar Mas Super Air, was ferry flight from Ujung Tanjung, Pekanbaru home base to Tangar airstrip, Center of Kalimantan, with reference flight approval number D09-038960 and Security Clearance number AU05-033328, person on board was one pilot and one engineer.

On 29 December 2009, the aircraft departed from Ujung Tanjung, transit at Jambi and stop overnight at Pangkal Pinang Airport, Bangka with total flight time was 3 hours.

On the next day, 30 December 2009, the aircraft continuing flight from Pangkal Pinang to Rahadi Oesman Airport, Ketapang, West Kalimantan[1] and overnight at Ketapang with total flight time is 1:40 hours.

On the next day 31 December 2009, the aircraft plan to continued flight to Tangar Airstrip.

During that day, the pre flight inspection is conducted by the engineer and released safe for flight. From the last 10 days maintenance log book report, no indication of pilot report and/or trouble except a preventive maintenance of Hot Section Inspection performed at 25 December 2009 on engine flight time 1,419.58 hours, test and found satisfactory condition.

The aircraft was reported dispatched from Ketapang with the following sequence:

a. The pilot requested for start the engine at 01:17 UTC[2] (08:17 Local Time);

b. At 01:24 the pilot requested for taxi, and the ATC gave clearance via taxiway "A". The pilot requested intersection runway 17 and approved by ATC

c. The ATC requested for reported when ready for departure, and the pilot reported ready for departure, then the ATC gave the departure clearance.

d. At 01:25, the aircraft was departed and crashed at 01:26 striking the roof of the hospital and broken down into pieces at the parking area in which have had approximate 1.5 Kilometer to the left side from the flight path centerline.

The aircraft was substantially damage and the Crew on board was consist of one pilot in command and one aircraft maintenance engineer, both of them were fatally injured.

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[1] Rahadi Oesman Airport, Ketapang, West Kalimantan will named Ketapang for the purposes of this report.

[2] The 24-hour clock used in this report to describe the time of day as specific events occurred, is in Coordinated Universal Time (UTC). Local time, Western Indonesian Standard Time (WIB) is UTC + 7 hours

1 FACTUAL INFORMATION

1.1 History of the flight

The Fletcher FU24-950 aircraft, registered PK-PNX operated by PT.Sinar Mas Super Air, was ferry flight from Ujung Tanjung/Pekanbaru home base to Tangar airstrip, Center of Kalimantan, with reference flight approval number D09-038960 and Security Clearance number AU05-033328, person on board was one pilot and one engineer.

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On the next day 31 December 2009, the aircraft plan to continued flight to Tangar Airstrip.

The aircraft was airworthy prior departure and dispatched from Ketapang with the following sequence:

a. The pilot requested for start the engine at 01:17 UTC[4] (08:17 Local Time);

b. At 01:24 the pilot requested for taxi, and the ATC gave clearance via taxiway "A". The pilot requested intersection runway 17 and approved by ATC

c. The ATC requested for reported when ready for departure, and the pilot reported ready for departure, then the ATC gave the departure clearance.

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[3] Rahadi Oesman Airport, Ketapang, West Kalimantan will named Ketapang for the purposes of this report.
[4] The 24-hour clock used in this report to describe the time of day as specific events occurred, is in Coordinated Universal Time (UTC). Local time, Western Indonesian Standard Time (WIB) is UTC + 7 hours

The aircraft was substantially damage and the crew on board consist of one pilot in command and one aircraft maintenance engineer; both of them were fatally injured.

Figure 1: Main wreckage of PK-PNX

1.2 Injuries to persons

Injury	Flight crew	Passengers	Total in Aircraft	Others
Fatal	2	-	2	-
Serious	-	-	-	-
Minor	-	-	-	-
None	-	-	-	-
TOTAL	2	0	2	-

1.3 Damage to aircraft

Aircraft was substantially damage with nose section, left wing, and left elevator was separated from the main wreckage. Part of the left wing tip was found in the roof of hospital.

1.4 Other damage

Figure 2: The hospital roof after impact

Figure 3: the car damages in the parking area

The aircraft crashed striking the roof of the hospital and broken down into pieces at the parking area in which have had approximate 1.5 kilometres to the left side from the flight path centreline.

1.5 Personnel Information

1.5.1 Pilot in Command (Pilot Monitoring)

Gender	:	Male
Date of birth	:	20 April 1960
License	:	CPL
Valid to	:	11 February 2010
Aircraft ratings	:	CASA-212 & FU-24
Last Proficiency Check	:	06 September 2008
Flying experience		
Total all types	:	2,892:45 Hours
Total on type	:	641:35 Hours
Total on type last 90 days	:	83:15 Hours
Total on type last 7 days	:	4:55 Hours
Total on type last 24 hours	:	1:40 Hours
Medical certificate	:	First Class
Valid to	:	11 February 2010
Medical limitation	:	Holder shall wear lenses that correct for distant vision and posses glasses that correct for near vision

There was no evidence that the PIC was not fit for duty.

1.5.2 Maintenance Engineer

Gender	:	Male
Date of birth	:	22 January 1955
License	:	AMEL
Aircraft ratings	:	Fokker F27, Boeing B737 Series, Engine CFM56-3 Series
Medical limitation	:	Nil
Certificate of Maintenance	:	Fletcher FU24-950 & PT6A series

1.6 Aircraft Information

1.6.1 Aircraft data

Registration	:	PK-PNX
Manufacturer	:	Pacific Aerospace Cooperation (re-engined by Super Air Ltd.)
Country of Manufacturer	:	New Zealand
Year of Manufacture	:	1970
Type Model	:	FU24-950
Serial Number	:	187
Certificate of Airworthiness		
Issued	:	14 July 2009
Valid to	:	13 July 2010
Certificate of Registration		
Issued	:	14 July 2009
Validity	:	13 July 2010
Category	:	Restricted for Agriculture

1.6.2 Engine data

Engine Type	:	Not provided by operator
Manufacturer	:	Not provided by operator
Model	:	Not provided by operator

There was no evidence of a defect with the aircraft's engines.

1.6.3 Maintenance data

During that day, the pre flight inspection is conducted by the engineer and released safe for flight.

From the last 10 days maintenance log book report, no indication of pilot report and/or trouble.

Hot Section Inspection performed at 25 December 2009 on engine flight time 1,419.58 hours, test and found satisfactory condition.

1.7 Meteorological information

The weather information (QAM) at Ketapang, reported on 31 December 2010 was:

	0100	0130
Wind	060 / 4 knot	030 / 4 knot
Visibility	9 km	10 km
Cloud	Cumulonimbus	Cumulonimbus
Temperature	25 / 24	25 / 24
QNH	1010	1010
QFE	1009	1009

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

Aerodrome Code	:	KNG / WIOK
Airport Name	:	Rahadi Osman Airport
Airport Address	:	Jl. Pattimura – Ketapang
Coordinates		01° 48′ 58″ S ,109° 57′ 43″ E
Elevation	:	13 feet
Runway Length	:	1,400 meters
Runway Width	:	30 meters
Azimuth	:	17 – 35

1.10.2 Aerodrome area

The investigation found the population and building for about 500 meters from the end of runway, a head of the take-off flight path.

Figure 4: The aerodrome area

1.11 Flight Recorders

The aircraft was not fitted with a flight data recorder or cockpit voice recorder. Neither recorder was required by current Indonesian regulations.

1.12 Wreckage and impact information

1.12.1 Initial impact

The nose landing gear was hit the top of the hospital roof (see Figure 5)

Figure 5: Initial impact on the roof of hospital

The forward fuselage section was broken and hit the park car in front of the hospital.

The aircraft stop faced opposed to the direction of flight, the wing and horizontal stabilizer was broken.

Figure 6: The tail section damaged

1.12.2 Engines & propeller

The propeller blades were on fine pitch and no sign of rotating impact.

Figure 7: The Engine & Propeller damaged

1.13 Medical and pathological information

The aircraft was crashed hit the top roof of the hospital and broken down into pieces at the parking area. The crew and engineer were fatally injured, victims were on their seats.

1.14 Fire

There was no evidence of fire in flight or after the aircraft crashed.

1.15 Survival aspects

The evacuation was immediately executed by the medical team of the hospital, about fifteen minutes after the occurrence the airport fire fighting team were coming to the site.

1.16 Test and research

No tests or research were required to be conducted as a result of this accident.

1.17 Organisational and management information

Aircraft Operator	:	PT. Sinar Mas Super Air
Address	:	Plaza BII Tower 2 , 30th Floor
		Jl. MH. Thamrin No. 50 Jakarta
Air Operator Certificate	:	AOC 137/001.

1.18 Additional information

1.18.1 Fuel tank

The fuel tank was broken and there were no remaining fuel.

1.18.2 Engine teardown examination

Engine teardown investigation was performed at PT. Aero Nusantara Indonesia facilities in Budiarto Airport, Tangerang, Indonesia supervised by NTSC investigators and accredited representative. The investigation found no evidence damage related to the engine prior to the occurrence.

1.18.3 Airframe Fuel Pump

The airframe fuel pumps investigation; part number CJ 10000-D, serial number K 2705-1, corroded at the pump vent and pressure regulator spring.

Figure 8: Booster Pump Pressure Regulator shown the spring was surface corrosion

Figure 9: The Plate & Van pump was surface corrosion

1.18.4 Low Pressure (LP) Filter

The investigation found sign of water contamination as indicated by gel.

1.18.5 Component maintenance

The maintenance process of Fuel Pumps part number CJ 10000–D is On Condition (OC) as per Sinar Mas Super Air approved maintenance program.

1.18.6 Operation

Referred to the Fletcher Flight Manual and Pilot Operating Handbook, chapter 3.10. Fuel System Failure:

LOW or HIGH (red radial) engine fuel pressure -
- Ensure Fuel Boost Pump is switched ON.
- Select a safe landing site and land immediately.
- Investigate the cause of the fuel pressure failure.

Fuel Boost Pump failure -
- Check Pump failure by cycling Boost Pump Switch OFF/ON.
- If Pump fails to respond, switch OFF, check fuel pressure and fuel flow indicators.
- If the engine fuel pressure is LOW or HIGH, select a safe landing site and land immediately.
- Otherwise monitor fuel pressure and flow and land at the next convenient opportunity to investigate. Do not continue further flight operations until the Boost Pump is serviceable.

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

The aircraft was airworthy prior departure and dispatched from Ketapang.

The aircraft was departed and crashed striking the roof of the hospital and broken down into pieces at the parking area.

The propeller blades were on fine pitch and no sign of rotating impact, showing that the engine was not in powered when striking the ground.

The booster pump removed from PK–PNX, the investigation found of evident of surface corrosion on the spring, plate and van pump indicated that the reaction of the remaining contaminated fuel.

3 CONCLUSIONS

3.1 Findings

- The aircraft was airworthy prior departure.
- The pilot was fit for flight.
- The booster pump was found of an evident of surface corrosion on the spring, plate and van pump indicated that contaminated fuel.
- Referred to the Fletcher Flight Manual and Pilot Operating Handbook chapter 3.10. Fuel System Failure, the booster pump must have been operated prior to flight.
- The propeller blades were on fine pitch and no sign of rotating impact. The engine was not in powered when hit the ground.
- No evidence damage related to the engine prior to the occurrence.

3.2 Causes

The investigation concluded that the aircraft engine was not in power during impact the hospital roof. There was a corroded fuel pump, that indicated of contaminated fuel.

4 SAFETY ACTION

At the time of issuing this Preliminary Report, the National Transportation Safety Committee had been informed of safety actions resulting from this accident as follows:

4.1 PT. Sinar Mas Super Air

The operator had issued the Quality Assurance and Safety Notice No. QN/ 003/ III/ 2010 (Preventing The Possibility Of Engine Quit by Water Contamination that Entering The Fuel Tank After Night Stop or Enroute Rain Condition) dated 25 February 2010 related to fuel contaminated inspection.

5 SAFETY RECOMMENDATIONS

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

5.1 Recommendation to the Directorate General Civil Aviation

The National Transportation Safety Committee recommends to the Director General of Civil Aviation to ensure that the maintenance program of the airframe fuel pumps, part number CJ 10000–D from an on condition to be a hard time maintenance bases.

5.2 Recommendation to PT. Sinar Mas Super Air

The National Transportation Safety Committee recommends that PT. Sinar Mas Super Air should:

- Review the maintenance program of the airframe fuel pumps, part number CJ 10000–D from an on condition to be a hard time maintenance bases.
- Review the policy of take-off at intersection for the first operation of the day.