ACCIDENT INVESTIGATION COMMISSION

FINAL REPORT

AIC 25-1002

18 MAY 2026

CONTRACTOR	:	Liddles Aerial Spraying Pty Ltd
OPERATOR		Ramu Agri Industries Limited
REGISTRATION	:	VH-SOY
MANUFACTURER	:	Cessna Aircraft Company
MODEL	:	T188C
CLASS/CATEGORY	:	Ground Impact During Low Altitude Operations (LALT)
LOCATION	:	Sangkiang Village, Ramu, Madang Province
OCCURRENCE DATE	:	23 April 2025

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TABLE OF CONTENTS

TABLE OF CONTENTS i
FIGURES v
TABLES v
DEFINITIONS AND INTERPRETATION vii
ACRONYMS viii
INTRODUCTION ix
Investigation AIC 25-1002 ix
Synopsis xi
1 FACTUAL INFORMATION 1
1.1 History of the Flight 1
1.2 Injuries to Persons 3
1.3 Damage to Aircraft 4
1.4 Other damage 4
1.5 Personnel Information 5
1.5.1 Pilot 5
1.6 Aircraft Information 6
1.6.1 Aircraft 6
1.6.2 Engine 7
1.6.3 Propeller 7
1.6.4 Aircraft Weight and Balance 7
1.6.5 Aircraft Airworthiness & Maintenance 7
1.6.6 Fuel Information 8
1.7 Meteorological Information 8
1.8 Aids to Navigation 9
1.9 Communication 9
1.10 Aerodrome Information 9
1.11 Flight Recorders 9
1.12 Wreckage and Impact Information 9
1.12.1 General Description of the Wreckage 9
1.12.2 Impact Sequence and Distribution of the Wreckage 10
1.12.3 Examination of the wreckage and fire patterns 11
1.13 Medical and Pathological Information 13
1.14 Fire 13
1.15 Survival Aspects 13

1.15.1 Rescue 13
1.16 Tests and Research 14
1.17 Organizational and Management Information 14
1.17.1 Contractor: Liddles Aerial Spraying Pty Ltd 14
1.17.2 Operator: Ramu-Agri Industries Limited 14
1.18 Additional Information 14
1.18.1 The RAIL Emergency Response Procedure 14
1.18.2 RAIL Standard Operating Procedures ERP-001 14
1.19 Useful or Effective Investigation Techniques 14
2 ANALYSIS 15
2.1 General 15
2.2 Flight Operations 15
2.2.1 Flight 15
2.2.2 Impact and wreckage 15
2.3 Emergency Response 16
2.4 Survivability 16
2.5 Corrosion Analysis of Airframe Fuel Filter 16
3 CONCLUSIONS 19
3.1 Findings 19
3.1.1 Aircraft 19
3.1.2 Pilot 19
3.1.3 Survival 20
3.1.4 Flight Operations 20
3.1.5 Operator 20
3.1.6 Flight Recorders 20
3.1.7 Wreckage and Impact Information 20
3.1.8 Medical 21
3.2 Causes [Contributing factors] 21
4 RECOMMENDATIONS AND SAFETY ACTIONS 23
4.1 Recommendations 23
4.2 Recommendation AIC 26-R01/25-1002 to Ramu Agri Industries Limited 23
4.3 Recommendation AIC 26-R02/25-1002 to Civil Aviation Safety Authority of PNG 23
5 APPENDIXES 25
Appendix 5.1 Maps Showing Fields Sprayed 25
Appendix 5.2 Fuel filter assembly 26

Appendix 5.3 Location of airframe fuel filter (Delphi 7111-296) on the Cessna T188C aircraft VH-SOY27
Appendix 5.4 (Fire and Impact Damage to Delphi 7111-296)....28
Appendix 5.5 (Corrosion Damage to Delphi 7111-296) 28
Appendix 5.6 Left main landing gear installation....29
Appendix 5.7 RAIL Operations Manual 30
Appendix 5.8 RAIL Emergency Response Procedure (ERP) 31
Appendix 5.9 Rail Emergency Management Guideline....31
Appendix 5.10 32
Appendix 5.10.1 Procedures for Engagement of short-term contract pilots from other States who operate foreign-registered aircraft 32
Appendix 5.10.2 Permit to Fly (PTF) 32

FIGURES

Figure 1. VH-SOY accident site, Sangkiang village, Madang Province. 1
Figure 2. Depiction of flight track from sugar cane fields to accident site. 2
Figure 3. Overview of Accident site, Gusap Airstrip and surrounding sugar fields. 3
Figure 4. Evidence of post-impact fire at the accident site. 4
Figure 5. Evidence of localised vegetation damage in the vicinity of the accident. 4
Figure 6. Aircraft destroyed by impact forces and fire. 10
Figure 7. Initial ground marks and fuel filter showing blackened soot marks. 11
Figure 8. Rear fuselage showing battery installation area. 12

TABLES

Table 1. Accident summary. 1
Table 2. Injuries to Persons. 3
Table 3. PIC Personnel Information. 5
Table 4. Aircraft Information. 6
Table 5. Engine Information. 7
Table 6. Propeller Information. 7

DEFINITIONS AND INTERPRETATION

Accident	An occurrence associated with the operation of an aircraft resulting in fatal or serious injury, or substantial damage.
Accredited representative	A person designated by a State, on the basis of his or her qualifications, for the purpose of participating in an investigation conducted by another State. The accredited representative would normally be from the State's accident investigation authority.
Contributing Factor	An action, omission, or condition that increased the likelihood or severity of the accident.
Safety Recommendation	A proposal of an accident investigation authority based on information derived from an investigation, made with the intention of preventing accidents or incidents and which in no case has the purpose of creating a presumption of blame or liability for an accident or incident.
State of Design	The State having jurisdiction over the organization responsible for the type design.
State of Manufacture.	The State having jurisdiction over the organization responsible for the final assembly of the aircraft, engine or propeller.
State of Occurrence.	The State in the territory of which an accident or incident occurs.

ACRONYMS

AGL	Above Ground Level
AIC	Accident Investigation Commission (PNG)
AAIB	Air Accidents Investigation Branch
amsl	Above Mean Sea Level
AOC	Air Operator Certificate
ATSB	Australian Transport Safety Bureau
ATS	Air Traffic Service
CASA PNG	Civil Aviation Safety Authority of Papua New Guinea
CASR	Civil Aviation Australia Safety Regulations
CPL	Commercial Pilot License
COA	Certificate of Approval
COV	Certificate of Validation
CRM	Crew Resource Management
CSN	Cycles Since New
DoT	Department of Transport
ELT	Emergency Locator Beacon
ERP	Emergency Response Procedure
ICAO	International Civil Aviation Organization
MOA	Memorandum of Agreement
NBPOL	New Britain Palm Oil Limited
NTSB	National Transportation Safety Board
Nm	Nautical mile(s)
PIC	Pilot in Command
RAIL	Ramu Agri Industries Limited
S/N	Serial Number
TSN	Time Since New
TTIS	Total Time in Service
UTC	Coordinated Universal Time
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

INTRODUCTION

Investigation AIC 25-1002

On 23 April 2025, at 08:30 local (22:30 UTC), a Cessna T188C aircraft, registered VH-SOY, was conducting VFR low-level agricultural operations at the Ramu sugar fields when it impacted the ground at Sangkiang Village in the Usino Bundi District, Madang Province, Papua New Guinea.

The aircraft was owned by JANLIT Pty Ltd of Tully, Queensland. Liddles Aerial Spraying Pty Ltd (LASPL) of Innisfail Queensland operated the aircraft in Australia and contracted (hired) the aircraft and pilot to Ramu Agri Industries Ltd (RAIL) in PNG. RAIL was the PNG Operator of VH-SOY.

The AIC immediately commenced an investigation into the occurrence pursuant to *Section 247 of the PNG Civil Aviation Act 2000,* and a team of investigators was dispatched to the site the next day to carry out the on-site investigation activities.

The AIC classified the occurrence an accident as it involved the aircraft destroyed by a post-impact, fuel- fed fire and fatal injuries to the sole occupant, the pilot.

Pursuant to *ICAO Annex 13, Chapter 4, paragraph 4.1*, the AIC promptly informed relevant foreign authorities of the State of:

- Registry: Australia (ATSB)
- Airframe Manufacture/Design: United States of America (NTSB)

This investigation was conducted, and participation of other states was permitted, in accordance with the AIC's *Investigation Policy and Procedures Manual* which is fully aligned with *ICAO Annex 13*.

This *Final Report* has been produced by the AIC pursuant to *ICAO Annex 13, Chapter 6,* and is disseminated to specific addressees for significant and substantiated comments. It remains a confidential document and has not been approved for public release.

The report is based on the investigation carried out by the AIC under the *Civil Aviation Act 2000*, and *Annex 13 to the Convention on International Civil Aviation*. It contains factual information, analysis of that information, findings and contributing (causal) factors, other factors, and safety recommendations. All times in this report are in local time (UTC+10 hours) unless otherwise stated.

AIC investigations explore the circumstances surrounding an occurrence, and the facts relevant to understanding how and why the accident occurred are included in the report. The report may also contain other non-contributing factors which have been identified as safety deficiencies for the purpose of improving safety.

In accordance with *ICAO Annex 13*, it is not the purpose of aircraft accident investigation to apportion blame or liability. The sole objective of the investigation and the Final Report is the prevention of accidents and incidents.

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Synopsis

On 23 April 2025, at 08:30 local (22:30 UTC), a Cessna T188C aircraft, registered VH-SOY, was conducting VFR low-level agricultural operations at the Ramu sugar fields when it impacted the ground at Sangkiang Village in the Usino Bundi District, Madang Province, Papua New Guinea.

The aircraft was owned by JANLIT Pty Ltd of Tully, Queensland. Liddles Aerial Spraying Pty Ltd (LASPL) of Innisfail Queensland operated the aircraft in Australia and contracted (hired) the aircraft and pilot to Ramu Agri Industries Ltd (RAIL) in PNG. RAIL was the PNG Operator of VH-SOY.

The pilot was scheduled to complete five crop spraying sorties over the RAIL sugar cane plantation on 23 April 2025. The pilot successfully completed two spraying sorties. At approximately 08:30, during the third spraying sortie to the northwest of Gusap Airstrip, the aircraft impacted the ground in the vicinity of Sangkiang Village, approximately 10 nm northwest of Gusap Airstrip.

The aircraft had tracked northeast from the sugarcane fields towards Sangkiang Village. Witnesses reported that as the aircraft approached Sangkiang Village, they estimated the aircraft's height to be approximately 20 to 30 metres higher than the coconut tree canopy while dispensing chemicals. They added that the aircraft entered a descending left turn after it crossed the Lae to Madang highway.

During the descending left turn, the aircraft had insufficient height to maintain obstacle clearance and hit the tops of coconut trees. The impact with the trees likely affected the aircraft's velocity, causing the aircraft to descend and heavily impact the ground a short distance from the highway.

There was no evidence to indicate fuel exhaustion or fuel contamination prior to the ground impact sequence. After impact, the aircraft skidded forward for approximately 5 metres while simultaneously yawing to the right, ultimately coming to rest with its nose oriented toward the north.

The aircraft was destroyed by a post-impact fuel-fed fire. The pilot was the sole occupant of the aircraft and was fatally injured.

The investigation considered two hypotheses.

1. That smoke in the cockpit initially emanated from the rear fuselage due to an electrical fault in the battery or associated electrical wiring and may have prompted the pilot to attempt an emergency forced landing on the Lae to Madang highway, due to smoke from a rear fuselage fire.
2. That when the steel left landing gear leg was torn from its steel airframe mount sparks may have emanated igniting fuel from the fuel filter assembly that detached at the same impact time. This may explain the reason for the fire igniting at the initial impact and not an airborne fire.

However, due to the destruction of the aircraft and its systems, there was insufficient evidence to conclusively support either hypothesis. The investigation was unable determine the reason the pilot appeared to be attempting a forced landing, nor was the investigation able to establish the ignition source of the fire.

The report includes safety recommendations made by the AIC to the Civil Aviation Safety Authority of PNG and Ramu Agri Industries Limited, with the intention of enhancing the safety of flight and accident prevention (See Part 4 of this report). It is important to note that none of the safety deficiencies brought to the attention of CASA and RAIL caused the accident.

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1 FACTUAL INFORMATION

1.1 History of the Flight

Aircraft Registration	VH-SOY
Operator	Ramu Agri Industries (RAIL)
Type of Operation	VFR LALT[1] Agricultural Operations
Persons on Board	One
Accident Site	Latitudze: 5° 55' 24.36" S, Longitude 145° 50' 22.29" E, Sangkiang Village, Usino Bundi District, Madang Province, Papua New Guinea
Time of occurrence	08:30 local time (22:30 UTC)

Table 1. Accident summary.

On 23 April 2025, at 08:30 local (22:30 UTC), a Cessna T188C aircraft, registered VH-SOY, was conducting VFR low-level agricultural operations at the Ramu sugar fields when it impacted the ground at Sangkiang Village in the Usino Bundi District, Madang Province, Papua New Guinea.

The aircraft was owned by JANLIT Pty Ltd of Tully, Queensland. Liddles Aerial Spraying Pty Ltd (LASPL) of Innisfail Queensland operated the aircraft in Australia and contracted (hired) the aircraft and pilot to Ramu Agri Industries Ltd (RAIL) in PNG. RAIL was the PNG Operator of VH-SOY.

Figure 1. VH-SOY accident site, Sangkiang village, Madang Province.

The pilot was the sole occupant of the aircraft and was fatally injured.

On the day of the occurrence, the pilot and RAIL ground operations personnel arrived at Gusap Airstrip at approximately 05:30 to prepare the aircraft for the day's aerial agricultural operations.

1 Low Altitude

The pilot conducted a preflight inspection of the aircraft in accordance with RAIL *Standard Operating Procedures*[2] which included a fuel drain to check for water contaminants in the fuel.

According to RAIL, aerial spraying operations were normally conducted between 05:00 and 10:30, subject to operational requirements and prevailing meteorological conditions. The pilot was scheduled to complete five crop spraying sorties[3] over the RAIL sugar cane plantation on 23 April 2025.

The aircraft departed Gusap Airstrip at approximately 06:00 carrying 400 liters (L) of chemical for the first spraying sortie over sugarcane fields located northwest of the airstrip. Upon completion of the first sortie, the aircraft returned to Gusap Airstrip to load another 400 L of chemical for the second sortie. The pilot successfully completed two spraying sorties.

At 08:30, during the third spraying sortie of the sugar cane fields northwest of Gusap Airstrip, the aircraft impacted the ground in the vicinity of Sangkiang Village, approximately 10 nm northwest of Gusap Airstrip (See *Appendix 5.1*).

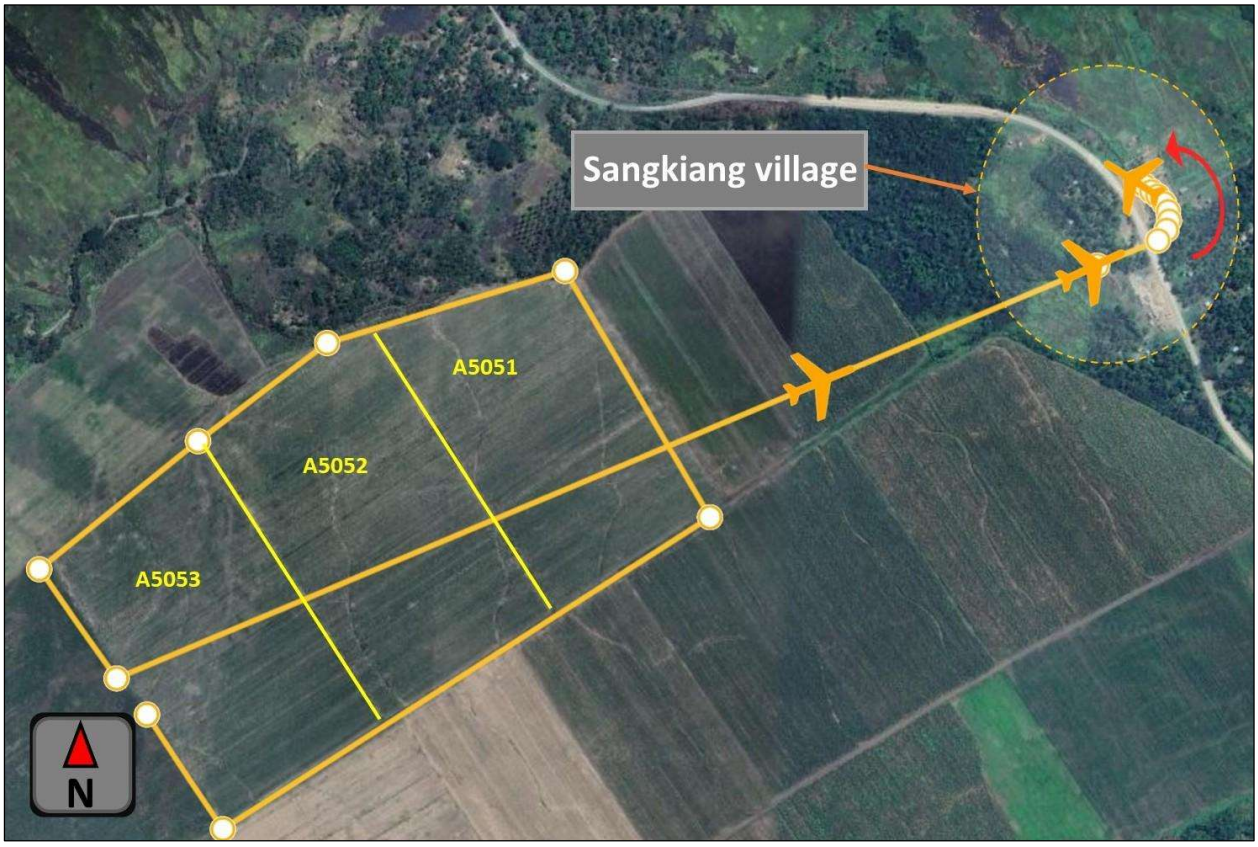

Figure 2. Depiction of flight track from sugar cane fields to accident site.

The aircraft had tracked northeast from the sugarcane fields towards Sangkiang Village. Witnesses reported that as the aircraft approached Sangkiang Village, they estimated the aircraft's height to be approximately 20 to 30 metres higher than the coconut tree canopy while dispensing chemicals.

2 RAIL had Standard Operating Procedures in their Operations Manual

3 Each sortie comprised a number of spraying runs delivering a total of 400 litres of chemical per sortie

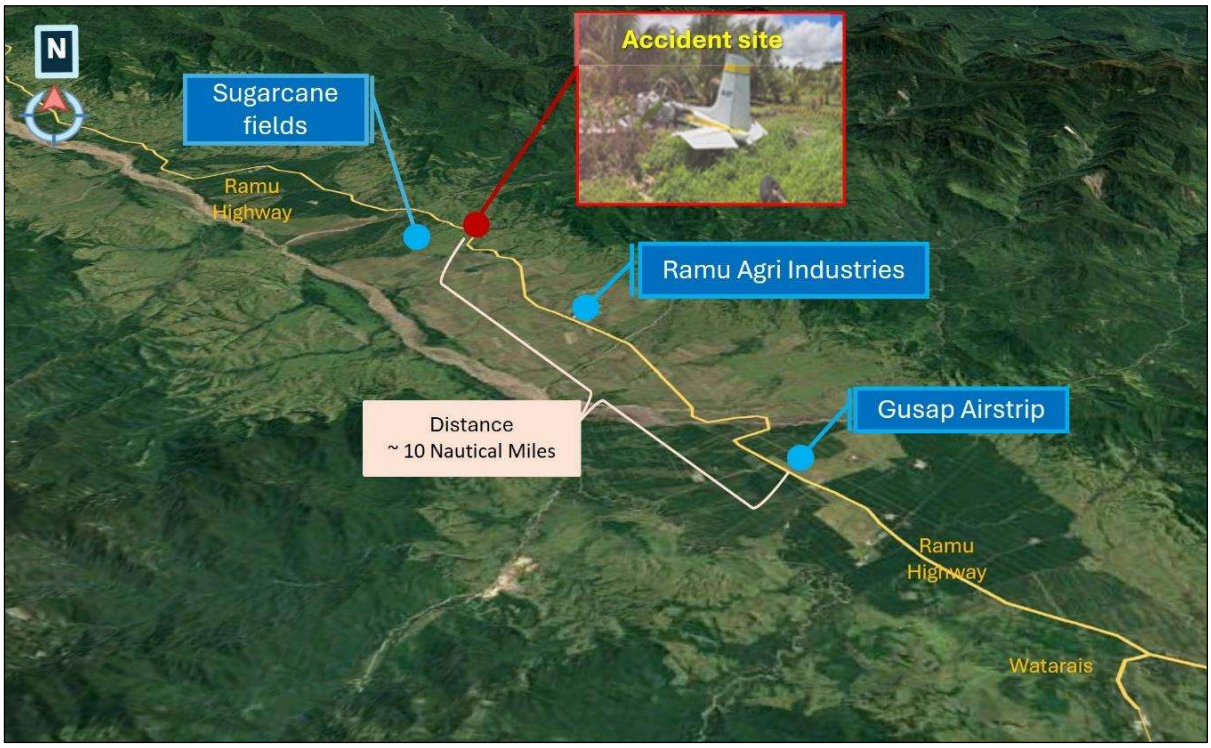

Figure 3. Overview of Accident site, Gusap Airstrip and surrounding sugar fields.

Witnesses also reported observing the aircraft entering a descending left turn after it crossed the highway. During the descending left turn, the aircraft clipped the tops of trees before impacting the ground adjacent to the highway. The aircraft skidded forward for approximately 5 metres while simultaneously yawing to the right, ultimately coming to rest with its nose oriented toward the northeast.

The AIC obtained video footage taken by a witness that showed the aircraft as it was engulfed in flames. The right-wing fuel tank was significantly ruptured during the impact resulting in the intense fuel fed fire. Witnesses also reported observing fire emanating from the forward fuselage and underside of the forward cockpit area at the accident site.

The pilot was unable to egress the aircraft without assistance. Sangkiang villagers extricated the pilot from the wreckage and transported him by RAIL ambulance to the RAIL medical clinic about 6km southeast of the accident site. Despite medical intervention, the pilot succumbed to his injuries. (see *Section 1.15, Survival Aspects*).

1.2 Injuries to Persons

INJURIES	***Crew***	***Passengers***	***Total in aircraft***	***Others***
Fatal	*1*	-	*1*	*0*
Serious	-	-	-	-
Minor	-	-	-	*Not applicable*
None	-	-	-	
TOTAL	*1*	-	*1*	-

Table 2. Injuries to Persons.

1.3 Damage to Aircraft

The aircraft was destroyed by a post-impact fuel-fed fire. The right fuel tank, located in the inboard section of the right wing was consumed by the fire (see *Section 1.12, Wreckage and Impact Information*).

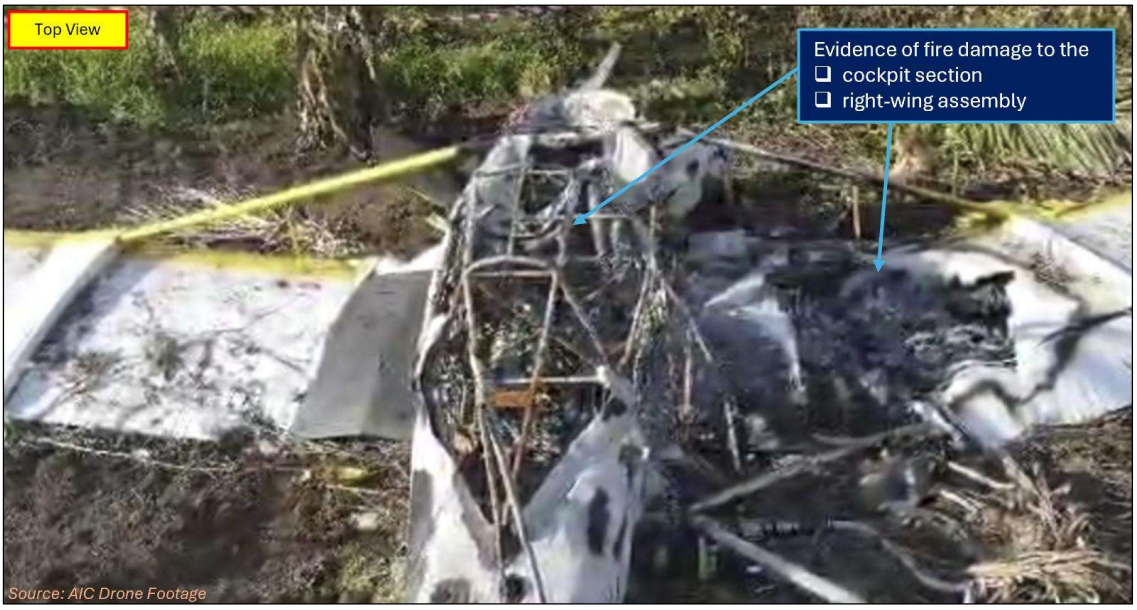

Figure 4. Evidence of post-impact fire at the accident site.

1.4 Other damage

Vegetation at the accident site sustained localized damage from both the impact and post-impact fuel-fed fire.

Figure 5. Evidence of localised vegetation damage in the vicinity of the accident.

1.5 Personnel Information

1.5.1 Pilot

Age	***:***	40 years
Gender	*:*	Male
Nationality	*:*	Philippines
Position	*:*	Agricultural (AG) Pilot
Type of licenses	*:*	Philippines CPL Aeroplanes: Issue Date - 24 March 2025 Valid to - 23 March 2026
Certificate(s) ***Civil Aviation Safety Authority (CASA) Australia***	*:*	Certificate of Validation: Issue Date - 24 March 2025 Valid to - 23 March 2026
Type ratings (listed on the Philippines License)	*:*	Airplane: Single Engine Land – Agcat-G164A; S2RT-Turbo Thrush; G164B-34T
Total flying time	*:*	3,380.0 hours
Total on this type (Cessna T188C)	*:*	20.0 hours
Total on agriculture	*:*	3,071.0 hours
Total hours last 90 days	*:*	26.0 hours
Total hours last 7 days (Cessna T188C)	*:*	13.3 hours
Last Competency Check	*:*	4 April 2025
Medical class	*:*	One
Issued	*:*	4 March 2025
Valid to	*:*	4 September 2025
Medical limitation	*:*	Nil

Table 3. PIC Personnel Information.

Documentation provided by the Contractor (LASPL) indicated that the pilot held a valid Commercial Pilot Licence (CPL-A) and a current Class 1 Medical Certificate issued by the Civil Aviation Authority of the Philippines (CAAP).

The pilot arrived in Australia on 17 March 2025, to undertake the required theoretical training associated with Australian aerial agricultural operations which included Spray Safe Pilot Accreditation[4].

Subsequently, the pilot completed the required Civil Aviation Safety Authority (CASA) Australia regulatory requirements and was issued with a Certificate of Validation (CoV) by CASA Australia on 24 March 2025.

The pilot commenced employment with LASPL in Mareeba, Queensland on 31 March 2025.

On 3 April 2025, he began flight training for his Australian Aerial Application Rating and Aerial Category Application Endorsement. This training included aerial spraying operational techniques and aircraft handling on a Piper PA25 Pawnee[5]. He successfully completed a proficiency check ride on 4 April 2025.

On 6 April 2025, prior to departing for Papua New Guinea, the contractor's chief pilot instructed the pilot on emergency procedures in accordance with RAIL and LASPL operations manuals.

4 Aerial Application Association Australia Spray Safe Pilot Accreditation (not a CASA Australia regulatory requirement)
5 PA25 is a single engine low wing tail wheel aircraft of similar size, weight and characteristics to the Cessna T188C.

Following arrival at Gusap on 7 April 2025, the pilot undertook a two-day induction program, provided by the outgoing pilot[6], which included Cessna T188C and RAIL operational familiarisation in the local environment. This was ground-based training and did not involve flight training. The Cessna T188C is a single seat aircraft. The pilot commenced aerial spraying operations with RAIL on 9 April 2025.

Investigation revealed that, prior to his employment with Liddles Aerial Spraying Ltd, the pilot had accumulated more than 3,000 hours of flight time in agricultural operations, primarily within the Philippines. However, the engagement with RAIL was the pilot's first operational experience in Papua New Guinea and flying the Cessna T188C aircraft type.

1.6 Aircraft Information

1.6.1 Aircraft

Aircraft manufacturer	***:***	*Cessna Aircraft Company*
Model	*:*	*T188C*
Serial number	*:*	*T18803847*
Year of manufacture	*:*	*1981*
Nationality of State of Manufacture	*:*	USA
Nationality of State of Registration	*:*	Australia
Registration	*:*	VH-SOY
Name of the owner	*:*	JANLIT PTY LTD
Name of the contractor	*:*	Liddles Aerial Spraying Pty Ltd
Name of the operator	*:*	Ramu Agri Industries Limited
Certificate of Airworthiness number	*:*	BK805
Certificate of Airworthiness issued	*:*	15 December 1991
Valid to	*:*	non-terminating
Certificate of Registration issued in Australia	*:*	9 December 1981
Certificate of Registration issued to contractor	*:*	28 October 2022
Valid to	*:*	non-terminating
Total airframe hours	*:*	8859.3 hours[7]

Table 4. Aircraft Information.

The Contractor had engaged Statewide Aviation Pty Ltd[8] to conduct aviation related activities, under an arrangement approved by CASA Australia, effective from 1 July 2021. The scope of the arrangement included the provision of maintenance and engineering services as required.

6 LASPL pilot based at Gusap who was returning to Australia

7 The last airframe hours recorded on the airframe logbook was on the 19 March 2025. The AIC could not determine the hours at the time of the accident due to the daily technical logbook being destroyed in the fire.

8 Statewide Aviation Pty Ltd is an Australian owned aircraft maintenance and agricultural aviation business based in Moree, New South Wales

1.6.2 Engine

Manufacturer	*:*	Teledyne Continental
Engine Model	*:*	TSIO-520-T
Serial Number	*:*	515259
Time Since Overhaul	*:*	466.7[9]

Table 5. Engine Information.

Witnesses reported hearing the aircraft engine noise as the aircraft flew toward the area where it impacted vegetation and subsequently impacted the ground. The engine was destroyed by impact forces and separated from the airframe. (See *Section 1.12 Wreckage Information*).

The on-site investigation found that the engine manifold valve that distributes fuel to the engine injector nozzles was full of fuel.

1.6.3 Propeller

Manufacturer	*:*	McCauley
Model	*:*	D3A34C402
Serial Number	*:*	779695
Time since Overhaul	*:*	466.7[10]

Table 6. Propeller Information.

Examination of the propeller assembly revealed that the propeller had separated from the engine shaft flange during the impact sequence and was destroyed. (See *Section 1.12 Wreckage Information*).

1.6.4 Aircraft Weight and Balance

There was no documented evidence that the pilot calculated the aircraft loaded weight and balance for the flight. Because the pilot had flown the loaded aircraft without any apparent difficulties on a number of spraying runs as part of the third sortie of the day, the investigation determined that aircraft weight and balance were not a factor in this accident.

1.6.5 Aircraft Airworthiness & Maintenance

At the time of the accident, the aircraft held a current *Certificate of Airworthiness* (CoA), and *Certificate of Registration* (CoR). Maintenance records were reviewed during the investigation and indicated that there were no outstanding scheduled maintenance or defect items at the time of the accident. The aircraft was certified as airworthy prior to departure on the accident flight.

The maintenance records indicated that Statewide Aviation Pty Ltd conducted scheduled 100-hourly maintenance inspection on the airframe and engine starting 13 March 2025, with release to service certification on 19 March 2025.

9 The last entry of engine hours in the engine logbook was on the 19 March 2025. The AIC could not determine the hours at the time of the accident due to the daily technical logbook being destroyed in the fire.

10 The last entry of propeller hours in the propeller logbook was on the 19 March 2025. The AIC could not determine the hours at the time of the accident due to the daily technical logbook being destroyed in the fire.

1.6.5.1 Airframe Fuel Filter

According to the Statewide Aviation Pty Ltd (SAPL), the original factory-fitted Cessna airframe fuel filter was replaced in December 1981 by Hazelton Air Services, Australia, in accordance with approved *Engineering Order (EO) No. 41*.

Hazelton Air Services modified imported Cessna agricultural aircraft, including the Cessna T188C (Ag Husky), by installing a larger-capacity automotive-type fuel filter. The replacement filter was mounted to the sub-frame beneath the cockpit floor. The filter assembly installed on VH-SOY was identified as a *Delphi 7111-296* unit (See *Appendix 5.2).*

SAPL and CASA Australia assisted the AIC in attempting to obtain a copy of *EO No. 41*; however, no archival copy was available.

SAPL further advised that the filter assembly had historically been hard mounted to the sub-frame beneath the cockpit floor, protruding below the aircraft belly (see *Appendix 5.3*). The filter bowl cartridge could be replaced externally without removal of the assembly from the airframe.

The 100-hour maintenance inspections included checks of:

- Security of the filter housing attachment to the sub-floor structure.
- Integrity of associated fuel hoses (including leak inspection); and
- Cleaning of the filter bowl.

Filter cartridges were reportedly replaced during routine maintenance as required.

SAPL advised that similar automotive-type filters are commonly used in agricultural aircraft due to increased filter volume and availability of replacement cartridges. SAPL further stated that approximately five different cartridge part numbers were interchangeable within the same filter housing.

A review of the aircraft's maintenance documentation did not identify specific maintenance practices, inspection intervals, or corrosion management procedures relating to the fuel filter assembly.

1.6.6 Fuel Information

During interview, RAIL ground operations personnel stated that the aircraft's fuel tanks were typically refilled from Avgas 100LL drum stock on the day prior to the commencement of spraying operations.

Fuel quantity was verified by dipstick measurement, and fuel quality was checked by draining a sample into a glass container to detect water contamination. The fuel pump used by RAIL to pump fuel from the drums had a contamination filter and water trap to prevent pumping contaminated fuel into the aircraft tanks.

The RAIL personnel informed the AIC that the aircraft fuel tanks were refilled following completion of the second sortie of the morning. The refuelling operation was conducted with the aircraft's engine running and the pilot remained seated in the cockpit. No aircraft fuel drain was conducted following this refuel. RAIL personnel were unable to determine the exact quantity of fuel uplifted to VH-SOY

The investigation was unable to determine the exact quantity of fuel onboard the aircraft at the time of the accident due to the unavailability of fuel dockets for the relevant period.

1.7 Meteorological Information

The Ramu area is within 50 nautical miles of Nadzab Airport. The Terminal Aerodrome Forecast (TAF) issued for Nadzab airport for the period relevant to the scheduled spraying operations indicated that the visibility was greater than 10 km and calm wind conditions. Based on the forecast meteorological information available, no significant meteorological phenomena were identified that would have adversely affected the conduct of the flight at the time of the accident.

On the day of the occurrence, the pilot and the RAIL Ground Operations Manager observed the prevailing weather in the Ramu area and considered it suitable for the commencement of aerial spraying operations. There was good visibility, no reported rainfall and a light breeze.

1.8 Aids to Navigation

Ground-based navigation aids, on-board navigation aids, and aerodrome visual ground aids and their serviceability were not a factor in this accident.

1.9 Communication

The aircraft was equipped with a VHF radio transceiver system.

The investigation established that the pilot did not communicate with any Air Traffic Services units during the accident flight.

According to the *RAIL Operations Manual section 4.2* (1,2,3):

1) *"Should the aircraft be in grave and imminent danger, e.g. engine failure, fire, drive train failure or serious airframe malfunction, the early transmission of a distress message (MAYDAY - see AIP/ERSA) and selection of transponder code 7700 will ensure maximum assistance with minimum delay."*
2) *An urgency message (PAN-see AIP/ERSA) is the appropriate transmission should the safety of a person be involved, or the aircraft be experiencing performance or navigational difficulties and, as with the distress message, early.*

The investigation determined that no distress (MAYDAY) or urgency (PAN) transmissions were made by the pilot to any ATS units prior to the accident nor was there a transmission of the emergency transponder code 7700.

1.10 Aerodrome Information

Not relevant to this investigation.

1.11 Flight Recorders

The aircraft was not fitted with a flight data recorder or a cockpit voice recorder nor were they required by the Australian *Civil Aviation Safety Regulations Part 91*.

1.12 Wreckage and Impact Information

1.12.1 General Description of the Wreckage

Witness accounts indicated that the aircraft was flying at an estimated height of approximately 20 to 30 metres above the tops of the coconut trees, while tracking toward the main highway. Witnesses stated that the aircraft was dispensing chemicals from the spray booms during this segment of flight. A visible trail of chemical mist from the wing spray booms was observed along the aircraft's final flight path prior to impact.

At the time of the accident the aircraft wing flaps were fully extended in a configuration normally used for landing and also used at the end of spray runs to conduct a minimum radius procedural turn. The right wing and flap were destroyed but the left wing and flap were not significantly damaged.

The aircraft initially contacted the tops of two coconut trees, each estimated to be approximately 10 metres in height. The aircraft subsequently impacted the ground and struck a third coconut tree trunk that was uprooted as a result of the impact forces. The leading-edge section of the right-wing root was significantly damaged, and the integral fuel tank ruptured.

The distribution of wreckage and vegetation damage was consistent with a low-level flight path prior to impact.

1.12.2 Impact Sequence and Distribution of the Wreckage

The aircraft sustained substantial damage as a result of the ground impact. On impact, the left main landing gear assembly separated from the airframe after tearing out of its attachment structure. The lower fuselage structure subsequently contacted the ground, and the aircraft slid along the surface for approximately 5 metres before coming to rest. Ground scaring clearly indicated the first point of ground contact and the aircraft's track to the final resting position.

Figure 6. Aircraft destroyed by impact forces and fire.

The investigation found that during the ground slide the aircraft rotated approximately 90 degrees right relative to the initial ground track.

The engine mounting frame had fractured, separated from the firewall attachments, and together with the engine assembly had collapsed forward due to impact forces. All four engine attachment mounts fractured. The manifold lever (power lever), propeller control lever, and fuel mixture control lever cables remained connected to the engine and were pulled (stretched) to their extension limits. These engine controls were found in the fully forward position (normally associated with maximum power). However, due to the forced extension to their physical limitations, the positions of these controls were not indicative of in-flight power settings.

The propeller hub flange mounting bolts fractured, leading to separation of the propeller assembly from the engine. The propeller blades exhibited chordwise scratching and leading-edge abrasion. One propeller blade was mostly straight, while the remaining two blades exhibited rearward bending and back folding deformation. This

deformation pattern was consistent with the propeller assembly rotating but not being driven by engine power[11], at the time of impact.

Appendix 5.6 contains photographs and structural details of the landing gear attachment points and associated airframe structure.

The *Delphi 7111-296* fuel filter bowl assembly mounted to the sub-floor frame structure beneath the cockpit area, was found detached from the airframe in proximity to the initial ground impact point. Further examination indicated that this separation occurred after the collapse of the left main landing gear and subsequent contact of the aircraft belly structure with the ground.

1.12.3 Examination of the wreckage and fire patterns

1.12.3.1 Airframe examination

Examination of the airframe at the accident site indicated that the fuselage from the engine firewall to the rear fuselage Bulkhead Station 143 was destroyed by impact forces and the post-impact fuel-fed fire. The spray boom assembly separated from the wings during the ground impact sequence.

The steel left main landing gear assembly separated from the airframe after tearing out of its steel attachment structure causing the belly of the aircraft to heavily contact the ground.

The under-floor mounted fuel filter assembly separated from its mounting and fuel lines during the ground impact sequence. The fuel filter assembly was located near the first impact point. It exhibited soot marks.

Figure 7. Initial ground marks and fuel filter showing blackened soot marks.

11 Very low torque.

The aircraft battery, in a sealed container, was mounted on a frame immediately forward of rear fuselage Bulkhead Station 143. The battery was destroyed (melted) by the intense fire.

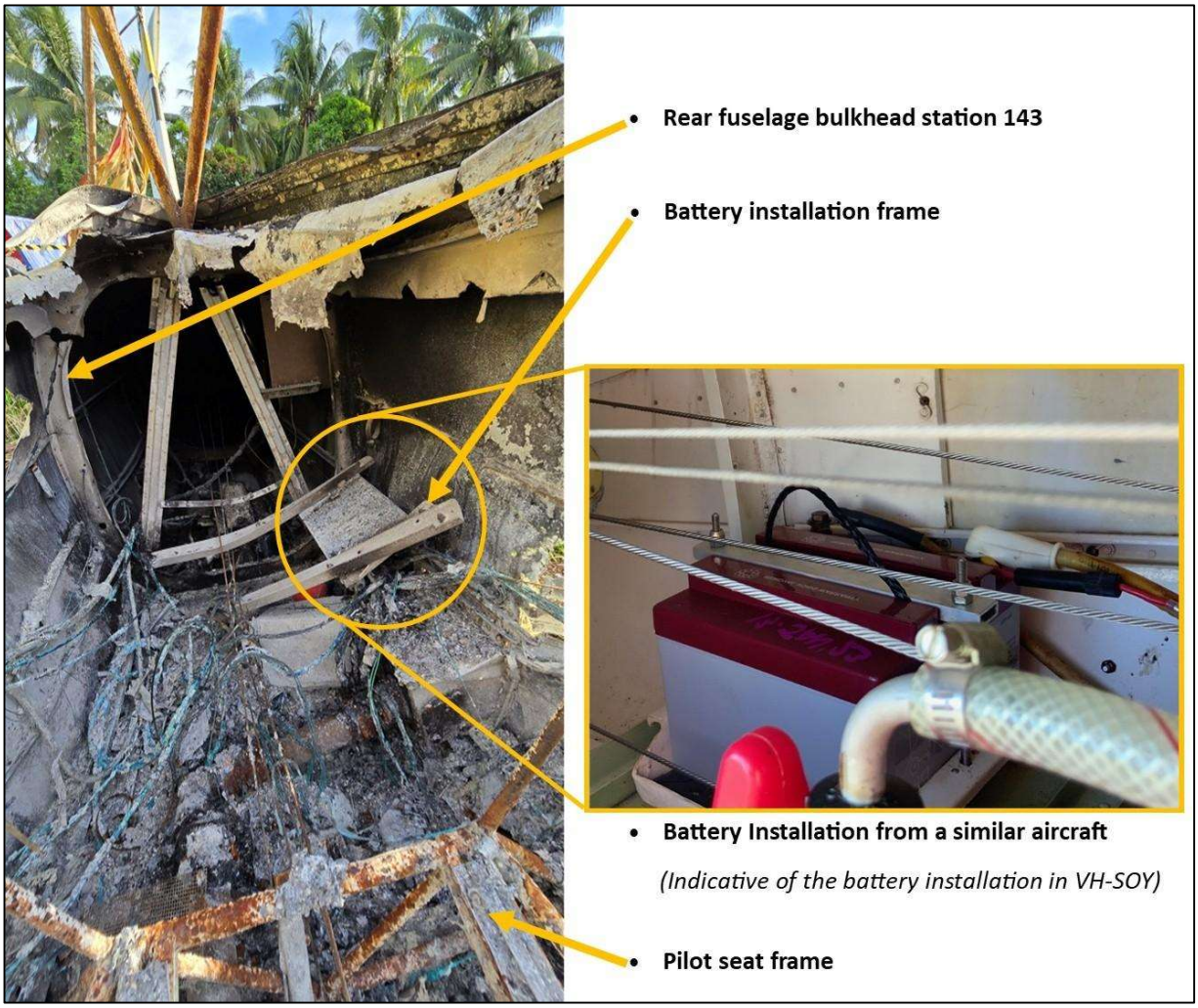

Figure 8. Rear fuselage showing battery installation area.

1.12.3.2 Fuel system examination

The right fuel tank was destroyed by impact forces and the post-impact fuel-fed fire. The left fuel tank remained structurally intact and was found to contain fuel.

Fuel lines forward of the engine firewall were not consumed by fire. Electrical wiring looms routed to the engine, which did not have heat protection, exhibited evidence of thermal damage but were not burnt.

The fuel tank selector in the cockpit was destroyed by the fire. The position of the selector was not able to be determined.

1.12.3.3 Examination of the Damage to Airframe Fuel Filter

The airframe fuel filter assembly was recovered near the initial impact point. The filter housing indicated impact damage, soot deposits, and burn marks (Refer *Appendix 5.4*) there was no evidence of sustained ground fire in the immediate area where the filter was located. The filter assembly displayed:

- Soot and burn marks;
- Damage to inlet and outlet valve threads consistent with separation of fuel line fittings;
- Fracture of the filter housing mounting bracket;
- Impact deformation of the filter casing;

- Corrosion on the top and bottom cover assemblies; and
- Corrosion and impact damage to the drain valves.

Detailed examination identified corrosion damage that was assessed as unrelated to the impact sequence (Refer to *Appendix 5.5*).

Maintenance records reviewed did not contain documentation relating specifically to inspection or treatment of corrosion affecting the fuel filter assembly.

1.13 Medical and Pathological Information

An autopsy of the pilot was conducted on behalf of the Coroner at the ANGAU[12] Memorial Hospital in Lae, Morobe Province. The Pathologist advised the investigation that the pilot sustained third-degree burns, smoke inhalation, carbon monoxide poisoning, and multiple rib fractures consistent with direct blunt force trauma to the chest, along with extensive thermal injuries resulting from the post-impact fire.

The nature of the injuries was consistent with those typically observed in a moderate to high velocity aircraft impact followed by a post-impact fire.

1.14 Fire

The aircraft was destroyed by impact forces and post-impact fuel-fed fire. Witness video evidence confirmed that a small fire was present at the location of the initial impact.

The video taken by a Sangkiang villager showed dense smoke in the cockpit and billowing around the left side of the aircraft. When the villager breached the rear cockpit window, the smoke gushed from the cockpit.

Sangkiang villagers used water from buckets and the RAIL Safety Officer using a portable fire extinguisher attempted to extinguish the fire, however their efforts were unsuccessful. The fire self-extinguished sometime after the pilot was extracted from the wreckage.

The investigation was unable to determine the ignition source of the fire.

1.15 Survival Aspects

1.15.1 Rescue

Sangkiang villagers attempted to extinguish the fire and rescue the pilot. Rescue efforts were impeded by dense smoke, intense flames, and concerns regarding potential explosion. They applied water from buckets in an attempt to extinguish the fire.

The villagers reported difficulty identifying the cabin door location. An iron spade was used to breach the windscreen to gain access to the cockpit. Upon breaching the windscreen, thick dark smoke and chemical odours emanated from the cockpit.

Attempts were made to release the pilot's four-point safety harness; however, the intensity and heat of the fire limited their ability to access the cockpit. A knife was subsequently used to cut the shoulder and waist restraints.

RAIL medical personnel and the RAIL Safety Officer arrived during the rescue effort[13] and assisted in extracting the pilot from the cockpit and transferring him to an ambulance.

The pilot was transported to the RAIL medical clinic. Despite medical intervention and resuscitation efforts, the pilot succumbed to injuries sustained from the impact blunt trauma forces, smoke inhalation and severe burns.

12 Australian New Guinea Administrative Unit

13 The RAIL personnel were travelling along the highway enroute to conduct safety inspections at a village clinic and were passing Sangkiang Village shortly after the aircraft Impacted the ground.

1.16 Tests and Research

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

1.17 Organizational and Management Information

1.17.1 Contractor: Liddles Aerial Spraying Pty Ltd

Liddles Aerial Spraying Pty Ltd is an aerial application company based in North Queensland operating aerial spraying aircraft. Liddles routinely hired its aircraft including pilots to Ramu Agri Industries Ltd on short term contracts under a Memorandum of Agreement dated 1 October 2022.

Pilots were trained and check by Liddles before they operated aircraft in PNG for RAIL.

Its aircraft maintenance was conducted by Statewide Aviation Services Pty Ltd an Australian aircraft maintenance engineering company based in Moree, New South Wales.

1.17.2 Operator: Ramu-Agri Industries Limited

Ramu Agri Industries Limited is located at Gusap Downs, Lae, Morobe Province, Papua New Guinea. RAIL is a member of the New Britain Palm Oil Limited (NBPOL) Group and is engaged in agricultural and manufacturing operations.

Although the PNG Civil Aviation Safety (CASA) does not require RAIL to hold an *Air Operator's Certificate*, RAIL maintains and operates to *Standard Operating Procedures* for its aerial spraying operations.

1.18 Additional Information

1.18.1 The RAIL Emergency Response Procedure

The AIC reviewed the RAIL Emergency Response Procedure (ERP) and noted that they cater for major accidents, as outlined in the table, (see *Appendix 5.8*). RAIL also maintains a fire truck and trained personnel on standby at its headquarters near Gusap. However, it is noted that the definition of "Major Accidents" within the ERP does not clarify whether aircraft accidents are included.

1.18.2 RAIL Standard Operating Procedures ERP-001

The RAIL *Emergency Management Guideline 2023-2026 Section 2* (see *Appendix 5.9*) under subtitle *TO NOTFIY OF AN EMERGENCY* mention using a radio to communicate with the Security Base. While the SOP does have radio bases for emergencies, RAIL does not specifically mention aviation incident or accident considering their operations also includes aviation.

1.19 Useful or Effective Investigation Techniques

The investigation was conducted in accordance with PNG Legislation and PNG Accident Investigation Commission approved policies and procedures and in accordance with the Standards and Recommended practices of *Annex 13* to the Chicago Convention.

2 ANALYSIS

2.1 General

The analysis section of this report discusses relevant facts which contributed to the accident.

It provides a logical link between the factual information and the conclusions seek to explain the circumstances that contributed to the accident.

2.2 Flight Operations

2.2.1 Flight

At the end of a spray run during the third spraying sortie, the aircraft was observed to track from the spray run towards the main highway. The investigation determined that the track flown was not consistent with previous spray runs and post-run tracks.

At the time of the accident the aircraft wing flaps were fully extended in a configuration normally used for landing and also used at the end of spray runs to conduct a minimum radius procedural turn. The investigation considered that the pilot may have been making a low-level obstacle clearance procedural minimum-radius turn to avoid the approaching coconut trees. Alternatively, if he had encountered a malfunction he may have elected to conduct a forced landing. The pilot did not broadcast a PAN or MAYDAY, nor did he transmit the emergency transponder code 7700.

The investigation noted that the final track and the wreckage trail lined up with a long and straight portion of the main highway and was into the observed prevailing wind. The investigation considered the likelihood of the pilot attempting a forced landing on the highway.

However, the aircraft impacted trees and the ground in a field a short distance before the highway. It is likely that the impact with the tops of the coconut trees significantly affected the aircraft's velocity causing the aircraft to descend and heavily impact the ground.

The investigation was unable to determine if the pilot may have been committing to a forced landing or conducting an obstacle clearance minimum radius turn.

2.2.2 Impact and wreckage

The engine manifold valve that distributes fuel to the engine injector nozzles was full of fuel, so the engine was not starved of fuel. Furthermore, because the engine was observed by ground witnesses to be operating (engine noise was reported) immediately prior to the impact with the coconut trees, the investigation determined that there was no evidence to indicate fuel exhaustion or fuel contamination prior to the impact sequence.

Due to the destruction caused by the impact and post-impact fuel-fed fire, the investigation was unable to determine if the aircraft had sustained an engine or system malfunction or if the pilot manually shut the engine down for a reason that the investigation was not able to determine.

The investigation considered a number of hypotheses.

1. That smoke in the cockpit initially emanated from the rear fuselage due to an electrical fault in the battery or associated electrical wiring and may have prompted the pilot to make an emergency forced landing.
2. That when the steel left landing gear leg was torn from its steel airframe mount sparks may have emanated igniting fuel from the fuel filter assembly that detached at the same impact time.

Hypothesis one (1) may explain the reason the pilot appeared to be attempting an emergency forced landing, due to smoke from a rear fuselage fire.

Hypothesis two (2) may explain the reason for the fire being initiated at the initial impact and not an airborne fire.

However, due to the destruction of the aircraft and its systems, there was insufficient evidence to conclusively support either hypothesis.

The investigation was unable to determine the ignition source of the fire.

2.3 Emergency Response

No emergency transmission was made.

Ground emergency response was immediate but limited by:

- The remote location of the accident site having no fire suppression infrastructure and equipment.
- Local citizens uncertainty regarding aircraft access points to reach the pilot.

There was no evidence that the pilot broadcast a MAYDAY, transmit the transponder emergency code 7700, or attempt to communicate with ground personnel. The investigation considered that at a low height and while committing to a forced landing, the pilot's workload would have been significantly increased and could have reduced the likelihood of him broadcasting an emergency transmission.

As flight priorities, pilots are trained to aviate, navigate and communicate in that order. Therefore, the investigation considered that the pilot while committing first to handling the aircraft and positioning it for a forced landing, he was exercising professional procedure actions.

If a highway landing had been attempted, precise control, correct configuration, and timely emergency management would have been extremely challenging. Immediate evacuation after touchdown would still have been critical, but the rapid progression of the fire and procedural limitations as well as injuries sustained greatly reduced the likelihood of a successful outcome.

2.4 Survivability

The pilot sustained serious injuries resulting from a combination of blunt force trauma and exposure to fire-related hazards. Impact to the pilot's chest caused multiple rib fractures, consistent with a flail chest, which would have severely compromised respiratory function. Simultaneously, the pilot was exposed to intense heat and smoke, resulting in third-degree burns over portions of the body, smoke inhalation, and carbon monoxide poisoning.

The pilot survived the impact but was unable to egress the aircraft unaided. The local villagers who raced to the accident site were not familiar with the aircraft doors, nor were they expected to be. The pilot was subsequently extricated from the aircraft by the local villagers and the RAIL Safety Officer and taken to the RAIL medical clinic where he succumbed to his injuries.

2.5 Corrosion Analysis of Airframe Fuel Filter

There was no evidence that the corrosion observed on the airframe filter housing contributed to the accident. However, in the interest of safety enhancement, the following analysis is included in this report.

The investigation noted that as a design feature for ease of access, the airframe fuel filter was attached to sub-frame below the cockpit floor, protruding through the belly skin aft of the hopper (chemical spray compartment) gate box. The position of the airframe fuel filter increased its exposure to chemical spray (See *Appendix 5.3*).

Most agricultural spraying chemicals such as herbicides, insecticides and fungicides contain high levels of various types of salts such as Glyphosate and Potassium Bicarbonate used as mineral salt in insecticides, herbicides and fungicides, as well as nitrates found in fertilizers.

Considering the location of the airframe fuel filter, as well as the contents of the various agricultural chemicals used in crop spraying operations, the investigation considered that the exposure to chemicals over time increased the likelihood of corrosion build up on adjacent airframe components such as the airframe fuel filter.

Additionally, the aircraft had previously operated in Australia, a region with predominantly dry, temperate conditions, before commencing operations in Papua New Guinea. Papua New Guinea's operating environment is characterised by high humidity and tropical temperatures, particularly for low-level agricultural operations. These environmental conditions are widely recognised to increase the likelihood of moisture exposure in aircraft fuel systems when routine protective measures, such as water draining or the application of corrosion-preventive treatments, are not conducted at regular intervals.

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3 CONCLUSIONS

3.1 Findings

3.1.1 Aircraft

a) The aircraft had a valid Certificate of Airworthiness and had been maintained in compliance with the Australian *Civil Aviation Safety Regulations*.

b) The aircraft was certified as being airworthy when dispatched for the flight operations on the day of the accident.

c) There was no documented evidence that the pilot calculated the aircraft loaded weight and balance for the flight.

d) Weight and balance was not a factor in the accident.

e) The aircraft was structurally intact prior to impact.

f) The left main landing gear leg was torn from the airframe during the initial ground impact.

g) The aircraft's Daily Flight Records and Technical Logbook were destroyed in the post impact fire.

h) The aircraft was destroyed by impact forces and the subsequent intense post-impact fuel-fed fire.

i) The fuselage from the engine firewall to rear fuselage Bulkhead Station 143 was destroyed by fire.

j) The battery mounted on a frame forward of Bulkhead Station 143 was destroyed (melted) by the intense fire.

k) The destruction of the aircraft precluded determination of any material failure or system malfunction.

l) The position of the fuel selector could not be determined due to the extensive fire damage.

m) The engine fuel manifold valve was full of fuel showing fuel was available to the engine injector nozzles.

3.1.2 Pilot

a) The pilot held a valid and current Australian *Certificate of Validation* against his Philippines CPL that allowed him to operate Australian registered aircraft in PNG.

b) The pilot was in compliance with flight and duty time limitations in accordance with the existing Australian *Civil Aviation Safety Regulations*.

c) The pilot had a valid medical certificate.

d) The pilot had accumulated more than 3000 hours of flying experience in various single engine agricultural spraying aircraft.

e) The pilot had no experience operating the Cessna T188C aircraft prior to joining Liddle's Aerial Spraying Ltd.

f) The pilot completed training and checking in Australia for the issue of a Spraysafe Pilot Accreditation from the Aerial Application Association of Australia.

g) The pilot completed a flight test for aerial application rating and aerial category application endorsement in a Piper PA25 Pawnee (Dual seat).

h) The pilot underwent two-day induction training with an experienced Cessna T188C pilot in PNG before commencing operations on the Cessna T188C aircraft.

i) This was ground-based training and did not involve flight training. The Cessna T188C is a single seat aircraft.

j) The pilot completed more than a week of spraying operations on the Cessna T188C aircraft prior to the accident.

3.1.3 Survival

a) The pilot succumbed to his injuries after being rescued from the wreckage.

3.1.4 Flight Operations

a) The flight was operated as a low level agricultural chemical spraying operation.

b) Weather conditions at the time of the accident were not a factor to this accident.

c) The track flown at the end of a spray run during the third spraying sortie, was not consistent with previous spray runs and post-run tracks.

d) The aircraft wing flaps were extended in a landing configuration at the time of the accident.

e) Although it appeared that the pilot was attempting to conduct an emergency forced landing on the main highway, he did not broadcast an emergency transmission.

f) The aircraft impacted trees and the ground in a field alongside the main highway.

g) The investigation was unable to determine why the pilot appeared to be committing to a forced landing.

h) There was no established communication channel with RAIL's ground personnel.

i) On the day of the accident, the pilot successfully conducted two multiple spray run sorties. The accident occurred during the third sortie.

j) The pilot maintained positive control of the aircraft prior to impact.

3.1.5 Operator

a) The aircraft was owned by JANLIT Pty Ltd of Tully, Queensland and contracted by Liddles Aerial Spraying Pty Ltd (LASPL) of Innisfail Queensland, to Ramu Agri Industries Ltd (RAIL), the PNG Operator.

b) The arrangements for the permit to import the aircraft met the PNG Department of Transport and Civil Aviation Safety Authority of PNG requirements.

c) The arrangements to change flight crew did not meet the Civil Aviation Safety Authority of PNG requirements nor was CASA PNG notified by RAIL.

3.1.6 Flight Recorders

a) The aircraft was not equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR); neither were required by Australia Civil Aviation Safety Regulations.

3.1.7 Wreckage and Impact Information

d) The left wing and its fuel tank remained intact and contained fuel.

e) The right wing and fuel tank and cockpit were destroyed by impact and fire damage.

f) The aircraft's airframe fuel filter assembly was located at the first impact point, fractured and displaying soot marks.

g) There was no evidence of fire damage forward of the engine firewall.

h) The aircraft's chemical spray system sustained fire damage.

i) The airframe fuel filter had signs of fire damage.

j) The ignition source for the fire could not be determined.

3.1.8 Medical

a) The pilot was certified medically fit at the time of the accident.

b) There was no evidence that the pilot suffered any sudden illness or incapacity which might have affected his ability to control the aircraft.

c) The pilot sustained third-degree burns, smoke inhalation, carbon monoxide poisoning, and blunt force trauma to the chest.

3.2 Causes [Contributing factors]

The evidence available to the investigation was indicative of the pilot appearing to be attempting to conduct a forced landing on the Lae to Madang highway in response to an in-flight emergency. The reason for this action by the pilot could not be conclusively determined.
During the descending turn towards the highway the aircraft had insufficient height to maintain obstacle clearance and hit the tops of coconut trees before heavily impacting the ground.
The investigation considered two hypotheses.

1. That smoke in the cockpit initially emanated from the rear fuselage due to an electrical fault in the battery or associated electrical wiring and may have prompted the pilot to make an emergency forced landing.

2. That when the steel left landing gear leg was torn from its steel airframe mount sparks may have emanated igniting fuel from the fuel filter assembly that detached at the same impact time.

However, due to the destruction of the aircraft and its systems, there was insufficient evidence to conclusively support either hypothesis.

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4 RECOMMENDATIONS AND SAFETY ACTIONS

4.1 Recommendations

As a result of the investigation into the accident involving the Cessna T188C aircraft registered VH-SOY, at Sangkiang village, Ramu, Madang Province, Papua New Guinea on 23 April 2025, the Accident Investigation Commission issued the following recommendations to address concerns identified in this report.

4.2 Recommendation AIC 26-R01/25-1002 to Ramu Agri Industries Limited

Date Issued: 21 April 2026

The PNG Accident Investigation Commission recommends that Ramu Agri Industries Limited (RAIL) should formally notify the Civil Aviation Safety Authority of PNG of any change in flight crew after a *Permit to Fly* is granted and ensure that pilot qualifications and experience are reviewed and approved prior to continuation of flight operations.

Action requested

The AIC requests that the Ramu Agri Industries Limited (RAIL) note recommendation *AIC 26-R01/25-1002* and provide a response to the AIC within 90 days of the issue date but no later than 20 July 2026 and explain (including with evidence) how RAIL has addressed the safety deficiency identified in the safety recommendation.

STATUS: ISSUED.

4.3 Recommendation AIC 26-R02/25-1002 to Civil Aviation Safety Authority of PNG

Date Issued: 21 April 2026

On 17 October 2025, during a CASA-AIC meeting, CASA PNG informed the investigation of the following Safety Actions proposed following the accident:

- Ensure rigorous *Permit to Fly* application processes are applied and further risk assessment are carried out particularly regarding pilot qualifications.
- Ensure pilot details are included in all future PTF applications.
    - Restrict changes to pilot assignments after an application has been submitted and approved.
    - Continue improving the *Permit to Fly* process to enhance safety and compliance.

The PNG Accident Investigation Commission recommends that in addition to the proposed Civil Aviation Safety Authority of PNG safety action, in order to strengthen safety oversight, CASA should review its *Permit to Fly* application requirements and consider including specific/explicit operational conditions to the *Permit to Fly* with conditions for agricultural operations in PNG that address:

- Minimum safe altitudes and designated low-level flight where appropriate

- Approved methods, procedures and restrictions for aerial spraying activities
- Pilot qualifications and operational approvals specific to these activities

Including these conditions in the *Permit to Fly* would help ensure that agricultural aviation activities are conducted with appropriate safety margins and regulatory supervision within Papua New Guinea.

Action requested

The AIC requests that the Civil Aviation Safety Authority of PNG note recommendation AIC 26-R02/25-1002 and provide a response to the AIC within 90 days of the issue date but no later than 20 July 2026 and explain (including with evidence) how RAIL has addressed the safety deficiency identified in the safety recommendation.

STATUS: ISSUED.

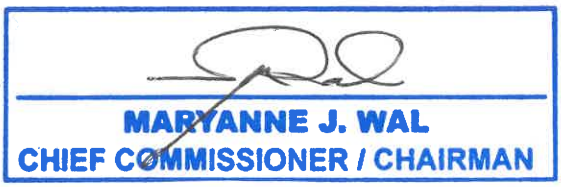
This Final Report is released by;

Accident Investigation Commission

Ministry of Civil Aviation

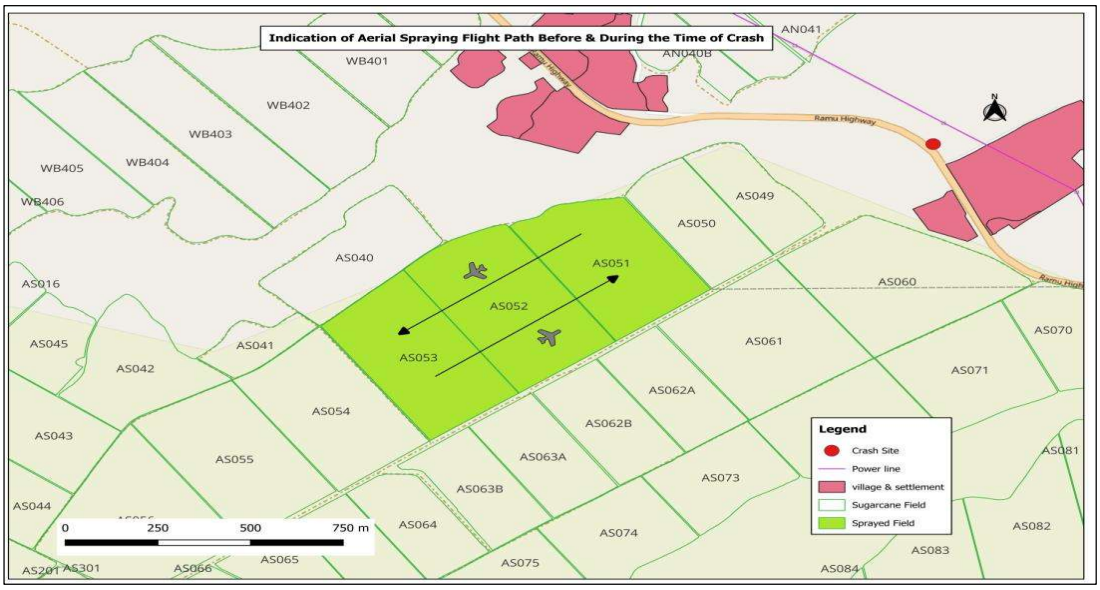
Papua New Guinea

18 May 2026



5 APPENDIXES

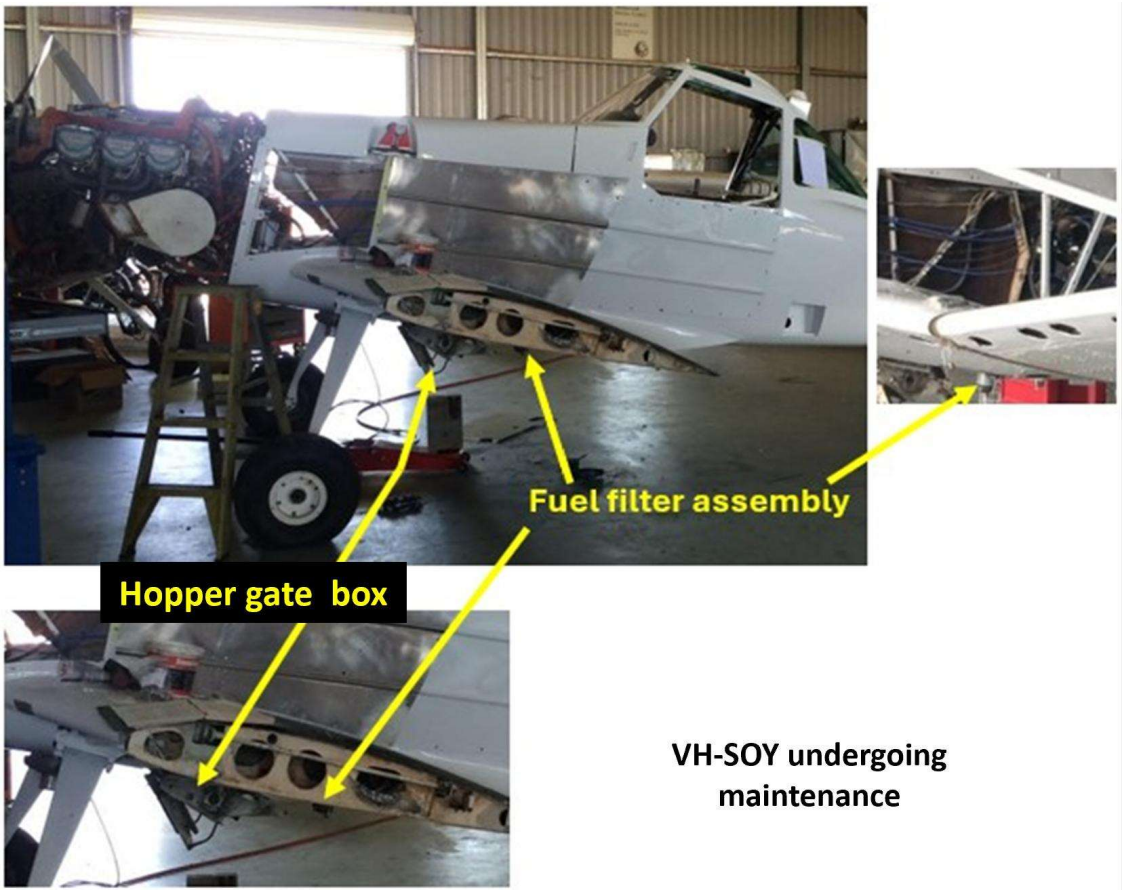
Appendix 5.1 Maps Showing Fields Sprayed



Appendix 5.2 Fuel filter assembly

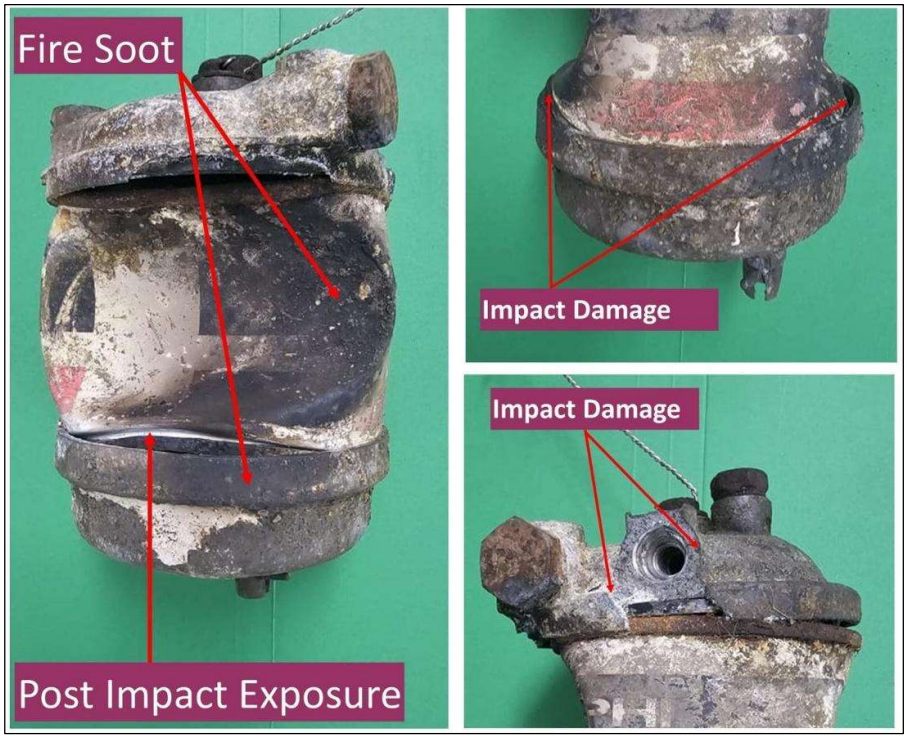
Delphi 7111-296 fuel filter assembly

Appendix 5.3 Location of airframe fuel filter (Delphi 7111-296) on the Cessna T188C aircraft VH-SOY

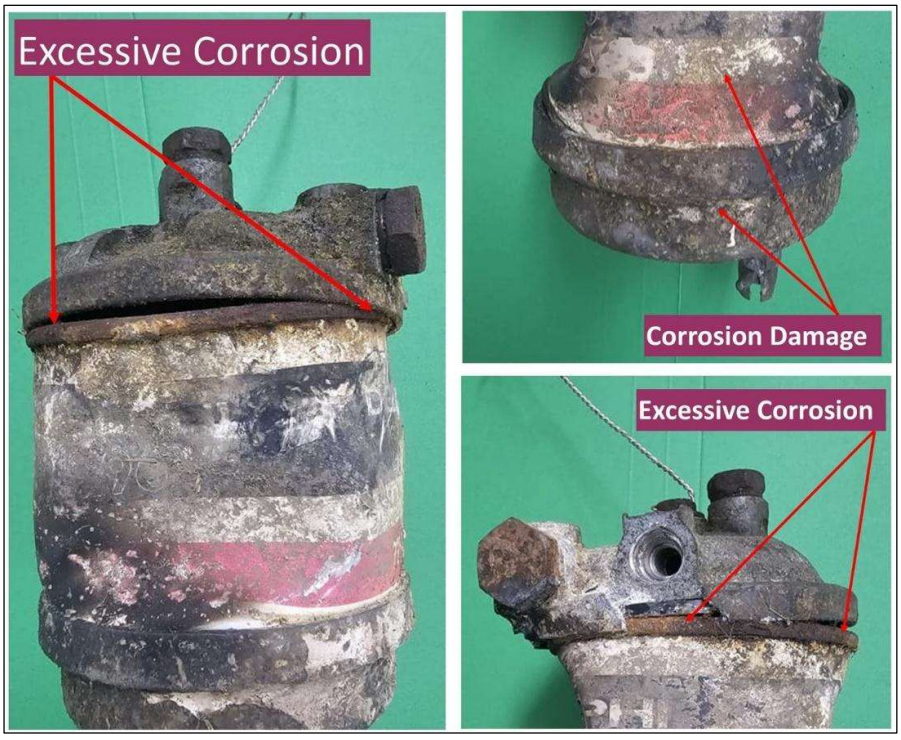


VH-SOY undergoing maintenance

Appendix 5.4 (Fire and Impact Damage to Delphi 7111-296)

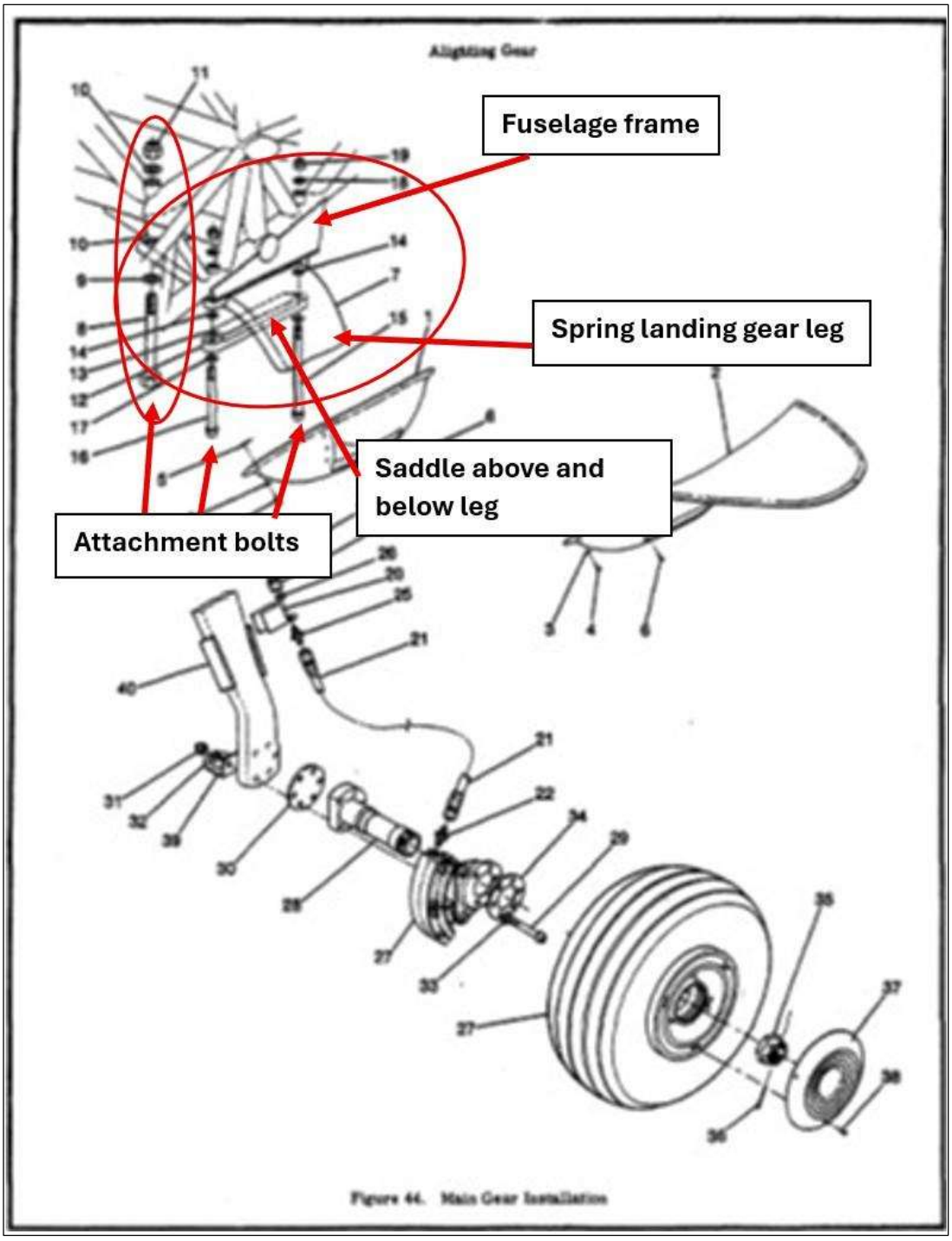


Appendix 5.5 (Corrosion Damage to Delphi 7111-296)



Appendix 5.6 Left main landing gear installation

Left main landing gear tore out from structure in the area denoted by red ellipses.



Appendix 5.7 RAIL Operations Manual

4.2 DECLARATION OF EMERGENCY

(1) Should the aircraft be in grave and imminent danger, e.g. engine failure, fire, drive train failure or serious airframe malfunction, the early transmission of a distress message (MAYDAY - see AIP/ERSA) and selection of transponder code 7700 will ensure maximum assistance with minimum delay.

(2) An urgency message (PAN - see AIP/ERSA) is the appropriate transmission should the safety of a person be involved, or the aircraft be experiencing performance or navigational difficulties and, as with the distress message, early transmission and transponder selection to 7700 is essential for maximum assistance.

(3) Company pilots are expected to be fully conversant with AIP/ERSA so that the appropriate procedure may be instantly initiated should an emergency or abnormal situation arise or be observed in flight, or if unable to comply with the Rules of the Air or ATC requirements.

4.8 ACTION IN THE EVENT OF BEING FORCED DOWN

(1) If a Company aircraft operating in a designated remote area is forced to make an unscheduled landing for reasons of weather or mechanical failure, or is similarly unable to take-off, radio communication should immediately be established with a ATS, the Company or other aircraft to obtain the necessary assistance.

(2) If communications cannot be established, the pilot should activate the aircraft's emergency locater transmitter, either at the nominated Sartime or after allowing time for the Company to realise the aircraft is overdue.

4.8 ACTION IN THE EVENT OF BEING FORCED DOWN

(3) The pilot and all other persons on board must stay with the aircraft until located or, if weather is the cause of the grounding, until conditions have sufficiently improved to permit a safe continuation of the flight. The aircraft's survival equipment and survival handbook should be utilised as necessary in the meantime.

(4) It is permissible for the pilot or other person to leave the grounded aircraft to seek assistance only if it is **absolutely certain** that a town, settlement, road or homestead is within reasonable distance, but notes should be left and a trail made which can be followed by a land party.

Appendix 5.8 RAIL Emergency Response Procedure (ERP)

Major Accident	Inform to Security_____ Chief Medical Officer	ASSESS Safety of Responders to entry Call for Ambulance and Medical Assistance Assess Patients for - Consciousness (CPR) - Bleeding (Direct Pressure) - Broken limbs (Immobilise) Manage bleeding and breathing and await help Evacuate to Clinic/Lae as advised	Debrief on site Incident Report

Appendix 5.9 Rail Emergency Management Guideline

New Britain Palm Oil

RAMU AGRI-INDUSTRIES

RAIL SOP ERP-001
Emergency Management
Guideline 2023-2026

- Radio **SECURITY BASE**
- If near a telephone, Call **Ext. 319 SECURITY EMERGENCY BASE**

SECURITY BASE WILL NOTIFY THE RELEVANT DEPARTMENTS

Appendix 5.10

Appendix 5.10.1 Procedures for Engagement of short-term contract pilots from other States who operate foreign-registered aircraft

According to the Operators *Quality & Safety Management System Manual, section 1.11.1 'Initial Assessment of Contractor';*

All prospective contractors for RAMU-AGRI-INDUSTRIES LIMITED will be assessed by the CEO. The assessment will determine if the contractor has:

1) *Appropriate qualifications/credentials or approvals for the work being outsourced;*
2) *Appropriate facilities to carry out the intended work;*
3) *The ability to provide sufficient trained and competent staff. Where practicable, this training should include relevant Human Factors training and assessment;*
4) *An understanding of RAMU AGRO-INDUSTRIES LIMITED's Quality and Safety Management System, and their own responsibilities within the Program;*
5) *Previous safety record and any regulatory breaches[...]*

Section 1.11.2 *'Monitoring and Audits'* states;

All Contractors/Vendor/Supplier/Service providers will be subject to regular Audits and monitoring to determine their performance. Once assessed as satisfactory, the CEO will include all Contractors/Vendor/Supplier/Service providers in the Audit Schedule. RAMU AGRI-INDUSTRIES LIMITED holds overall responsibility for the safety of services by the Third-Party Contractor.

The CEO will make the final decision on whether these are to be audited on-site, or it is acceptable to accept a self-assessment requested as and when the CEO deems appropriate.

The investigation noted that there were no Standard Operating Procedures (SOPs) or organisational policies specifically addressing the engagement of short-term contract pilots from other States operating foreign-registered aircraft in PNG. The procedure outlined in the Operator's *Quality and Safety Management System Manual, Section 1.11.1 – 'Initial Assessment of Contractor'*, was found to be generic in nature and not tailored to the unique operational or regulatory considerations associated with such engagements.

Appendix 5.10.2 Permit to Fly (PTF)

On 2 December 2024, Ramu Agri Industries Limited (RAIL) submitted a *Permit to Fly (PTF)* application to the Civil Aviation Safety Authority of Papua New Guinea (CASA PNG) under PNG *Civil Aviation Rules (CAR) Part 21.46*. The application indicated that RAIL intended to operate an agricultural aircraft (crop duster), specifically a Cessna T188C (VH-SOY), at Gusap, Markham, Morobe Province, in support of its sugar operations through crop dusting for the period December 2024 to May 2025.

The *Permit to Fly (PTF)* was issued subject to compliance with specific conditions (a–j) stipulated on the permit.

The investigation reviewed the following supporting documents that Ramu Agri Industries Limited (RAIL) had submitted to CASA PNG in support of its PTF application:

- Signed *Permit to Fly* Application *Form (CA 27/07*)
- Copy of the *Certificate of Registration* for aircraft VH-SOY
- Copy of the *Certificate of Airworthiness* for aircraft VH-SOY
- Copy of the *Aerial Work Program*

- Copy of *Flight Crew Licence* and Medical for [named pilot – not the accident pilot]
- Copy of the *Certificate of Approval* for Statewide Aviation Pty Ltd
- Copy of the *Quality & Safety Management System (QSMS) Manual*, August 2020
- Copy of the *Maintenance Release* for aircraft VH-SOY
- Copy of the *Radio Station Licence*

The investigation determined that Ramu Agri Limited (RAIL) had changed the pilot assigned to the Gusap operation after the *Permit to Fly (PTF)* application was submitted. The original application, which included the nominated pilot's Licence and Medical documentation, had already been provided to CASA PNG for assessment prior to the change.

According to CASA PNG, the Australian pilot [named], CPL(A), was the individual presented in the application for *Permit To Fly No. 02/2024*, which authorised the foreign-registered aircraft VH-SOY to operate in Papua New Guinea for the period specified on the PTF.

CASA PNG confirmed that it did not receive any formal notification from RAIL regarding the pilot change. CASA PNG further advised that, had such a notification been submitted, it would have triggered a review of the replacement pilot's licence and medical credentials to ensure compliance with regulatory requirements. Any identified discrepancies could then have been addressed directly with the accountable organisation.

The investigation also found that, although the *Permit to Fly* issued to RAIL contained general conditions relating to operator compliance and safe conduct of flight operations, it did not:

- Explicitly specify operational parameters relevant to low-level flying (defined as operations below 500 feet AGL);
- Include conditions specific to aerial application activities such as agricultural spraying or dusting; or
- Require additional vetting or qualification criteria for pilots conducting such specialised operations.

Such provisions are critical to ensuring that pilots and operators adhere to tailored safety protocols designed for the unique risks associated with low-level agricultural aviation operations.