Australian Government
Australian Transport Safety Bureau

# Loss of ground control involving a PZL-Mielec M18A Dromader, VH-TGY

7 km ESE of Brewarrina aerodrome (Rumleigh), NSW, 22 February 2013

**ATSB Transport Safety Report**
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**Addendum**

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# Loss of ground control involving a PZL-Mielec M18A Dromader, VH-TGY

## What happened

**Damage to VH-TGY**


Source: Aircraft operator

On 22 February 2013, at about 0600 Eastern Daylight-saving Time,[1] a PZL-Mielec M18A (Dromader) aircraft, registered VH-TGY (TGY), departed a private airstrip near Bourke for Rumleigh (7 km east-south-east of Brewarrina aerodrome), New South Wales. About 10 minutes later, a second Dromader, registered VH-TZJ (TZJ), also departed Bourke for Rumleigh.

Both aircraft were to conduct aerial application (spraying) operations on cotton fields at Rumleigh. The operation was supported by two ground personnel (mixers) who were responsible for mixing the spray chemicals and loading the aircraft's hoppers.

At about 0630, TGY landed at the Rumleigh airstrip and the mixers[2] loaded the aircraft's hopper with 2,750 L of water/chemical. TGY departed and commenced spraying operations to the south-west of the airstrip.

Shortly after, TZJ landed at Rumleigh and was loaded with 2,700 L of water/chemical. As the take-off run on the south-eastern runway was commenced, TZJ's fire-bombing door[3] unexpectedly released and the water/chemical load was jettisoned onto the ground, contaminating the runway (Figure 1).

The takeoff was continued and the aircraft returned to the airstrip, landing on the north-west runway. During the landing roll, the pilot manoeuvred TZJ to the left of the contaminated area, with the aircraft's left wheel on dry ground and the right wheel on the contaminated area. The pilot shut down the aircraft and confirmed that the cockpit switches were appropriately selected for spraying operations. After exiting, the pilot examined the fire-bombing door, with no irregularities found. As a precaution, the mixers partially loaded the hopper with water to test the door. As the door remained closed, the hopper was re-loaded with the water/chemical.

During that time, the pilot of TZJ attempted to contact TGY by Ultra-High Frequency (UHF) radio, but was unsuccessful. The mixers elected not to contact the pilot of TGY as they were of the understanding that he had been advised of the runway contamination by the pilot of TZJ.

TZJ then departed off the south-east runway, through the contaminated area. The pilot reported that, while mud was observed spraying up from the aircraft's wheels, directional control was maintained. After takeoff, the pilot attempted to contact TGY again on the UHF, but without success. The pilot of TZJ commenced his spraying flight.

The pilot of TGY reported observing TZJ depart and land again, but was not concerned as he had not received any communications indicating a problem existed.

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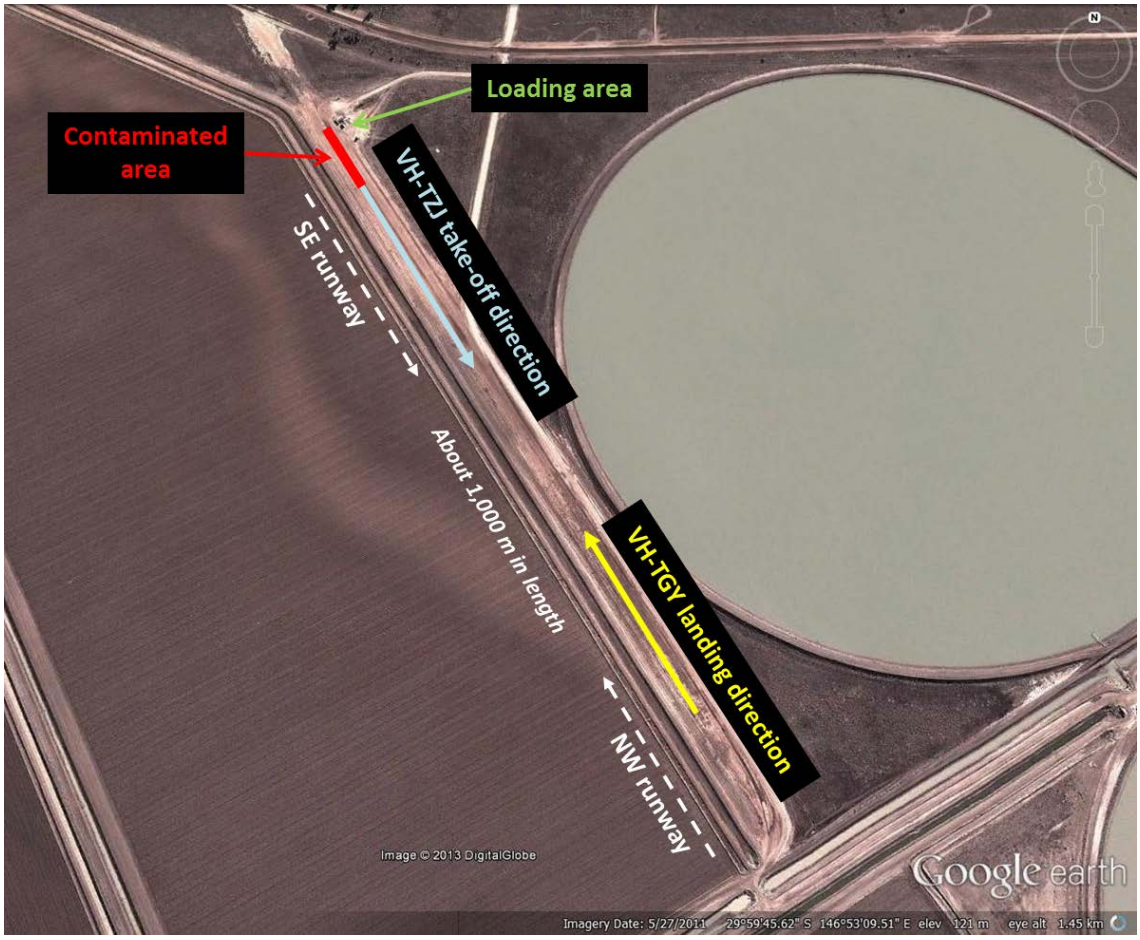
1 Eastern Daylight-saving Time (EDT) was Coordinated Universal Time (UTC) + 11 hours.

2 The mixers were positioned at the northern end of airstrip, on the right side of the runway.

3 Fire-bombing doors were attached to the aircraft's hopper. This allowed the aircraft's load to be released quickly when conducting fire suppression operations.

**Figure 1: Rumleigh airstrip**




**Source: Google earth**

Soon after, the pilot of TGY completed his spraying flight and joined final approach for the north-west runway. The pilot of TZJ observed TGY tracking towards the airstrip and attempted to contact the pilot on the UHF again.

About 15 minutes after the runway became contaminated, TGY touched down about a quarter of the way along on the north-west runway. At the time, there was a 5 kt tailwind. The pilot reported applying light braking and reverse thrust.

When approaching the runway end at a reasonably slow speed, but faster than his normal taxi speed, the pilot of TGY suddenly observed mud spraying up from the aircraft's wheels. The aircraft then commenced sliding and turning to the left. When the left wheel contacted dry ground, the aircraft swung further left and tipped forward, resulting in the propeller contacting the ground. The aircraft then tipped backwards and the tail wheel assembly detached. TGY came to rest at 90° to the runway direction. The pilot of TGY exited and spoke to the mixers, who advised that the fire-bombing door in TZJ had malfunctioned and released the 2,700 L load, contaminating the runway. TGY sustained minor damage (Figure 2).

TZJ landed to the left of the north-west runway about 15 minutes later. The reason for the fire-bombing door malfunction could not be determined.

**Figure 2: Damage to VH-TGY**

Source: Aircraft operator

### *Contamination*

The contamination covered a 100-150 m area at the northern end of the runway. As the runway surface was dirt/clay, the water/chemical had soaked in and created a layer of mud. Consequently, the pilot of TZJ reported that, when he landed to re-load, he had difficulties sighting the contaminated area on the runway surface.

### *Landing (VH-TGY)*

The aircraft operator reviewed the incident and believed that a reasonable amount of braking and reverse thrust was being applied when TGY contacted the contaminated area, subsequently resulting in a loss of ground control. The mixers reported to the ATSB that TGY's landing appeared normal and the aircraft's speed was not fast, as also reported by the pilot of TGY.

### *Communications*

The day prior to the incident, the radio in TZJ was reported as operating intermittently; the pilot of TGY could hear broadcasts made by TZJ, but the pilot of TZJ could not hear broadcasts made by TGY. On the day of the occurrence, the pilot of TZJ attempted to contact the pilot of TGY on a number of occasions, but the broadcasts were not heard. The operator advised that the radio audio selector had failed gradually the previous day. Subsequent to the incident, a 100-hourly maintenance inspection of TZJ was conducted, during which time the radio fault was rectified. The radio in TGY was reported as serviceable.

The pilot of TGY also stated that, when they were unable to contact someone using the UHF radio they would generally send a mobile telephone text message. While a text message had not been sent on this occasion, the pilot suggested that an alternative means could have been employed to warn him of the hazard; such as placing the mixers' truck on the runway.

## Safety message

A reliable communications system can assist with improving the overall efficiency and safety of an operation. This incident highlights the impact ineffective two-way communications can have on aircraft operations, and in that case, the need to consider alternative means for warning pilots of potential ground hazards.

## General details

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| Manufacturer and model: | PZL-Mielec M-18A (Dromader) | |
| Registration: | VH-TGY | |
| Type of operation: | Aerial work | |
| Occurrence category: | Serious incident | |
| Primary occurrence type: | Ground strike | |
| Location: | 7 km ESE of Brewarrina aerodrome (Rumleigh), New South Wales | |
| | Latitude: 30° 00.47' S | Longitude: 146° 52.68' E |
| Persons on board: | Crew – 1 | Passengers – Nil |
| Injuries: | Crew – Nil | Passengers – Nil |
| Damage: | Minor | |

## About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The Bureau is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

The object of a safety investigation is to identify and reduce safety-related risk. ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

## About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.