



Australian Government

Australian Transport Safety Bureau

Flight crew incapacitation involving a SOCATA TBM 700, VH-YZZ

at Lake Macquarie Airport, New South Wales, 15 December 2015

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Addendum

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Flight crew incapacitation involving a SOCATA TBM 700, VH-YZZ

What happened

On the morning of 15 December 2015, a SOCATA TBM 700 aircraft, registered VH-YZZ (YZZ), departed Gold Coast Airport, Queensland for Lake Macquarie Airport, New South Wales. On board were the pilot and one passenger.

The flight to Lake Macquarie was uneventful and the pilot reported feeling well.

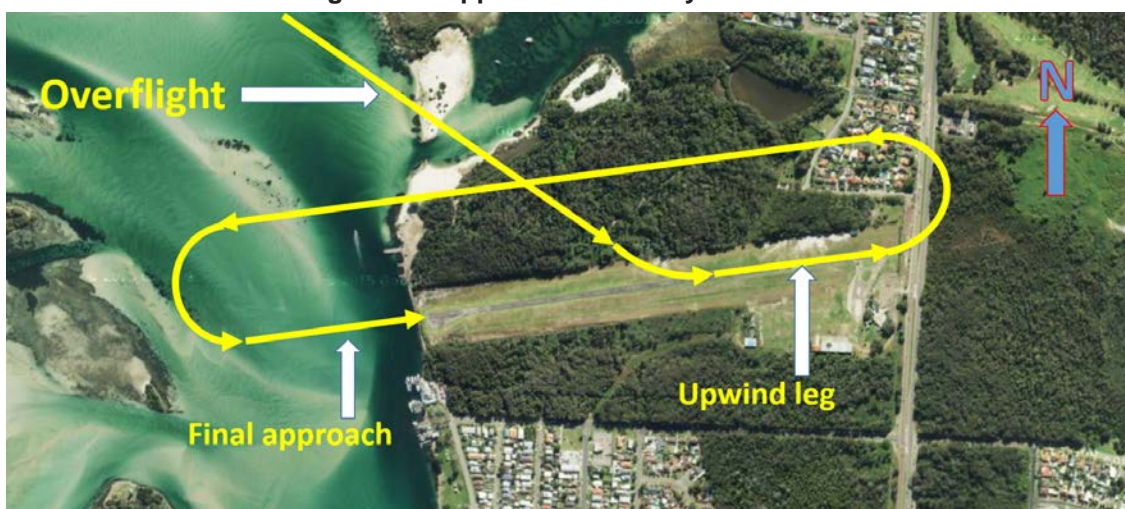
Having not previously landed at Lake Macquarie, the pilot overflew the aerodrome, at approximately 1,500 ft above ground level, to confirm the airfield layout. After the overflight, the pilot joined the upwind leg and commenced a left circuit for runway 07 (Figure 1). The aircraft was configured for landing during this time and, when on final, the approach speed was set to 80 kt.

SOCATA TBM 700, VH-YZZ



Source: Martin Eadie/Airliners.net

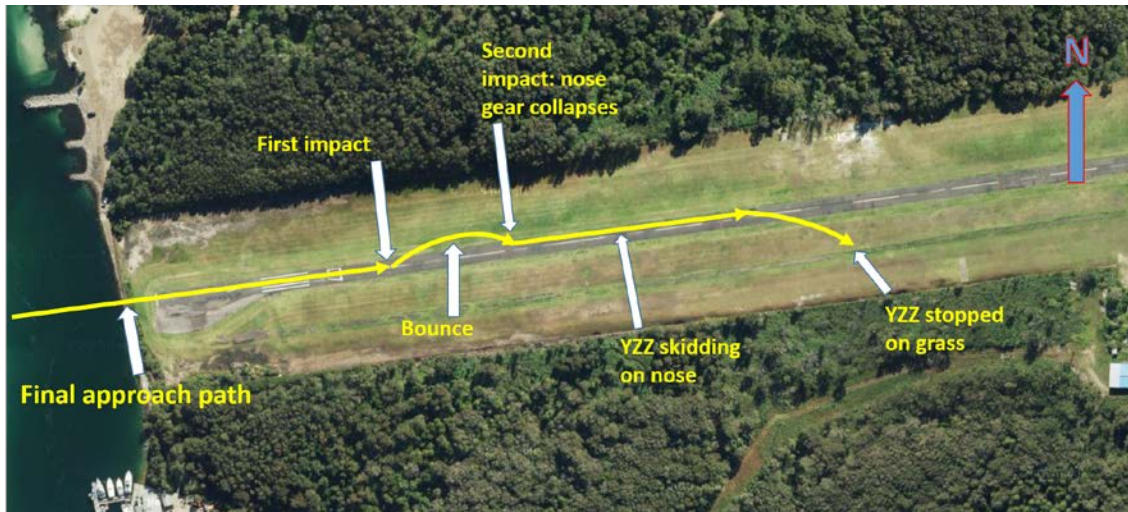
Figure 1: Indicative flight path of YZZ overflying Lake Macquarie Airport prior to joining the downwind and final legs of the approach to runway 07



Source: Google maps – modified by ATSB

When YZZ was on short final, the pilot began to feel ‘woozy’ and, shortly after, lost consciousness. Closed circuit television footage showed the aircraft descended onto the runway and bounced before impacting the runway in a nose-low attitude to the left of runway centreline. The nose-low impact collapsed the nose gear and caused the forward section of the aircraft to strike the runway, bending all four propeller blades. It was at this time that the pilot regained consciousness, approximately 5 to 10 seconds after losing consciousness. The aircraft then skidded on the runway before veering to the right, and onto the grass (Figure 2). The aircraft eventually stopped on the grass area next to the runway (Figure 3).

Figure 2: Final approach path of YZZ to runway 07 with the approximate positions the aircraft first impacted the runway, bounced, the second impact and the approximate path YZZ skidded along, and across, the runway before coming to a stop on the grass



Source: Google maps – modified by ATSB

Figure 3: YZZ post-accident showing the damage to the forward section of the aircraft as a result of the nose gear collapse and skidding on the ground



Source: Phil Hearne/Fairfax syndication

After YZZ had come to a stop, the pilot and the passenger detected a burning smell and made an emergency egress from the aircraft. Once they were safely clear of the aircraft, the pilot saw that there was no fire and that the smell was from the nose gear being jammed under the fuselage and skidding on the runway surface. The pilot then re-entered the aircraft and shut down the engine to ensure that the risk of fire was eliminated. Neither the pilot nor the passenger were injured in the accident, however the aircraft was substantially damaged.

Aircraft systems

All systems on the aircraft were functioning normally. There was no fault evident with any system that could have contributed to the pilot’s loss of consciousness.

Pilot comments

The pilot stated they were well rested, had eaten prior to and during flight and were appropriately hydrated. The pilot reported that they had no previous loss of consciousness events, nor were there any extra pressures or distractions that may have affected them during the flight.

Medical tests and monitoring after the accident found that the loss of consciousness was due to a previously undiagnosed heart condition.

Safety message

The health of flight crew is vitally important for the safe operation of aircraft. Ultimately, all flight crew are responsible for monitoring their own health and wellbeing. Any deterioration in health that may affect the performance of flight crew should be taken seriously.

While in this instance, the pilot had no indication of a health concern before to the event, it is important for pilots to assess their fitness to fly prior to flight. The following checklist provides a quick reference. A description of aeromedical factors is available in the US Federal Aviation Authority (FAA) [Pilot’s Handbook of Aeronautical Knowledge](#).

I’M SAFE Checklist
Illness - Symptoms
Medication - Prescription or OTC
Stress - Job, Financial, Health, Family
Alcohol - 8 Hrs? 24 Hrs?
Fatigue - Adequately rested
Eating - Adequately Nourished

Source: US Federal Aviation Administration

In February 2016, the ATSB released a [research report](#) into pilot incapacitation occurrences between 2010 and 2014. The report provides valuable insight into pilot incapacitation occurrences in high capacity air transport, low capacity air transport and general aviation.

The report highlights how pilot incapacitation can occur in any operation type, albeit rarely. Of interest, the research found that around 75 per cent of the incapacitation occurrences happened in high capacity air transport operations (about 1 in every 34,000 flights). With the main causes being gastrointestinal illness and laser strikes. Low capacity air transport and general aviation had fewer occurrences with a wider variation of causes of pilot incapacitation. These ranged from environmental causes, such as hypoxia, to medical conditions, such as heart attack.

Importantly, the report reminds pilots in general aviation, to assess their fitness prior to flight. Assessment of fitness includes being aware of any illness or external pressures they may be experiencing.

General details

Occurrence details

Date and time:	15 December 2015 – 1300 EDT	
Occurrence category:	Accident	
Primary occurrence type:	Flight crew incapacitation	
Location:	Lake Macquarie ALA, New South Wales	
	Latitude: 33° 04.0' S	Longitude: 151° 38.9' E

Aircraft details

Manufacturer and model:	S.O.C.A.T.A. Groupe Aerospatiale TBM 700
Registration:	VH-YZZ
Serial number:	226
Type of operation:	Private

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB 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 operations involving the travelling public.

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.