



Australian Government

Australian Transport Safety Bureau

Runway operations with hookcable raised involving Cessna 310, VH-COQ

Tindal Airport, Northern Territory, 28 April 2017

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Addendum

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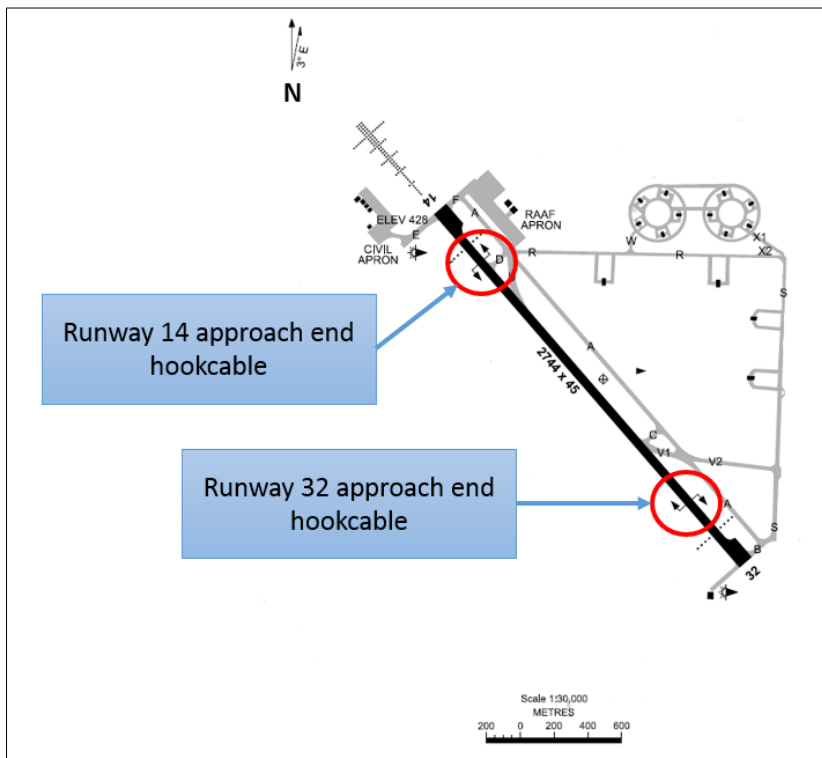
Runway operations with hookcable raised involving Cessna 310, VH-COQ

What happened

On 28 April 2017, at about 0936 Central Standard Time (CST), a Cessna 310R aircraft, registered VH-COQ (COQ), was on approach to land at Tindal Airport, Northern Territory.

Tindal Airport has bi-directional hookcables, used to stop military jets in an emergency, positioned at both ends of the runway (Figure 1). The air traffic control tower had opened for a scheduled military jet departure and was therefore active when COQ made its approach to land. During the tower opening checklist procedure, the tower controller annotated the 'cables' check was completed. About 21 minutes after the tower opened, COQ requested a clearance to land from the base leg position for runway 14. The tower controller scanned the control console, noted that both hookcable pushbutton lights were green, and cleared COQ to land on runway 14.

Figure 1: Tindal airport runway hookcables



Source: Airservices Australia, annotated by ATSB

When COQ was on short final approach to land on runway 14, the pilot noticed the approach end hookcable was raised.¹ They² adjusted their aim point beyond the hookcable and landed without incident. The pilot of COQ reported the position of the hookcable to the tower controller, who then rectified the situation.

¹ Hookcables are marked by dayglo orange disks.

² Gender-free plural pronouns: may be used throughout the report to refer to an individual (i.e. they, them and their).

Hookcable status checks

During the air traffic control tower opening procedure, equipment failure resulted in the approach controller working downstairs and the adoption of procedural coordination between the positions of tower controller and approach controller. The tower controller noted that while traffic levels were low at the time of the incident, they were distracted by phone calls and attempts to restore the functioning of the failed equipment. Both the UP and DOWN hookcable positions have green indicator status lights (see *Aircraft arrestor system*).

Aircraft arrestor system

The Tindal Airport aircraft arrestor system (AAS) is used to stop military jets that have a malfunction, which may otherwise result in a runway excursion. The jet will lower a hook at the rear of the aircraft to catch the cable. The AAS includes two cables, one positioned at either end of the runway and displaced from the respective threshold as displayed in Figure 1.

The AAS may be controlled by air traffic control from the air traffic control tower using the cable control console pushbutton selection/indicator lights (Figure 2). There are four pushbutton selection/indicator lights for each hookcable. Two separate green UP and green DOWN pushbuttons are used to select, and then indicate, the desired position for each hookcable.

Figure 2: Tower control console hookcable pushbuttons



Source: Tindal Airport

Enroute Supplement Australia

The Enroute Supplement Australia entry for Tindal Airport includes the following information:

Physical characteristics: Recessed bi-directional hookcables installed. When arrestable aircraft are operating – departure end up, approach end down. In the event of power failure, cables will rise to a height of 10 cm until restored. Recommended that aircraft not approved to trample hookcables confine their operations to between cables outside air traffic control hours.

Enroute Supplement Australia introduction paragraph 22.2 (b) states:

Pilots should refer to the Pilot Operating Handbook or Flight Manual for specific restrictions for each aircraft. In the absence of any reference to trampling in either the handbook or manual, trampling is not authorised.

Previous incident

On 9 August 2016, an aircraft struck the runway 14 hookcable at Tindal Airport during take-off a few minutes after the air traffic control tower closed. Further information is available from ATSB report [AO-2016-098](#).

Safety analysis

The distractions during the opening procedure resulted in the tower controller inadvertently leaving both hookcables in the UP position after they tested the operation of the system. When they received the request to land from COQ, the tower controller subsequently checked the status of the hookcable but they misidentified the two green UP status lights as DOWN indicators, which are also green.

Finding

- When the air traffic tower was opened, the hookcables were inadvertently left in the UP position. When the tower controller subsequently checked the status of the hookcable before clearing COQ to land, they incorrectly identified the green UP light as the green DOWN light and cleared COQ to land.
- The pilot detected the raised cable and adjusted their aim point to ensure they landed past the raised cable.

Safety action

Whether or not the ATSB identifies safety issues in the course of an investigation, relevant organisations may proactively initiate safety action in order to reduce their safety risk. The ATSB has been advised of the following proactive safety action in response to this occurrence.

Air traffic service provider

As a result of this occurrence, the air traffic service provider has advised the ATSB that they are taking the following safety action:

The possibility of changing the colour of the UP lights will be investigated through an engineering process to better differentiate between the UP and DOWN positions (this will be for all our sites that have arrestor systems). Furthermore, due to the relative low number of civilian aircraft operating at Tindal Airport, Tindal air traffic control will be advising the position of the cable with every landing and take-off clearance given to civilian aircraft. This will help force the controller to verify the position of the cable in addition to the conduct of the instrument scan.

Safety message

This incident highlights the risks of expectation bias. The tower controller observed two green lights on the control console, but did not recognise they were the UP indicators. However, the design of the indicators, where green lights can have two different meanings, removes the usefulness of the colour of the lights in determining whether the hookcable is up or down.

The pilot detected the problem in time to avoid trampling the hookcable during the landing. However, pilots should take note that the hookcables will automatically raise in the event of a power failure.

General details

Occurrence details

Date and time:	28 April 2017 – 0936 CST	
Occurrence category:	Incident	
Primary occurrence type:	Procedural error	
Location:	Tindal Airport, Northern Territory	
	Latitude: 14° 31.27' S	Longitude: 132° 22.67' E

Aircraft details

Manufacturer and model:	Cessna Aircraft Company 310R	
Registration:	VH-COQ	
Serial number:	310R1643	
Type of operation:	Charter - passenger	
Persons on board:	Crew – 1	Passengers – 1
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	Nil	

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.