



Australian Government

Australian Transport Safety Bureau

Reduced landing distance available involving Boeing 737 aircraft VH-YIS and VH-YFC

Darwin Airport, Northern Territory on 3 and 19 September 2021



ATSB Transport Safety Report

Aviation Occurrence Investigation (Short)

AO-2021-037

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Addendum

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Executive summary

What happened

On 3 September 2021, a Boeing Company 737-8FE (B737), registered VH-YIS and operated by Virgin Australia, was conducting a flight from Melbourne, Victoria, to Darwin, Northern Territory. During the pre-flight briefing, the flight crew planned the incorrect displaced threshold instrument approach into Darwin Airport. During the approach, air traffic control cleared the flight crew for a non-displaced threshold approach but the flight crew continued and conducted the pre-planned displaced threshold approach and landing. The aircraft landed 1,153 m into the runway.

Separately, on 19 September 2021 a Boeing Company 737-81D (B737), registered VH-YFC and also operated by Virgin Australia, conducted a flight from Brisbane, Queensland to Darwin, Northern Territory. During the pre-flight briefing the flight crew similarly planned a displaced threshold approach into Darwin runway 11 instead of the non-displaced threshold approach. The aircraft landed 932 m into the runway.

What the ATSB found

The ATSB found that the flight crew of VH-YIS misinterpreted the notice to airmen (NOTAM) information during the pre-flight briefing which led them to believe that runway 11 was displaced. As a result, they planned for the displaced threshold approach on runway 11. The flight crew continued the planned runway 11 VOR-T despite being cleared for the non-displaced threshold runway 11 VOR-Z approach by air traffic control.

This resulted in reduced runway length being available for the landing roll. Air traffic control did not request the flight crew to correctly readback the VOR approach clearance resulting in a missed opportunity to identify the error and for the flight crew to reconsider their decision to continue the displaced threshold approach.

The flight crew of VH-YFC similarly misinterpreted the NOTAM during pre-flight briefing which led them to believe that both ends of 11/29 in Darwin were displaced. This resulted in the flight crew planning for and conducting the RWY 11 VOR-T displaced threshold approach instead of the RWY 11 VOR-Z non-displaced threshold approach.

Both flight crews misinterpreted the Darwin Airport recorded information prior to arrival, this also resulted in a missed opportunity to capture the misidentification of the displaced threshold information from the NOTAM.

What has been done as a result

After the first incident, Virgin Australia updated their Flight Crew Operational Notice to reflect that the Darwin Airport runway 11 works had been completed, and then subsequently modified it further after the second occurrence to specifically highlight the displaced thresholds.

Safety message

Operational information in a NOTAM, can have critical importance for the planning and conduct of a flight. As such, misinterpretation of this information can significantly affect flight safety.

Correct and complete readback of air traffic control clearances, are important to confirm that information has been received and understood and provide a valuable defence to detect and correct errors such as occurred during these incidents.

Finally, when there is uncertainty or ambiguity about the condition of a destination, such as a displaced threshold, flight crew are encouraged to seek clarification from air traffic control.

The investigation

Decisions regarding the scope of an investigation are based on many factors, including the level of safety benefit likely to be obtained from an investigation and the associated resources required. For this occurrence, a limited-scope investigation was conducted in order to produce a short investigation report, and allow for greater industry awareness of findings that affect safety and potential learning opportunities.

The occurrence

On 3 September 2021 at about 0945 Eastern Standard Time (EST)¹ the flight crew of a Boeing Company 737-8FE (B737), registered VH-YIS (YIS) and operated by Virgin Australia, were conducting their pre-flight briefing on the flight deck in preparation for flight VA1457 from Melbourne, Victoria, to Darwin, Northern Territory. The flight crew consisted of a captain and a first officer.

The flight crew reported that they both reviewed a NOTAM² for Darwin (Figure 1) during the pre-flight briefing and acknowledged to each other that there were runway works in progress that reduced the available runway length. The flight crew also reviewed the Flight Crew Operational Notice (FCON)³ for Darwin (Figure 4). The captain commented that they were aware of the reduced runway length for Darwin and the first officer commented that they were both under the impression that runway 11 had a displaced threshold and not runway 29 as the NOTAM stated.

The flight crew received the ATIS⁴ (Figure 2) during cruise and then commenced an arrival brief 30 minutes before the planned top of descent. The flight crew planned to conduct the Darwin runway 11 VOR-T instrument approach associated with a displaced runway 11 threshold (Figure 7) and they calculated the landing distance based on that displacement.

At 1436 Central Standard Time (CST)⁵ air traffic control instructed VA1457 to descend to 9,000 ft and they were subsequently cleared for the runway 11 VOR-Z instrument approach (Figure 6). The flight crew, cognisant that they had planned for the VOR-T in expectation of a runway 11 displaced threshold, discussed with each other that air traffic control had cleared them for the VOR-Z approach. The flight crew, believing that the VOR-T was safe and appropriate, elected to continue and not conduct the VOR-Z approach in accordance with their clearance.

The aircraft touched down 1,153 m into the runway and the aircraft decelerated to a stop before the displaced threshold cones that were present at the 29 displaced threshold. The aircraft backtracked on the runway and taxied to the terminal. Having recognised the error, the flight crew reported their misinterpretation of the displaced threshold to Virgin Australia.

On 19 September 2021, the flight crew of a Boeing Company 737-81D (B737), registered VH-YFC (YFC) and also operated by Virgin Australia, were conducting their pre-flight briefing for flight VA449 from Brisbane, Queensland to Darwin, Northern Territory. The flight crew consisted of a captain and a first officer.

During the pre-flight briefing, the flight crew reviewed the NOTAM (Figure 1) and the company supplied briefing pack. The captain commented that they believed the NOTAM and FCON were

¹ Eastern Standard Time (EST): Universal coordinated Time (UTC) + 10 hours.

² Notice To Airmen (NOTAM): A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure, or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

³ Flight Crew Operational Notice (FCON): A notice from Virgin Australia to their flight crews containing relevant information about airports and operational aspects of a flight.

⁴ Automatic Terminal Information Service (ATIS): The provision of operational information required by aircraft for take-off or landing that is broadcast on a dedicated frequency and/or on the voice channel of radio navigation aids.

⁵ Central Standard Time (CST): Universal Coordinated Time (UTC) + 9.5 hours.

ambiguous regarding the displaced runway threshold and expected to acquire more information in flight when they received the ATIS (Figure 3). The flight departed at 0944 EST.

Prior to the top of descent into Darwin, the flight crew received the ATIS and commenced their arrival brief. They discussed that there was no information on the ATIS broadcast regarding displaced thresholds, and decided to conduct the displaced threshold VOR-T approach just in case the threshold was displaced. The flight crew also commented that if the PAPI⁶ was operating that it would read high while on approach to runway 11.

The flight crew conducted the Darwin runway 11 VOR-T approach and touched down 932 m down the runway, decelerated, and proceeded to the terminal. During the taxi to the terminal, the captain noted the displaced threshold cones at the 29 end of the runway and realised that a misinterpretation of the NOTAM had occurred. The flight crew reported the occurrence to Virgin Australia.

Context

Information available to flight crew

Both flight crews conducted a briefing prior to dispatch from their departure airports. The information included in these briefings was provided to them by Virgin Australia in the FCON and in a pilot briefing pack that was prepared for each flight. The briefing packs contained information such as the flight plan, weather, and fuel requirements. They also contained the NOTAMs of the departure and destination airports, as well as information on en-route airports, in case a diversion was required. The briefing pack provided to the crew of YFC included a note from the Virgin Australia dispatcher indicating that Darwin runway 29 has a displaced threshold.

Notice to airmen

For both occurrences, information related to displaced thresholds in the Darwin NOTAM (Figure 1) was the same. The NOTAM stated that runway 29 had a displaced threshold of 765 m due to works in progress and that the eastern end of runway 11/29 was not available due to the works. The NOTAM also stated that the landing distance available on runway 11, with the runway 29 threshold displaced, was 2,670 m.

⁶ Precision Approach Path Indicator (PAPI): A visual aid located next to the runway that provides guidance to a pilot in maintaining the correct approach path by a series of lights.

Figure 1: Darwin NOTAM, current at the time of both occurrences

C416/21 REVIEW C393/21

THR RWY 29 DISPLACED 765M DUE WIP

DISPLACED THR MARKED BY RWY THR IDENT LGT HJ AND GREEN THR LGT EACH SIDE OF RWY HN

RWY 11/29 594M EAST END NOT AVBL DUE WIP

Runway information

OBST 18 FT AGL ON RWY 2874M FM START OF TORA RWY 11

DECLARED DISTANCE AND GRADIENT CHANGES

RWY	TORA	TODA	ASDA	LDA
11	2670(8759)	2760(9055)(5.0)	2670(8759)	2670(8759)
29	2760(9055)	2850(9350)(1.2)	2760(9055)	2589(8494)

SUPPLEMENTARY TKOF DIST

RWY11-	2543(8343)(1.6)	2592(8504)(1.9)	2629(8626)(2.2)
	2656(8714)(2.5)	2706(8878)(3.33)	

Landing distance available

LDA FOR LAND AND HOLD SHORT OPS (LAHSO) AMD DISTANCE WHEN RWY 29 THR DISPLACED RWY 29 1922(6306)

GP INFRINGES APCH BY 11FT WHEN THR DISPLACED

RWY 29 TKOF TO COMMENCE AT RED AND WHITE CONES

RWY 29 PAPI NOT AVBL WHEN THR DISPLACED

RWY 29 TEMPO PAPI AVBL LEFT HAND SIDE 3.0 DEG 61FT

RWY THR IDENT LGTS AND TEMPO PAPI PILOT MNT

TWY A6 NOT AVBL BTN RWY 29 THR AND EASTERN INVERT OF FIGHTER REPLENISHMENT AREA (FRA)

TWY A6 AVBL FOR MIL OPS ONLY

REFER METHOD OF WORKING PLAN YPDN 21/02 STAGE 2

FROM 07 132135 TO 09 300730

Source: Virgin Australia, annotated by ATSB

The captain of YIS stated that when they reviewed the NOTAM during the pre-flight briefing the reduced length of the runway was all that they comprehended. The captain did not review the NOTAM again until after the occurrence. The first officer reviewed the NOTAM twice before departure, once at home and once during the pre-flight briefing with the captain. The first officer stated that, after the pre-flight briefing, they were both under the impression that the threshold of runway 11 was displaced.

The captain of YFC recalled that, after reviewing all the available information during the pre-flight briefing, their interpretation was that both thresholds of runway 11/29 were displaced. The captain stated that the 11 VOR-T was planned with an expectation to gather further information regarding the displaced thresholds when the ATIS was received in flight.

The flight crew of YIS, and the captain of YFC, recalled reviewing the NOTAM after their flights and realising that a misinterpretation of the displaced threshold had taken place.

Automatic terminal information service

In both occurrences the ATIS was received in flight via the ACARS⁷ prior to the conduct of the arrival briefings. The ATIS received on 3 September (Figure 2) by the flight crew of YIS, stated that runway 11 and 36 was to be used for arrivals and departures. It also noted that runway 11 had a reduced runway length. The first officer commented that after reviewing the ATIS they conducted the arrival briefing with the impression that runway 11 had a displaced threshold rather than a section of the upwind end of the runway being unavailable.

⁷ Aircraft Communications Addressing and Reporting System (ACARS): a digital datalink system for transmission of short messages between aircraft and ground stations via VHF radio.

Figure 2: ATIS utilised by flight crew of YIS on 3 September 2022

```

Record Time      : 2021.09.03-04:54:18
Record Location: 00011C1002F0C588
Error Code       : 0 (No error found )

DYLA0205 2109030452
GG YIZZPDNA
030452 YPDNZTZ
ATIS YPDN E 030452
APCH:VISUAL OR VOR
RWY: 11 AND 36 FOR ARRIVALS R11 FOR DEPARTURES
SURFACE COND:
OPR INFO:R11 REDUCED RWY LEN
LAHSO TACAN AVAILABLE

+ WIND:02018 KT, MAX CROSS WIND 18 KT
VIS:9999
WX:
CLD:SCT 045
TMP:34
+ QNH:1008
DEPARTURE FREQUENCY:123.0
    
```

Runway information

Source: Virgin Australia, annotated by ATSB

The ATIS received on the 19 September (Figure 3) by the flight crew of YFC, stated that runway 11 was in use and that runway 11 had a reduced runway length. The captain commented that the ATIS only mentioned a reduced runway length on runway 11 and not a displaced threshold, therefore they continued with the planned runway 11 VOR-T approach. No clarification was sought from air traffic control on either occasion.

Figure 3: ATIS utilised by flight crew of YFC on the 19 September 2022

```

50=QU QXSXHX
.BNEHPVA 190302
STA:M3M
AN VH-YFC/FI VA407
- WX RESPONSE
ATIS YPDN Y 190201
APCH:VISUAL
RWY: 11
SURFACE COND:
OPR INFO:RWY 11 REDUCED RWY LEN

+ WIND:10010G20KT, MAX XW 15KT
VIS:CAVOK
WX:
CLD:
+ TMP:32
+ QNH:1014
DEPARTURE FREQUENCY:123.0
    
```

Runway information

Source: Virgin Australia, annotated by ATSB

Flight Crew Operational Notice

The FCONs were provided to both flight crews as part of the flight briefing pack. On the 3 September 2021 the FCON (Figure 4) provided the following information:

- From 25 February 2021 until 30 September 2021, RWY 11/29 is undergoing works associated with upgrading the Aircraft Arrestor System.
- During works, RWY 11 threshold and RWY 29 threshold will be displaced at separate times.
- Actual date and time of works and threshold displacements will be advised by NOTAM.

The FCON also stated the specific VOR instrument approach chart to use

Figure 4: Flight Crew Operational Notice used by VH-YIS on the 3 September 2022

Virgin australia **FCON**
Flight Operations

Effective Date: 02 SEP 2021 **Issue No: 61**

Darwin

40/21 – YPDN – Arrestor Cable Upgrade

- From **25 February 2021** until **30 September 2021**, RWY 11/29 is undergoing works associated with upgrading the Aircraft Arrestor System.
- During works, RWY 11 threshold and RWY 29 threshold will be displaced at separate times.
- Actual date and time of works and threshold displacements will be advised by NOTAM.
- On the Jeppesen Chart, procedures to displaced runway threshold have a '-T' suffix. Existing VOR and NDB procedures to the standard runway threshold will have a '-Z' suffix to differentiate them from the new procedures. **CAUTION: '-T' charts must only be used when landing runway threshold is displaced.**
- When thresholds are displaced temporary AAM Take-off data must be used and is available at:
GoodReader: FCON > YPDN
- Landing data for RWY 11 and RWY 29 displaced threshold is already present in existing AAM Landing data.
- FOE NOTAM Comment will advise which IDENT to use.

Source: Virgin Australia, annotated by Virgin Australia

Following the occurrence on the 3 September, the FCON (Figure 5) was updated by Virgin Australia on the 16 September with the following amendment:

- During the works RWY 29 threshold will be displaced, and runway operational length of both RWY 11 and 29 will be reduced.

Figure 5: Flight Crew Operational Notice used by VH-YFC on the 19 September 2022

PORT SPECIFIC

Darwin

99/21 – YPDN – Arrestor Cable Upgrade **Updated 16-9-21**

- From **25 February 2021** until **30 September 2021**, RWY 11/29 is undergoing works associated with upgrading the Aircraft Arrestor System.
- During the works RWY 29 threshold will be displaced, and runway operational length of both RWY 11 and 29 will be reduced.
- When runway operational length is reduced, refer to FOE NOTAM Remark regarding use of Temporary AAM pages.
- When referencing the AAM Landing pages, ensure the correct IDENT is used.
- FOE NOTAM Remark will advise which IDENT to use.
- Actual date and time of works and threshold displacements will be advised by NOTAM.
- On the Jeppesen Chart, procedures to displaced runway threshold have a '-T' suffix. Existing VOR and NDB procedures to the standard runway threshold will have a '-Z' suffix to differentiate them from the new procedures. **CAUTION: '-T' charts must only be used when landing runway threshold is displaced.**

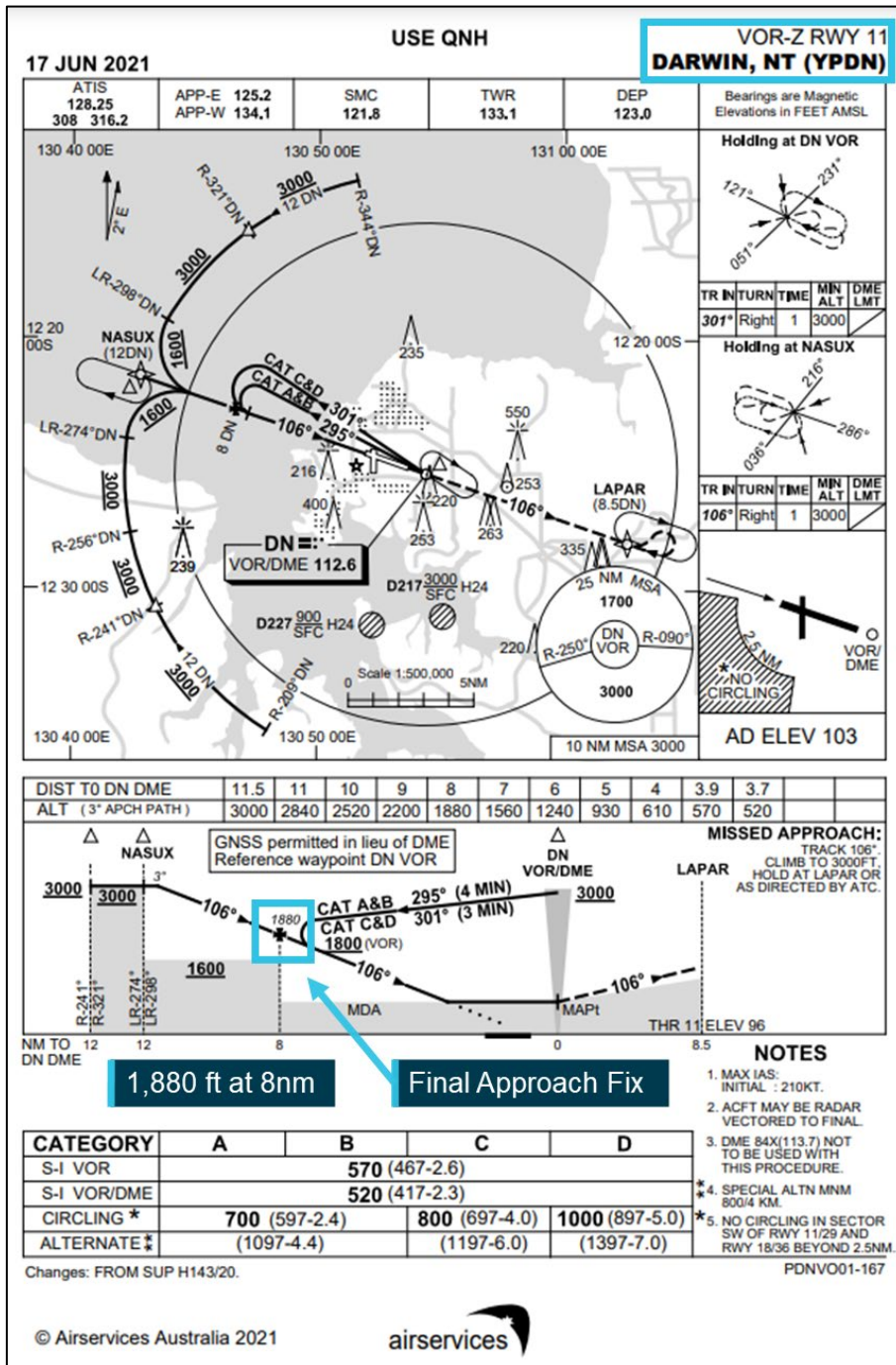
Source: Virgin Australia

VOR Approaches

Darwin runway 11 had 2 published VOR procedures current at the time of the occurrences. The VOR-Z (Figure 6) and the VOR-T (Figure 7).

The VOR-Z RWY 11 approach was used when the runway did not have a displaced threshold. The aircraft was to be flown down a 3° approach path from an 8 nm final approach fix, indicated by the Maltese cross, from an altitude of 1,880 ft to a touch down point 300 m past the runway threshold.

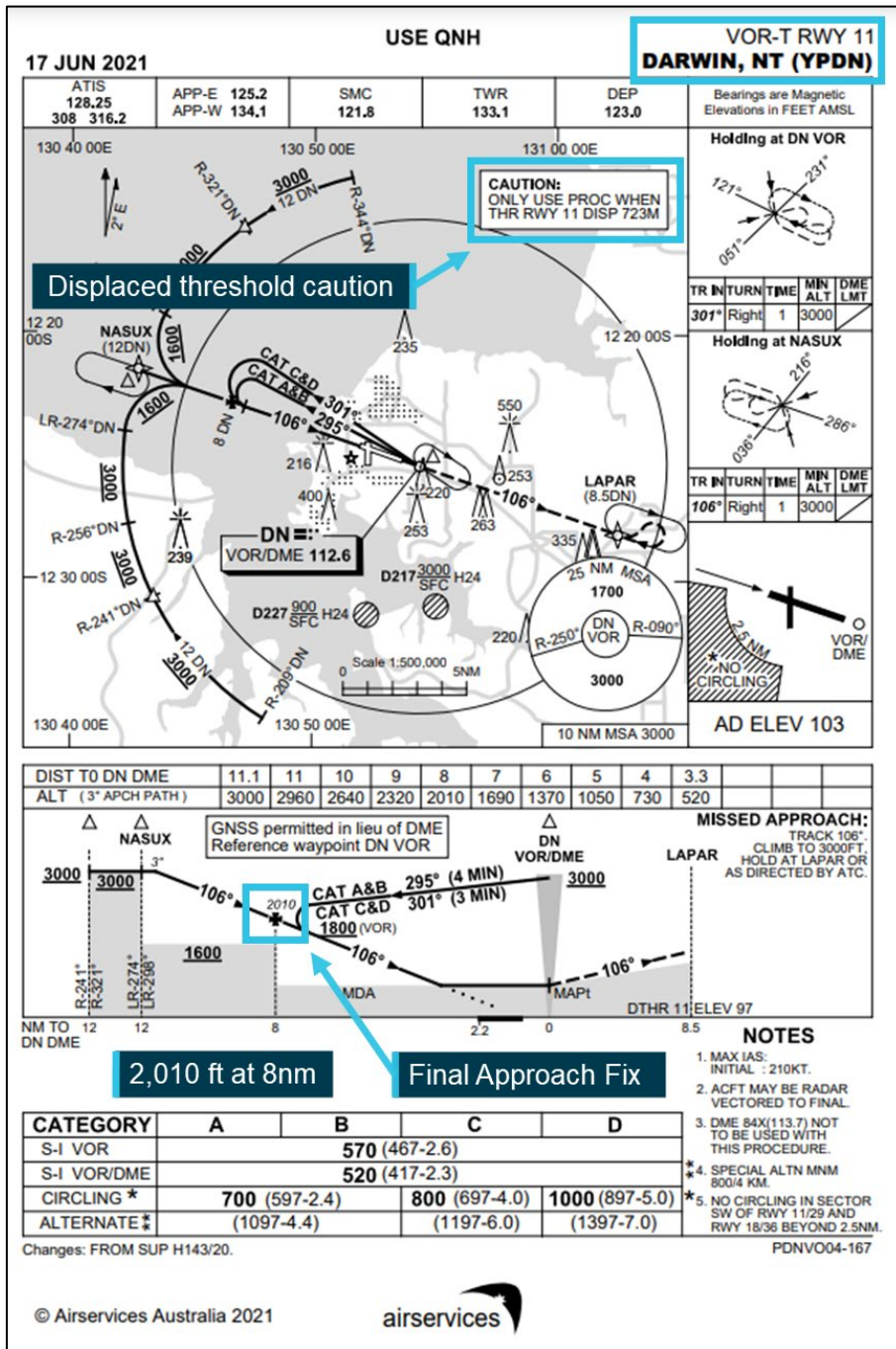
Figure 6: VOR-Z non-displaced threshold approach



Source: Airservices Australia, annotated by ATSB

The VOR-T RWY 11 approach was to be used when the threshold was displaced 723 m due to runway works. The VOR-T placed the aircraft 130 ft higher at the final approach fix, indicated by the Maltese cross. The aircraft was to be flown down a 3° approach path from an 8 nm final approach fix altitude of 2,010 ft to a touch down past the displaced runway threshold.

Figure 7: VOR-T displaced threshold approach



Source: Airservices Australia, annotated by ATSB

Air traffic control readback requirements

Aeronautical Information Package Australia ENR 1.1-15, 2.11.2.5 stated:

The full chart title of the instrument approach procedure, as described at the top of the relevant chart, must be used in all clearances, coordination and readbacks relating to the procedure, including entry procedures. However, with the exception of circling approaches, the suffix may be omitted if there is no possibility of confusion. Where multiple approach procedures are on the same chart, only the approach procedure being conducted shall be referred to.

On the 3 September occurrence, air traffic control (ATC) cleared the crew of YIS to conduct the VOR-Z approach. The captain responded 'cleared the 11 VOR but did not use the suffix of Zulu or Tango. ATC did not request the captain to readback the suffix.

For the 19 September occurrence, the captain reported that air traffic control only cleared YFC for the 11 VOR with no suffix. This could not be verified as the ATC recording was not available.

Recorded information

Flight parameters for the approach were recorded by both aircraft and were provided to the ATSB. This data included the:

- aircraft height above the airfield
- ground speed
- rate of descent in feet per minute
- angle of descent in degrees
- touchdown point of aircraft
- brake pressure
- engine settings.

On the 3 September 2021, the flight data indicated that:

- YIS touched down 1,153 m into the runway at a groundspeed of 139 kt
- 1.25 seconds later the auto brakes activated (1,256 m into the runway)
- 7 seconds after the touchdown, reverse thrust was selected (1,606 m into the runway)
- reverse thrust was active until a groundspeed of 43 kt
- peak manual braking occurred from a groundspeed of 37 kt to 19 kt.
- YIS turn around on the runway prior to the unusable area and taxied to the terminal

On the 19 September 2021, the flight data indicated that:

- YFC touched down 932 m into the runway at a groundspeed of 137 kt
- auto braking was active until a groundspeed of 98 kt
- reverse thrust was active until a groundspeed of 58 kt
- YFC exited via a taxiway and taxied to the terminal.

Safety analysis

Introduction

In September 2021, on 2 separate occasions, Virgin Australia flight crews planned and conducted a displaced threshold approach and landing on runway 11 at Darwin Airport. At the time of the occurrences runway 11 was not subject to a displaced threshold, although, at the opposite end on runway 29, a displaced threshold was in place due to works being undertaken.

Flight information

NOTAM information indicated that the eastern end of runway 11/29 was not available due to the works and, as a result, the threshold of runway 29 was displaced. The flight crew of YIS misinterpreted this section of the NOTAM and concluded that runway 11 had a displaced threshold and planned the VOR-T displaced threshold approach for runway 11.

The flight crew of YFC similarly misinterpreted the NOTAM, concluding that both ends of the runway were simultaneously displaced. As a result, they planned for a displaced threshold on runway 11, with an intention to await further information contained in the ATIS.

The FCON used by the flight crew of YIS stated that the runway 11 threshold and runway 29 threshold were displaced at separate times. The FCON also directed the flight crew to refer to NOTAM information to identify which runway threshold was displaced during flight planning. The FCON detailed the correct VOR chart to use when the thresholds were displaced. The flight crew, with this information from the FCON, in conjunction with a misinterpretation of the NOTAM that runway 11 threshold was displaced, planned the runway 11 VOR-T displaced threshold approach.

An updated version of the FCON, which contained information that the threshold of runway 29 was displaced, was provided to the flight crew of YFC. As the threshold of runway 11 was not displaced at the time, the FCON did not provide any information on runway 11 other than stating that the operational length of both runway 11 and 29 was reduced. The flight crew did not identify that the reduced length of runway 11 was due to the works underway at the upwind end of the runway. As a result, the flight crew planned the displaced threshold approach to runway 11 with an intention to await the reception of the ATIS for further information.

Due to the succinct nature and purpose of an ATIS, the Darwin ATIS only referenced the runway in use at the time, which was runway 11. As runway 11 was not subject to a displaced threshold, the ATIS only informed of its reduced length.

The flight crews of YIS and YFC continued with their plan to conduct the VOR-T displaced threshold approach in both instances. The captain of YFC commented that the ATIS was expected to provide further information in flight on the status of the runway, but no further information was obtained from the ATIS. There was no attempt by the flight crews to contact ATC for clarification on either occasion.

ATC cleared the flight crew of YIS to conduct runway 11 VOR-Z, non-displaced threshold approach. This approach clearance was unexpected by the flight crew as they had planned the VOR-T displaced threshold approach. The flight crew decided to continue with their planned displaced threshold approach without advising ATC. The captain responded to ATC with 'cleared runway 11 VOR' but omitted the suffix 'Zulu'. ATC did not request the flight crew to read back the suffix as required. A readback request by ATC may have presented an opportunity for the flight crew to identify the error.

It is likely that, due to both flight crew's initial misinterpretation of a displaced threshold from the NOTAM information, any further information that was provided by the FCON and the ATIS was viewed with a perception that the threshold of runway 11 was displaced. As a result, the flight crew of YIS did not realise the misinterpretation until ATC cleared them for the VOR-Z approach. The flight crew of YFC did not realise their misinterpretation until after landing.

Findings

ATSB investigation report findings focus on safety factors (that is, events and conditions that increase risk). Safety factors include 'contributing factors' and 'other factors that increased risk' (that is, factors that did not meet the definition of a contributing factor for this occurrence but were still considered important to include in the report for the purpose of increasing awareness and enhancing safety). In addition 'other findings' may be included to provide important information about topics other than safety factors.

These findings should not be read as apportioning blame or liability to any particular organisation or individual.

From the evidence available, the following findings are made with respect to the NOTAM misinterpretations at Darwin Airport on the 3 and 19 September 2021.

Contributing factors

- The flight crew of VH-YIS misinterpreted Darwin airport information during pre-flight briefing, which resulted in them believing that the threshold of runway 11 in Darwin was displaced. This subsequently resulted in the flight crew planning for and conducting the RWY 11 VOR-T displaced threshold approach instead of the RWY 11 VOR-Z standard approach.
- The flight crew of VH-YIS continued the planned runway 11 VOR-T approach despite being cleared for the runway 11 VOR-Z approach by air traffic control. This resulted in reduced runway available for the landing roll.
- The flight crews of VH-YIS and VH-YFC misinterpreted, or did not comprehend, the information on the ATIS prior to arrival. This resulted in a missed opportunity to capture the misidentification of a displaced threshold and the continuation of the VOR-T approach.
- The flight crew of VH-YFC misinterpreted Darwin Airport information during pre-flight briefing which led them to believe that both ends of 11/29 in Darwin were displaced. This resulted in the flight crew planning for and conducting the RWY 11 VOR-T displaced threshold approach instead of the RWY 11 VOR-Z standard approach.

Other factors that increased risk

- Air traffic control did not request the flight crew of VH-YIS to fully readback their VOR approach clearance. This was a missed opportunity for the error to be identified and the flight crew to reconsider their decision to continue with the planned VOR-T approach.

Safety actions

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.

Safety action by Virgin Australia

Following the occurrence on the 3 September 2022, Virgin Australia modified their Flight Crew Operational Notice (FCON) for Darwin Airport to remove the runway 11 displaced threshold information, and then subsequently modified the FCON further after the second occurrence to specifically highlight the displaced thresholds.

Sources and submissions

Sources of information

The sources of information during the investigation included:

- Virgin Australia
- the flight crews of VH-YFC and VH-YIS
- RAAF air traffic control
- Airservices Australia
- Civil Aviation Safety Authority

Submissions

Under section 26 of the *Transport Safety Investigation Act 2003*, the ATSB may provide a draft report, on a confidential basis, to any person whom the ATSB considers appropriate. That section allows a person receiving a draft report to make submissions to the ATSB about the draft report.

A draft of this report was provided to the following directly involved parties:

- Virgin Australia
- the flight crews of VH-YFC and VH-YIS
- RAAF air traffic control
- Civil Aviation Safety Authority

No draft report submissions were received.

General details

Occurrence details

Date and time:	3 September 2021 – 1501 CST	
Occurrence class:	Incident	
Occurrence categories:	Operational, Flight Preparation, Navigation	
Location:	Darwin Airport	
	Latitude: 12°24.883' S	Longitude: 130°52.600' E

Aircraft details

Manufacturer and model:	The Boeing Company 737-8FE	
Registration:	VH-YIS	
Operator:	Virgin Australia Airlines PTY LTD	
Serial number:	39926	
Type of operation:	Air Transport High Capacity-Passenger – (Air Transport High Capacity)	
Activity:	Commercial Air Transport-Scheduled-Domestic	
Departure:	Melbourne, Victoria	
Destination:	Darwin, Northern Territory	
Persons on board:	Crew – 2 flight crew	Passengers – unknown
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	None	

Occurrence details

Date and time:	19 September 2021 – 1216 CST	
Occurrence class:	Incident	
Occurrence categories:	Operational, Flight Preparation, Navigation	
Location:	Darwin Airport	
	Latitude: 12°24.883' S	Longitude: 130°52.600' E

Aircraft details

Manufacturer and model:	The Boeing Company 737-81D	
Registration:	VH-YFC	
Operator:	Virgin Australia Airlines PTY LTD	
Serial number:	39413	
Type of operation:	Air Transport High Capacity-Passenger – (Air Transport High Capacity)	
Activity:	Commercial Air Transport-Scheduled-Domestic	
Departure:	Brisbane, Queensland	
Destination:	Darwin, Northern Territory	
Persons on board:	Crew – 2 flight crew	Passengers – unknown
Injuries:	Crew – 0	Passengers – 0
Aircraft damage:	None	

