



BRISBANE AIRPORT SODPROPS 10KT TAILWIND PROPOSAL

Proposal to CASA with Safety Analysis Report

Version 1.0 | 31 March 2021





IMPORTANT NOTICE

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Document Redactions

The redactions shown in this document relate to the removal of personal identifiers (names, business titles etc) and commercial in confidence information of airline operators.

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Change summary

| Version | Date | Change description |
|---------|-------------|--------------------|
| 1 | 30 Mar 2021 | Initial Release |

1. PROPOSAL

Brisbane Airport Corporation (BAC) proposes that CASA considers an exemption to CASR MOS Part 172, to allow Airservices to increase tailwind runway nomination criteria to 10kts specifically for Brisbane Airport Simultaneous Opposite Direction Parallel Runway Operations (SODPROPS).

BAC made a public commitment prior to opening of the new runway to seek CASA approval, after CASA determined in 2017 that Airservices could no longer nominate Runway Reciprocal Operations with 10kts tailwind and rejected Airservices' request to apply the same tailwind criteria for the new runway system.

The commitment was based on industry support, and historical evidence that Airservices operated over the bay operations safely with 10kts tailwind for over 20 years.

Benefit

Based on the last 11 years of actual wind data, increasing the tailwind to 10kts will increase the time available for SODPROPS in summer when the runway is dry from 54% to 90% and in winter from 52% to 95% between 10pm and 6am, a measurable reduction in residential over flight and exposure to aircraft noise. SODPROPS is used during the most noise sensitive sleep periods, when even a single noise event can have a significant impact on residents. These are also the periods of least movements allowing additional "decision time" for air traffic control and pilots, and most flights during the night period receive an efficiency benefit as they are to and from the north.

During late evening and early morning, particularly at the weekends, there will also be an increase in availability of SODPROPS, which has not been estimated as it is also dependent on traffic levels with sufficient look ahead time to re-sectorise and reassign Standard Instrument Departures (SIDs) and Standard Instrument Arrivals (STARs). This provides potential for further respite for residents affected by operations using the new runway particularly when traffic levels are typically lower at the weekend.

2. SAFETY ANALYSIS REPORT

Purpose

The purpose of this Safety Analysis Report is to describe the safety management activities that have been undertaken for the following proposed change to Brisbane Airport SODPROPS: ATC to nominate dry runway (Take-off RWY01R, Arrival RWY19R) with up to 10kts tailwind including gusts.

The existing runway nomination criteria for SODPROPS is 5kts tailwind, dry runway, 2500ft cloud base and 8km visibility.

The proposed change to runway nomination criteria is for tailwind only and specifically for Brisbane Airport SODPROPS.

Methodology and Safety Program

The safety program was informed by:

- A Safety Plan administered by BAC, as the change proponent
- Establishment of a Local Runway Selection Safety Team (LRSST) to conduct Hazard Identification and Risk Assessment Workshops
- CASA response to Airservices SAF-SS-16031 Version 1 Runway Nomination Criteria – Brisbane Aerodrome 22 August 2017
- Operational review by Airservices and Operators
- Operator tailwind operating limits
- Airservices incident data
- ICAO SARPS and PANS guidelines
- International methodology - FAA Order and waiver at Los Angeles Airport
- Stakeholder Consultation and Communication

The initial safety analysis conducted through the Local Runway Selection Safety Team (LRSST) identified existing and proposed key controls aimed at preventing aircraft from operating outside operational limits. These controls aim to ensure air traffic control have the procedures in place to keep the tailwind within these operational limits, pilots receive accurate wind information in sufficient time to exercise their responsibility to determine runway suitability, and to reduce the risk of windshear related hazards or wide variations in wind gradients during tailwind operations.

Operators provided assurance that pilots operating into Brisbane Airport are aware of their operational tailwind limits, and existing operating procedures ensure that they will assess landing distance required and take off distance required well prior to landing or take-off, and that if they do choose to conduct a missed approach, they follow published missed approach procedures which will not compromise separation.

Airline and non-airline operators that are operating fleets with 15kts as their operational tailwind limit have sufficient existing controls in place to minimise any increased risk to operations with 10kts tailwind, including landing performance calculations and pre take-off assessments that include tailwind, and ensuring pilots are trained to adhere to published instrument flight procedures. For those operators with aircraft limits of 10kts tailwind, based on the outcomes of the Hazard Identification and Risk Assessment sufficient additional controls were necessary to ensure the limits are not exceeded for arriving aircraft.

Historical incident data supports that the operational safety risks of runway nomination with 10kts tailwind are acceptable. Airservices operated Runway Reciprocal Operations with 10kts tailwind from the late 1980's with low risk to operations evidenced by no runway incursions and a single go around between 2010-2016 (from Airservices incident data as included in their 2016 submission).

Whilst there are no ICAO SARPS that preclude runway nomination with 10kts tailwind, ICAO PANS OPS Doc 8168 and PANS ATM Doc 4444 identify that noise abatement should not be determining factor for runway nomination when the tailwind exceeds 5kts including gusts.

There are global examples that consider these as guidelines only from PANS and allow local runway safety team analysis to determine acceptably safe preferential runway program criteria, with the caveat that pilots ultimately have the authority to determine runway for the safe operation of the aircraft.

This safety analysis has applied this methodology and demonstrates that, while PANS provides a standardised approach to ensuring safety margins between tailwind nominated (5kts) and operational tailwind limits (10kts +), a robust local safety assessment is necessary to ensure adequate controls are implemented to provide sufficient assurance to operate at, and not above those operational tailwind limits.

BAC proposes that the local safety assessment methodology applied by the FAA is sound, with evidence of long-term night operations with 10kts tailwind at LAX, and that the Brisbane Airport SODPROPS application will be demonstrably safer due to the wider distance between runways, STAR connected 3D approaches, limiting crosswind to 15kts, and higher visibility and cloud base criteria.

After completing the initial safety activities outlined in the Safety Plan, the following controls were developed and agreed to mitigate the hazards identified for 10kts tailwind for SODPROPS departures and arrivals:

Amend Brisbane ATC SODPROPS procedures, Tower/TCU LOA/Flow procedures and NAP

1. For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts;
2. During Brisbane SODPROPS when tailwind is >5kts, ATC will request that all pilots provide 500ft winds and record on ATIS
3. During Brisbane SODPROPS, ATC to allow sufficient spacing between arrivals in the event that a preceding arrival may, due to tailwind, need to roll through to the end of RWY19R instead of vacating on a rapid exit taxiway
4. During SODPROPS, when tailwind is different to ATIS, ATC to provide tailwind on first contact and with landing clearance, and for departures with take-off clearance (tailwind advice when different to ATIS is existing practice but needs to be in procedures)
5. AIP DAP NAP YBBN to be updated (new text in blue) Between 2200 and 0600 local time pilots are requested to minimise the use of reverse thrust when operationally acceptable, **except during SODPROPS**

Initially, the Safety Program outcomes supported development of a Safety Case to demonstrate that all safety risks for 10kts tailwind could be managed to ALARP. This included the Hazard Identification and initial Risk Assessment workshop outcomes and input of further hazards and suggested controls from operators who could not attend. BAC ensured that all operators, airline and non-airline, were provided with sufficient context and given the opportunity to identify hazards and review effectiveness of controls.

On 22 March 2021, an operator that had attended the initial workshop provided late input that they could not support the full 10kts limit as proposed and believed that 7kts is a more appropriate limit given the maximum tailwind allowance of some of their aircraft. This was provided to BAC a day prior to the final residual Risk Assessment on 23 March.



Safety Analysis Report Summary

The Safety Program methodology and safety activities were initially contained within a Safety Case. The initial safety activities identified existing and proposed controls to keep the tailwind to within operational tailwind limits for all aircraft operating at Brisbane Airport, applying a local runway safety team methodology applied by the FAA to determine acceptability of the change, and it was only just before the final residual risk assessment that a major airline indicated they could not support the Safety Case.

BAC must submit this proposal as a commitment to the wider Brisbane community and this Safety Analysis Report provides the evidence of Safety Activities and Methodology demonstrating that BAC has conducted the Safety Program thoroughly with all operators at Brisbane Airport.

If CASA do not support this proposal, BAC will investigate other options for runway nomination including 10kts for departure and 7kts for arrival to continue to look for maximum safe use of over the bay operations, applying the same Safety Program methodology.

3. BAC COMMITMENT TO MAXIMISING OVER THE BAY OPERATIONS

During EIS/MDP consultation for Brisbane's New Runway in 2005/2006, the concept of operations for the new parallel runway system included a commitment to maximising over the bay operations by applying the existing wind criteria for nomination of runways (for Runway Reciprocal Operations) up to 10kts tailwind including gusts on a dry runway.

To support the BAC's commitment to minimise the impacts of aircraft noise and overflight from the new runway system, Airservices applied to CASA in 2016 while completing the final airspace design for an exemption against the runway nomination criteria specified in CASR MOS Part 172 to allow runway nomination with 10kts tailwind, supported by a Safety Statement SAF-SS-16031 that included incident data from 2010 - 2016 demonstrating low risk to operations. (No runway incursions and only 1 go around based on RRO nomination with 10kts tailwind).

CASA provided a comprehensive response to Airservices as to why they did not accept the proposal including principles proposed to develop a local procedure at Brisbane that allows pilots to select over the bay runways with tailwind greater than 5kts. The minimum provisions provided to assist to develop that procedure have been included in existing and proposed controls in the safety analysis for this proposal. While the current Noise Abatement Procedures (NAP) include that "pilots may request an arrival RWY19L/R or departure RWY01R when tailwind exceeds 5kts during Night hours" this is very rarely utilised and does not provide a measurable noise benefit.

BAC formed an industry steering group in 2019 and gained support for an industry proposal to CASA that includes finalised airport infrastructure, airspace procedures, and ATC procedures, to conduct a comprehensive industry safety assessment using a similar methodology to that applied by FAA Order 8400.9 1981, notably as applied at LAX. To properly evaluate threats and controls, experience operating SODPROPS with the new runway system under local environmental conditions, infrastructure, and updated instrument flight and ATC procedures was necessary.

4. SAFETY PLAN

A Safety Plan has been developed to ensure that the safety activities that have been identified as part of this safety program are managed with appropriate governance and oversight.

The scope of this Safety Analysis Report is to determine the effect on all aspects of operational safety to operators, air traffic control, and Brisbane Airport Corporation due to increasing the allowable tailwind criteria for Brisbane Airport SODPROPS runway nomination from 5kts to 10kts.

The HAZID and risk assessment workshop held with airport operators, air traffic control and Brisbane Airport SME's initially reviewed ICAO SARPS, PANS, overseas examples, local SODPROPS procedures and associated instrument flight procedures, wind reporting procedures, operator operating procedures and tailwind limits, and CASA's concerns raised in the 2017 response to Airservices. Threats on safety of operations associated with the change, effectiveness of existing controls, and proposed controls necessary to effectively manage those threats were determined during the assessment. A critical principle of the safety assessment was to include all Brisbane airport operators including international operators and to obtain input from those operators that could not attend the workshop. Operators were also asked to provide operational tailwind limits, internal safety assessments, or any further issues not identified at the workshop.



5. CONSULTATION AND COMMUNICATION

Airservices and CASA were initially consulted to confirm that BAC could submit the change proposal to CASA.

After a HAZID and Risk Assessment Workshop was held to understand the safety impact and to identify controls to safely proceed with the change, CASA advised that, based on the “first of type” nature of the change, a Safety Case would be required.

Based on feedback from CASA, and to complete a comprehensive safety analysis that included consideration of all types of aircraft operations, consultation included all regular aircraft operators at Brisbane Airport and Airservices as well as the appropriate operational and safety specialists from BAC.

The community, as a major stakeholder, was and continues to be engaged including Federal, State and Local Government representatives to confirm BAC’s commitment to initiating the proposal. It is consistent with BAC’s ongoing engagement with the community to look for the best possible noise outcomes for residents within the implemented airspace design and flight paths for the new runway system.

All Brisbane Airport operators below were provided with an initial letter of context and invitation to the HAZID and risk assessment to form the LRSST.

| Operator | Contact | Role |
|------------------------|--------------------------|--------------------------|
| Air New Zealand | [REDACTED] [REDACTED] | [REDACTED] [REDACTED] |
| Alliance | [REDACTED] | [REDACTED] |
| Cathay Pacific | [REDACTED] | [REDACTED] |
| Cobham | [REDACTED] | [REDACTED] |
| Corporate Air | [REDACTED] | [REDACTED] |
| Emirates | [REDACTED] | [REDACTED] |
| Eva Air | [REDACTED] | [REDACTED] |
| Nauru Air | [REDACTED] | [REDACTED] |
| Qantas Group | [REDACTED] | [REDACTED] |
| Virgin | [REDACTED] [REDACTED] | [REDACTED] [REDACTED] |
| Rex | [REDACTED] [REDACTED] | [REDACTED] [REDACTED] |
| RFDS | [REDACTED] | [REDACTED] |
| Singapore | [REDACTED] [REDACTED] | [REDACTED] [REDACTED] |
| Skytrans | [REDACTED] | [REDACTED] |
| Toll Aviation/Hevilift | [REDACTED] | [REDACTED] |
| QG Air | [REDACTED] | [REDACTED] |
| BARA | [REDACTED] | [REDACTED] |
| Lifeflight | [REDACTED] | [REDACTED] |



6. SAFETY ACTIVITIES

Hazard Identification and Risk Assessment

The following attended the HAZID and risk assessment workshop via Teams (LRSST):

- [REDACTED] BAC [REDACTED]
- [REDACTED] BAC [REDACTED]
- [REDACTED] BAC [REDACTED]
- [REDACTED] Virgin Australia [REDACTED]
- [REDACTED] Airservices [REDACTED]
- [REDACTED] Skytrans [REDACTED]
- [REDACTED] Airservices [REDACTED]
- [REDACTED] Air New Zealand [REDACTED]
- [REDACTED] Airservices [REDACTED]
- [REDACTED] Jetstar [REDACTED]
- [REDACTED] BAC [REDACTED]
- [REDACTED] BAC [REDACTED]
- [REDACTED] BAC [REDACTED]
- [REDACTED] Cathay Pacific [REDACTED]
- [REDACTED] Nauru Airlines [REDACTED]
- [REDACTED] REX [REDACTED]
- [REDACTED] Qantas Express Freighters [REDACTED]
- [REDACTED] QantasLink [REDACTED]
- [REDACTED] Airservices [REDACTED]
- [REDACTED] Airservices [REDACTED]
- [REDACTED] Qantas [REDACTED]
- [REDACTED] Qantas [REDACTED]
- [REDACTED] Jetstar [REDACTED]

Following the distribution of the HAZID outcomes and agreed proposed controls, the following de-identified operators provided fleet tailwind limits, internal safety assessments and/or any additional concerns or suggested controls/mitigation:

| Airline 1 |
|--|
| 10KT tailwind – margin available for all aircraft landing RWY 19R [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] |
| HAZARDS (outside those already identified in HAZID) <ol style="list-style-type: none">1. Aircraft performance variability due climbing and descending through tailwind gradients2. Additional payload restrictions due potential take-off weight limitations |
| Mitigation <ol style="list-style-type: none">1. Crew awareness to adequately anticipate and respond to greater range of performance variability2. Flexibility in runway assignment by ATC to minimise commercial impact |

| Airline 2 |
|--|
| 10KT tailwind – margin available for all aircraft landing RWY 19R [REDACTED] [REDACTED] [REDACTED] [REDACTED] |
| Risk assessment conducted by (Airline) <ol style="list-style-type: none">1. Reduced in flight performance – reduced climb performance may cause CFIT2. Increased take-off and landing distance resulting in runway excursion |
| Mitigation <ol style="list-style-type: none">1. Existing controls considered adequate to control risks assessed as low (acceptable for 10kts tailwind at BNE)2. Climb gradient requirements can be satisfied for take-offs and landings]3. Maximum take-off weights and typical landing distances under max landing weights assessed4. Aircraft certified for 15kts tailwind and flight crews required to verify landing performance including missed approach climb gradient and landing distance |



Airline 3

1. Pre-dispatch landing performance data is provided for network aerodromes and includes tailwinds up to 15 kts.
2. In-flight guidance on landing distance required (LDR) is provided (in the QRH) which includes performance margins based on operational experience.
3. Similarly, crew are provided with a tablet based app for determining accurate LDR in-flight (same margins as in (ii)).
4. Specific company policies apply to all landing performance calculations and drive appropriate aircraft configurations e.g. autobrake settings and approach speeds.
5. Certified maximum tailwind limit is 15 kts for the B737.
6. Detailed information is provided in crew manuals for techniques to apply during take-off and landing with tailwinds.

No additional HAZARDS (outside those already identified in HAZID)

Airline 4

10kts tailwind within design capabilities of the aircraft in normal circumstances, all aircraft operating at Brisbane



Aircraft commander's discretion may require alternative runway and should not be delayed for doing so

Otherwise, no issues with proposal

Mitigation

1. Crew awareness to adequately anticipate and respond to greater range of performance variability
2. Flexibility in runway assignment by ATC to minimise commercial impact

Non Airline 1

Aircraft operational tailwind limit 10kt

Flight standards team – 10kt tailwind acceptable providing the quartering tailwind is limited to below 25kt

Discussed as threat during the HAZID and control implemented to restrict cross wind to 15kts during SODPROPS for windshear mitigation will also mitigate the quartering tailwind issue



Non Airline 2

- All aircraft are maximum 15kt tailwind for take-off and landing
- Head of flight operations supports the proposal providing there are not traffic delays to accommodate

Airline 5

Tailwind limits for all aircraft either 15kts or 10kts

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With 10kts being the operational limit of some of the aircraft variants, ATC can expect a higher rate of go arounds. Night operations with tailwind and crosswind would present a higher risk of hard landings.

Suggested additional control that ATC should not issue vectors during missed approach

Airline 6

No identified concerns, as long as the tailwind component does not exceed 10kts.

All current (Airline) fleets are maximum of 10kt tailwind for take-off and landing.



Airline 7

The (Airline) response/concerns about the proposal can be collated as follows:

1. (Airline).....can't support the full 10kts limit as proposed and believe that 7kts is a more appropriate limit given the maximum tailwind limits of some of our aircraft.
2. 3D approaches must be available to support the increased tailwind limits.
3. A crosswind limit of 15kts should be imposed.
4. Dry runway operations only.
5. Runway occupancy constraints should not applied. Early exit taxiway expectations should not be applied.
6. Airport should be aware of possible increase in reverse thrust use.
7. Awareness of winds aloft. Possibly require regular reports from pilots of wind conditions on approach.
8. We support the cautionary advice regarding "operational creep" as noted in the powerpoint presentation "HAZID – industry workshop and review"

1. Climb gradient requirements for take-off and landings – can they be satisfied? Yes
2. Maximum take-off weights and typical landing distances are under maximum landing weights (less than 3300m LDA?). Yes
3. Certified tailwind limits for fleet? See below.
4. Pilots completed simulator training and evaluation for take offs and landings at those limits? Simulator training covers many scenarios at different 'maximum' limits, this particular scenario in the sim is an irregular event.
5. Confirmation that flight crews are required to verify landing performance, including missed approach climb gradient and landing distance? Yes

Aircraft tailwind limits are either 15kts or 10kts

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Industry Feedback and Final Risk Assessment Workshop

Following finalisation of controls based on HAZID and feedback from operators and Airservices, a final risk assessment workshop was conducted, noting that a major airline (Airline 7) had provided late feedback on 22 March, the day before the workshop, that they could not fully accept 10kts but that 7kts provided an acceptable buffer for those aircraft with 10kts operating limit. As a result, the workshop also considered residual risk for 7kts and 10kts and a suggestion was made at the end of the workshop to consider 10kts for departure and 7kts for arrival.

| Operator | Contact | Role |
|--------------|--|--|
| Qantas Group | [REDACTED] [REDACTED] [REDACTED] [REDACTED] | [REDACTED] [REDACTED] [REDACTED] |
| Virgin | [REDACTED] | [REDACTED] |
| Airservices | [REDACTED] [REDACTED] [REDACTED] | [REDACTED] [REDACTED] |
| BAC | [REDACTED] [REDACTED] [REDACTED] [REDACTED] | [REDACTED] [REDACTED] [REDACTED] [REDACTED] |

7. METHODOLOGY

Design integrity – difference to ICAO

Subject Matter Experts (SME) from airline and non-airline operators, Airservices ATC, and BAC validated the suitability of using existing procedures with additional controls at Hazard identification and Risk assessment workshops to adequately manage any additional threats. The SME who participated in these workshops or provided input after distribution of the workshop outcomes, are appropriately qualified and adequately represent all of industry impacted by the change. This supports the design integrity of the local application of the change.

To support the design integrity, international standards and recommendations were also reviewed and global examples of the safe application of 10kts considered with reference to those standards and recommendations.

Whilst there are no ICAO SARPS that preclude runway nomination with 10kts tailwind, ICAO PANS OPS Doc 8168 and PANS ATM Doc 4444 identify that noise abatement should not be determining factor for runway nomination when the tailwind exceeds 5kts including gusts. PANS OPS and PANS ATM are not considered as standards but more as international guidelines and there are international examples of variation from the 5kt criteria.

Since 1981, the FAA allows local runway safety team analysis to determine acceptably safe preferential runway program criteria, with the caveat that pilots ultimately have the authority to determine runway for the safe operation of the aircraft.

This Safety Program has thoroughly applied this method of analysis and demonstrates that, while PANS provides a standardised approach to ensuring safety margins between tailwind nominated (5kts) and operational tailwind limits (10kts +), a robust local safety assessment ensuring adequate controls provides sufficient assurance to operate up to those operational tailwind limits.

The most relevant international example is LAX who has operated a preferential runway use policy including Over Ocean Operations (Same runway mode as SODPROPS) since 1972. The Over Ocean Operations policy operates under FAA Order 8400.9 1981 which specifies a 7kt tailwind limit and includes provision for waivers to the criteria in the Order to accommodate site specific situations, with justification, a safety analysis, and supporting data. The Over Ocean Operations policy operates under such a waiver to allow ATC to nominate that noise preferred runway mode with 10kts tailwind between 0000 and 0630am local time.

LAX has been operating long- term night operations with 10kts tailwind demonstrating integrity of design based on runway safety team analysis to determine acceptably safe preferential runway program criteria, with the caveat that pilots ultimately have the authority to determine runway for the safe operation of the aircraft. The Brisbane Airport SODPROPS application applies the same methodology to ensure the departure from ICAO guidelines are thoroughly assessed against local operations and operating environment.

The Brisbane Airport SODPROPS application is safer by design than that conducted at LAX due to the wider distance between runways, STAR connected 3D approaches, limiting crosswind to 15kts (proposed control 1), and higher visibility and cloud base criteria.

The results from these safety activities and the methodology applied to identify and mitigate differences from ICAO PANS ATM and PANS OPS confirm the integrity of how to ensure change to tailwind can be implemented safely for SODPROPS operations, and that all local factors including operator concerns are addressed.

Design integrity – benefits and previous use of 10kts

BAC provided 11 years of wind data to define the following significant potential benefit in terms of time available for SODPROPS use between 10pm and 6am, providing noise and overflight relief to Brisbane residents affected by the new runway system.

- During Summer
 - Tailwind up to 5kts provides SODPROPS availability 54% of the time when the runway is dry
 - Tailwind up to 10kts provides SODPROPS availability 90% of the time when the runway is dry
- During Winter
 - Tailwind up to 5kts provides SODPROPS availability 52% of the time when the runway is dry
 - Tailwind up to 10kts provides SODPROPS availability 95% of the time when the runway is dry
- Note that the runways are wet for approximately 5% of those hours and the actual over the bay % is around 10% higher currently when including non SODPROPS operations during this period as aircraft will either be landing or taking off over the bay when SODPROPS is not operating.

In 2016 Airservices provided a Safety Statement (SAF-SS-16031 Version 1.0) in support of a submission for exemption against the MOS to continue to use 10kts tailwind for Runway Reciprocal Operations. (attached) The Safety Statement provided the following history, incident data, and AIP reference to demonstrate that 10kts tailwind during that time presented minimal risk to operations.

“The 10kts downwind criterion has been in use in excess of 25 years. There has been no runway excursions in that time. Occurrence data from 2010 to current was reviewed for the RRO time period. Specifically, from the 106 reported occurrences the 18 reported Go Around occurrences were reviewed. Of these:

- 9 were considered not applicable as were not related to RRO
- 4 occurrences could not determine the nominated runways or wind
- 4 occurrences took place when the downwind was 5kts or less, and
- 1 occurrence took place when the quoted downwind was 8kts.

Where the quoted downwind was 8kts the report also states that the 8kts was indicated on the anemometers. The pilot reported 15kts in the ‘flare’. The plane was re-sequenced for Runway 01 and RRO was cancelled.

For those operations unable to accept a 10kt downwind AIP makes provision for the pilot in command to select an into wind runway if operationally required.

Noise Abatement Procedures AIP ENR 1.5, 9.1.2 states that noise abatement will not be a determining factor in runway selection under the following circumstance:

(e) When, in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration

- *The occurrence data from 2010 also reports 2 occasions where aircraft requested and were provided the into wind runway for departures from Brisbane”.*

The design results in a measurable benefit to the Brisbane community, is supported by historical safety data, and the risk assessment conducted with industry determined that implementation of proposed procedural controls ensures the risk to aircraft operations is minimised through the proposed controls. Concerns were raised at the final risk assessment workshop that 10kts does not provide a buffer for those aircraft who would be operating at their tailwind limit, specifically for threats associated with arriving aircraft.

Design safety management activities

The following safety activities have been conducted as part of this Safety Program.

Consultation and communication with stakeholders:

- BAC letter of request to Airservices to provide support for the proposal, and Airservices letter of response
- BAC discussion with CASA to confirm it is acceptable to CASA for BAC to submit the proposal for exemption of CASR MOS Part 172 with Airservices and operator support
- Letter to all operators requesting attendance at Hazard Identification and Risk Assessment workshop and support to review
- Airservices, BAC, Operator attendance and input at Hazard Identification and Risk Assessment Workshop
- Request for Airservices review of threats, controls and proposed controls from workshop and any further information
- Request to all operators to review threats, controls and proposed controls from workshop, provide fleet operational tailwind limits and any additional threats and/or suggested controls
- Once all feedback received and controls finalised, agreement from Airservices on proposed controls
- Risk assessment workshop with Airservices, BAC and operators for final risk assessment to compare existing and residual risk under BAC risk assessment framework (likelihood and consequence) for all identified threats



ATTACHMENTS

| No. | Title and version |
|-----|---|
| 1 | Final risk assessment (Excel spreadsheet) |

| Item No. | Source | Status | Date | Participants Initials | Risk/Issue | Cause | Consequences Qualitative | Compliance / Usability | Cost | Time | Health & Safety | Environment | Stakeholders | Image & Reputation | Primary Risk | Current Controls | Current Consequence | Current Likelihood | Current Risk Rating | Control Rating | Future Controls | Residual Consequence | Residual Likelihood | Residual Risk Rating | Risk Treatment | Person's Responsible | Due Date | BRISBANE AIRPORT AUSTRALIA | |
|------------|----------|--------|------------|-----------------------|--|------------------|---|------------------------|------|------|-----------------|-------------|--------------|--------------------|-----------------|--|---------------------|--------------------|---------------------|----------------|---|----------------------|---------------------|----------------------|--|----------------------|----------|----------------------------|----|
| Tailwind 1 | Tailwind | Open | 8/02/2021 | | Missed Approach due to tailwind | 5 Knot Tailwind | Increased likelihood of Unstable Approach or Missed Approach due to wind gusts; exceeding operational tailwind limits | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection "when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration"; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BACI/Airservices/Airline forum. | Minor | Unlikely | Low (L4) | Good | Existing operation - current controls only | Minor | Rare | Low | Accept the risk | | | | |
| Tailwind 1 | Tailwind | Open | | | Missed Approach due to tailwind | 7 Knot Tailwind | Increased likelihood of Unstable Approach or Missed Approach due to wind gusts; exceeding operational tailwind limits | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection "when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration"; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BACI/Airservices/Airline forum. | Moderate | Unlikely | Medium | Good | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; During Brisbane SODPROPS when tailwind is >5kts, ATC will request that all pilots provide 500ft winds and record on ATIS. During Brisbane SODPROPS, ATC to allow sufficient spacing between arrivals in the event that a preceding arrival may, due to tailwind, need to roll through to the end of RWY19R instead of vacating on a rapid exit taxiway. During SODPROPS, when tailwind is different to ATIS, ATC to provide tailwind on first contact and with landing clearance, and for departures with take-off clearance (tailwind advice when different to ATIS is existing practice but needs to be in procedures) | Minor | Unlikely | Low | Implement controls and accept the risk | | | | |
| Tailwind 2 | Tailwind | Open | 8/02/2021 | | Missed Approach due to tailwind | 10 Knot Tailwind | Increased likelihood of Unstable Approach or Missed Approach due to wind gusts; exceeding operational tailwind limits | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection "when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration"; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BACI/Airservices/Airline forum. | Moderate | Possible | Medium (M5) | Weak | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; During Brisbane SODPROPS when tailwind is >5kts, ATC will request that all pilots provide 500ft winds and record on ATIS. During Brisbane SODPROPS, ATC to allow sufficient spacing between arrivals in the event that a preceding arrival may, due to tailwind, need to roll through to the end of RWY19R instead of vacating on a rapid exit taxiway. During SODPROPS, when tailwind is different to ATIS, ATC to provide tailwind on first contact and with landing clearance, and for departures with take-off clearance (tailwind advice when different to ATIS is existing practice but needs to be in procedures) | Moderate | Unlikely | Medium (M3) | Requires additional controls for arriving operations before accepting the risk | | | | -- |
| Tailwind 3 | Tailwind | Open | 19/03/2021 | | Tail Strike or Hard Landing | 5 Knot Tailwind | Tail Strike or hard landing due to excessive tailwind particularly with quartering tailwind above 25kts; continuing to land when unstable on approach | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection "when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration"; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BACI/Airservices/Airline forum. | Major | Rare | Medium (M1) | Good | Existing operation - current controls only | Major | Rare | Medium (M1) | Accept the risk | | | | |
| Tailwind 1 | Tailwind | Open | | | Tail Strike or Hard Landing | 7 Knot Tailwind | Tail Strike or hard landing due to excessive tailwind particularly with quartering tailwind above 25kts | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection "when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration"; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BACI/Airservices/Airline forum. | Major | Unlikely | Medium | Good | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; During SODPROPS, when tailwind is different to ATIS, ATC to provide tailwind on first contact and with landing clearance. During Brisbane SODPROPS when tailwind is >5kts, ATC will request that all pilots provide 500ft winds and record on ATIS. | Major | Rare | Medium | Controls effective, accept risk | | | | |
| Tailwind 3 | Tailwind | Open | 19/03/2021 | | Tail Strike or Hard Landing | 10 Knot Tailwind | Tail Strike or hard landing due to excessive tailwind particularly with quartering tailwind above 25kts | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection "when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration"; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BACI/Airservices/Airline forum. | Major | Possible | High (H2) | Weak | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; During SODPROPS, when tailwind is different to ATIS, ATC to provide tailwind on first contact and with landing clearance; During Brisbane SODPROPS when tailwind is >5kts, ATC will request that all pilots provide 500ft winds and record on ATIS. | Major | Unlikely | Medium (M4) | Controls effective to manage quartering tailwind issue but not tail strike or hard landing. Risk not accepted for arriving aircraft. | | | | |
| Tailwind 4 | Tailwind | Open | 19/03/2021 | | Deviations to published procedures due to windshear, leading to reduced separation | 5 Knot Tailwind | Late reaction to Unstable Approach; Late Missed Approach; Due to unforecast/unexpected windshear | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection "when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration"; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BACI/Airservices/Airline forum. | Moderate | Rare | Medium | Good | Existing operation - current controls only | Moderate | Rare | Low (L3) | Accept the risk | | | | |

| Item No. | Source | Status | Date | Participants Initials | Risk/Issue | Cause | Consequences Qualitative | Compliance / Usability | Cost | Time | Health & Safety | Environment | Stakeholders | Image & Reputation | Primary Risk | Current Controls | Current Consequence | Current Likelihood | Current Risk Rating | Control Rating | Future Controls | Residual Consequence | Residual Likelihood | Residual Risk Rating | Risk Treatment | Person's Responsible | Due Date | BRISBANE AIRPORT AUSTRALIA | |
|------------|----------|--------|------------|-----------------------|--|------------------|--|------------------------|------|------|-----------------|-------------|--------------|--------------------|-----------------|---|---------------------|--------------------|---------------------|----------------|--|----------------------|---------------------|----------------------|--|----------------------|----------|----------------------------|--|
| Tailwind 1 | Tailwind | Open | | | Deviations to published procedures due to windshear, leading to reduced separation | 7 Knot Tailwind | Late reaction to Unstable Approach; Late Missed Approach; Due to unforecast/unexpected windshear | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration”; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BAC/Airservices/Airline forum. | Moderate | Unlikely | Medium | Satisfactory | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; | Moderate | Rare | Low | Accept the risk | | | | |
| Tailwind 4 | Tailwind | Open | 19/03/2021 | | Deviations to published procedures due to windshear, leading to reduced separation | 10 Knot Tailwind | Late reaction to Unstable Approach; Late Missed Approach; Due to unforecast/unexpected windshear | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration”; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BAC/Airservices/Airline forum. | Major | Possible | High (H2) | Weak | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; | Major | Unlikely | Medium (M4) | Further controls required to accept the risk for arriving aircraft | | | | |
| Tailwind 4 | Tailwind | Open | 19/03/2021 | | Reduced in flight or climb performance | 5 Knot Tailwind | | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots, including missed approach gradient, allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration”; airline operators SOP stable by 1000ft or fly published missed approach; Climb gradient requirements for take off can be satisfied; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BAC/Airservices/Airline forum. | Insignificant | Rare | Low (L1) | Good | Existing operation - current controls only | Insignificant | Rare | Low (L1) | Accept the risk | | | | |
| Tailwind 1 | Tailwind | Open | | | Reduced in flight or climb performance | 7 Knot Tailwind | | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Pilots trained to fly published missed approach procedures; Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration”; airline operators SOP stable by 1000ft or fly published missed approach; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BAC/Airservices/Airline forum. | Minor | Unlikely | Low | Good | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; During SODPROPS, when tailwind is different to ATIS, ATC to provide tailwind on first contact and with landing clearance; During Brisbane SODPROPS when tailwind is >5kts, ATC will request that all pilots provide 500ft winds and record on ATIS. | Minor | Unlikely | Low | Implement controls and accept the risk | | | | |
| Tailwind 4 | Tailwind | Open | 19/03/2021 | | Reduced in flight or climb performance | 10 Knot Tailwind | | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Either CAT I Instrument Landing System; CAT II HIAL or RNP AR; SODPROP Procedures - Cloud base – above 2500 feet and visibility above 8km, RWY condition – dry, Tailwind component on CATIS, ATC provide variation in wind when fluctuating by 5kts or more; Excess of 5kts will mean suspension of SODPROPS by ATC, 3D approaches STAR connected ILS or RNP AR provide maximum stability on approach. Operator procedures for pre landing safety briefing, including missed approach procedures; Landing distance assessment by all pilots, including missed approach gradient, allow for tailwind and operators indicate there is sufficient runway length for 10kts tailwind for all aircraft types; Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration”; airline operators SOP stable by 1000ft or fly published missed approach; Climb gradient requirements for take off can be satisfied; Industry wide operational material available in relation to tailwind operations; All existing operators have aircraft capability to accept 10kt tailwind at MTOW on Brisbane Runways; RWY Lengths - (RWY 19R 3300 m - 10,827 ft) (RWY 01R 3500m - 11483 ft); RWY Widths - (RWY 19R 60m) (RWY 01R 45m); RWY's grooved, RWY strips 300m, graded 150m; RWY CL 15m - CAT II; Location of anemometer RWY19R provides accurate wind information for landing; Ongoing Stakeholder Engagement to increase pilot and ATC awareness and address any issues/concerns with operational risks through LRST and BAC/Airservices/Airline forum. | Minor | Possible | Medium (M3) | Satisfactory | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; During SODPROPS, when tailwind is different to ATIS, ATC to provide tailwind on first contact and with landing clearance; During Brisbane SODPROPS when tailwind is >5kts, ATC will request that all pilots provide 500ft winds and record on ATIS. | Minor | Possible | Medium (M3) | Implement controls and accept risk | | | | |
| Tailwind 4 | Tailwind | Open | 19/03/2021 | | Increased likelihood of runway excursion due to increased take off and/or landing distance outside operational limits dry runway | 5 Knot Tailwind | Insufficient runway length for operational requirements with tailwind and/or wind shear | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Crews must perform a performance calculation for any tailwind take off or landing. Operational limit for all aircraft regularly operating at Brisbane Airport is 10kts and above. Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration” | Minor | Rare | Low (L2) | Good | Existing operation - current controls only | Minor | Rare | Low (L2) | Accept the risk | | | | |
| Tailwind 4 | Tailwind | Open | 19/03/2021 | | Increased likelihood of runway excursion due to increased take off and/or landing distance outside operational limits | 7 Knot Tailwind | Insufficient runway length for operational requirements with tailwind and/or wind shear | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Crews must perform a performance calculation for any tailwind take off or landing. Operational limit for all aircraft regularly operating at Brisbane Airport is 10kts and above. Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration” | Moderate | Rare | Low | Good | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; AIP DAP NAP YBBN to be updated (new text in blue) Between 2200 and 0600 local time pilots are requested to minimise the use of reverse thrust when operationally acceptable, except during SODPROPS; | Moderate | Rare | Low | Implement controls and accept the risk | | | | |
| Tailwind 4 | Tailwind | Open | 19/03/2021 | | Increased likelihood of runway excursion due to increased take off and/or landing distance outside operational limits | 10 Knot Tailwind | Insufficient runway length for operational requirements with tailwind and/or wind shear | Y | Y | Y | Y | Y | Y | Y | Health & Safety | Crews must perform a performance calculation for any tailwind take off or landing. Operational limit for all aircraft regularly operating at Brisbane Airport is 10kts and above. Pilot has the authority according to AIP to operationally require a runway ie aircraft noise will not be a determining factor in runway selection “when in the opinion of the pilot in command, safety would be prejudiced by runway conditions or any other operational consideration” | Moderate | Unlikely | Medium (M3) | Reasonable | For Brisbane SODPROPS reduce crosswind limit to 15kts including gusts; AIP DAP NAP YBBN to be updated (new text in blue) Between 2200 and 0600 local time pilots are requested to minimise the use of reverse thrust when operationally acceptable, except during SODPROPS; | Moderate | Unlikely | Medium (M3) | Implement controls and accept risk for departure but not arrival | | | | |