

Norfolk Island Airport Risk Assessment

Airport SMS Risk Assessment for A320 RPT operations and the risk associated with delaying the runway resurfacing from anticipated 2019-2020 timeframe to a 2021-2023 program.

Business areas affected.

**Corporate
Goals
Operational**

Risks identified.

**Aviation Safety
Compliance
Business
Financial**

Consequences of risk with no mitigation.

1. Aviation Safety

Potential for multiple fatal aviation safety occurrences causing multiple fatalities (3 or more) due to a major issue of compliance and aviation safety regulations leading unsafe aviation operations

Scenario

- a. A piece of the runway surface breaks loose and is ingested into the engine on take-off with potential for flameout and crash.
- b. Runway fragment breaks off on landing and strikes the aircraft rendering it unserviceable.
- c. Runway fragments break off and need repair prior to operations resuming, estimated 7-10days of runway closure

It should be noted here that runway closure will ultimately affect all commercial, civilian and medical evacuation flights, there may be approval for military flights only

2. Compliance

- a. Major issue of compliance with aviation safety regulations and leading to potential for unsafe aviation operations.
- b. Loss of regulatory approval to operate

Scenario

- a. The runway surface is assessed by a CASA inspector or their representative and deems the surface unsuitable for ongoing operations and closes the runway removing licence to operate
- b. The Captain of the aircraft deems the runway unsafe to operate from and reports to CASA who remove approval for operations
- c. The Airport Manager deems the runway to be unsuitable for operations and informs CASA who then assess the runway and remove approval to operate

3. Business

- a. Threatens the ongoing existence of the organisation.
- b. Loss of public confidence
- c. Loss of airline operator confidence

Scenario

- a. A part of the runway gives way which closes the runway. The aircraft is now stranded on Norfolk Island. Repairs will likely take at least of seven days with no flights operating.
- b. Tourism. Public loses confidence in the Council and airport staff causing staff stress and potential problems
- c. Tourism. Operator loses confidence in Norfolk Island Airport and refuses to operate

4. Financial

>60% of budget affected

Scenario

- a. Operator loses confidence in Norfolk Island Airport and refuses to operate
- b. CASA closure whilst lengthy repairs take place leading to business failure
- c. Council revenue not meeting targets, Norfolk Island programs cancelled
- d. Penalties applied against NIRC for aircraft stranded on Norfolk Island or damaged
- e. Staff unable to be retained

Assessed risk level.

Using the Australian Civil Aviation Safety Authority matrix the risk for delaying the resurfacing of the operational areas of Norfolk Island International Airport is:

9 Catastrophic

Aviation safety $3 + 5 = 8$
 Compliance $4 + 5 = 9$
 Business $3 + 5 = 8$
 Financial $3 + 5 = 8$

Risk Matrix

		Insignificant 0	Minor 1	Moderate 2	Major 3	Severe 4	Catastrophic 5
Almost Certain	5	5	6	7	8	9	10
Likely	4	4	5	6	7	8	9
Possible	3	3	4	5	6	7	8
Unlikely	2	2	3	4	5	6	7
Rare	1	1	2	3	4	5	6
Extremely Rare	0	0	1	2	3	4	5

Risk mitigation strategies.

1. Resurface the runway as soon as practical
2. Whilst awaiting the resurfacing the airport staff will, with the help of all council assets applicable:
 - a. Procure a crack sealing machine and media from the 2018/19 budget
 - b. Procure a spray sealing machine from 2018/19 budget
 - c. Procure additional jet black seal (runway seal)
 - d. Airport staff will attempt to maintain cracks and joins from further deterioration using the above equipment but are in no way responsible should the runway surface give way.
3. Aerodrome staff will conduct runway inspections prior to and before each and every landing on Norfolk Island Aerodrome

Notes:

- a. Runway 04/22 was not completely resurfaced in the previous 2005 runway program. A portion of runway 04 /22 will need to be assessed and potentially deemed unserviceable thus requiring the runway length to be lessened by some 400 meters. This is length change is required due to the condition of the runway and with independent technical advice it is not possible to repair the surface with the current road maintenance equipment on Norfolk Island.
- b. RWY 04/22 also will require an amendment in the AIP ERSa to ensure that no aircraft with a tyre loading greater than 1410KPA operates upon it.
- c. The intersection of RWY 11/29, 04/22 by the fire station is the most likely to cause an issue with the surface in extremely poor repair and subject to the greatest prolonged loads whilst the aircraft is turning.
- d. RWY 11 /29 has points of surface cracking causing islands on asphalt which have been sealed in temporarily and require constant supervision. Should one of these "island" pieces of asphalt break free it will need to be repaired with concrete. Estimated repair time with curing is likely to be 7-10 days which will mean the runway will be closed to RPT traffic.
- e. Apron parking bays will require constant monitoring to reduce surface damage.
- f. RWY 29 has media breaking free on the joints of requiring constant supervision.
- g. In the opinion of Norfolk Island Regional Council independent technical expert **Dr Greg White:**
 - a. The runway is now in a worse condition than it was prior to the previous resurfacing in 2006.
 - b. It is highly likely that deferring the overlay by a further 2-3 years, will result in a significant distress under ongoing A320 usage that will render the runway temporarily unserviceable.
 - c. **Delaying the resurfacing of Norfolk Island Aerodrome will expose Norfolk Island Regional Council to the risk of the runway becoming unserviceable with the repair period being both lengthy and expensive to the council and community.**



A Q Allan Airport Manager YSNF



Dr Greg White Independent Consultant