



TOBERMORY AIRPORT ASSESSMENT – Tobermory, Ontario

Client: Municipality of Northern Bruce Peninsula



4 December 2017

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Aerodrome Assessment



- **STUDY PURPOSE:** The purpose of the study was to undertake a high-level operational and safety assessment of the airport and its uses, in particular, the use of the airport for aerial tours of the area.
- **AIRPORT'S MISSION, OPPORTUNITIES & CHALLENGES:**
 - The Tobermory Airport (CNR4) is an important community asset; however, the financial burden to operate, maintain and periodically rehabilitate the facility can be challenging for a small community. Nevertheless, the Municipality does well in minimizing costly services and manage it prudently.
 - Beyond providing access to local and itinerant (visiting) aircraft owners, the airport is an important base for: (i.) air ambulance services (Ornge), (ii.) search and rescue, (iii.) law enforcement, and (iv.) disaster recovery, particularly for isolated areas on the peninsula.
 - Airports similar to CNR4 derive a majority of their revenue from fuel sales (either through direct sales or a concession fee). MNBP should continue to seek opportunities to maximize fuel sales revenues, while remaining competitive. Given the region's rich tourism offerings, MNBP should seek to attract private aircraft owners/operators to the area via the airport.

Aerodrome Assessment – Airside Infrastructure



- **CATEGORY:** CNR4 is a “registered aerodrome” which requires that it meet CAR 301. A “certified aerodrome or an airport” must meet requirements under CAR 302, including TP312 standards. An aerodrome must be certified if deemed to be in a “built-up area”, serves a commercial air carrier, or in the public’s best interest. Owners also obtain certification in order to attract operators that seek the certainty/safety that a certified airport offers. CNR4 will not need to be certified in the near future. However, for purposes of this assessment, TP312 5th edition was the benchmark standard.
- **CHARACTERISTICS:**
 - CNR4 has a single, 969.3 m (3,180’) x 18.3 m (60’), non-instrument runway.
 - Based on CNR4’s use and existing infrastructure, the aerodrome falls under Aircraft Group Number (AGN) I, which limits the airport’s use to aircraft with a wingspan of < 14.94 m (49’) and approach speeds of < 121 knots, including all piston and some turbo-prop aircraft, such as the Beech King Air B100 and Cessna 414 Chancellor.
 - In order to accommodate larger turbo-prop aircraft, such as the Cessna 208 Caravan, the runway width would need to be increased to 23 m (75’) plus a number of obstacles eliminated.

Aerodrome Assessment – Obstacle Environment



- **OBSTACLE LIMITATION SURFACES:**

- According to the CFS, RWY 30 threshold is displaced 137.2 m (450'), presumably for the approach to clear the trees to the southeast; however, this displacement is not marked on the field.
- Near the Rwy 12 end, trees flanking the runway strip appear to infringe into the transition surface.
- There may be trees within the properties on the north side of Warner Bay Road which may be infringing into the RWY 12 approach path. MNBP may need to seek approval of property owners for removal or trimming of infringing trees

Aerodrome Assessment Findings – Helicopter Operations



- Fuel tanks should be located a minimum of 15.2 metres from the edge of a FATO (CAR 325.46 and NFPA 418). In the case of Tobermory, the parking area (TLOF) and FATO are not collocated. However, consideration should be given to the use of a trailer or truck-bed mounted tank for conveyance of fuel to the helicopter.
- There should be fuel spill containment equipment available on-site. None was observed.
- Smoking should be restricted within 15.2 metres of a fuel tank or dispensing station, and “No Smoking” signs erected at entrances (CAR 325.46 and NFPA 418).
- The helicopter parking area should be located further (at least 35 to 40 metres) from the parking lot and areas accessible to the public, in order to mitigate injury and damage due to rotor downwash.
- Ensure that operate’s insurance coverage includes damage/injury caused by rotor downwash.

Aerodrome Assessment Findings – Aerial Helicopter Tours



- **OBSERVATIONS:** Aviotec observed seasonal aerial tour operations at the airport and within the community during the weekend of August 12-13. No aerial tours by Owen Sound Flight Services were directly observed; however a number of tours by Blue Heron Tours (BHT) were observed.
- **FINDINGS:**
 - BHT's R44 helicopter is parked at the end of Taxiway Alpha near the main terminal gate, where passengers are loaded/unloaded.
 - For departures, helicopter pilots taxi under "ground effect" along Alpha to near the runway, and then begin the take-off procedure toward the south-southwest.
 - Pilots then turned toward the north-northwest, avoiding nearby residences to the northwest of the airport. Aircraft appeared to be at or above 1000 ft AGL by the time they crossed Warner Bay Rd.
 - Tour helicopter pilots appeared to maintain at least 1000 ft AGL during all flight segments.
 - On a purely subjective basis, noise from tour helicopters was barely discernable when situated in the Tobermory town area.

Airport and Aircraft Noise – Regulatory Considerations



- **AIRCRAFT NOISE:** In Canada, aircraft noise is regulated through certification standards (prescribed by the International Civil Aviation Organization [ICAO]), which Transport Canada sets, regulates and enforces. Each aircraft operating in Canada must meet these standards. This same approach is used globally.
- **AIRPORT NOISE:** In Canada, there are no Federal or Provincial standards or regulations which actually limit noise generated from an airport. Rather the approach has been to control incompatible land uses in the vicinity of airport lands, such as residential development. There are only a few exceptions in the world, where airport operations have been limited by setting a defined upper limit for a specific noise metric, such as is the case at Billy Bishop Toronto City Airport through a tripartite agreement between the City, Province and the Federal government.
- **FEDERAL REGULATIONS:** The Canadian Aviation Regulations (CAR 602.105) do allow for the Minister of Transport to establish noise abatement procedures and noise operating restrictions at specific airports in order to mitigate the impact of aircraft noise. As well, the Aeronautics Act permits the Minister of Transport to enact a compatible land use zoning regulation where all attempts to convince a municipality not to allow incompatible development have been unsuccessful. However, these powers are rarely exercised in Canada.

Airport and Aircraft Noise – Regulatory Considerations



- **PROVINCIAL AND MUNICIPAL REGULATIONS:** Neither a province nor a municipality can regulate aircraft noise or airports; they can only regulate land uses proposed at or near an airport, or which would be affected by, aircraft noise. At the provincial level, there are two Policy and Guideline documents that are applicable to the establishment of aircraft noise assessment criteria (MMAH - Provincial Policy Statement [2014] and Ontario MOE Guideline NPC-300 [2013]).
- **NORTHERN BRUCE PENINSULA:** MNBP does have a noise control by-law in force which permits any activity approved by the Municipality to be exempt, hence the charter operation would be exempt.
- **TRANSPORT CANADA GUIDELINES:** As well, Transport Canada has established guidelines (Document No. TP 1247), for ensuring compatible land uses on and adjacent to airport lands, and specifically to aircraft noise and its community impacts. In its guidelines, Transport Canada recommends that new residential construction or development should not be undertaken in areas with NEF of 30 or greater..

Aircraft Noise Abatement Procedures (NAP)



- **PROCESS FOR ESTABLISHING NAPs:** Typically an airport owner will initiate the development of an NAP. The procedure to establish a NPA is as follows:
 - Following an extensive consultation process involving the local community and aviation stakeholders, the airport owner, with the assistance of a consultant, prepares the NAP proposal.
 - The NAP proposal is submitted to Transport Canada (TC) for consideration.
 - The NAP proposal is thoroughly studied by TC's Domestic Aircraft Noise & Emissions Committee to ensure that it is in the public's best interest and that there are no risks to aviation safety.
 - If accepted, TC will initiate publication of the NAP by Nav Canada in the Canada Flight Supplement and Canada Air Pilot.
- **ENFORCEMENT:** All aircraft operators must comply with published NAPs, which are monitored by Nav Canada and enforced by Transport Canada. Penalties for violating these procedures may reach a maximum of \$5,000 for an individual and \$25,000 for a company.

Aircraft Activity Complaints



- Aircraft activity complaints have been focussed in 3 main areas (Big Tub Harbour, Dunks Bay Road and immediately north of the airport). In general terms, the comments have included:
 - Noise impact on residential quality of life, particularly during evening hours.
 - Low flying aircraft (below 1000' AGL).
 - Public safety issues in the event of an aircraft emergency (i.e. engine failure).
 - Impact on wildlife and the natural environment.
- Based on a review of previous correspondence and consultations (conducted as part of this study), little to none of the comments and concerns expressed were directed at the fixed wing aerial tours.

Case Studies – Helicopter Aerial Tours



- Helijet – Grouse Mountain, BC:

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Recommended Changes to Aerial Helicopter Tour Procedures

- **RECOMMENDED PROCEDURE CHANGES:** The following are recommended changes to improve flight safety and to mitigate noise exposure to residential areas along the flight route. These should be negotiated with the operator (Blue Heron Tours), failing compliance, MNBPO could seek to have the NAPs formally published by Nav Canada.
 - **DEPARTURES:** Depart over the airfield environment while climbing to 1000' AGL circuit height before proceeding over the trees and adjacent properties. (By staying within the confines of the airfield, the pilot will have the option to abort to the runway in the event of an engine failure at low speed and low altitude.)
 - **ARRIVALS:** On arrival maintain as least 1000' AGL and join circuit for RWY 30 thereby avoiding nearby residential properties. Plan approach to mid-way down the runway either straight in or button hook turn into wind, then continue to taxi under “ground effect” to TLOF. This would keep the noise footprint over the un-populated areas near the airport.
 - **CIRCUIT HEIGHTS:** Although legally pilots can stay at or above 1000' AGL, it is recommended that portions of the circuit (when not over key tourist areas) be conducted at 1500' to 2000' AGL.
 - **VARYING CIRCUIT ROUTING:** To mitigate noise impacts, consideration should be given to varying the circuit routes slightly through the day while travelling to the areas of interest.
 - **HOURS OF OPERATION:** The aerial tour agreements state hours of operations to be 09:00 to 18:00, with an exception for “special tours, charters ...”. However, during the 2017 season, these exceptions appear to have become the norm. Consideration should be given to limiting hours to 09:00 to 19:00, with a much tighter exception rule on late arrivals. (Internationally for aircraft noise assessments, 19:00 is the accepted start of “evening” hours and reduced noise exposure.)

Aerodrome Assessment – Proposed Helicopter Tour Flight Pattern

