



AERONAUTICAL STUDY

TRANSPONDER REQUIREMENT IN THE VICINITY OF RED DEER, ALBERTA

Executive Summary

Although the number of aircraft movements at the Red Deer Regional Airport (CYQF) has declined from the traffic levels for 2018, the number of movements represent an increase in aircraft movements since 2016. Flight training accounts for a significant portion of aircraft movements. The increase in traffic, combined with student pilots who are learning effective phraseology, have significantly increased complexity and workload.

The implementation of wide-area multilateration (WAM) in, completed late May 2020, allows the Red Deer tower and the Calgary Enroute controllers to observe and identify aircraft within the CZ from 100 to 200 ft AGL, and above and within a 10-nautical mile radius of the airport, from 800 to 10,000 ft AGL. The secondary surveillance radar (SSR) (from Edmonton and Calgary) and WAM systems provide detection and tracking of aircraft targets but require a cooperative target that provides information from the aircraft's Mode C transponder. The controllers will have to ask pilots of aircraft without a functioning transponder for position report updates as required to aid in the provision of traffic information to other pilots to supplement the mandatory reports.

There are fourteen (14) private aerodromes (both registered and non-registered) located between 5 and 15 NM from the Red Deer airport. Some of the owners of these aerodromes have aircraft that are not equipped with transponders. The current base of the 15 NM Class E transition area (TA) is 700 ft AGL. Establishing a transponder requirement in the TA would restrict access or result in pilots of non-transponder aircraft having to fly at an altitude below 700 ft AGL. Although the number of aircraft movements flown in accordance with instrument flight rules (IFR) is low, establishing a transponder requirement in the TA would allow the Calgary Enroute controllers to provide pilots of arriving IFR aircraft with information on VFR aircraft in the area of the IFR approach procedures. Raising the base of the TA from 700 ft AGL to 4,000 ft ASL will provide VFR pilots the option of flying in uncontrolled airspace at an increased altitude to avoid obstacles when the weather does not permit flight in controlled airspace.

The study recommends that:

- The floor of the 15 NM Class E TA be raised from 700 ft AGL to 4,000 ft ASL; and
- A transponder requirement be established in the 15 NM Class E TA



These changes are planned to take effect 25 February 2021 at 0901 UTC. The appropriate aeronautical publications will be amended. Refer to the appropriate AIP Supplement until the next editions of the Calgary and Edmonton VFR Navigation Charts (VNC) AIR 5005 and 5015 are available in April 2021.

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