AERONAUTICAL CHARTING MEETING
Instrument Procedures Group
Meeting 21-02 – October 25-26, 2021

RECOMMENDATION DOCUMENT

FAA Control # 21-02-359

<u>**Subject:**</u> CNF used in airways

<u>**Background/Discussion:**</u> The PCG states the following regarding CNF:

> COMPUTER NAVIGATION FIX (CNF)− A Computer Navigation Fix is a point defined by latitude/longitude coordinate and is required to support Performance−Based Navigation (PBN) operations. A five−letter identifier denoting a CNF can be found next to an "x" on en route charts and on some approach charts. Eventually, all CNFs will be labeled and begin with the letters "CF" followed by three consonants (e.g., 'CFWBG'). CNFs are not recognized by ATC, **are not contained in ATC fix or automation databases**, and are not used for ATC purposes. Pilots should not use CNFs for point−to− point navigation (e.g., proceed direct), **filing a flight plan**, or in aircraft/ATC communications. Use of CNFs has not been adopted or recognized by the International Civil Aviation Organization (ICAO).
> (REFER to AIM 1−1−17b5(i)(2), Global Positioning System (GPS).

CNF have been adapted into airways under the following common situations: at junctions between airways where they intersect; at dog legs in conventional routes; and at airways that transit the US/Canada border. Recently we received a pilot report from a pilot on an international flight plan from Europe through Canada airspace to a US destination. Montreal Center advised the pilot that the CNF in the Q route at the border and included in the aircraft FMS route detail description was causing issues with ADS-C, as it was not adapted by NavCanada. The filed route did not specify the CNF, but when the Q route was expanded in the FMS, it exposed the CNF.

Modern RNAV FMS and GPS systems and ICAO standard PANS ATM Doc 4444 which defines the filing syntax for ICAO flight plans is based on point to point navigation and does not support the use of radial routes or airway to airway syntax without specifying an entry_fix and exit_fix for each airway. Neither does CPDLC. So use of a CNF, rather than a named fix, can cause issues with these routes. The current charting standards shows CNF fixes that are included in routes to be charted in parenthesis.
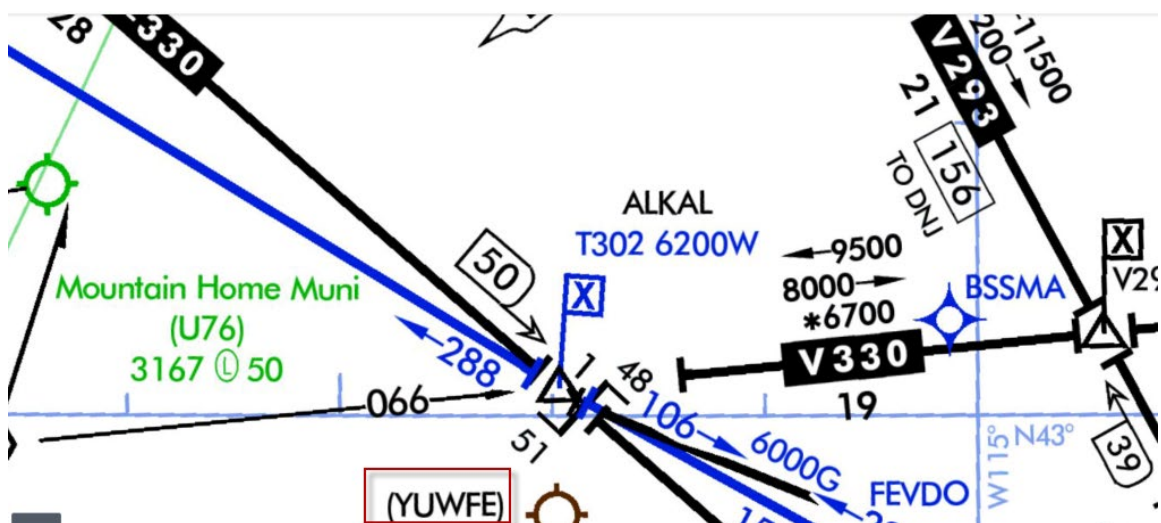
Examples of CNF used in routes:

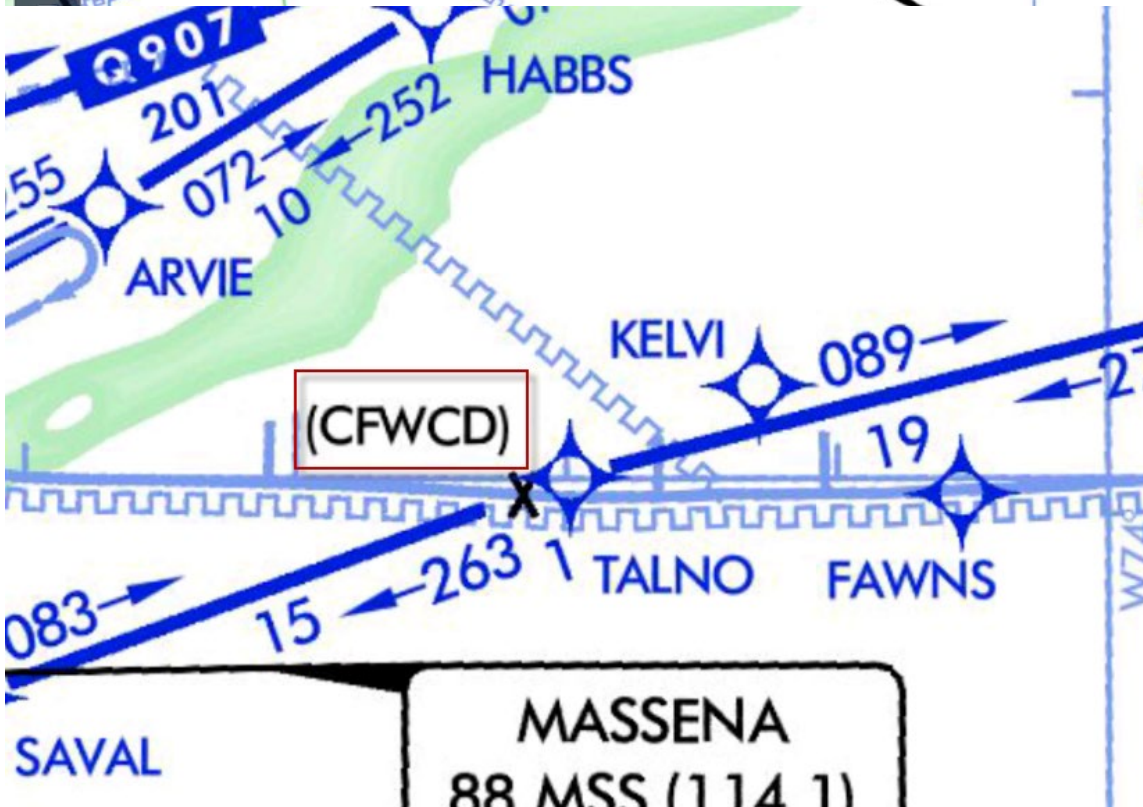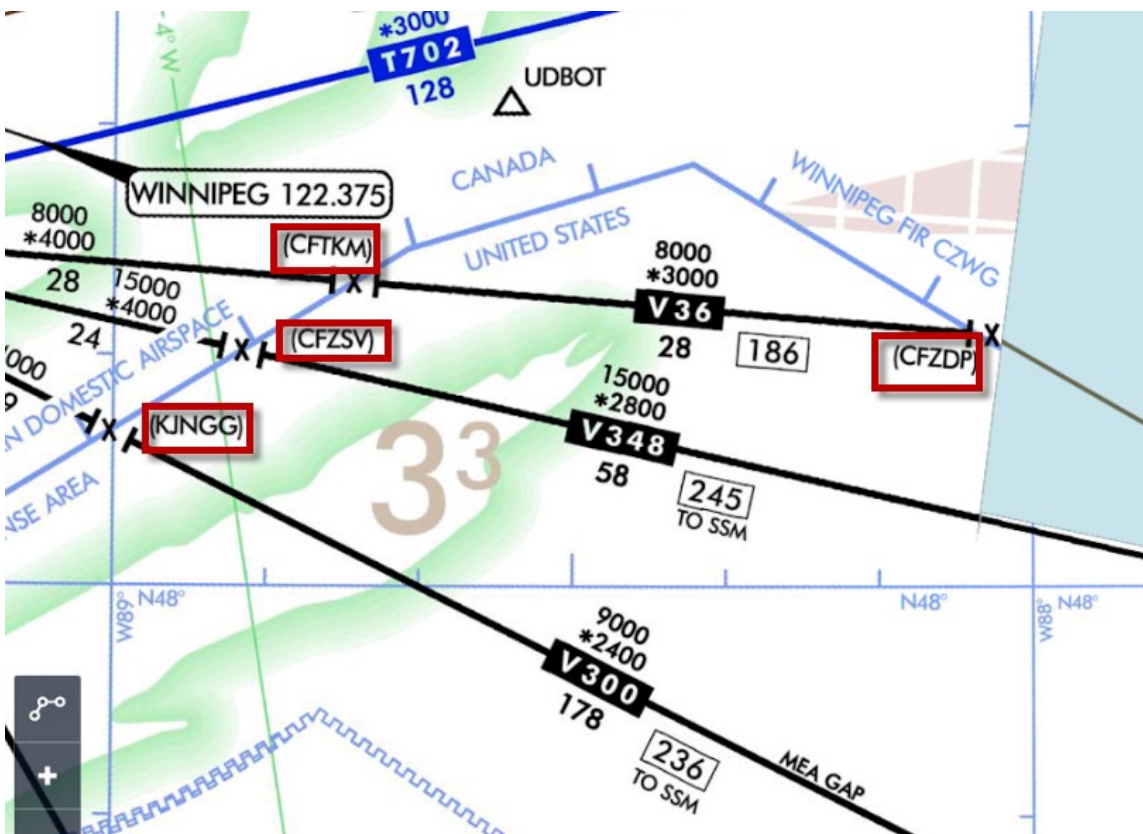ODUCE used as a junction between J202 and J173 and as a dog leg on J202
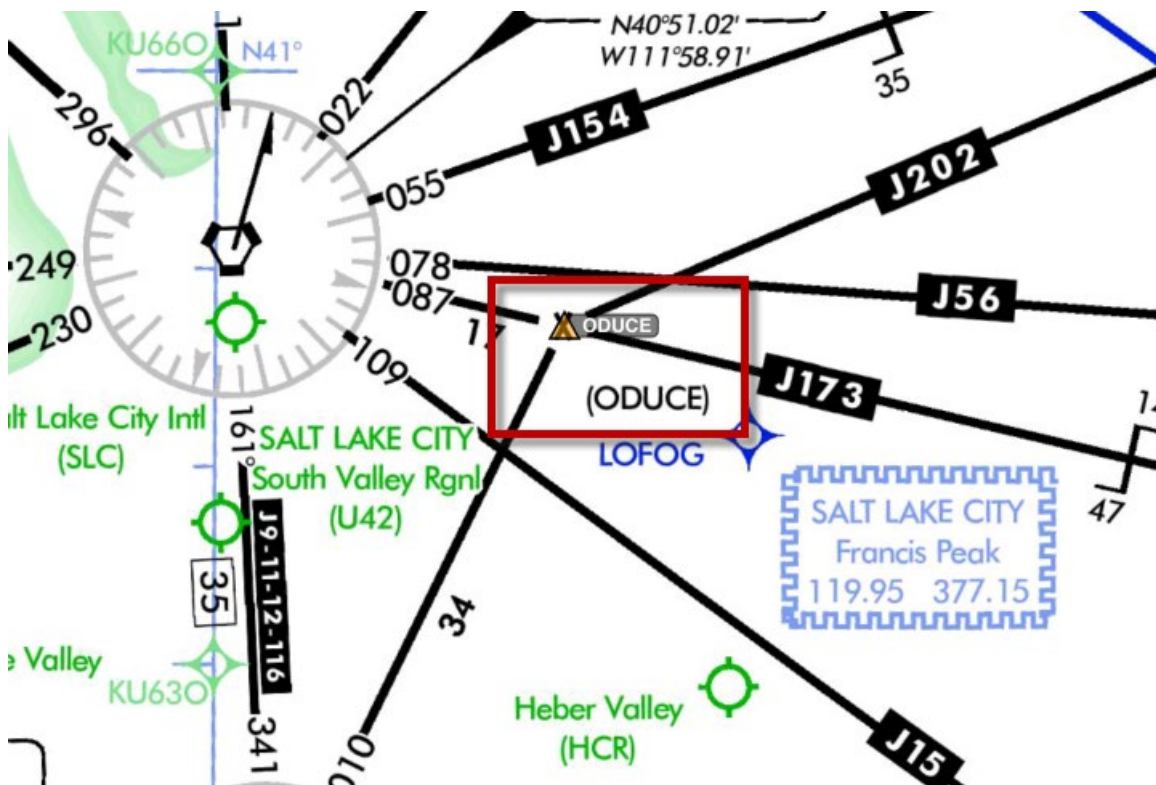
ENJAK on V257 dog leg:

YUWFE dog leg on V330, junctions

US Canada Border

Since CNF are not ICAO standard when used in an airway, international routes with CNF included in the route to join airways or for bends in airways may cause the route to be rejected when filed by FIR/ARTCC outside of the US, making filing some otherwise correct routes unavailable. If the CNF is replaced by a named fix, these routes would be accepted.

Recommendations:

At a minimum, the AIM guidance should be updated to state that CNF, if used in an airway may be filed and will be included in databases. Preferably, the CNF used in airway junctions and in dog legs should be replaced by named fixes to be compatible with NextGen systems and ICAO. The same should apply to fixes at the US/Canada border, either named fixes should replace the CNF, the CNF eliminated if possible, and when Canada has eliminated the airway on the Canadian side of the border, the airway segment to the nearest fix or Navaid should be eliminated.

Comments:

Submitted by: John Collins
Organization: ForeFlight LLC
Phone: 704 576-3561
E-mail: john@foreflight.com
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