Subject: Charting of Unusable Airway Segments

Background/Discussion:

FAA depicts Unusable Airways Segments on IFR Enroute Charts and it is unclear to the pilot what to do with that information. It is also unclear to the pilot what to do for NOTAMed Unusable Airway Segments. See Aviation Forum Discussions below.

In addition to confusion, the Unusable Airway Segments cause undue clutter on the chart.

During email discussions with FAA, it was made clear that these routes are not for use and cannot be used even with RNAV equipment. A substantial portion of the general aviation piloting community does not know this and no pilot facing government document addresses this issue adequately:

Government Publications

- Instrument Procedures Handbook – No information
- Instrument Flying Handbook – No Information
- Aeronautical Information Manual – No Information
- Aeronautical Chart User’s Guide – States how unusable segments are depicted (gray zig-zag), but includes no explanation of what unusable segments, why they are depicted, or what the unusable status means to pilots

Flight Training Websites:

“Unusable Route Segments
Unusable route segments are charted when an airway is closed or no longer in use. They’re a good reminder to pilots that may have frequently used the route that it is closed.”
-Boldmethod.com 2014

airlinepilotforums.com:

“I’m not sure why they would chart an unusable route in the first place, but that’s just me.”
-plasticpi 2007

“Unusable... not guaranteed radio navigation reception? Are you supposed to just fly the heading until you pick up the VOR again?”
-timnunes 2007

“Doesn’t really sound logical...why print a segment that isn't usable.”
-planecrazy.jenn 2007

“They are printed because they are just "segments" of a specific V route that r out of service.....maybe tempo. maybe for good....maybe just MX on the station...or conflicting signals.....who knows!”
-tangoindia 2007
“If an airway is marked unusable, why publish it? Secondary question, can RNAV still be used? -ymb1 2016

- [Voted Best Answer and viewed 832 times]
  - only part of the airway is unusable, and even then it's usable with GPS... ...you have to look at the full airway... only some parts of it are marked unusable... ...A [long] ‘outage’ covers several of the FAA's 28 or 56 days chart cycles, so I guess they decided it was worth charting in addition to the NOTAMs. Removing the sections completely from the chart would mean decommissioning or redesigning the full ...airway, which is presumably a much bigger task than just marking it unusable.

  - Finally, the ATC orders give some instructions on this and if part of an airway is unusable because of a NAVAID issue they still expect RNAV-equipped aircraft to be able to use it:
    - 4−4–4. ALTERNATIVE ROUTES [ATC Handbook] ‘When any part of an airway or route is unusable because of NAVAID status, clear aircraft that are not RNAV capable via one of the following alternative routes’

  - ... [so] the only aircraft that can't use [Unusable Segments] are ones that have to use... VOR signal(s) for navigation and even then they can expect ATC to give them an alternative route.”

-Pondlife; 2016

**Nav Database Conundrum**

Garmin Avionics introduced FAA Raster Charts in 2017 into our Integrated Flight Decks (G1/3/5000) as an optional map “middle” layer. The traditional Nav data is still available under this layer and may or may not contain the unusable airway.
The Unusable Segment of the Airway may or may not exist in the database or an EFB or flight deck, depending on the coding practices of the data supplier.
Recommendations:

Option 1: Discontinue the charting of Unusable Airway Segments because of the confusion they cause

  Option 1a: Continue to chart airway segments that are unusable only temporarily (communicated via NOTAM). Do not chart them differently than “usable” segments and let the NOTAM address the situation.

  Option 1b: Clarify to the data supply community that unusable airway segments should not be included in navigation databases

Option 2: Allow RNAV equipped aircraft to fly the routes and update FAA Publications to discuss Unusable Airway expectations

  Option 2a: Rephrase what unusable airway segments are called. Suggest “RNAV-only Airway Segments” instead of “Unusable Airway Segments.”

  Option 2b: Remove the gray zig-zag line and make the segment line blue to match the charting practice of RNAV airways

In addition to the option recommendations above, recommend an update to the Chart Users Guide concerning Cross-hatching of unusable radials. It appears that the FAA uses cross-hatching when the radial unusability is unconditional, meaning it applies at all altitudes and distances from the VOR. It also appears that the FAA does not cross-hatch unusable radials when the unusability is conditional, meaning it applies only at certain altitudes and/or distances from the VOR. These conditional cases also have free-text notes that describe the conditions (though the unconditional cases often have free-text notes too, which are of questionable value and add clutter). It would be nice to have this nuance confirmed and clarified in the AIM and/or Chart User’s Guide.

Comments:

Submitted by: Jason Hewes
Organization: Garmin
Phone: 913-440-6370
E-mail: Jason.hewes@garmin.com
Date: 04/05/2019
Jason Hughes, Garmin, briefed the new recommendation regarding the depiction of unusable airway segments on IFR Enroute Charts. He stated that when a segment of an airway is designated as unusable, it is unclear to pilots exactly what that means. Is everything along that airway segment unusable, or can pilots still fly it using RNAV? He recommends that the FAA clarify the definition of an unusable segment and make sure that the pilot guidance is clear. He suggested that if the segment is truly unusable under all conditions and with any equipage, it should be removed entirely from the charts.

Valerie Watson, FAA/AJV-A250, explained that airways are published from two sources. She said that the source for AJV-A to chart an unusable airway segment is FAA Form 8260-16. The legal (point-to-point linework) description for the airway is published as an airway docket in the Federal Register. She stated that as long as a segment is part of the legal description, it must be charted, whether that segment is designated “unusable” or not. Changing a legal description is a lengthy process and the “unusable” status for an airway segment is, in most cases, a temporary condition and may be revised at any time. Valerie explained that the specification for the charting of unusable airway segments was created many years ago, before the inception of RNAV in the NAS. She agreed with Jason that it is not clear whether an unusable airway segment on a conventional route can be flown using RNAV or not. Can a pilot file point to point to the next usable segment to transition the unusable part of the route? It is not clear and there is currently no explanatory documentation available.

There was a lot of discussion about how these unusable airway segment are being interpreted, highlighting the need for published explanatory material/guidance. Some pilots stated they believed these segments should not be used at all while others believe the routes can still be used with RNAV. Rich Boll, NBAA, stated that a flight plan can be filed for a route that is designated on the chart as unusable and it will be accepted; however, Rich stated he does not believe that a pilot can rightfully file for an airway segment that is published or NOTAM’d as unusable. Joel Dickinson, FAA/AFS-410, said that it depends why the segment is unusable, but either way, pilots can still navigate point-to-point on an unusable segment using RNAV. Valerie asked Joel if that point-to-point RNAV use of an unusable segment is documented for pilots in commonly available documents. Joel said that to his knowledge, it is not. Valerie stated that addressing this scenario is necessary and that the pilot confusion in the room highlights the problem. She said she believes that unusable airway segments and their sanctioned use needs to be defined and clarified by Flight Standards so it can be documented and made clear in the Aeronautical Information Manual (AIM), the Instrument Procedures Handbook and other resources available to pilots.

Jason pointed out that some data suppliers code the unusable segment of the airway in their database, while others do not. He asked if Garmin should be coding it. Valerie said that, in her view, if it is designated as unusable, it should not be coded in the database. She asked Joel about the coding aspect of these segments, but he did not state a Flight Standards opinion.

There was a consensus in the room that there is a need to provide more information to pilots to clarify the definition of unusable airway segments. Jason voiced that he would like to see clear guidance published by the FAA in the AIM, the Chart User’s Guide and other relevant documents. It was suggested that AJV-A work with Flight Standards to come up with new language for the Chart User’s Guide and possibly the AIM. Joel will also look into how it is defined in the Flight Standard documents and see if updates are necessary.

STATUS: OPEN
**ACTION:** Jennifer Hendi, FAA/AJV-A250, will work with Joel Dickinson, FAA/AFS-410, to develop explanatory guidance for the Chart User’s Guide regarding Unusable Airway Segments.

**ACTION:** Joel Dickinson, FAA/AFS-410, will investigate how Unusable Airway Segments are defined in Flight Standards documentation and see if updates are necessary.

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**MEETING 19-02**

Jennifer Hendi, FAA/AJV-A250, provided an update on the changes made in the Chart User’s Guide for the 15 August 2019 edition. Language approved by the Flight Operations Group and submitted to AJV-A by Joel Dickinson, FAA/AFS-410, was added to the Chart User’s Guide to describe how Unusable Segments can and cannot be used. Jennifer then asked Joel if he plans to also update the Aeronautical Information Manual (AIM) on how Unusable Airway Segments are defined and may be used. Joel said he is still looking into AIM updates.

Gary Fiske, FAA/AJV-82, Contract Support, asked if it is permissible to substitute RNAV to fly an unusable route. If that is the case, he agreed that needs to be explained further in the pilot guidance.

Dave Stamos, NGA, said that there are instances where the unusable symbol was not added to a number of charted conventional routes because the 8260-16 airway source form said that the routes are unusable except for aircraft equipped with RNAV. As a result, a note was added to the chart, e.g. ISO R-055 to PEARS unusable except aircraft equipped with suitable RNAV. John Bordy, FAA/AFS-420, said he is not aware of any policy to support that. Dave Teffeteller, FAA/AJV-A433, said he will look into the reasons why the note was added to the source.

Rune Duke, AOPA, pointed out that FAA JO 7110.65 states if any part of the route is unusable, Air Traffic Control will clear aircraft by other means. Valerie Watson, FAA, AJV-A250, stated that it appeared to her that there is a disconnect between the 7110.65 and the language supplied by the Flight Operations Group and published in the Chart User’s Guide. Joel said they are different because the 7110.65 is referring to a route and the Chart User’s Guide is referring to flying RNAV point-to-point. Gary said he will look at the 7110.65 and ensure that there is no disconnect with the pilot guidance in the AIM and Chart User’s Guide.

**STATUS:** OPEN

**ACTION:** Joel Dickinson, FAA/AFS-410, will consider updates to the Aeronautical Information Manual (AIM) regarding the definition and use of Unusable Airway Segments.

**ACTION:** Dave Teffeteller, FAA/AJV-A433, will investigate the source documentation for the addition of the unusable note to the routes Dave Stamos cited.

**ACTION:** Gary Fiske, FAA/AJV-82, Contract Support, will look at FAA JO 7110.65 to ensure there is no disconnect with the pilot guidance in the Aeronautical Information Manual and Chart User’s Guide.
Samer Massarueh, FAA/AJV-A221, reviewed the issue. Joel Dickinson, FAA/AFS-410, showed the audience the expanded guidance that was added to the Chart Users' Guide to describe how Unusable Segments can and cannot be used. Valerie Watson, FAA/AJV-A250, asked if Joel considered similar updates to the Aeronautical Information Manual (AIM). Joel said his office does not think AIM updates are necessary. Valerie said that a lot of confusion has been expressed regarding this issue, and she believes expanded guidance in the AIM is needed.

Dan Wacker, FAA/AFS-420, asked if an unusable route/airway is also part of a Departure or Arrival procedure, if it is also considered unusable on those procedures. He also noted that NOTAMs sometimes say that the unusable conventional route, or route segment, can still be used with GNSS. Joel said an unusable route is unusable in the Enroute environment as well as on any Departure or Arrival procedures on which it appears. He said there is no basis for the addition of the GNSS note. Dan agreed with Valerie that the guidance is not clear and use of unusable routes/segments needs to be better explained in the AIM and the Instrument Procedures Handbook (IPH).

Valerie explained a second issue that was discussed at ACM 19-02 regarding a number of airway route notes that are being added to the charts, e.g. “ISO R-055 to PEARS unusable except aircraft equipped with suitable RNAV”. She said the Instrument Flight Procedures Group had taken an action to investigate the source for these confusing notes. Joel said those notes should not be on the charts. Valerie pointed out that a disconnect seems to exist between what notes are being documented on the 8260-16 airway forms and what is supported by the Flight Operations Branch.

John Collins, ForeFlight, said that from a pilot's perspective, a great deal of confusion exists on this issue and he sees a need to define “unusable” in the pilot guidance. Bennie Hutto, NATCA, agreed that it is not clear what unusable means for RNAV-equipped aircraft. He said he does not think an unusable conventional route should be excluded for RNAV aircraft. Joel emphasized that a pilot should not be flying an unusable route. There might be conditions where RNAV substitution is allowed, but there are also conditions where it is not. Gary Fiske, FAA/AJV-P31, said it is about training and education and he doesn’t understand why this is causing so much confusion. He said that it is not explained in the AIM because the Flight Operations Branch does not have any control over how pilots or ATC handle a route that is designated unusable. Gary said he had taken an action to determine if there is a disconnect between FAA JO 7110.65 and what is in the AIM, and determined there is clearly a disconnect. ATC guidance does not preclude an aircraft that is RNAV capable from flying an unusable Victor route. ATC’s main concern is that the aircraft is going where they expect it to go based on the clearance.

Valerie said that the airway notes that are being published on the charts are very inconsistent and difficult to interpret. She asked what kind of notes are permissible based on the criteria in FAA Order 8260.19. Jeff Rawdon, FAA/AFS-420, said the Order is not specific regarding these notes. Pat Mulqueen, FAA/AJV-A440, said the Instrument Flight Procedures (IFP) Group realizes now that they should not have been publishing certain notes and that a NOTAM should have been used instead. He said they will look into the currently published notes on unusable routes, ensure they are correct and report back at the next meeting.

Valerie summarized the topic. She noted there is still a lot of confusion about how unusable routes and segments can and cannot be used. Guidance has been added to the Chart Users’ Guide. Counter to recommendation of the ACM audience, the Flight Operations Branch does not plan to add guidance to the AIM or the IPH. Pat has agreed to look into the airway notes being added to the 8260-16s, and thus to the charts, and consider recommending that more detailed and specific guidance for the notes be published in FAA Order 8260.19.
STATUS: OPEN

ACTION: Pat Mulqueen, FAA/AJV-A440, will investigate the source documentation for the addition of the unusable airway notes to FAA Form 8260-16 and consider recommending criteria for the notes in FAA Order 8260.19.