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."
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

**aviation.stackexchange.com:**

“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:

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Date: 04/05/2019
MEETING 19-01

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.

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**MEETING 20-02**

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 PEARLS 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.

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**MEETING 21-01**

Samer Massarueh, FAA/AJV-A223, reviewed the issue. Pat Mulqueen, FAA/AJV-A440, reported that Aeronautical Information Services (AIS) established an internal workgroup and proposed revised criteria to the Flight Procedures and Airspace Group (FPAG). TJ Nichols, FAA/AFS-420, said there are other criteria considerations and FPAG will take over as point of contact for this issue.

Jeff Rawdon, FAA/AFS-420, reported the FPAG has discussed this at length and from their perspective, they do not understand why it is necessary to chart an unusable airway segment. He said if it is temporary, a T-NOTAM should be used. If it is permanent, the route should not be charted. Valerie Watson, FAA/AJV-A250, explained that there are many complicated situations. She said there are currently examples of unusable conventional airways with a note that says it can still be flown with GNSS. Pat agrees that some of the charted notes do not meet criteria and they need more guidance.

Curtis Davis, FAA/AJV-A311, showed examples of unusable airway segments on existing charts and in the database. He said there are five ways this has been handled in the past. Pat said these examples are very helpful to demonstrate the problem and to help determine the best way to move forward. He said this problem exists partially due to the need to update the airways to meet the 224 NOTAM requirement. Jeff thanked both Pat and Curtis. He said that we should address the 224 day requirement and said he would like to work together with Pat to address these issues.

Gary Fiske, FAA/AJV-P310, mentioned that when ATC clears an aircraft on a route with an unusable segment or ATC assigns an unusable segment because it is a preferred route, the local traffic is unaware that there is an unusable segment on the other end. This situation will continue to occur. That doesn't mean the pilot can't still fly the same path. John Collins, ForeFlight, agreed that pilots constantly receive clearances across unusable airways. He said there is confusion about what pilots file and fly on these routes.
Rich Boll, NBAA, asked if unusable routes are still charted with a MEA and whether those altitudes are still being monitored for changes. Curtis said the MEAs should come off the chart when the unusable symbol is added to the route but that sometimes that removal is not reflected on the 8260-16 airway form that renders the “unusable” aspect. Rich said on data driven charts, the MEAs are still showing up. Scott Jerdan, FAA/AJV-A310, suggested that once the approach to dealing with these airway segments is standardized, they could work with the ERAM office to identify the attributes of an unusable segment. Scott said unusable airway segments cannot be removed from the airway data because it is Part 71 and would require rulemaking. Paul Gallant, FAA/AJV-P210, said a request could be sent to his office to begin the rulemaking process, but it is a lengthy process.

Valerie noted there is still a lot of confusion about how unusable routes and segments can and cannot be used and how they should be documented on 8260-16 airway forms, in databases, and in Part 95. Valerie showed the audience the guidance that FAA/AFS-410 submitted for the Chart Users’ Guide. Valerie said explanatory guidance also should be added to the Aeronautical Information Manual (AIM). Jeff said the FAA needs more time to investigate this issue. He said they will work to clarify the criteria and the guidance.

**STATUS: OPEN**

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on discussions between the Flight Procedures and Airspace Group (FPAG) and Aeronautical Information Services (FAA/AJV-A) to resolve existing issues related to unusable airway segments and investigate potential criteria and pilot guidance updates.

**MEETING 21-02**

Samer Massarueh, FAA/AJV-A223, reviewed the issue. Jeff Rawdon, FAA/AFS-420, explained unusable means just that and there are no exceptions. He said pilots should not file or accept a clearance for an unusable route. He said ATC can clear to fly point-to-point where there is an unusable route. He said that the problem at hand is the charted notes that do not meet criteria and the problems created by the 224 day NOTAM requirement. Jeff said the Flight Procedures and Airspace Group (FPAG) is continuing to investigating these issues.

John Collins, ForeFlight, pointed out that there is nothing in ERAM that blocks an unusable airway segment from being filed. Jeff agreed that is a problem and that issue also needs further investigation. Scott Jerdan, FAA/AJV-A310, explained these routes can be filed because ERAM gets its airway information from the National Airspace System Resource (NASR) database. Scott suggested the only way to keep unusable segments from being used is to remove the unusable segments from the NASR database. This would result in their removal from the charts and from ERAM. Gary Fiske, FAA/AJV-P310, said that is not realistic and taking the segments out of the databases would impact the entire system. Controllers need to know if a segment is unusable. Valerie Watson, FAA/AJV-A250, stated that unusable routes or route segments should not be removed from NASR as long as they exist as regulatory entities. Gary agreed and said removing them would require rulemaking. Paul Gallant, FAA/AJV-P210, said Part 71 rulemaking does not specify unusable segments because that status can change over time. Scott suggested that further discussion is needed to investigate how the handling the data can help solve this problem.
Pat Mulqueen, FAA/AJV-A440, brought the conversation back to the charted notes that do not meet criteria. He said the terminology used in the verbiage in the NOTAMs comes from the NOTAM Order and that the notes should never have made it to the charts. He said many of the currently charted notes are only relevant if there are Global Navigation Satellite Systems (GNSS) MEAs on the segments. Jeff Rawdon said that one of the reasons this came up is that pilots were interpreting the publication of a GNSS MEA to mean they can fly the route with GPS. Jeff said NOTAMs cannot be used as authorization to fly unusable segments even if the NOTAM includes a GNSS MEA.

Valerie Watson, FAA/AJV-A250, spoke to the issue of the notes appearing on the charts versus only published by NOTAM. She explained that currently, right or wrong, these notes are published on the 8260-16 airway forms. All such notes are added to NASR and subsequently charted and included in 14 CFR Part 95. If the intent is not to chart the notes or include them in 14 CFR Part 95, they need to be removed from the 8260-16 forms. She suggested the guidance in the 8260.19 Order for how to handle these situations with respect to NOTAM and/or 8260-16 airway form actions may need to be examined for clarity.

Rich Boll, NBAA, asked Paul Gallant whether there are requirements in the CFR to depict airways on charts. Paul said the CFR does not address charting. AJV-A charts based on Part 71 and FAA Forms 8260-16 and 8260-2. Rich asked why these routes/segments must be charted when designated unusable. Valerie said the charting specifications state that the entire route will be charted, with portions designated unusable overlain with the zigzag symbology. She said if those unusable segments were removed from NASR, they would be removed from the charts, but cautioned if it would be wise to remove regulatory routes or sections of such routes from NASR when they still legally exist in the NAS. Rich then asked whether there is anything that requires publication in NASR. Brian Murphy, FAA/AJV-A350, said these are legal routes. He said if we removed them from NASR, then they would also be removed from other legal documents, e.g., 14 CFR Part 95. The Flight Operations Branch would need to make that determination.

Valerie said she believes the Flight Procedures and Airspace Group needs to continue to investigate aspects related to this issue. Jeff agreed and said that work will continue.

**STATUS:** OPEN

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on investigation and discussions between the Flight Procedures and Airspace Group (FPAG) and Aeronautical Information Services (FAA/AJV-A) to resolve existing issues related to unusable airway segments/routes and investigate potential criteria and pilot guidance updates.

**MEETING 22-01**

Jeff Rawdon, FAA/AFS-420, reported that his office has been meeting with Aeronautical Information Services on this issue. He said there are three ways unusable airway segments are identified: 1) conventional airway segments charted with the unusable symbol, 2) airway segments made unusable by a Temporary Notices to Air Missions (T-NOTAM), and 3) notes on
airway segments that say “unusable except” in certain cases. The first two are acceptable, but the notes are not.

Jeff explained that the exception notes were charted because they were requested by Flight Inspection and documented on FAA Form 8260-16. He said he is seeking Flight Standards approval to issue T-NOTAMs to cover the exception notes so the charted notes can be removed from the 8260-16 forms and thus the charts. They will also need to work with Flight Inspection to make sure they don’t continue to add any new notes to 8260-16 forms in the future. Jeff said Flight Standards is also investigating the possibility of removing the charted unusable segments entirely via rule making. He said his office will continue to work these issues.

Valerie Watson, FAA/AJV-A250, asked when and under what circumstances a radial would be designated as unusable. She said there is not clear guidance in FAA Order 8260.19. Jeff said they will continue to investigate that as well.

John Collins, ForeFlight, said with regard to removing the unusable segments, when pilots file airways that have gaps in them, ERAM doesn’t accept across the gap and the pilot will get an error in their flight plan. He said it is important that the pilot is able to identify the gap information. Jeff said he understands the difficulty and will take that into consideration.

Johnnie Baker, FAA/AJV-A441, reported that he and Jeff met recently and plan to amend the seven airways that have the RNAV exception note. He also shared that, as a result of the VOR MON program, some of those airways may already be scheduled for cancelation.

**STATUS:** OPEN

**ACTION:** Jeff Rawdon, FAA/AFS-420, will report on investigation and discussions internal to the Flight Procedures and Airspace Group (FPAG) and with Aeronautical Information Services (FAA/AJV-A) to resolve existing issues related to unusable airway segments/routes/radials and investigate potential criteria and pilot guidance updates.