AERONAUTICAL CHARTING MEETING
Charting Group
Meeting – April 27 - 29, 2021

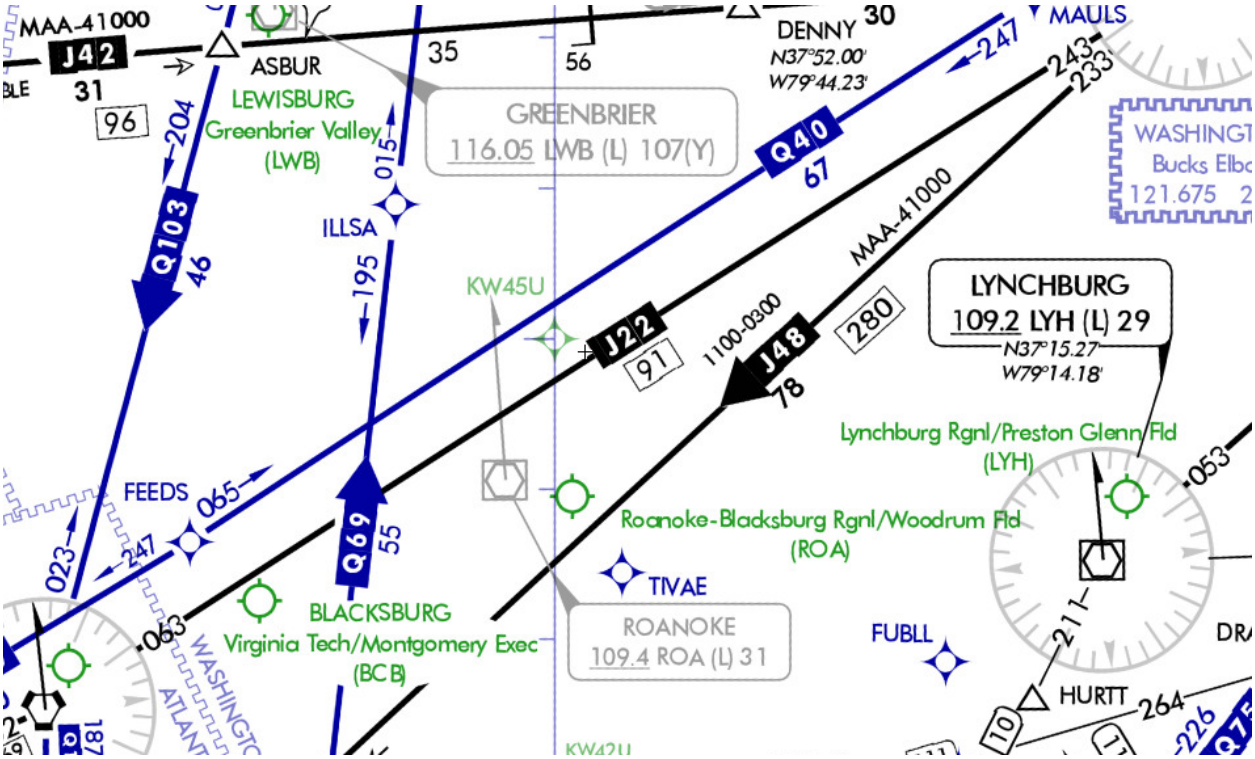
RECOMMENDATION DOCUMENT

FAA Control #21-01-357

Subject: Single Direction Airways in the US. NAS

Background:

In the US, there are several Jet Route and Q-Route airways depicted on US IFR High charts as High Single Direction (HSD) Preferred IFR Routes, as indicated by directional arrows:



The directional arrows and direction restrictions **are not** part of the legal description of these airways. For reference, there are two legal descriptions for all airways. The first description is published in 14 CFR part 71 (airway docket) that describes the airway's horizontal linework, point to point including only points where an airway change of course occurs. The second description is provided in 14 CFR part 95 where the airway's altitudes, equipment notes, unusable designations, etc., are published. If any directional restrictions were imposed, they would be published in the part 95 description. The source of these restrictions would be found on the FAA 8260-16 Form. See Figure #1 for a description of Air Traffic Services (ATS) Routes in the US NAS and Figure #2 for an example of the part 95 "Legal Description" of an airway.

In discussions with Air Traffic representatives, we have determined that these airways **are considered** by air traffic control and controllers as being “usable” and assignable in either direction.

The source for these HSD Preferred IFR Routes is the National Airspace System Resource (NASR) database, and specifically, the PerfRoute database. Daily changes and regular cycle changes to this database are also circulated through the National Flight Data Digest (NFDD). The request for an HSD Preferred IFR Route comes from the underlying ARTCC. The entire route, or individual segments of the route, may be designated as an HSD route. Please see Figure #3 for a list of all HSD routes in the US NAS.

The NASR PrefRoute database is used as source to chart these directional arrows on Jet Routes and Q-Routes designated as HSD Preferred IFR Routes on the US IFR High charts. They are also used to populate the HSD Preferred IFR Routes in the Chart Supplement, an extract of which is shown in Figure #4. The HSD Preferred IFR Routes and associated charting are intended to furnish the pilot/operator with preferred IFR routing between selected city pairs as an aid to flight planning. Pilots are expected to file an IFR route that is not in conflict with the charted direction of the airway for the effective times shown, if any are published. However, as noted earlier, this does not restrict ATC from assigning the airway in the opposite direction either with the initial IFR clearance or tactically once airborne.

Discussion:

Commercial navigation database providers use various State aeronautical data sources to populate their “master” navigation database based on the ARINC 424 specification, which in turn is used to build the navigation databases installed in RNAV systems and Flight Management Systems (FMS). In addition, these databases also serve as data sources for data-driven electronic charting applications and flight planning tools.

For airway data, there are two ARINC 424 airway records:

1. Enroute Airway Record
2. Enroute Airway Restriction Record

The Enroute Airway Record itself provides a flag indicating there is a restriction for an airway segment. The Enroute Airway Note Restriction Record provides the actual Restriction Times. This is a separate ARINC record from the Enroute Airway Record. There are many airways in the world that have legal restrictions placed on the direction of use. These records aid to ensure that these restrictions are recorded for use by navigation systems and electronic navigation/charting products.

In the US, one commercial charting/database provider considers the NASR and the NFDD as “Official State” source documents, and as a result, in their databases they populate the Enroute Airway and Enroute Airway Restriction Records for US ATS routes based on the NASR & NFDD PerfRoute database entries for HSD Preferred IFR Routes.

It has come to our attention that at least one avionics manufacturer has programmed their Flight Management System products to utilize these restrictions contained within these ARINC 424 airway records. This programming logic prevents the pilot from programming the FMS with a route that includes an airway with a directional restriction in a direction not in agreement with the

coded restriction. Please refer to an example of this behavior in Figure #5. This is not a bad decision on their part since in some States, some airway directional restrictions are part of the legal description of the airway and are enforceable on users and ATC.

If ATC were to assign an airway in a direction not in agreement with the charted direction, the pilot would be unable to load the airway in the FMS directly from the navigation database. Pilots are permitted to load the airway waypoint by waypoint in accordance with guidance furnished in AC 90-100A; however, this is not considered desirable. Further, if enroute CPDLC is used to send a route or route modification to the aircraft that includes a directionally restricted airway, but in a direction other than what is coded & charted, that uplinked message will fail to auto-load, i.e., "Push to Load", which is a desired function of the enroute CPDLC in the US NAS.

Recommendations:

The publication of Preferred IFR routes in the US NAS has been viewed as a flight planning tool; however, we are now seeing these restrictions having an operational impact on the use of the airway. At least one commercial charting/navigation data provider is taking these NASR & NFDD PerfRoute directional restrictions as "Official Source" concerning restrictions on the directional use of an airway. At least one avionics manufacturer has incorporated the use of these coded restrictions in their FMS programming logic to prevent their systems from loading an airway in a direction that is not compatible with the restriction. As a result, NBAA believes that it is appropriate to review the purpose of these HSD directionally restricted routes, and although not currently used also review the purpose of the Low Single Directional (LSD) routes as well, to ensure that the intent of these restrictions is accurately communicated to US NAS users, industry, and ATC.

NBAA further believes that there needs to be a discussion about the true intent of these charted restrictions. Are they just for flight planning? Are they operational restrictions that prohibit flight on the airway in a direction opposite of the charted direction by both pilots and ATC? Should these restrictions be part of the airway's legal description in 14 CFR part 95?

NBAA does not question past decisions by the FAA, the avionics manufacturer, or the chart/navigation database providers that have resulted in these issues. Rather, we believe that it is a subject that requires fresh look at the subject directionally restricted routes/airways by all parties involved. We do believe that if these issues are left unresolved, they could have undesirable, negative outcomes when pilots cannot load clearances issued by ATC, either by voice or CPDLC, that could result in confusion for both pilots and controllers.

NBAA recommends that a joint FAA/Industry working group be established by the ACM-CG to review the issues described and make recommendations to resolve them.

Comments:

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Date: April 1, 2021

Please send completed form and any attachments to:
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Figure #1: Air Traffic Services (ATS) Routes in the US NAS:

Reference: Order 7400.2M, Procedures for Handling Airspace Matters, Chapter 20. Air Traffic Service Routes:

20−1−5. ROUTE IDENTIFICATION
All alpha−numeric ATS route identifiers are assigned by the Rules and Regulations Group as follows:

a. L/MF (Colored) Federal airways are identified by color names (Amber, Blue, Green, or Red). The identifier consists of the first letter of the color followed by a number (e.g., R−50, G−13, A−1, etc.).

1. Identify L/MF (Colored) airways oriented mainly west and east as Green or Red.

2. Identify L/MF (Colored) airways oriented mainly south and north as Amber or Blue.

b. VOR Federal airways (below FL 180) are identified by the letter “V” prefix followed by a number (e.g., V−104).

c. Jet routes (FL 180 through FL 450) are identified by the letter “J” prefix followed by a number (e.g., J−75).

d. RNAV routes are identified as follows:

1. Low altitude (below FL 180) RNAV routes are identified by a “T” prefix followed by a number (e.g., T−245).

2. High altitude (FL 180 through FL 450) RNAV routes are identified by a “Q” prefix followed by a number (e.g., Q−120).

3. Helicopter RNAV routes are identified by a “TK” prefix followed by a number (e.g., TK−502).

Figure #2: Example of the part 95 “Legal Description”

95.4069 RNAV ROUTE Q69

VTYAP, GA WP	OLBEC, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
OLBEC, GA WP	ISUZO, GA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ISUZO, GA WP	GURGE, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
GURGE, SC WP	BLAAN, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
BLAAN, SC WP	EMCET, SC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EMCET, SC WP	RYCKI, NC WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
RYCKI, NC WP	LUNDD, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
LUNDD, VA WP	ILLSA, VA WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
ILLSA, VA WP	EWESS, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			
EWESS, WV WP	RICCS, WV WP	*18000	45000
*18000 - GNSS MEA			
*DME/DME/IRU MEA			

Figure #3: List of all HSD Preferred IFR Routes:

AWY	Orig	Dest	Type	Seq	Route String	Direction	Hours
J30	JOT	TRIXY	HSD	1	JOT J30 TRIXY	E BND	1100-0300
J34	AIR	TRIXY	HSD	1	AIR J34 TRIXY	E BND	1100-0300
J42	TXK	RBV	HSD	1	TXK J42 RBV	NE BND	1100-0300
J48	PTW	ODF	HSD	1	PTW J48 ODF	SW BND	1100-0300
J162	AIR	MRB	HSD	1	AIR J162 MRB	E BND	1100-0300
J180	LIT	IAH	HSD	1	LIT J180 IAH	SW BND	1200-0400
J115A	TED	FAI	HSD	1	TED J115A FAI	N BND	
J125A	ENN	TED	HSD	1	ENN J125A TED	S BND	
Q1	ELMAA	PYE	HSD	1	ELMAA Q1 PYE	S BND	1300-0600
Q3	FEPOT	PYE	HSD	1	FEPOT Q3 PYE	S BND	1300-0600
Q5	HAROB	STIKM	HSD	1	HAROB Q5 STIKM	S BND	1300-0600
Q7	JINMO	AVE	HSD	1	JINMO Q7 AVE	S BND	1300-0600
Q9	SUMMA	REBRG	HSD	1	SUMMA Q9 REBRG	S BND	1300-0600
Q11	PAAGE	LAX	HSD	1	PAAGE Q11 LAX	S BND	1300-0600
Q52	COLZI	CHOPZ	HSD	1	COLZI Q52 CHOPZ	SW BND	
Q65	JEFOI	MGNTY	HSD	1	JEFOI Q65 MGNTY	S BND	
Q69	GURGE	RYCKI	HSD	1	GURGE Q69 RYCKI	N BND	
Q69	LUNDD	RICCS	HSD	1	LUNDD Q69 RICCS	N BND	
Q69	VIYAP	ISUZO	HSD	1	VIYAP Q69 ISUZO	N BND	
Q75	TEEEM	ENEME	HSD	1	TEEEM Q75 ENEME	S BND	
Q77	MATLK	SHRKS	HSD	1	MATLK Q77 SHRKS	N BND	
Q79	ATL	WULFF	HSD	1	ATL Q79 WULFF	S BND	
Q81	HONID	FARLU	HSD	1	HONID Q81 FARLU	S BND	
Q83	SLOJO	JEVED	HSD	1	SLOJO Q83 JEVED	S BND	
Q85	SMPRR	LPERD	HSD	1	SMPRR Q85 LPERD	S BND	
Q87	MATLK	LCAPE	HSD	1	MATLK Q87 LCAPE	N BND	
Q93	ISUZO	MALET	HSD	1	ISUZO Q93 MALET	S BND	
Q97	ELLDE	MALET	HSD	1	ELLDE Q97 MALET	S BND	
Q99	KPASA	POLYY	HSD	1	KPASA Q99 POLYY	N BND	
Q103	RICCS	PSK	HSD	1	RICCS Q103 PSK	S BND	

Q103	SLOJO	CYNTA	HSD	1	SLOJO Q103 CYNTA	S BND	
Q104	ACORI	PIE	HSD	1	ACORI Q104 PIE	S BND	
Q109	CAMJO	LAANA	HSD	1	CAMJO Q109 LAANA	N BND	
Q110	SHEEK	JYROD	HSD	1	SHEEK Q110 JYROD	N BND	
Q113	RAYVO	SARKY	HSD	1	RAYVO Q113 SARKY	N BND	
Q116	SHEEK	DEEDA	HSD	1	SHEEK Q116 DEEDA	N BND	
Q118	SHEEK	ATL	HSD	1	SHEEK Q118 ATL	N BND	
Q135	JROSS	RAPZZ	HSD	1	JROSS Q135 RAPZZ	N BND	
Q409	MRPIT	ENEME	HSD	1	MRPIT Q409 ENEME	S BND	

Figure #4: Chart Supplement US IFR Preferred Routes and HSD Preferred IFR Routes

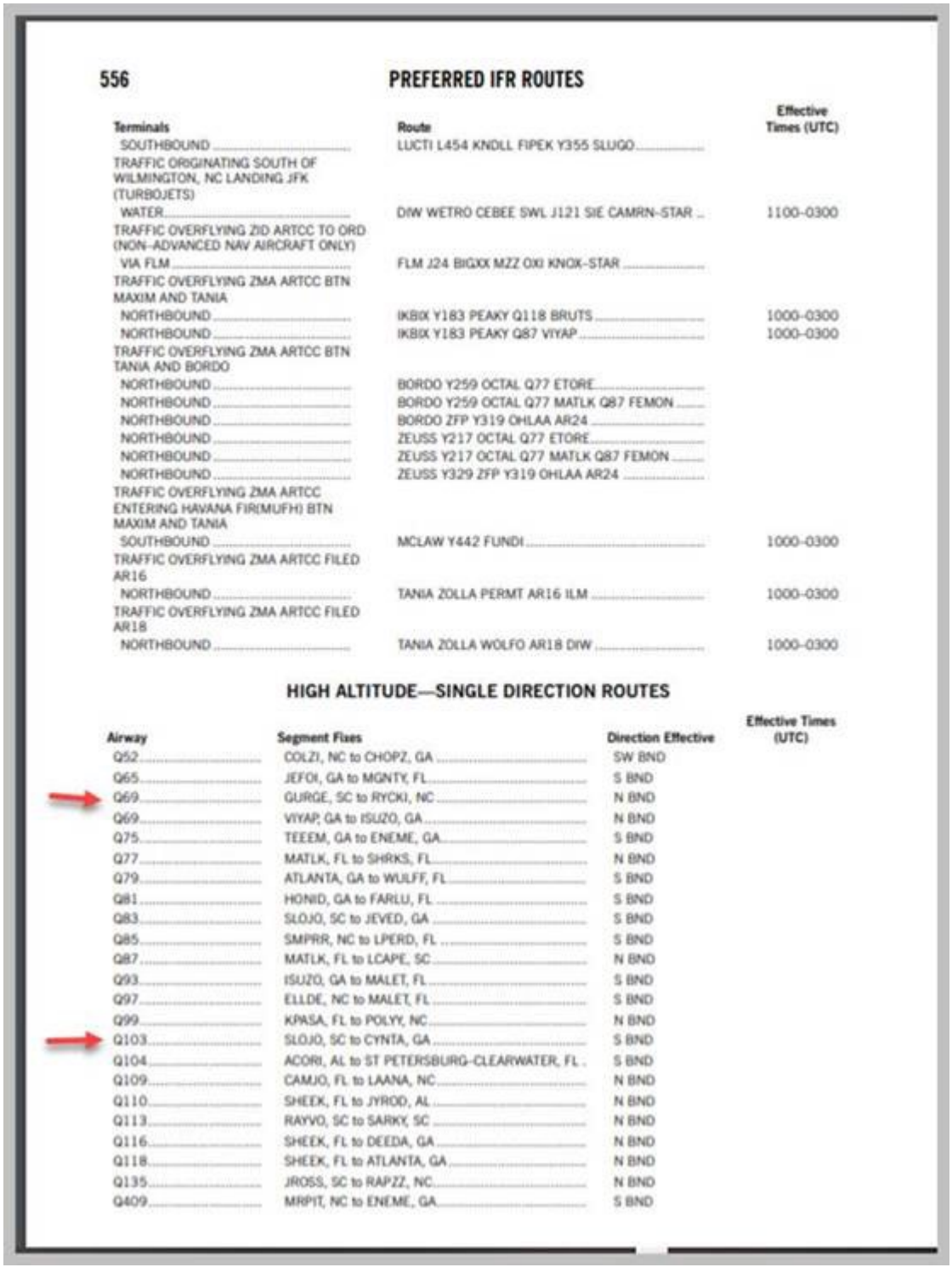
PREFERRED IFR ROUTES

A system of preferred routes has been established to guide pilots in planning their route of flight, to minimize route changes during the operational phase of flight, and to aid in the efficient orderly management of the air traffic using federal airways. The preferred IFR routes which follow are designed to serve the needs of airspace users and to provide for a systematic flow of air traffic in the major terminal and en route flight environments. Cooperation by all pilots in filing preferred routes will result in fewer traffic delays and will better provide for efficient departure, en route and arrival air traffic service.

The following lists contain preferred IFR routes for the low altitude stratum and the high altitude stratum. The high altitude list is in two sections; the first section showing terminal to terminal routes and the second section showing single direction route segments. Also, on some high altitude routes low altitude airways are included as transition routes.

The following will explain the terms/abbreviations used in the listing:

1. Preferred routes beginning/ending with an airway number indicate that the airway essentially overlies the airport and flight are normally cleared directly on the airway.
2. Preferred IFR routes beginning/ending with a fix indicate that aircraft may be routed to/from these fixes via a Standard Instrument Departure (SID) route, radar vectors (RV), or a Standard Terminal Arrival Route (STAR).
3. Preferred IFR routes for major terminals selected are listed alphabetically under the name of the departure airport. Where several airports are in proximity they are listed under the principal airport and categorized as a metropolitan area; e.g., New York Metro Area.
4. Preferred IFR routes used in one direction only for selected segments, irrespective of point of departure or destination, are listed numerically showing the segment fixes and the direction and times effective.
5. Where more than one route is listed the routes have equal priority for use.
6. Official location identifiers are used in the route description for VOR/VORTAC navaids.
7. Intersection names are spelled out.
8. Navaid and distance fixes (e.g., ARD201113) have been used in the route description in an expediency and intersection names will be assigned as soon as routine processing can be accomplished. Navaid radial (no distance stated) may be used to describe a route to intercept a specified airway (e.g., MIV MIV101 V39); another navaid radial (e.g., UIM UIM255 GSW081); or an intersection (e.g., GSW081 FITCH).
9. Where two navaids, an intersection and a navaid, a navaid and a navaid radial and distance point, or any navigable combination of these route descriptions follow in succession, the route is direct.
10. The effective times for the routes are in UTC. During periods of daylight saving time effective times will be one hour earlier than indicated. All states observe daylight saving time except Arizona, Puerto Rico and the Virgin Islands. Pilots planning flight between the terminals or route segments listed should file for the appropriate preferred IFR route.
11. (90–170 incl) altitude flight level assignment in hundred of feet.
12. The notations "pressurized" and "unpressurized" for certain low altitude preferred routes to Kennedy Airport indicate the preferred route based on aircraft performance.
13. All Preferred IFR Routes are in effect continuously unless otherwise noted.
14. Use current SIDs and STARSs for flight planning.
15. For high altitude routes, the portion of the routes contained in brackets [ ] is suggested but optional. The portion of the route outside the brackets will likely be required by the facilities involved.



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PREFERRED IFR ROUTES

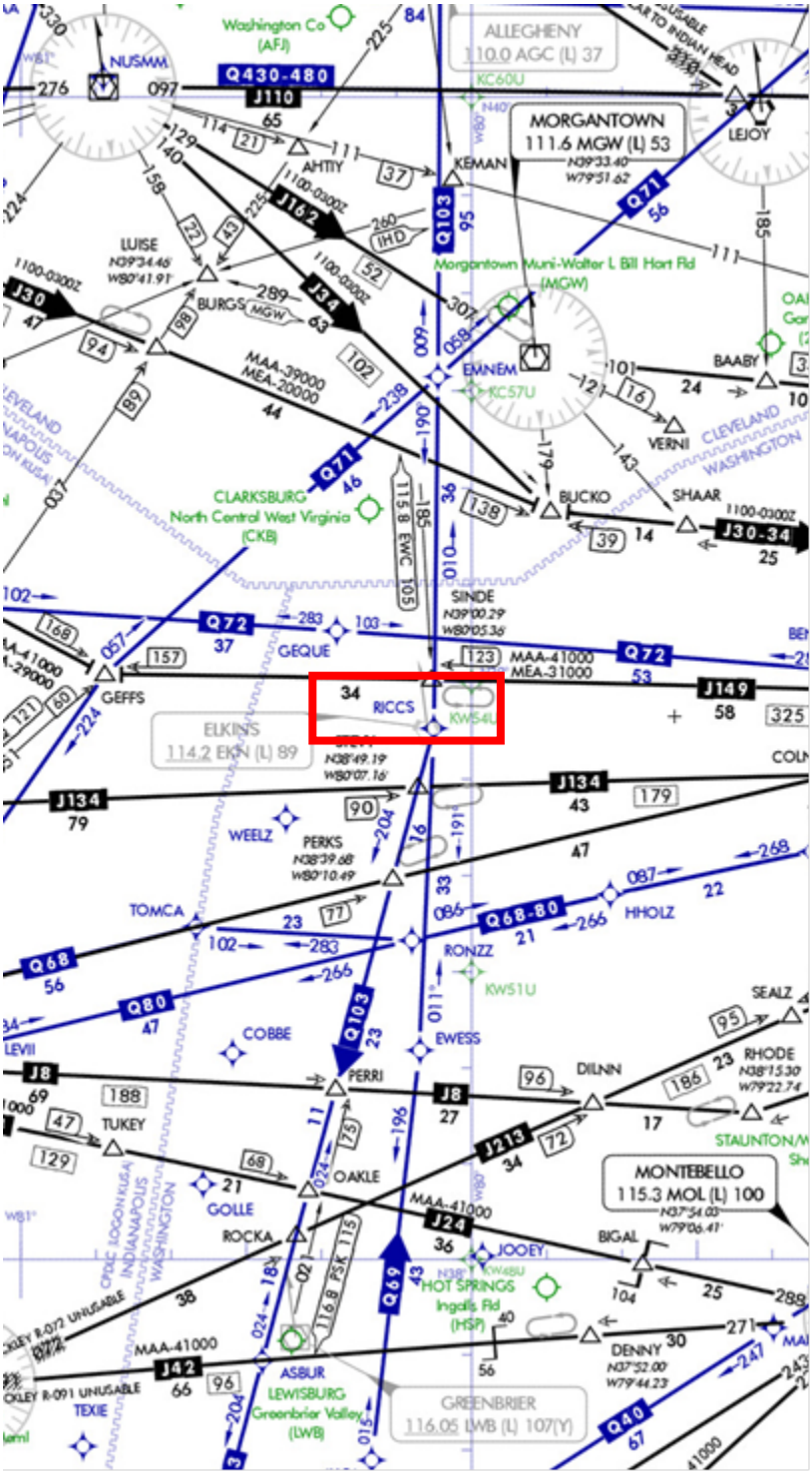
Terminals	Route	Effective Times (UTC)
SOUTHBOUND	LUCTI L454 KNDLL FIPEK Y355 SLUGO	
TRAFFIC ORIGINATING SOUTH OF WILMINGTON, NC LANDING JFK (TURBOJETS)		
WATER	DIW WETRO CEBEE SWL J121 SIE CAMRN-STAR	1100-0300
TRAFFIC OVERFLYING ZID ARTCC TO ORD (NON-ADVANCED NAV AIRCRAFT ONLY)		
VIA FLM	FLM J24 BIGXX MZZ OXI KNOX-STAR	
TRAFFIC OVERFLYING ZMA ARTCC BTN MAXIM AND TANIA		
NORTHBOUND	IKBIX Y183 PEAKY Q118 BRUTS	1000-0300
NORTHBOUND	IKBIX Y183 PEAKY Q87 VIYAP	1000-0300
TRAFFIC OVERFLYING ZMA ARTCC BTN TANIA AND BORDO		
NORTHBOUND	BORDO Y259 OCTAL Q77 ETORE	
NORTHBOUND	BORDO Y259 OCTAL Q77 MATLK Q87 FEMON	
NORTHBOUND	BORDO ZFP Y319 OHLAA AR24	
NORTHBOUND	ZEUSS Y217 OCTAL Q77 ETORE	
NORTHBOUND	ZEUSS Y217 OCTAL Q77 MATLK Q87 FEMON	
NORTHBOUND	ZEUSS Y329 ZFP Y319 OHLAA AR24	
TRAFFIC OVERFLYING ZMA ARTCC ENTERING HAVANA FIR(MUFH) BTN MAXIM AND TANIA		
SOUTHBOUND	MCLAW Y442 FUNDI	1000-0300
TRAFFIC OVERFLYING ZMA ARTCC FILED AR16		
NORTHBOUND	TANIA ZOLLA PERMT AR16 ILM	1000-0300
TRAFFIC OVERFLYING ZMA ARTCC FILED AR18		
NORTHBOUND	TANIA ZOLLA WOLFO AR18 DIW	1000-0300

HIGH ALTITUDE—SINGLE DIRECTION ROUTES

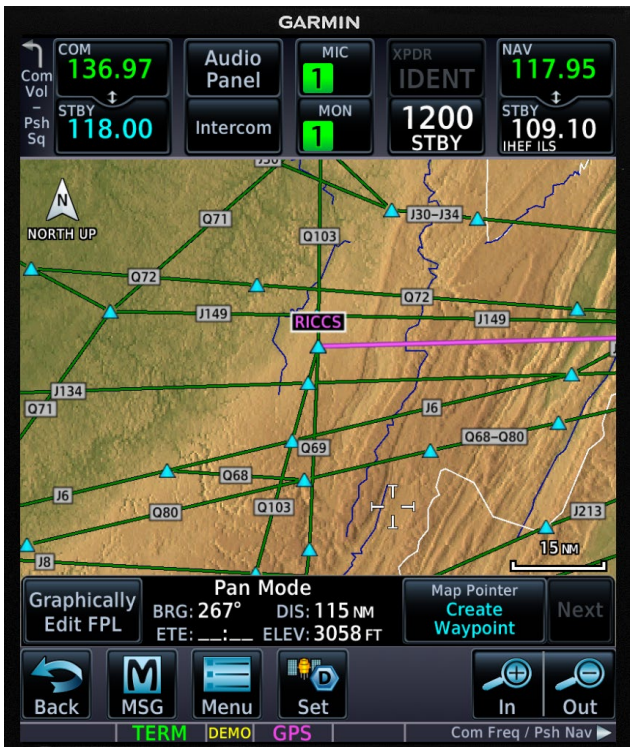
Airway	Segment Fixes	Direction Effective	Effective Times (UTC)
Q52	COLZI, NC to CHOPZ, GA	SW BND	
Q65	JEFOI, GA to MGNTY, FL	S BND	
Q69	GURGE, SC to RYCKI, NC	N BND	
Q69	VIYAP, GA to ISUZO, GA	N BND	
Q75	TEEEM, GA to ENEME, GA	S BND	
Q77	MATLK, FL to SHRKS, FL	N BND	
Q79	ATLANTA, GA to WULFF, FL	S BND	
Q81	HONID, GA to FARLU, FL	S BND	
Q83	SLOJO, SC to JEVED, GA	S BND	
Q85	SMPRR, NC to LPERD, FL	S BND	
Q87	MATLK, FL to LCAPE, SC	N BND	
Q93	ISUZO, GA to MALET, FL	S BND	
Q97	ELLDE, NC to MALET, FL	S BND	
Q99	KPASA, FL to POLYY, NC	N BND	
Q103	SLOJO, SC to CYNTA, GA	S BND	
Q104	ACORI, AL to ST PETERSBURG-CLEARWATER, FL	S BND	
Q109	CAMJO, FL to LAANA, NC	N BND	
Q110	SHEEK, FL to JYROD, AL	N BND	
Q113	RAYVO, SC to SARKY, SC	N BND	
Q116	SHEEK, FL to DEEDA, GA	N BND	
Q118	SHEEK, FL to ATLANTA, GA	N BND	
Q135	JROSS, SC to RAPZZ, NC	N BND	
Q409	MRPIT, NC to ENEME, GA	S BND	

Figure #5: Loading Airways – Failure to Load Due to Airway Restriction

Objective: Load Q-Route from RICCS (red box)



From RICCS, there are two airway options: Q103 and Q69. North from RICCS, Q103 is unrestricted. Going south from RICCS, Q103 is restricted southbound while Q69 is restricted northbound (see US IFR HI Chart). Here is the FMS display:

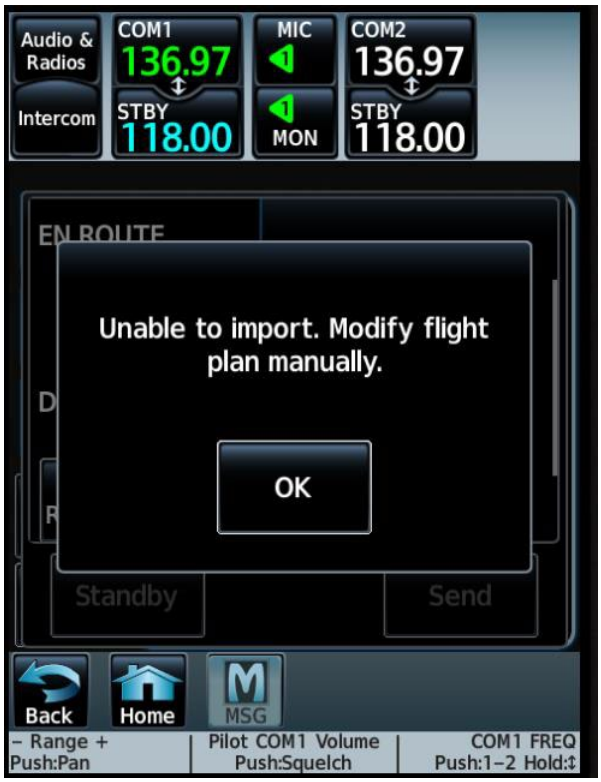


The pilot can select an airway to follow out of RICCS by pressing “Load Airway”:

The only option presented is to load Q103 by selecting an exit point for that airway:

No option is available to select Q69 southbound. However, the legal description of Q69 allows southbound flight, and a southbound sequence could be assigned by ATC.

If CPDLC is used to uplink a route (UM80) or amended route (UM79 or UM83) message that directs flight southbound on Q69, the uplinked load route message will fail:



MEETING 21-01

Rich Boll, NBAA, presented a briefing on a new recommendation regarding single direction airways. He explained that some J-Routes and Q-Routes are designated as High Altitude, Single Direction (HSD) IFR Preferred Routes. The HSD designation results in the depiction of a directional arrow on the IFR Enroute chart. Rich pointed out that directional restrictions are not part of the airway's legal description and ATC considers the airways usable in both directions, however pilots are expected to file an IFR route that is not in conflict with the charted direction. Rich said that some, but not all, Flight Management Systems (FMS) contain the airway restriction records. When the restriction is in the FMS, it can prevent the pilot from loading a route that doesn't conform to the restriction. This leads to a lot of questions regarding the intent behind indicating a route's directionality with regard to flight planning, operational use, and air traffic control (ATC) use. NBAA recommends that the FAA determine the purpose of HSD Q-Routes and J-Routes in the National Airspace System, and re-assess how those restrictions should be documented and charted (slide 7).

Colleen Kubont, FAA/AJV-A350, pointed out that about half of HSD routes are only single directional during specific time periods.

Don McGough, FAA/AJF-170, pointed out that flight inspection may not check a HSD route for DME coverage in both directions. He said it is possible that the coverage could be different depending on direction of flight.

John Moore, Jeppesen, said that what is being recommended will require a massive effort that has a lot of variables that won't be easily defined. ATC has the flexibility to change direction for

an aircraft and that is not the problem. The problem is with the FMS. Rich agreed and said these restrictions were added to some FMS databases because this feature becomes important when flying internationally. Rich said if the FAA intends for these routes to be single directional, they should be documented on the 8260-16 airway form and be charted as such, but if it is merely a preference, they should not be charted as single direction. The issue could be resolved if the FAA states that the Preferred Route database for single directional routes is for flight planning purposes only. Valerie Watson, FAA/AJV-A250, agreed that if these directional instructions are only a preference and not a restriction, then perhaps the arrows should not be on the charts.

Curtis Davis, FAA/AJV-A311, asked whether this was a problem before the proliferation of Q-Routes. He said J-Routes have been single direction for a long time without an issue. Rich said that the J-Routes are time-based, so no restrictions are set. Rich said that the addition of many new HSD Q-Routes along the east coast has exacerbated this issue. Curtis suggested that a perhaps the routes should not be coded in the FMS database as single directional and should be handled as preferred routes. Rich cautioned that the enroute airway restrictions record is the data used to put the arrow on electronic applications. The data has to come from somewhere, so if it is not in the database, charting will not be consistent.

Pat Mulqueen, FAA/AJV-A440, responded to the prior concern that these routes were not evaluated by the FAA in both directions by stating that they ARE evaluated in both directions. He views this as more of a flight planning issue.

Aaron Jacobson, Jeppeson, said his organization would like to better understand the intended use. If ATC intends it to be single direction, it should be charted as such. If it is single direction less than 24 hours, it should not be charted with the arrow, and the coding should match. Gary Fiske, FAA/AJV-P310, emphasized that directionality is not part of the routes' legal description. He said he thinks that the whole idea of restricting these routes as directional is for situational awareness, and if ATC allows bidirectional use, they should not be restricted or flagged as single direction.

Michael Stromberg, UPS, asked where pilot guidance is published for HSD Routes. Rich said it is defined in the Pilot Controller Glossary and Preferred Routes are in the Chart Supplement. Michael asked if guidance should also be published in the Aeronautical Information Manual (AIM).

John Barry, FAA/AIR-622, recommended participation in RTCA Special Committee 227 regarding the update of aeronautical standards in the FMS. He said a change proposal could be brought to this group so airway restrictions are handled consistently.

Valerie encouraged interested parties to sign up for the Single Direction Airway Workgroup, to be chaired by Rich Boll. The workgroup will work to determine whether HSD Routes are considered to be directionally restricted or preferred and, based on that determination, investigate how to best handle possible changes in documentation (8260-16, airway docket, preferred route publication), databasing, and charting of the directional aspect. They will also look at adding/revising pilot guidance in the Chart Users' Guide and the AIM.

Single Direction Airways Workgroup		
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STATUS: OPEN

ACTION: Rich Boll, NBAA, will report on the progress of the Single Direction Airway Workgroup.

MEETING 21-02

Samer Massarueh, FAA/AJV-A223, reviewed the issue. Rich Boll, NBAA, briefed the recommendation and discussed the workgroup activities that have taken place since the last ACM.

The workgroup determined that there are no "regulatory" Single Direction (SLD) airways in the U.S. National Airspace System (NAS) and no criteria that allows the FAA to document a single directional airway in FAA Order 8260.19. SLD airways in the U.S. are "Preferred Routes" and published in the NASR/NFDD Preferred Route database. Coded Instrument Flight Procedure (CIFP) records do not show the directional restrictions. Rich said Air Traffic Control (ATC) assigns flights in accordance with the charted directional restriction, however airways *can* be assigned in an opposite direction and ATC wishes to retain that option. Rich then discussed how single direction routes are handled internationally (slides 7-8).

The workgroup agreed that the U.S. SLD routes are preferred and not directionally restricted so they should continue to be documented in the Preferred Route database. The question is how to communicate to database providers that the Preferred Route data is not directionally restricted so that flight may be filed in the opposite direction. The workgroup is still attempting to determine if the directional arrows should remain on the charts.

John Barry, FAA/AIR-622, asked whether we need to change our charting standards to differentiate between a mandatory and recommended direction. Valerie Watson, FAA/AJV-A250, said the U.S. does not have any mandatory restricted airways. We only have preferred routes and their directionality is depicted with a solid arrow symbol. She said the arrow is clearly defined on the chart legend as a preferred direction.

Diane Adams-Maturo, FAA/AFS-420, said she is part of an airway working group. She offered to take this issue before that group and get ATC feedback.

Scott Jerdan, FAA/AJV-A310, said the CIFP file is in large part built from the NASR subscriber files. He said the decision could be made to not code directionality. Valerie said if the airways are directionally indicated, but ATC wants to use them in the opposite direction, they should remain as "preferred". If ATC wants to restrict a route to a single direction 100% of the time

without exception, the directionality should be part of the airway record and be documented on the FAA Form 8260-16.

Doug Willey, ALPA, said the core foundation for a chart is to show the legal, regulatory airways, not to show preferences. If the directionality is preferred, he does not think it should be shown on the chart. Valerie again stated the preferred meaning of the charted arrow is clearly defined on the chart legend and said depiction of the arrow serves ATC in that it dissuades pilots from attempting to file in the opposite direction. She voiced ATC input would be needed before considering removing the arrows from the charts. Rich agreed.

Bennie Hutto, NATCA, said there are letters of agreement between ATC facilities about how aircraft enter and exit each other's airspace. He said the direction is based on traffic. ATC wants pilots to file in the preferred direction of the route. It creates extra work when a route is filed for a different direction. Showing preferred directional arrows on the charts prevents filings in directions ATC does not want aircraft to fly. Michael Stromberg, UPS-IPA, said the problem is the airway direction is a preference and is not mandatory, so database providers should not be *coding* them as single direction. Bennie agreed they should not be coded only in one direction, but does think the arrow should remain on the charts.

Gary Fiske, FAA/AJV-P310, said preferred routes establish a flow for the busier times of the day. ATC will decide how they are going to clear airplanes based on what is needed at the time. The only problem that needs resolution is that the coding restricts the use of an airway in another direction.

There was some discussion regarding the impact on data driven charting. Rich said the working group still has work to do. He said he would like to get enroute ATC participation. Bennie said he can provide Rich with an enroute ATC contact.

Valerie said she knows the work is still ongoing and that they still need a definitive position from ATC, but at this point, the group has established that these are preferred directional routes. She asked if work can begin now to fix the data so the routes aren't published in the database with directional restrictions. Rich said the workgroup is currently working on a README file that would be distributed with the NASR preferred route database to explain what information should be flagged in the record.

Gary asked if the U.S. has filed a difference with ICAO Annex 4 regarding the depiction of the direction of traffic flow. Valerie said she'll look into that since she's responsible for filing U.S. differences to Annex 4.

STATUS: OPEN

ACTION: Rich Boll, NBAA, will report on the progress of the Single Direction Airway Working Group at the next ACM.

ACTION: Valerie Watson, FAA/AJV-A250, will research if the U.S. should file a difference to ICAO Annex 4 with regard to the charting of preferred directionality.

MEETING 22-01

Rich Boll, NBAA, briefed on the issue of Single Direction (SLD) airways. See slides 1-5 for a summary of this issue. Rich said the workgroup agreed that in the U.S. there are no true Single Direction Airways. The arrows on the airways/routes on enroute charts in the U.S. indicate preferred directionality NOT a directional restriction. This means the directionality of these airways/routes should continue to be documented in the Preferred Route resource of NASR. Database providers need to understand that preferred route directional data is not a restriction and flight plans need to be able to be filed in the opposite direction. Rich reported that the workgroup is developing guidance material for the navigation database providers so they do not include directional restrictions as part of the ARINC 424 airway coding. The group is also working on developing flight planning provider guidance and pilot/operator guidance.

Diane Adams-Maturo, FAA/AFS-420, said she is part of a workgroup that is working on related airway issues. This group is sending several items to the FAA Office of General Counsel regarding old airway criteria. She also said preferred routes are not necessarily airways and don't fall under Part 95. They are only contained in the preferred route database, they are not regulatory, and they are the only U.S. routes that have directional statements. Rich agreed and said that is why they need the educational piece to solve this problem. Valerie Watson, FAA/AJV-A250, agreed and said this issue has been misunderstood for years, so she supports the work group's plan to use all outreach tools available to clarify this issue.

Curtis Davis, FAA/AJV-A311, said some of the older offshore non-regulatory ATS airways were published in the National Flight Data Digest (NFDD) with directionality but were not stored in the National Airspace System Resource (NASR) database. They are captured in National Geospatial-Intelligence Agency's (NGA's) Digital Aeronautical Flight Information File (DAFIF) with directionality. He thinks that for consistency, all the airways should be published with directionality using preferred route database. Cameron Korrect, NGA, said the military doesn't have the capability in DAFIF to differentiate a preferred direction. He said they are coding them as single directional airways. Scott Jerdan, FAA/AJV-A310, stated DAFIF is not an authorized source for domestic charting information. He believes the focus should be on the source for FAA products and the charted result of that source. Curtis said there are several airways offshore that have directionality and the directionality is sourced with an airway remark. Scott clarified those are non-regulatory Air Traffic Services (ATS) routes 12 nautical miles offshore and that Diane is addressing those non-regulatory routes as part of her working group. He asked Curtis to look at the non-regulatory ATS routes with directionality and ensure they are databased in NASR consistently with the intent of their use. Rich said now that he knows what Diane's group is working on, he thinks this working group should concentrate on the FAA preferred routes and communicating that they need to be coded in such a way that they can be flown in either direction

Gary Fiske, FAA/AJV-P310, agreed and said he thinks this is being overanalyzed and the issue is simply that guidance is needed to ensure that the FMS database providers are not coding these routes with directionality. Valerie agreed and said Rich is working to provide that education piece to the navigation database providers.

Valerie said she also had an action from the last ACM to research if the U.S. should file a difference to International Civil Aviation Organization (ICAO) Annex 4 with regard to the charting of preferred directionality. She said ICAO documentation states for airways/routes "any

limitations in the direction of traffic flow" should be charted. She said direction is charted, but it is not a mandatory traffic flow and is clearly indicated as preferred on the chart legend. She doesn't think this constitutes a difference, but said she can file a clarification the next time IACO Annex 4 is reviewed.

STATUS: OPEN

ACTION: Rich Boll, NBAA, will report on the progress of the Single Direction Airway Working Group at the next ACM.

ACTION: Curtis Davis, FAA/AJV-A311, will ensure non-regulatory ATS routes with directionality are correctly represented in NASR.

ACTION: Diane Adams-Maturo, FAA/AFS-420, will report on anything relevant to this discussion that arises from the airway workgroup she is part of.

MEETING 22-02

Rich Boll, NBAA, briefed on the progress of the working group. The group determined the directional component of all airways in the NAS is preferred and does not constitute a restriction. The problem remains that they are coded in some databases with a directional restriction, preventing filing in the opposite direction. Air Traffic has made clear that they wish to be able to clear aircraft in either direction on any airway or route in the NAS. Curtis Davis, FAA/AJV-A311, is working to make sure the airways in NASR are databased correctly to reflect preferred directionality. Rich said the workgroup recommends this be communicated to users through: (1) publication of a Charting Notice, (2) publication of guidance in the National Airspace System Resource (NASR) README file, and (3) update of the Enroute Chart Legend and Chart Users' Guide. Rich showed the audience the draft Charting Notice.

Rich asked Aaron Jacobson, Jeppesen/Boeing, whether the Charting Notice and README file would give him the mechanisms needed to code the airways as intended, i.e., preferred direction rather than directionally restricted. Aaron confirmed it would and said that all the airways coded in a single direction have been recoded so they should now be loadable in both directions. He questioned if the Air Traffic Service (ATS) routes should still be referred to as single direction or if they should be renamed to preferred single direction route. Valerie Watson, AJV-A250, said these ATS routes currently referred to as single direction routes will be revised.

Curtis Davis, FAA/AJV-A311, said currently there are nine airways that are still databased as single direction. His team will remove the directional component from the NASR airway file and will publish an overlying preferred route for all of these airways in the 23 Feb 2023 update. Concurrent with the changes in NASR, the legend references on the charts will be updated to "Preferred Single Direction ATS Route". Curtis said they will include a note about this change in the December NASR readme to help users prepare for the February update.

Rich asked if the other database providers think this solution is sufficient. Roland Borys, Lido, and Dario Pierandrei, Lido, said they think this solution will meet their needs.

Doug Willey, ALPA, thinks the word "single" is unnecessary and makes the direction sound regulatory. He said part of the issue is that the rest of the world has regulatory directional

routes, but the U.S. doesn't. He thinks they should be named "preferred direction routes". Rich and Valerie agreed and said that now is the time to make this change. Valerie said she is in favor of the legends and all terminology and headers being updated to say "preferred direction", removing the term "single". She committed to working to ensure that is how they are referenced in/on all her organization's products.

Tom Carrigan, FAA/AJV-A311, said the data team has talked about this issue at internal meetings and everyone agrees with the proposed changes. His team plans to update NASR next week. He also agrees with the terminology change. Rich said the charting notice will also need to be updated with the new terminology. He asked when the chart legend changes can be done. Valerie said it will take an Interagency Air Committee (IAC) specification change, but she will initiate the process immediately so it can be effective for the February date.

STATUS: OPEN

ACTION: Rich Boll, NBAA, will work with Jennifer Hendi, FAA/AJV-A250, to update and publish the Charting Notice.

ACTION: Valerie Watson, FAA/AJV-A250, will process an Interagency Air Committee (IAC) specification change to revise the Enroute Chart legends to refer to these routes/airways as "Preferred Direction". She will also ensure the Chart Supplement is updated as necessary.

ACTION: Tom Carrigan, FAA/AJV-A311, will update the NASR README file for the December release to help prepare users for the 23 February 2023 NASR changes.

ACTION: Colleen Kubont, FAA/AJV-A350, will investigate whether the NASR headers and/or CSV output headers need to be updated to reflect the removal of the word "single".

ACTION: Jennifer Hendi, FAA/AJV-A250, will update the Aeronautical Chart Users' Guide guidance for preferred direction airways.

MEETING 23-01

Jennifer Hendi, FAA/AJV-A250, reported that a Charting Notice was published on 8 November 2022 to inform chart users and navigation data suppliers of the intended purpose of the charting of preferred IFR routes in the U.S. Domestic National Airspace System (NAS). She also said that Interagency Air Committee Requirement Document 850 that changed the term "single" direction to "preferred" direction, was signed and implemented for 23 February 2023. The Aeronautical Chart Users' Guide was also updated for the 23 February 2023 edition.

Tom Carrigan, FAA/AJV-A311, reported that an explanation regarding preferred direction routes was added to the 12/01/2022 National Airspace System Resource (NASR) README file.

Colleen Kubont, FAA/AJV-A350, reported that the CSV output has been modified to replace the "single" headers with "preferred". A ticket has been opened to update the headers in NASR, however that update is not likely prior to 2024.

Darrell Pennington, ALPA, asked if there was a way to add coding for both directions. Aaron Jacobson, Boeing/Jeppesen, explained that the README guidance that was published will help

to ensure these routes do not get coded in a single direction so that they can be filed in either direction.

Jennifer said all actions for this issue are complete and recommended closure. There were no objections. Rich Boll, NBAA, the original proponent of this issue, agreed with closing it.

STATUS: CLOSED