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*A Communication from the
Vice President, System Operations Services*

In this Issue:

Q-routes – The Genesis, Evolution, Benefits, and Future of these Highways in the Sky

/TERF **The Genesis of Q-routes** – In 2000, a Government-industry forum recommended increasing the use of area navigation (RNAV) to allow aircraft to more efficiently navigate within the National Airspace System (NAS). The benefits included reduced mileage, reduction of conflicts between routes, and additional routes within the same airspace. In 2003, the Code of Federal Regulations was changed to allow creation of RNAV routes in domestic airspace without being dependent on ground-based navigational aids (NAVAID).

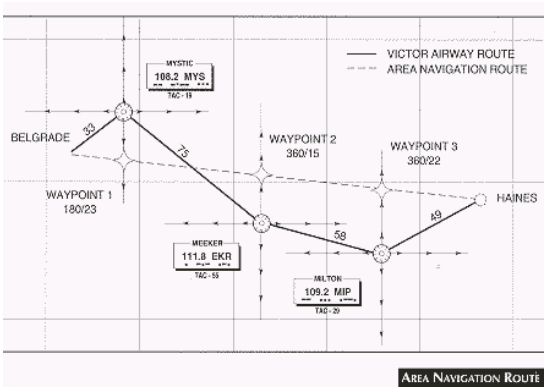

Figure 1 – RNAV Route vs. Conventional Airway

Later that year, the first RNAV routes were established on the west coast. These high-altitude RNAV routes, referred to as "Q" routes, are usable by RNAV-equipped aircraft from flight level (FL) 180 through FL 450. System safety along an RNAV route is ensured through a combination of aircraft navigation accuracy, route separation, and air traffic control (ATC) radar monitoring and communications.

Q-route Evolution – The first group of Q-routes was developed along the west coast from Seattle southbound to San Francisco and the Los Angeles basin and in Minneapolis Center to connect with the Canadian RNAV routes within Toronto Center's high-activity, east-west corridor. A major focus of the next group of Q-routes was on minimizing the impact of Special Use Airspace and ATC areas. As a result, Q-routes were established in the Southwest and along the Southern United States (U.S.) border. Routes also were published for high-activity flows within Texas, Florida, and Tennessee. Currently, 43 Q-routes exist in the contiguous U.S., and another route between Seattle and Phoenix is scheduled to be published later this year. An additional eight Q-routes have been established in Alaska under the Capstone Program.

The Benefits of Q-routes – Today, more than 85 percent of the U.S. air carrier fleet is RNAV-capable, and the percentage of aircraft operating in the turbojet cruise environment that can fly Q-routes is even higher. Q-routes provide more direct routing compared to conventional routes and allow creation

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of parallel routes where a single route existed before. Direct routes improve airspace capacity and relieve congestion while reducing direct operating expenses, such as fuel costs, to the aircraft operator.

These benefits are expected to lead to more efficient design of airspace and procedures and, collectively, lead to improved safety, access, capacity, predictability, and operational efficiency for airlines and ATC. By eliminating the need for airways to be tied to NAVAIDs, aircraft gain the flexibility of point-to-point operations. In Figure 2, we see that ATC has several options for routing traffic along the west coast.

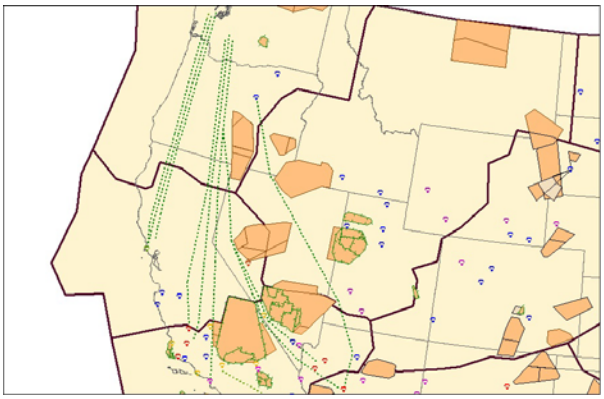

Figure 2

The Future of Q-routes – The Federal Aviation Administration Flight Plan introduces Q-routes as one of many strategies on the road to the Next Generation Air Transportation System. These routes will provide efficient traffic flows between busy airports (i.e., Operational Evolution Partnership airports), and allow parallel routes to be established where necessary to meet increasing demand on the NAS. Additional Q-routes will be established in those parts of the high-altitude airspace where route structure is needed. There are many areas where Q-routes can benefit both the flying public and ATC. As you can see, with RNAV Q-routes, the sky is the limit.

Publishing Q-routes – If you believe Q-routes would benefit your facility, contact personnel at the service center and have them call the RNAV/Required Navigation Performance (RNP) Group at (202) 385-4682. The RNAV/RNP Group will put you in touch with a service center representative who will help you in the development and publication processes.

Safety Alerts and Traffic Advisories

ATC Priorities

*TR/EF Recently, there has been a rise in situations where aircrews have reported being close to other aircraft without traffic calls from ATC. This article is a reminder that providing safety alerts and issuing traffic is an important part of our job. Whether the aircraft are instrument flight rules(IFR) or visual flight rules(VFR), in controlled airspace, radar identified, or on another controller's frequency, our responsibility includes issuing safety alerts and traffic advisories and informing other controllers if an aircraft is in a potentially unsafe situation.

Included below are some excerpts from FAA Order (FAAO) 7110.65R about traffic issuance and safety alerts for your review:

2-1-6. SAFETY ALERT – Issue a safety alert to an aircraft if you are aware the aircraft is in a position/altitude which, in your judgment, places it in unsafe proximity to terrain, obstructions, or other aircraft. Once the pilot informs you action is being taken to resolve the situation, you may discontinue the issuance of further alerts. Do not assume that because someone else has responsibility for the aircraft that the unsafe situation has been observed and the safety alert issued; inform the appropriate controller.

b. Aircraft Conflict/Mode C Intruder Alert. Immediately issue/initiate an alert to an aircraft if you are aware of another aircraft at an altitude which you believe places them in unsafe proximity. If feasible, offer the pilot an alternate course of action.

2-1-21. TRAFFIC ADVISORIES – Unless an aircraft is operating within Class A airspace or omission is requested by the pilot, issue traffic advisories to all aircraft (IFR or VFR) on your frequency when, in your judgment, their proximity may diminish to less than the applicable separation minima. Where no separation minima applies, such as for VFR aircraft outside of Class B/Class C airspace, or a TRSA, issue traffic advisories to those aircraft on your frequency when in your judgment their proximity warrants it.

5-1-8. MERGING TARGET PROCEDURES

a. Except while they are established in a holding pattern, apply merging target procedures to all radar identified:

1. Aircraft at 10,000 feet and above.
2. Turbojet aircraft regardless of altitude.
3. Presidential aircraft regardless of altitude.

b. Issue traffic information to those aircraft listed in subpara a whose targets appear likely to merge unless the aircraft are separated by more than the appropriate vertical separation minima.

In this publication, the option(s) for which a briefing is required are indicated by an asterisk (*) followed by one or more letter designators, i.e., ****T*** *= Tower, combined tower/approach control,* ****R*** *= TRACON,* ****E*** *= ARTCC (En route), or* ****F*** *= AFSS/FSS. (Reference FAAO 7210.3U, para. 2-2-8.)*

This table lists Bulletins published since 2002. They can also be found on the Internet at: http://www.faa.gov/atpubs

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