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A Communication from the
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/TERF/ **Why Tango Routes were Established?** In October 2004, the Aircraft Owners and Pilots Association (AOPA) requested the FAA establish area navigation (RNAV) routes around or through busy terminal areas. The fixed location of ground based Navigation Aids (NAVAIDS) precluded efficient routing for General Aviation (GA) in a number of busy terminal areas. To accommodate AOPA's request, the FAA used the flexibility provided by RNAV to develop a point-to-point route capability for the low altitude environment, including busy terminal areas. Those routes are called RNAV Tango routes.

Tango routes enable Global Navigation Satellite System (GNSS), commonly referred to in the U. S. as Global Positioning System (GPS), equipped GA aircraft to more efficiently fly around or through terminal areas with Class B and Class C airspace. Tango routes also help reduce controller workload by providing a published route in lieu of controllers providing navigation services through use of radar vectoring along those flight paths.

How can Tango Routes Help the ATO and its Customers? The biggest benefit Tango routes offer is providing GA pilots an ability to efficiently navigate around and through busy terminal areas without necessitating the additional controller workload of routinely providing radar vectors. Over time, as we refined arrival and departure procedures to increase efficiency and capacity to the major airports for terminal areas, a number of the airways in those areas conflicted with the new traffic flows. As a result, controllers frequently had to vector the aircraft flying those airways away from the conflicting routes, adding to their workload. With Tango routes, GA pilots can navigate on their own along non-conflicting routes, saving them time and money associated with the previous generally longer flight paths, while reducing controller workload; a "win-win" for all.

Tango routes are published on low altitude en route charts in blue. Since the minimum en route altitude (MEA) for GPS navigation is not affected by NAVAID limitations, MEAs for Tango routes can frequently be lower than for conventional airways. The lower MEAs can be a significant benefit to pilots in their route planning and avoidance of icing if they can fly below the freezing level.

Where are the Tango Routes? Currently, there are 14 Tango routes in the contiguous United States. The first Tango routes were developed for the Charlotte, NC area and published in September 2005.

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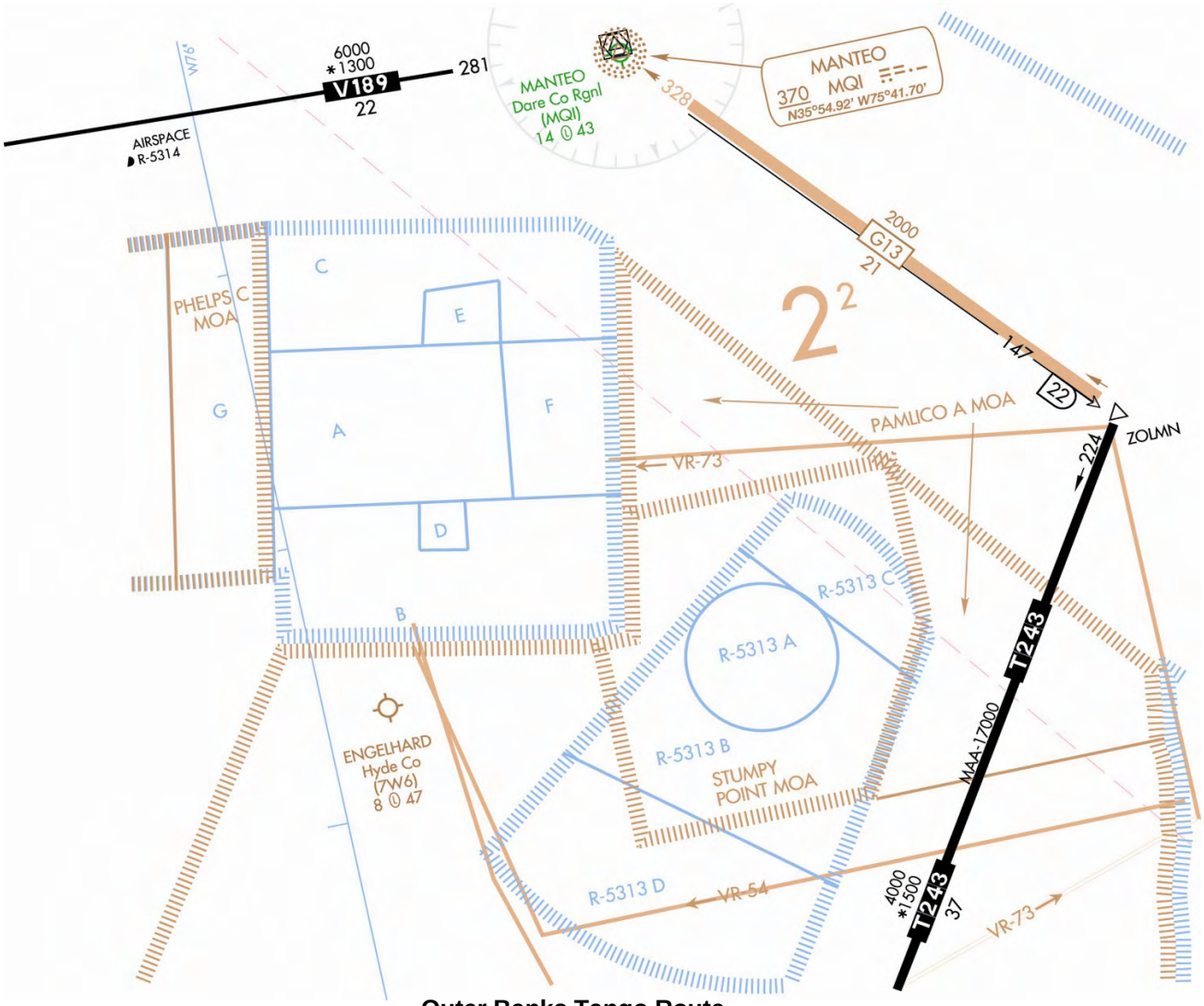

Outer Banks Tango Route

Tango routes for the Cincinnati, OH and Jacksonville, FL areas followed in December 2005. An additional Tango route was published in August 2006, to serve the Outer Banks, NC area; replacing an airway that became unusable with the decommissioning of a supporting non-directional beacon.

How can Tango Routes be Established for your Area? This article has not addressed all the benefits and uses of Tango routes, but hopefully we have provided enough information to get you interested as to how they could help in your area. The first step to get a Tango route is having the facility discuss the need with their Service Center. The Area Navigation/Required Navigation Performance (RNAV/RNP) Group will work closely with the Service Center to develop routes to serve both ATO and our customer's needs. The RNAV/RNP Group is very adept in working with facility and Service Center personnel to design efficient routes for both busy areas and where conventional airways are not available to meet needs.

Since Tango routes are published routes, they must be established by regulation. The RNAV/RNP Group will help in getting the route established. They will assist in preparation of the rulemaking package, track its progress through all regulatory activities, develop responses to comments, and facilitate the overall charting effort.

The National Aeronautical Charting Group (NACG) has also been very helpful in the Tango route development process. They have worked closely with the Eastern En Route and Oceanic Service Area in the development of the Tango routes for Charlotte, Jacksonville, and Cincinnati. The NACG provided them with graphics during the development, made

suggestions that met the ATC requirements, and ensured the en route charts were more legible for pilots.

If you believe Tango routes would benefit your facility operations, contact your Service Area and have them give the RNAV/RNP Group a call at 202-385-4682. The RNAV/RNP Group will put you in touch with their Service Area representative to help you in the development and publication process.

WAAS Usage Ready to Skyrocket

//TF// The number of aircraft using the GPS Wide Area Augmentation System (WAAS) will vastly increase starting this November. Commissioned in July, 2003 there has been limited use of WAAS instrument procedures. While FAA TERPS specialists have already developed more than 650 WAAS and 950 LNAV/VNAV procedures, there are only about four thousand general aviation aircraft equipped to fly WAAS procedures. This low equipage rate is the result of only one avionics receiver certified for WAAS operations. However, this will change in November when Garmin begins to upgrade their 400 and 500 series GPS avionic receivers to be WAAS capable. In addition, the WAAS navigational transponder on the new navigation satellite [PanAmSat (PAS)] becomes operational in October. This will return WAAS coverage to the New England area.

Controllers and Flight Service personnel can reacquaint themselves with the WAAS by reviewing the Controller Based Instruction #57097, dated June 2005. This CBI provides training on system components, WAAS instrument approach charts, WAAS descent minima (LPV), controller and flight service personnel actions and WAAS NOTAMS. With the FAA Flight Plan goal of 300 new WAAS procedures each year and more avionics options coming available, it's only a matter of time before WAAS (titled RNAV (GPS) Rwy ##) approaches are at airports near you, if they aren't there already. More information about WAAS and the GPS program are available at http://gps.faa.gov.

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 7210.3, para. 2-2-8.)*

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

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** Special Edition