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A Communication from the
Vice President, System Operations Services

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DUTY PRIORITY, SAFETY ALERTS, AND TRAFFIC ADVISORIES

/*TRE FAA Order JO 7110.65, paragraph 2-1-1, ATC Service, states: "...controllers shall provide additional service procedures to the extent permitted by higher priority duties and other circumstances. The provision of additional services is not optional on the part of the controller, but rather is required when the work situation permits." Paragraph 2-1-2c, Duty Priority, states: "Provide additional services to the extent possible, contingent only upon higher priority duties and other factors including limitations of radar, volume of traffic, frequency congestion, and workload." A recent audit conducted by the Federal Aviation Administration Air Traffic Safety Oversight Service also indicates safety alerts and radar traffic advisories were not always issued when warranted, and proper procedures and phraseology were not used as required. Some recent near mid-air collisions (NMAC) and evasive actions taken by pilots may help underscore the need for air traffic controllers to exercise extreme vigilance and thorough action when issuing safety alerts and radar traffic advisories.

An example that illustrates this need occurred when an IFR Piper Aerostar (PA60) in a descent and a VFR Twin Cessna (C335) in cruise flight on converging headings experienced a NMAC after the controller became distracted by a discussion in the terminal radar approach control (TRACON). The controller had initially called traffic at 10 miles, but then turned his attention away from the scope to answer some questions. When the controller returned his attention to the scope, he observed two aircraft passing. The controller did not realize the NMAC had occurred until the pilot of the C335 called the TRACON to file a report. The pilot estimated the closest proximity was around 100 feet vertical separation.

Another incident involved a V-22 flying IFR on an airway at 12,000 feet in air route traffic control center (ARTCC) airspace. A DHC6 was climbing VFR for parachute jump operations in the vicinity of an airport. Radar data indicates the V-22 was approaching the DHC6 climb area. The DHC6 maintained an altitude of approximately 12,000 feet for a brief period, and the V-22 approached the same area at 12,000 feet. The ARTCC controller issued a traffic advisory to the DHC6, stating the traffic was two miles away. The DHC6 pilot stated the military aircraft was about 100-150 feet away at closest proximity while the V-22 pilot reported closest proximity to be approximately 20 feet. The V-22 pilot took action to avoid the DHC6. During this time, the ARTCC controllers were conducting a position relief briefing, and controller on-the-job instruction was in progress.

The need was again exemplified when a B767, descending on a standard terminal arrival, had to take evasive maneuvers to avoid two VFR aircraft. This took place as a handoff, and frequency change between sectors was occurring. The ARTCC called VFR traffic at 9,500 feet to the B767 twice, but the B767 did not report the aircraft in sight. Obtaining a traffic alert and collision avoidance system (TCAS) traffic advisory, the B767 pilot leveled off at 10,500 feet until clear of the traffic. Resuming the descent, and after being given a frequency change to approach control, the B767 pilot received a TCAS resolution advisory instructing it to climb immediately to avoid a second VFR aircraft. This traffic was not called by either controller.

Duty Priority and Safety Alerts

Safety alerts share highest priority of duty status with maintaining separation. A safety alert must be issued to an aircraft if the controller is aware that it is in unsafe proximity to other aircraft, obstructions, or terrain. Judgment is involved in setting priorities, and in determining unsafe proximities. It is important to have the ability to judge when the distance between aircraft or between an aircraft and obstructions or terrain may diminish to less than the applicable separation minima so that safety advisories and safety alerts are given in time to be useful to the pilot.

Judgment

“Thinking you know when in fact you don't is a fatal mistake, to which we are all prone.”

Bertrand Russell

A significant portion of a controller's job involves good judgment. The current version of FAA Order JO 7110.65 mentions 'judgment' numerous times. Good professional judgment is essential. Although there may not be an exact formula, each controller's professional experiences, continuing education and training, and reflections on those experiences and opportunities may significantly contribute to the development of good professional judgment. To improve the quality of our professional judgment, it may benefit each of us to discuss various ways to predict potential loss of separation. Provision of timely and thorough traffic advisories or safety alerts will help pilots in

collaboratively using their professional judgment to synergistically reduce risks for loss of separation that threaten the safety of the National Airspace System (NAS).

Traffic Advisories and Merging Target Procedures

Except for provisions described in FAA Order JO 7110.65, paragraph 2-1-21, traffic advisories are to be issued to aircraft when, in the controller's judgment, the distance between aircraft may diminish to less than the applicable separation standard. Paragraph 2-1-21 also describes what to do where no separation minima applies. Usually, traffic advisories are not discretionary and must be issued when higher priorities do not preclude them.

To help ensure pertinent information about traffic is understood, controllers should provide the traffic azimuth, distance, direction and/or movement, as well as aircraft type and altitude. FAA Order JO 7110.65 provides the procedures and specifies the phraseology to use when issuing traffic advisories. Additionally, controllers are to apply merging target procedures to all radar identified aircraft at 10,000 feet and above, and to all radar identified turbojet and Presidential aircraft regardless of altitude.

Timeliness

It may be a useful technique to take the extra step to call traffic in time for it to be useful to the pilot. Ensure traffic calls include all pertinent information. Again, judgment is a factor in determining when to issue traffic advisories and traffic alerts. An informed pilot is less likely to be surprised and declare a NMAC than a pilot who is either not alerted about potential traffic, does not receive enough information about potential traffic, or receives a traffic call at the last minute. An informed pilot may also be better able to take proactive measures to reduce the risk of losing separation even when others make mistakes.

Additional information about Duty Priority, Safety Alerts, and Traffic Advisories can be found in FAA Order JO 7110.65, Paragraphs 2-1-2, Duty Priority; 2-1-6, Safety Alert; 2-1-21, Traffic Advisories; and 5-1-8, Merging Target Procedures.

ENHANCING PILOT SITUATIONAL AWARENESS IN THE NAS

/TREF The Surveillance and Broadcast Services Office is introducing a broadcast service to enhance pilot situational awareness throughout the NAS. This new broadcast service is called Essential Services and consists of two types of services, TIS-B and FIS-B. It provides traffic and flight information to pilots that are operating in a properly equipped aircraft. There is no impact to air traffic control (ATC). This information is being provided in the event that ATC receives inquiries on the frequency regarding these services. It does not replace any ATC operational responsibilities with respect to weather or traffic prescribed within FAA Order JO 7110.65.

TIS-B is the broadcast of ATC derived traffic information to ADS-B equipped (1090ES or universal access transceiver (UAT) aircraft. The source of this traffic information is derived from ground-based air traffic surveillance sensors, typically from radar targets. TIS-B service will be available throughout the NAS where there are both adequate surveillance coverage (radar) and broadcast coverage from ADS-B ground stations.

TIS-B provides ADS-B equipped aircraft with a more complete traffic picture in situations where nearby aircraft are not all similarly ADS-B equipped, or not equipped with ADS-B. This advisory application will enhance a pilot's visual acquisition of other traffic.

Only transponder equipped targets (i.e., Mode A/C or Mode S transponders) are detected and transmitted through the ATC ground system architecture. Current radar sites may result in limited radar surveillance coverage at lower altitudes near airports with subsequently limited TIS-B service volume coverage. If there is no radar coverage in a specific area, there is no TIS-B coverage in that area.

FIS-B is a ground broadcast service provided through the ADS-B broadcast services network over the UAT data link that operates on 978 MHz's.

The FAA FIS-B system provides pilots and flight crews with a cockpit display of specific aviation weather and aeronautical information. FIS-B service availability is expected across the NAS in 2013 and is currently available within certain regions.

The general performance of TIS-B and FIS-B is monitored by maintenance personnel, not ATC. It is recommended that ATC advise pilots to report malfunctions they may encounter in one of the following ways:

1. By radio (if in flight) or by telephone to the nearest controlling ATC facility, or Flight Service Station (FSS). The ATC or FSS manager/supervisor will notify the technical field operations control center in charge of monitoring TIS-B and FIS-B, in that specific airspace, to coordinate repair actions for the service.

2. By obtaining FAA Form 8000-7, Safety Improvement Report. A postage-paid card is designed for this purpose. These cards may be obtained from the FAA FSSs, flight standards district offices, and general aviation fixed-based operators. There are two ADS-B data links: 1090 MHz Extended Squitter (1090ES) and the UAT. From a pilot's standpoint, the two links operate similarly and support ADS-B and TIS-B. The UAT link supports FIS-B within the ground infrastructure coverage volume.

More information can be obtained online at www.adsb.gov or in the Aeronautical Information Manual.

The Air Traffic Bulletin (ATB) is a means for headquarters to remind field facilities of proper application of procedures and other instructions. It is published and distributed quarterly, with special issues published as necessary.

Articles must be submitted electronically in Microsoft® Word by the offices of primary responsibility with approval at the group level or above. Quarterly articles must be received by the end of September, December, March, and June of each year.

*In this publication, the option(s) for which a briefing is required is indicated by an asterisk followed by one or more letter designators, i. e., *T – Tower, *E – ARTCC, *R – TRACON, or *F – AFSS/FSS.*

*(Reference FAA Order JO 7210.3, Facility Operation and Administration, paragraph 2-2-9)
Archived ATB issues are available online: www.faa.gov/air_traffic/publications/*