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A Communication from the  
Vice President, System Operations Services

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**/\*TRF/E** Automated Lightning Detection and Reporting System (ALDARS) was interfaced in the Automated Surface Observing System (ASOS) software version 2.6. This modification to the system provides thunderstorm information (cloud-to-ground lightning reports) out to 10 miles from the airport, and lightning information from 10 to 30 miles from the airport.

Thunderstorm activity will be reported as "TS" in the present weather field of the meteorological report/special observation (METAR/SPECI) if report of the storm is located within a 5-mile radius of the airport. If activity is detected beyond 5 miles, but less than 10 miles from the airport, the thunderstorm is considered to be located in the vicinity of the airport and is reported as "VCTS." Any activity from 10 to 30 miles is defined as distant lightning and reported as "LTG DSNT (direction)." Unlike "TS" and "VCTS," "LTG DSNT NW" is reported in the

remarks section of the weather report. A SPECI will be generated when the thunderstorm activity indicates movement from outside a 10-mile radius of the airport to inside a 10-mile-radius. A SPECI will also be generated when a previously reported thunderstorm has ended, or has moved outside a 10-mile radius of the airport.

Lastly, a SPECI will be generated when a TS in the VCTS (1) moves inside the 5-mile radius of the airport (becomes TS at the airport); (2) a TS moves outside the 5-mile radius (becomes VCTS); or (3) ends.

If there is no lightning detected for 15 minutes, a SPECI will be generated to end the thunderstorm with specific information in the remarks section. For example, TSE23 means the thunderstorm ended at 23 minutes after the hour. If lightning is present, but moved outside of a 10-mile radius, LTG DSNT NE TSE23 will appear in the remarks section.

When the ALDARS service was implemented, the functionality for accurately reporting thunderstorms at the airport was discovered. If a thunderstorm starts as VCTS, and moves into the 5-mile radius, no change to the TS will occur. The ASOS will record the change, but take no action to generate the SPECI. This places the liability for missing this report on the observer/air traffic controller. Since it was not ensured that the operator interface device be

monitored continuously, a policy was set that until the ALDARS software could be changed to perform the new SPECI for VCTS to TS, it must not be enabled when the observer is present, and thunderstorm reporting would be provided by a human observer. When a facility closes, the controller/observer must ensure the ALDARS is enabled to continue the reporting service for pilots. Conversely, when a facility opens, the controller/observer must ensure the ALDARS is disabled.

Note: Service level D locations are "stand-alone" sites and have no observer interface. The ASOS Operations and Monitoring Center can access the entire system at all levels for remote maintenance and diagnostics.

**USE OF DESCEND VIA CLEARANCES ON STAR/ RNAV STAR/FMSP PROCEDURES  
DESCEND VIA CLEARANCES; ALTITUDE  
RESTRICTIONS; SPEED RESTRICTIONS;  
VECTORS OF THE STAR/RNAV STAR/FMSP.**

*/\*TR/E* To review "descend via" clearance procedures and altitude and speed restrictions as they pertain to standard terminal arrival (STAR), what procedures to use when it is necessary to vector an aircraft off a STAR, and how to resume a STAR using "descend via" clearance procedures, the following is provided.

**USE OF "DESCEND VIA" CLEARANCES.**

"Descend via" clearances take advantage of modern flight management system (FMS) automation capabilities to fly precise lateral and vertical paths, and manage aircraft speed when flying STAR procedures. Using "descend via" reduces phraseology and pilot/controller workload by providing one clearance to authorize aircraft to fly a STAR pre-coded with a vertical path (crossing altitudes) and speeds. Although the preference is to allow aircraft to fly procedures as published, Order JO 7110.65 allows controllers to vector aircraft and assign speeds/altitudes as required, to expedite traffic, manage compression, and ensure safety.

**"DESCEND VIA" PHRASEOLOGY.**

Clearance to "descend via" authorizes aircraft to fly the published STAR lateral path and to descend at the pilot's discretion to meet all depicted altitudes and speed restrictions for the procedure. When a STAR

contains runway transitions, the transition is included in the "descend via" clearance. If a runway assignment or any subsequent runway change is not issued before 10 nautical miles (NM) from the runway transition waypoint, radar vectors to final shall be provided. When changing frequencies, pilots flying "descend via" clearance are required to advise the receiving controller they are descending via the assigned procedure.

"Descend via" may not be used on any portion of a route containing published "expect" altitude restrictions. However, once beyond that portion of the procedure, "descend via" may be used if there are no further "expect" altitudes published on the route. When there is an operational advantage, "descend via" may be used to shortcut an aircraft to a waypoint/fix on a STAR. Keep in mind, if no altitude restriction is published for the waypoint/fix, one must be assigned. The controller is responsible for obstacle clearance until the aircraft is established on the STAR. The aircraft will then fly the remainder of the STAR as published. However, be aware a shortcut could impact the stability of the profile, and the pilot's ability to comply with subsequent altitude/speed constraints.

**ALTITUDE AND SPEED CHANGES.** Controllers may issue "descend via" clearance and modify waypoint/fix speed, crossing altitude restrictions or final altitude with clearance, if necessary. If an assigned altitude is subsequently modified or restated, any intervening restrictions must also be restated; otherwise, the restrictions no longer apply. Without the use of "descend via" clearance for a procedure containing published altitude restrictions, pilots are required to comply with the last altitude assignment received. However, pilots are always required to comply with published speed restrictions unless modified by air traffic control (ATC). When issuing "descend via" clearance, if previously issued speed restrictions are still required, the restrictions must be restated.

When assigned speeds are no longer required, pilots are advised to "resume normal speed." However, there are reports that pilots may misunderstand the meaning of normal speed and may have to be instructed to comply with restrictions. For example, "delete speed restrictions" was suggested, by the Performance-Based Operations Aviation Rulemaking Committee, to release pilots from

published speed restrictions. In this case, controllers must be cognizant of which restrictions are published because of ATC operational procedures, and which are required because of instrument procedure criteria, before deleting published restrictions. An instruction to “resume normal speed,” does not delete speed restrictions that are applicable to published procedures of upcoming segments of flight, unless specifically stated by ATC.

**VECTORS OFF A PROCEDURE AND TO REJOIN.** After issuing a “descend via” clearance, if it is necessary to vector an aircraft off the procedure, issue an altitude with the vector to maintain all required restrictions. As appropriate, advise the pilot what to expect when the vector is completed. For example, terminal RESUME (name/number FMSP/SID/transition/STAR/procedure) as referenced in Order JO 7110.65, Paragraph 5-6-2, Methods. Aircraft on an RNAV procedure must be re-cleared to a waypoint to rejoin a procedure. Aircraft may be re-cleared using “DESCEND VIA” phraseology, i.e., DESCEND VIA (STAR/RNAV STAR/FMSP name and number) referenced in Paragraph 4-5-7, Altitude Information.

Additional examples of phraseology, referenced from Order JO 7110.65, are provided for further review.

Paragraph 4-5-7. Altitude Information.  
Descend via the Lendy One Arrival, Runway 22 left.”

Example - “Proceed direct Luxor, cross Luxor at or above flight level two zero zero, then descend via the Ksino One Arrival.”

Example - “United 454 descend via the Haris One Arrival, except cross Haris at or above one six thousand.”

Section 6, Paragraph 5-6-2, Methods.  
“EXPECT TO RESUME (Route, SID, STAR, FMSP, etc.)”

Paragraph 4-2-5, Route or Altitude Amendments.  
“Cross Gordonsville VOR at One One Thousand, then, reduce speed to Three Zero Zero.”

Paragraph 5-7-2, Methods.  
“Maintain Two Eight Zero knots.”

Example - “Cross Robinsville at and maintain six thousand at two three zero knots.”

Paragraph 5-7-4, Termination.  
“RESUME NORMAL SPEED.”

## **COURSE GUIDANCE FOR PILOTS CONDUCTING DUAL AND TRIPLE SIMULTANEOUS ILS/MLS APPROACHES.**

**/\*RT** Thousands of simultaneous approaches are conducted at airports across the country daily, but rarely is it evident an aircraft fails to capture the appropriate final approach course once cleared for a particular approach. It is also rarely observed when an aircraft deviates from the approach course once established. Although these events are infrequent, it is important they are detected early when they do occur, and appropriate action is taken. Existing procedures and phraseology are contained in Order JO 7110.65, paragraphs 5-9-7, 5-9-8, and 5-9-9.

Once an aircraft has been cleared for the approach, or instructed to capture the final approach course, the aircraft may overshoot the turn-on or continue on a track which will penetrate the no transition zone (NTZ). The appropriate course of action is to instruct the aircraft to return to the correct final approach course. Paragraph 5-9-7 states: “YOU HAVE CROSSED THE FINAL APPROACH COURSE. TURN (left/right) IMMEDIATELY AND RETURN TO LOCALIZER/AZIMUTH COURSE, or TURN (left/right) AND RETURN TO THE LOCALIZER/AZIMUTH COURSE.”

Once the aircraft touches the NTZ, it is also critical that action is initiated for traffic on the adjacent final, which doubles our chances for continued separation. The “target” aircraft, which refers to aircraft that have strayed off the final approach, alerts pilots to the transmission, which could be their call sign. “TRAFFIC ALERT, (*call sign*), TURN (*right/left*) IMMEDIATELY HEADING (*degrees*), CLIMB AND MAINTAIN (*altitude*).” Using a high update radar system (updates from 1.0-2.4 seconds), final

monitor aid with alert algorithm, or precision runway monitoring system, the controller is able to easily detect lateral movement of the aircraft, and its relationship to the final approach course. In addition to the requirements above, "A controller shall provide position information to an aircraft that is (left/right)

of the depicted localizer centerline, and in their opinion is continuing on a track that may penetrate the NTZ. "(Aircraft call sign) I SHOW YOU (left/right) OF THE FINAL APPROACH COURSE." This advisory could correct a small problem that could become significant. Remain alert for deviations at any point of the approach, and be ready to react.

*The Air Traffic Bulletin (ATB) is a means for headquarters to remind field facilities of proper application of procedures and other instructions. It is routinely 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 division 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 are 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, para. 2-2-9)*

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