The Chart Clinic – Thirtieth in a Series

Speed Limit

In many countries, there is a standard speed limit of 250 knots IAS below 10,000 feet for the entire country. But, in most countries, that standard does not exist for all locations. In Sweden, there is a speed limit of 250 knots when arriving in Stockholm. This speed restriction is shown in the plan view portion of the STAR chart. In addition to the 250 knot speed restriction, there is a speed restriction to maintain at least 160 knots IAS on the ILS track until passing the outer marker (when using ILS Rwy 08, the 160-knot speed minimum should be used up to the ARL 3 DME fix since ILS Rwy 08 does not have an OM). For both the maximum and minimum speed limits, these can be changed by ATC. For the minimum speed limit, if you are flying in an airplane that can’t go as fast as 160 knots IAS, you must inform ATC immediately.

What’s In a Name?

The international naming standard for STARs states that they will be given a name that is the same as the first fix on the enroute transitions where they come together to begin the body of the STAR. At Arlanda Airport in Stockholm, Sweden, the Eltok Two STAR begins to the west of the airport and splits into a number of routes designed to go to initial approach fixes on the US, these separate routes would be considered runway transitions from the STAR, but at Stockholm, each route has a unique name to distinguish it from the other routes. Each of these routes uses a phonetic letter of the alphabet.

If you plan to use the STAR to transition to the ILS Rwy 01 approach, you would file for and receive a clearance for the Eltok Two Tango Arrival. Eltok Two Tango proceeds from the Eltok Intersection and follows a course of 144º toward the Lena (LNA) NDB. The route from the Eltok Intersection shows the route identi-
STARs are also designed for noise abatement. In the US, many SIDs and STARs adhere to, there will be no unnecessary noise abatement. If the routes are strictly followed, you need to pay close attention to how the altitudes are stated means the fix formed by the 249º radial is a fly-over fix. ATC expects you to fly over the radial and then begin the turn. If this were a GPS approach, a circle would be around the fix to indicate its fly-over status. The fix formed by the 249º radial and the 144º bearing is included in the GPS and FMS databases with the identifier of D249S. On the Jeppesen charts, the database identifiers are gradually being added to the SID and STAR charts. They are being depicted within brackets to indicate they are computer navigation fixes.

**Altitude Assignments**

Many STARs include altitude restrictions. At Stockholm, there are three different altitude assignments at the Eltok Intersection depending on which route is followed after Eltok. For the Eltok Two Tango Arrival, the altitude over Eltok is a maximum altitude of FL110. Sometimes the altitudes are “hard” altitudes specified as “at” altitudes, and sometimes the altitudes are minimum altitudes and are specified as “at or above” altitudes. These differences in how the altitudes are stated means you need to pay close attention to how the words are written.

On the Eltok Two Tango Arrival, the last fix is the Tebby VOR. If a clearance for the approach hasn’t been received by the time you are at Tebby, there is a holding pattern south of the VOR. Inside the holding pattern symbol, the number “Z500” is included. This is another piece of altitude information. The minimum altitude for holding south of Tebby is 2,500 feet (notice the altitude is feet, not FL; therefore you would have been given the local altimeter setting by the time you reached Tebby for holding).

**Noise Abatement**

At the bottom of the plan view, there are words that state this STAR is designed for noise abatement. If the routes are strictly adhered to, there will be no unnecessary noise disturbance. In the US, many SIDs and STARs are also designed for noise abatement purposes, but those words are not included on US charts. This concludes the Chart Clinic series of articles. It has been a pleasure writing the articles and receiving all the feedback many of you have given. Your responses tell me you all have a sincere desire to learn as much as possible about the airspace system in which we fly and to understand how that information is shown on charts. Thank you.