

Strike FORM MTR Appendix (SEP 2020)

Entry timing.

Since we are trying to arrive at the target at a specific time GMT, it is imperative that our internal elapsed timer inside the airplane is set accurately according to an external clock with more accuracy than can be assured at the time hack during the brief. In our current aircraft, the KLN 900 will display our current time based on the GPS system. The SETUP page 2 page, accessed via the left selector knob, will show the current time. Use this clock to hack the formation's internal clock per FTI procedures, ideally as the section crosses the entry point. As a reminder, **hack the clock at the route entry time, regardless of aircraft position.** When you are within 30 sec of time hack you should ONLY be focusing on the time hack. A correct time hack, synced on GPS time is imperative to your success throughout the route. Don't allow other distractions to take precedent.

The GPS displays the arrival time of the next waypoint on D/T Page 2 on the right side of the display. One technique available to assist your entry time management is to set up the GPS with SET page 2 on the left, and D/T page 2 on the right side of the display. This allows you to maintain the ability to see the current time in seconds, as well as the ETA for point A (or G). Adjust speed, and/or geometric distance (more on this follows) to enter the route on time to the second. See the image below as an example.

DATE/TIME	+ 2 GPT
02 AUG 96	DIS 34NM
21:22:04UTC	15:23UTC
CORD UNIV/Z	8 KPIE
MAG VAR:	DIS 477NM
AUTO 12°E	17:51UTC
SET 2 ENR-LEG	D/T 2

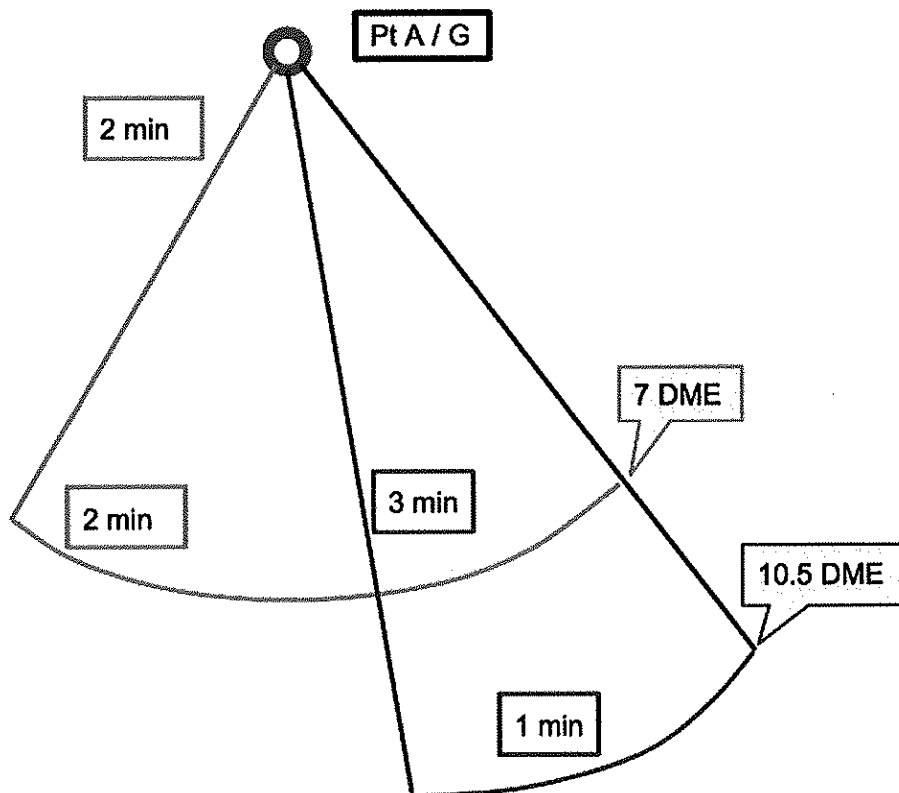
In the above example, GPT would be VR1024A and the ETA to the waypoint would read something closer to the Zulu time, i.e. 21:30 UTC.

Entry delay geometry and holding patterns

If the GPS as detailed above shows you will arrive at the entry point prior to your entry time, you will need to delay until your available entry time. There are a few ways to accomplish this, depending on the amount of delay required.

1. The simplest, and most intuitive, method is to adjust your speed during the transit to the entry point by speeding up or slowing down until the ETA on D/T page 2 matches your entry time. Keep in mind, the longer the available transit the more ability you will have to adjust the arrival time. Within this transit, you are still required to execute the G-Warm, which may impact your planned timing correction.

2. The most commonly used method is to set up an arc at a predetermined distance from the entry point. At 210kts TAS, we will travel 3.5 miles in one minute. Arcing at 7 DME until 2 minutes prior to route entry time, plus the 2 minutes to travel to the entry point, will allow you to cross the entry point on time. The math is similar for arcs at 10.5 DME (3 minutes to entry), 14 DME for 4 minutes, etc. In general, the longer you need to delay the greater DME arc you would want to use; a long delay on a short arc may force a sharp turn to the first inbound heading. See the example below for a visualization of two possibilities for a 4-minute delay.



In the above image, both tracks will delay the aircraft 4 minutes. By arcing at 7 DME shown in green, the aircraft travels across the arc for 2 minutes then inbound for 2 minutes. In the 10.5 DME arc shown in blue, the aircraft arcs for 1 minute, significantly reducing the cross-range travel of the arc before turning inbound and travelling for 3 minutes to arrive at the point. This decision can be made in the aircraft while enroute, taking into consideration the expected duration of the delay, airspace, weather, and other factors.

3. If an extended delay is expected, a standard hold may be utilized similar to the holding performed in instruments. Using a standoff distance as discussed above of 7 or 10.5 DME, a 4 minute holding pattern of 1 minute for the outbound turn, 1 minute outbound, 1 minute inbound turn, and 1 minute inbound to the 7 DME fix can be established. Adjust the inbound and outbound legs as necessary- if you're 5 minutes from entry as you start the outbound turn, finish the turn (1 minute), travel outbound 30 seconds (1:30 elapsed), turn inbound (2:30 elapsed), travel inbound to the 7 DME fix (3:00 elapsed) then continue to the point (5 minutes elapsed). See diagram for a visual explanation.

