

# Holding Patterns showing standard symbols and features

v.5 dated 18/02/09

Extracts from Glasgow Stars via GOW Chart . I suggest obtaining the chart to put this extract into context.  
Full chart available free from <http://www.nats-uk.ead-it.com/public/index.php.html>

Holding Patterns seem to be much feared by new pilots on Vatsim but they're not as scary as they sound IF one is prepared for them. They all have the following features which define the pattern:

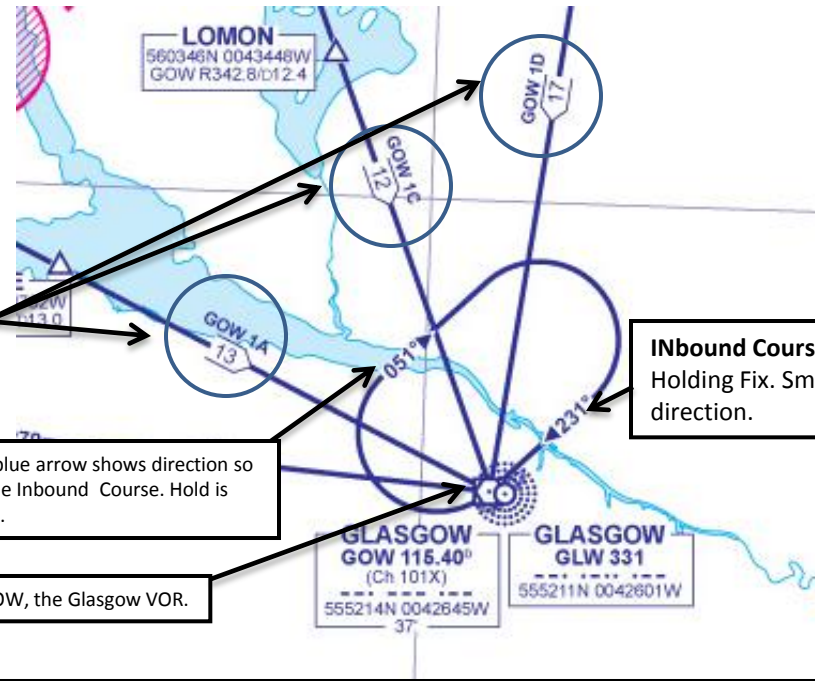
1. A Holding Fix – the waypoint that the Hold rotates around
2. A direction – left or right hand turns
3. An Inbound Course – heading for the leg that ends at the Holding Fix
4. A Leg Time – 1 minute per leg (below FL140, 1.5 mins above) so each straight section takes 1 minute, each turn takes 1 minute. Therefore one complete "lap" takes approx. 4 minutes.
5. A maximum speed. If there is no speed marked on the chart then assume a speed of 220Kts IAS, any faster and your a/c will not hold accurately.

Three different STARs end at the GOW Hold: GOW1A, GOW1C and GOW1D. The name of the STAR tells you the name of the Holding Fix.

OUTbound Course 051. Small blue arrow shows direction so this one turns right to get to the Inbound Course. Hold is defined as **Right Hand Turns**.

Holding Fix. GOW, the Glasgow VOR.

**INbound Course 231** leading TO the Holding Fix. Small blue arrow shows direction.



**READ** the Warning Boxes, especially the **Descent Planning**, it shows you that you may be instructed to descend to FL70 before reaching the GOW Hold. So, for example, on Vatsim if you've had no control higher up (CTR) then you should plan your descent on the assumption that when joining APP he may ask you to achieve FL70 before GOW.

**WARNING**  
Do not proceed beyond GOW VOR (GLW if GOW O/S) without ATC clearance.

**WARNING**  
For Minimum Descent Rate requirements See ENR 1-1-3-1 para 2.

Aircraft on all routes may be Radar Vectored.

**DESCENT PLANNING**  
Pilots should plan for possible descent clearance 7000 (FL equivalent) by GOW 025.  
**ACTUAL DESCENT CLEARANCE WILL BE AS DIRECTED BY ATC.**

## IMPORTANT NOTES:

1. If your a/c has an FMC you **MUST** check that the Hold is programmed correctly as per the Hold's definition, in this example the Hold is defined as: **Inbound Course 231, Right Hand Turns, Leg Time 1 minute, assume speed of 220kts IAS**
2. If your FMC has filled in the Hold automatically then it may well be incorrect. You **MUST** check it against the chart. Many FMCs get the Hold definitions **WRONG** if left to do it themselves. **NEVER ASSUME THAT THE FMC KNOWS WHAT IT'S DOING!!!!**
3. There is enough information on the chart to fly it manually or on HDG SEL (or equivalent) but this is not a holding tutorial!
4. It is vital to make sure you are not too high or too fast on approaching the Hold
5. Remain in the Hold until told "Hold is cancelled, fly heading..." or "Leave the Hold at [fix] heading ...."

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