

Holding Procedures

Reasons to Hold

Reaching a _____ limit
Delays, e.g. traffic and weather
Alignment for instrument approaches
Inability to complete an instrument approach
Buying time, e.g. high workloads, emergencies, lost communications

Identification

A hold must contain a _____ you can identify with the equipment in your aircraft.

The fix can be identified by a VOR, two VORs, a VOR and DME, GPS, an NDB, an outer marker, or occasionally (in VFR conditions) a landmark.

Types

A standard pattern indicates that all turns should be made to the _____.
A non-standard pattern indicates that all turns should be made to the _____.

Holding Instructions

If the holding pattern is charted and the controller has not directed otherwise, hold as _____ on the appropriate chart.

If no holding pattern is charted and holding instructions have not been issued, query ATC. If unable to obtain instructions prior to reaching the fix, then enter a _____ pattern on the course on which you are approaching and request _____ as soon as possible.

An ATC clearance requiring an aircraft to hold at a fix where the pattern is not charted will include the following information:

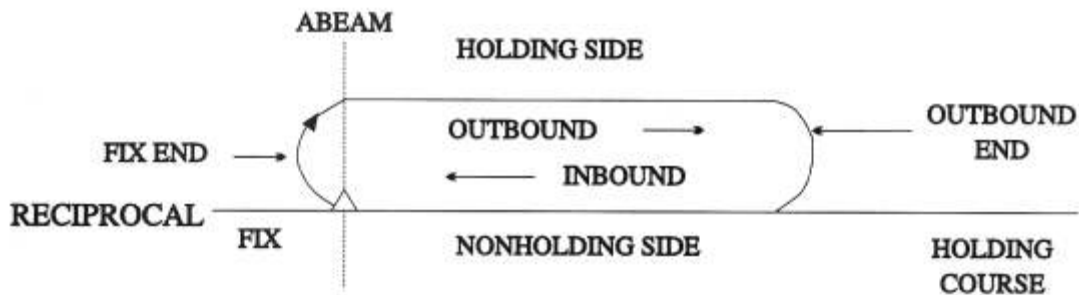
1. Direction (N, NE, E, SE, etc.).
2. Holding fix
3. Radial, course, bearing, airway or route on which the aircraft is to hold.
4. Leg length if _____ or _____ is to be used
5. Direction of turn if _____ turns are required
6. Time to e _____ f _____ c _____

Speed Limits in the Hold

Up to 6,000' MSL: _____ KIAS
 6,001' -14,000' MSL: _____ KIAS
 14,001' MSL and above: _____ KIAS

Pilots should start speed reduction when _____ minutes or less from the holding fix.

Holding Pattern Descriptive Terms



Holding courses always refer to the _____ course.

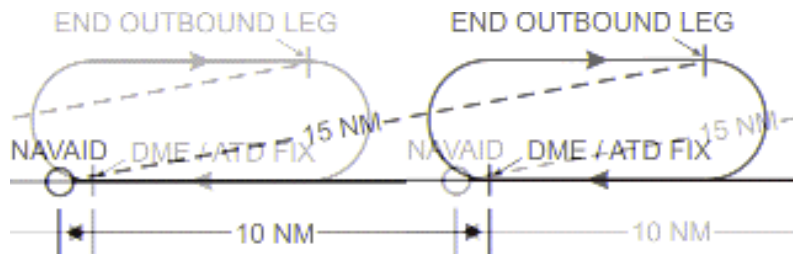
The “holding side” of a hold is _____ airspace. The aircraft must stay on that side of the course to remain safe.

Measuring a Hold

Unless otherwise specified, a hold is measured by the _____ on the inbound leg:

Up to 14,000' MSL: _____ minute(s)
 14,001' MSL and above: _____ minute(s)

A hold can also be measured by _____ (DME or GPS “Along Track Distance”) in lieu of time values. The controller or the IAP chart will specify the length of the outbound leg.



Entry Procedures

P _____ Procedure:

1. Turn parallel to the holding course outbound on the non-holding side
2. Fly for _____ minute(s).
3. Turn in the direction of the holding pattern through more than 180°.
4. Return to the holding fix or intercept the holding course inbound.

T _____ Procedure:

1. Turn outbound heading _____ ° from the course on the holding side.
2. Fly for _____ minute(s).
3. Turn to intercept the inbound holding course.

D _____ Procedure:

1. Fly directly to the fix
2. Turn to follow the holding pattern.

Pilot Actions

When crossing the holding fix:

- | | |
|---------|---|
| T _____ | Start timing the turn outbound |
| T _____ | Turn outbound as required |
| T _____ | Set heading bug/course as required |
| T _____ | Verify speed is within limits |
| T _____ | Announce when first crossing the fix and when leaving |

The initial outbound leg should be flown for 1 minute or 1½ minutes (appropriate to altitude.) Timing for subsequent outbound legs should be adjusted, as necessary, to achieve proper inbound leg time. Pilots may use any navigational means available; i.e., DME, RNAV, etc., to insure the appropriate inbound leg times.

When holding at a VOR station, pilots should begin the turn to the outbound leg at the time of the first _____ of the TO/FROM indicator.

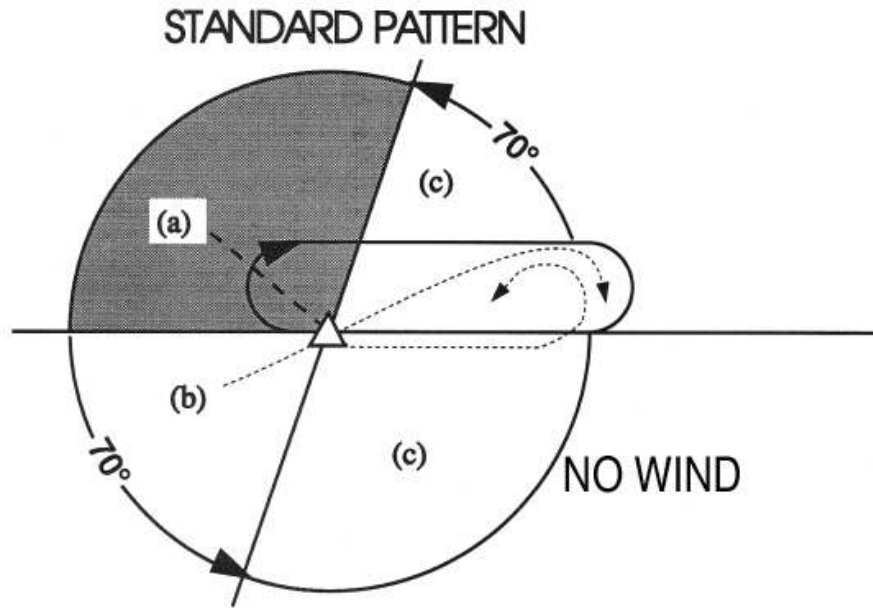
Outbound leg timing begins _____ the fix. If the abeam position cannot be determined, start timing when _____ is completed.

Compensate for wind by “crabbing.” When flying outbound, _____ the inbound drift correction, e.g. if correcting left by 8° when inbound, correct right by _____ ° when outbound.

“In more than 50 years of air traffic control, we haven't left one up there yet.”

– Paul Berge, Controller

Recommended Entry Procedures



- (a) _____
- (b) _____
- (c) _____