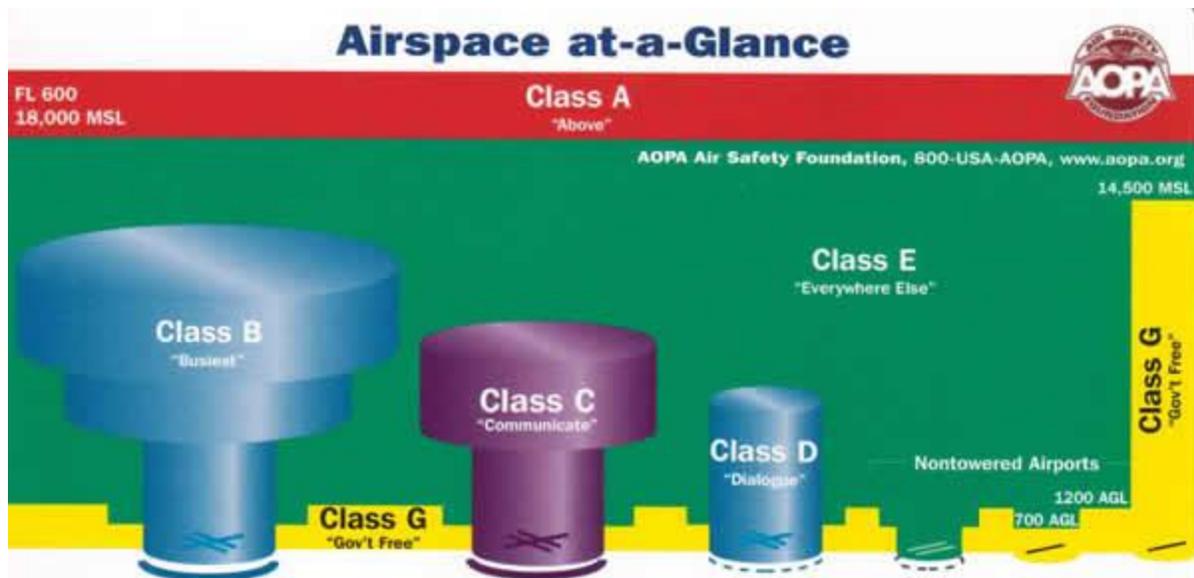
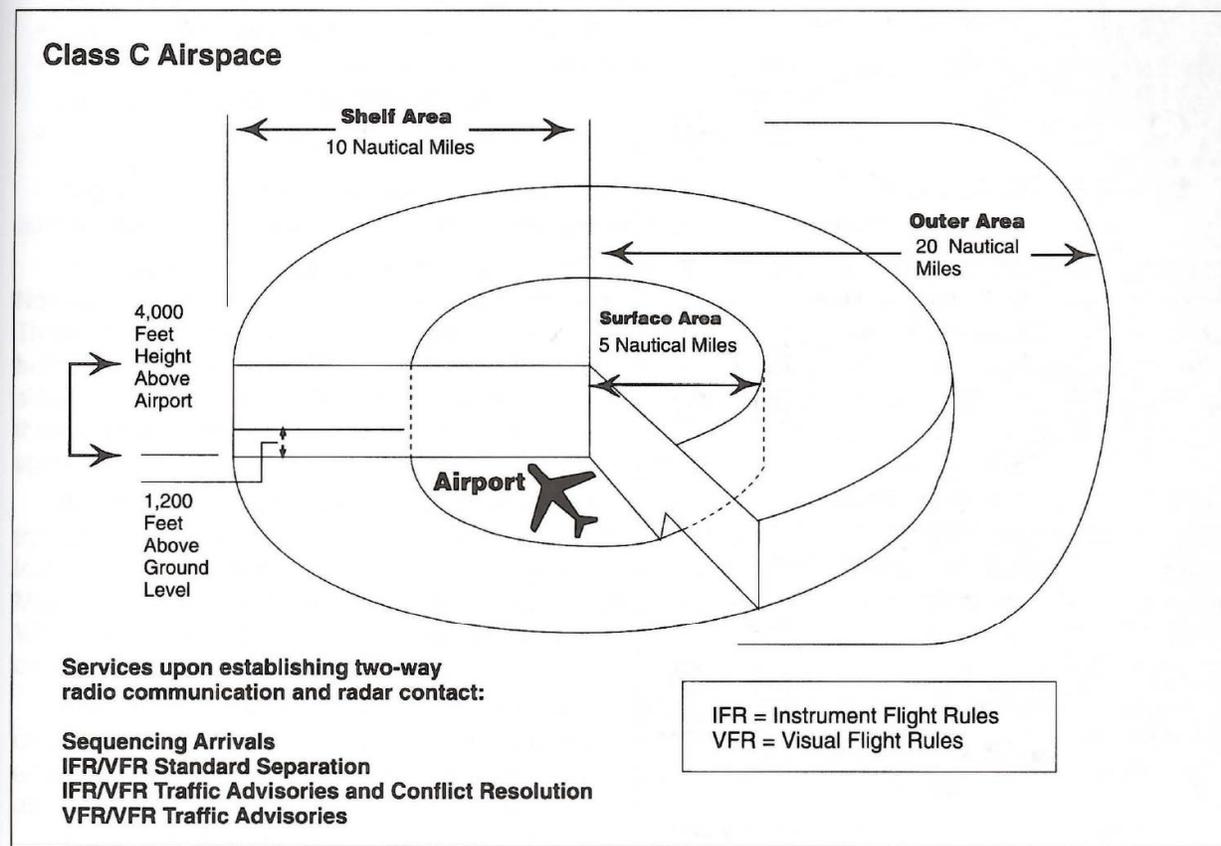
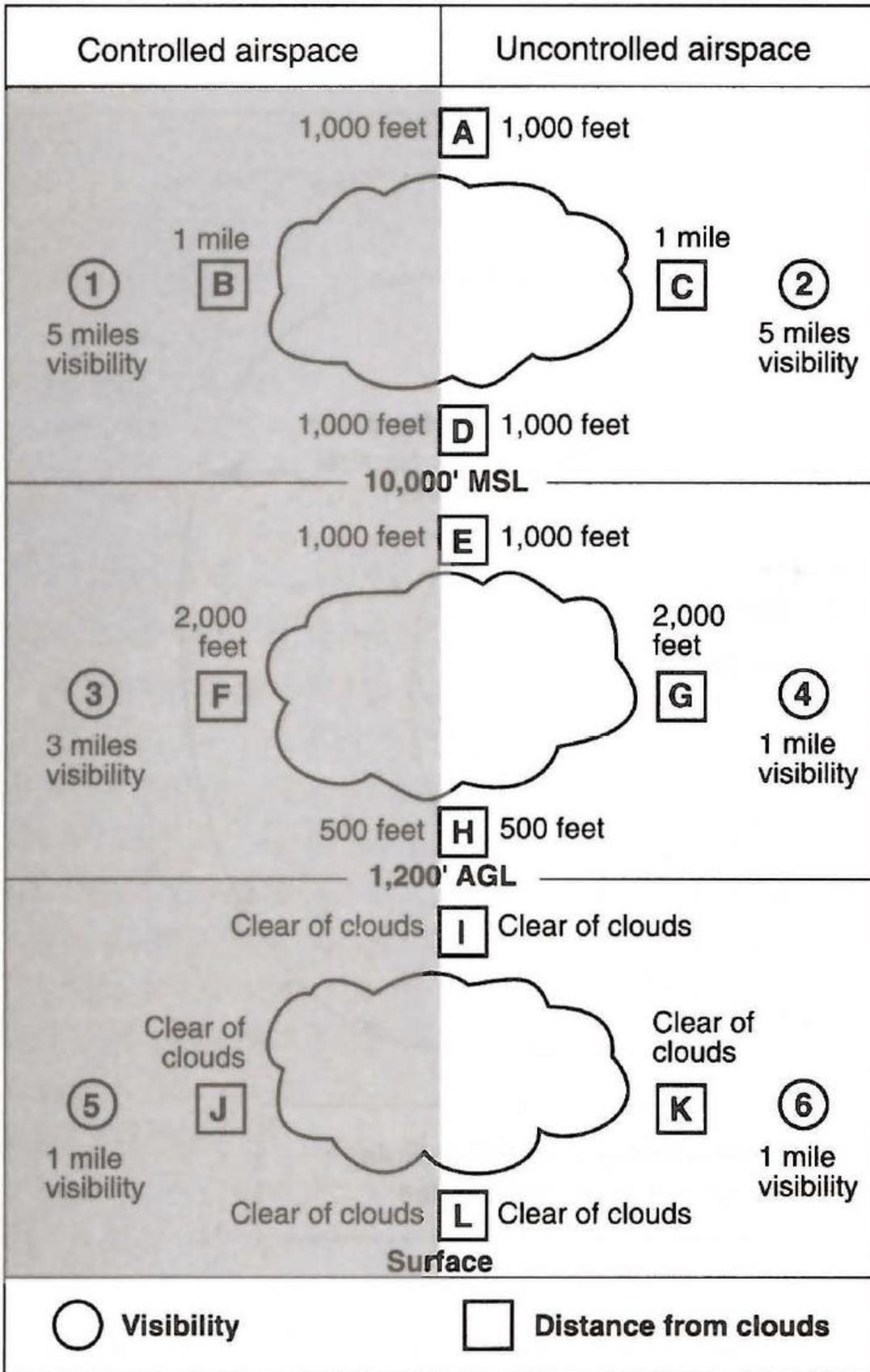


# Airspace





A turbine-powered airplane or a large airplane must enter Class D airspace at an altitude of at least 1,500 feet AGL and maintain that altitude in the traffic pattern until a lower altitude is necessary for a safe landing. When taking off, the pilot of a turbine-powered airplane or a large airplane must climb as rapidly as practicable to an altitude of 1,500 feet AGL.

No person may operate an aircraft within Class B airspace unless a proper authorization from ATC has been received prior to entry. An IFR clearance is not necessarily required. Unless otherwise authorized by ATC, every person flying a large turbine-engine-powered airplane to or from the primary airport in Class B airspace must operate at or above the floor of Class B airspace.

All Class C airspace has the same dimensions with minor site variations. They are composed of two circles both centered on the primary airport. The surface area has a radius of 5 nautical miles and extends from the surface up to 4,000 feet above the airport. The shelf area has a radius of 10 nautical miles and extends vertically from 1,200 feet AGL up to 4,000 feet above the primary airport. In addition to the Class C airspace proper, there is an outer area with a radius of 20 nautical miles and vertical coverage from the lower limits of the radio/radar coverage up to the top of the approach control facility's delegated airspace.

The only equipment requirements for an aircraft to operate within Class C airspace are a two-way radio and a transponder. No specific pilot certification is required.

The following services are provided within Class C airspace:

- Sequencing of all arriving aircraft to the primary airport.
- Standard IFR separation between IFR aircraft.
- Between IFR and VFR aircraft—traffic advisories and conflict resolution so that radar targets do not touch, or 500 feet vertical separation.
- Between VFR aircraft, traffic advisories and as appropriate, safety alerts.

The same services are provided in the outer area when two-way radio and radar contact is established. There is no requirement for VFR participation in the outer area.

No one may operate an aircraft below 10,000 feet MSL at an indicated speed greater than 250 knots. No one may operate an aircraft within Class D airspace at an indicated airspeed of more than 200 knots. There is no special speed limit for operations within Class B airspace other than the 250-knot limit when below 10,000 feet MSL. When operating beneath the lateral limits of Class B airspace, the indicated airspeed cannot exceed 200 knots. If the minimum safe airspeed for any particular operation is greater than the maximum speed prescribed by 14 CFR §91.117, the aircraft may be operated at that minimum speed.

**Warning Areas** are so designated because they are located in international (and therefore uncontrolled) airspace and have invisible hazards to flight. The purpose of a **Military Operating Area (MOA)** is to separate IFR traffic from military training activities. Normally, ATC will not clear an IFR flight into an MOA if it is in use by the military. In an MOA, the individual pilots are responsible for collision avoidance. **VR** Military Training Routes which extend above 1,500 feet AGL, and **IR** Training Routes are depicted on IFR Enroute Low Altitude Charts.

When a flight is to penetrate an **Air Defense Identification Zone (ADIZ)**, it must be on either an IFR or a DVFR flight plan. The flight must penetrate the ADIZ within  $\pm 5$  minutes of the flight plan estimate and within 10 miles when over land or within 20 miles when over water. These were formerly referred to as domestic and coastal ADIZs in the AIM.

A **VFR-On-Top** clearance is an IFR authorization to fly the cleared route at the VFR altitude of the pilot's choice. To request VFR-On-Top, the flight must be able to maintain the minimum VFR visibility and cloud clearances appropriate for the airspace and altitude. This may be done above, below or between the clouds, if any. While the pilot is expected to comply with all IFR rules, ATC will provide traffic advisories only. VFR-On-Top will not be authorized in Class A airspace. VFR weather minimums must be observed when operating under a VFR-On-Top clearance.

An air carrier flight may conduct day Over-the-Top operations below the minimum IFR altitude if the following are observed:

- The flight must be at least 1,000 feet above the top of a broken or overcast layer.
- The top of the clouds are generally uniform and level.
- The flight visibility is at least five miles.
- The base of any higher ceiling is at least 1,000 feet above the minimum IFR altitude.

**OROCA** is an off-route altitude which provides obstruction clearance with a 1,000-foot buffer in nonmountainous terrain areas, and a 2,000-foot buffer in designated mountainous areas within the U.S. **Minimum Vectoring Altitudes (MVAs)** are established for use by ATC when radar is exercised; MVA charts are prepared by air traffic facilities at locations where there are many different minimum IFR altitudes. **Minimum Safe/Sector Altitudes (MSAs)** are published for emergency use on IAP charts; they are expressed in MSL and normally have a 25 NM radius; however, this radius may be expanded to 30 NM if necessary to encompass the airport landing surfaces.

## **NOTAMs (NOTices To AirMen)**

Notices to Airmen (NOTAMs) provide the most current information available. They provide time-critical information on airports and changes that affect the national airspace system and are of concern to instrument flight rule (IFR) operations. NOTAM information is classified into four categories: NOTAM (D) or distant, Flight Data Center (FDC) NOTAMs, pointer NOTAMs, and military NOTAMs.

NOTAM-Ds are attached to hourly weather reports and are available at flight service stations (AFSS/FSS). FDC NOTAMs are issued by the National Flight Data Center and contain regulatory information, such as temporary flight restrictions or an amendment to instrument approach procedures.

Pointer NOTAMs highlight or point out another NOTAM, such as an FDC or NOTAM (D). This type of NOTAM will assist pilots in cross-referencing important information that may not be found under an airport or NAVAID identifier. Military NOTAMs pertain to U.S. Air Force, Army, Marine, and Navy NAVADs/airports that are part of the NAS.

NOTAM-Ds and FDC NOTAMs are contained in the Notices to Airmen publication, which is issued every 28 days. Prior to any flight, pilots should check for any NOTAMs that could affect their intended flight.

## Items on the Flight Plan

An IFR flight plan should be filed at least 30 minutes prior to the departure time, and pilots should request their IFR clearance no more than 10 minutes prior to taxi.

In a composite flight plan, one portion of the flight is IFR and the other is VFR. Both the VFR and IFR boxes of the flight plan form should be checked and the route defined in the route of flight box as with any other flight plan. The flight plan should also note where the switch from one type of clearance to the other is planned. If the first part of the flight is IFR, the pilot should cancel with ATC and open the VFR portion with the nearest Flight Service Station by radio. If the first portion is VFR, the pilot should close the VFR portion with the nearest Flight Service Station and request the IFR clearance at least five minutes prior to the IFR portion of the flight.

If the flight is to be flown on established airways, the route should be defined using the airways or jet routes with transitions. Intermediate VORs and fixes on an airway need not be listed. If filing for an off-airway direct route, list all the radio fixes over which the flight will pass. Pilots of appropriately equipped aircraft may file for random RNAV routes. The following rules must be observed:

- Radar monitoring by ATC must be available along the entire proposed route.
- Plan the random route portion to begin and end over appropriate departure and arrival transition fixes or navigation aids appropriate for the altitude structure used for the flight. Use of DPs and STARs, where available, is recommended.
- Define the random route by waypoints. Use degree-distance fixes based on navigational aids appropriate for the altitude structure used. Above FL390 latitude/longitude fixes may be used to define the route.
- List at least one waypoint for each Air Route Traffic Control Center through which the flight will pass. The waypoint must be within 200 NM of the preceding Center's boundary.

A pilot may file a flight plan to an airport containing a special or privately-owned instrument approach procedure only upon approval of the owner.

Air ambulance flights and air carrier flights responding to medical emergencies will receive expedited handling by ATC when necessary. When appropriate, the word "Lifeguard" should be entered in the remarks section of the flight plan. It should also be used in the flight's radio call sign as in, "Lifeguard Delta Thirty-Seven."

## Alternate Airport Planning

An airport may not be available for alternate use if the airport NAVAID is unmonitored, is GPS-based, or if it does not have weather-reporting capabilities.

For an airport to be used as an alternate, the forecast weather at that airport must meet certain qualifications at the estimated time of arrival. Standard alternate minimums for a precision approach are a 600-foot ceiling and 2 SM visibility. For a nonprecision approach, the minimums are an 800-foot ceiling and 2 SM visibility. Standard alternate minimums apply unless higher alternate minimums are listed for an airport.

**Alternate Airport for Destination—Domestic Air Carriers:** Unless the weather at the destination meets certain criteria, an alternate must be listed in the dispatch release (and flight plan) for each destination airport. If the weather at the first listed alternate is marginal (as defined by the operations specifications) at least one additional alternate must be listed.

**Alternate Airport for Destination—Flag Carriers:** An alternate airport must be listed in the dispatch release (and flight plan) for all flag air carrier flights longer than 6 hours. An alternate is not required for a flag air carrier flight if it is scheduled for less than 6 hours and the weather forecast for the destination meets certain criteria. For the period from 1 hour before to 1 hour after the estimated time of arrival:

- The ceiling must be forecast to be at least 1,500 feet above the lowest minimums or 2,000 feet, whichever is higher; and
- The visibility must be forecast to be 3 miles, or 2 miles greater than the lowest applicable visibility minimum, whichever is greater.

**Alternate Airport for Destination-Supplemental Air Carriers and Commercial Operators:** Except for certain operations, a supplemental air carrier or commercial operator must always list an alternate airport regardless of existing or forecast weather conditions.

An airport cannot be listed as an alternate in the dispatch or flight release unless the appropriate weather reports and forecasts indicate that the weather conditions will be at or above the alternate weather minimums specified in the certificate holder's operations specifications for that airport, when the flight arrives. Alternate weather minimums are for planning purposes only and do not apply to actual operations. If an air carrier flight actually diverts to an alternate airport, the crew may use the actual weather minimums shown on the IAP (Instrument Approach Procedure) Chart for that airport.

If the weather conditions at the departure airport are below landing minimums in the airline's operations specifications, a departure alternate must be listed in the dispatch or the flight release. Weather at alternate airports must meet the conditions for alternates in the operations specifications. The maximum distance to the departure alternate for a two-engine airplane cannot be more than 1 hour from the departure airport in still air with one engine operating. The distance to the departure alternate for an airplane with three or more engines cannot be more than 2 hours from the departure airport in still air with one engine inoperative.

# ATC Clearances

No one may operate an aircraft in Class A, B, C, D or E airspace under Instrument Flight Rules (IFR) unless he/she has filed an IFR flight plan and received an appropriate ATC clearance. No flight plan or clearance is required for IFR operations in Class G airspace.

IFR clearances always contain:

- A clearance limit (usually the destination);
- Route of flight;
- Altitude assignment; and
- Departure instructions (could be a DP).

The words "cleared as filed" replace only the route of flight portion of a normal clearance. The controller will still state the destination airport, the en route altitude (or initial altitude and expected final altitude) and DP if appropriate. If a STAR is filed on the flight plan, it is considered part of the enroute portion of the flight plan and is included in the term "cleared as filed."

When an ATC clearance has been received, you may not deviate from it (except in an emergency) unless an amended clearance is received. If you are uncertain of the meaning of an ATC clearance or the clearance appears to be contrary to a regulation, you should immediately request a clarification. When you receive a clearance you should always read back altitude assignments, altitude restrictions, and vectors. A Departure Procedure (DP) may contain these elements but they need not be included in the readback unless the ATC controller specifically states them.

At airports with pretaxi clearance delivery, a pilot should call for the clearance 10 minutes prior to the desired taxi time. After receiving clearance on the clearance delivery frequency, the pilot should call ground control for taxi when ready.

Occasionally, an aircraft with an IFR release will be held on the ground for traffic management reasons. The traffic may be too heavy or weather may be causing ATC delays. If this happens to an aircraft waiting for takeoff, it will be given a hold for release instruction.

When ATC can anticipate long delays for IFR aircraft, they will establish gate hold procedures. The idea is to hold aircraft at the gate rather than cause congestion and unnecessary fuel burn on the taxiways while waiting for an IFR release. Ground control will instruct aircraft when to start engines. ATC expects that turbine-powered aircraft will be ready for takeoff as soon as they reach the runway after having been released from gate hold.

When departing uncontrolled airports, IFR flights will often receive a void time with their clearance. The void time is usually a 30-minute window of time during which the aircraft must takeoff for its IFR clearance to be valid. If unable to comply with the void time, a pilot must receive another clearance with an amended void time.

The flight plan of an airborne IFR aircraft may only be canceled when the aircraft is in VFR weather conditions and outside of Class A airspace.

## Takeoff Procedures

Unless otherwise authorized by the FAA, an air carrier flight may not takeoff unless the weather meets the prescribed takeoff minimums for that airport. If takeoff minimums are not published for the airport, the following visibility is required for takeoff:

- For aircraft having two engines or less: 1 statute mile visibility.
- For aircraft having three or more engines: 1/2 statute mile visibility.

If an air carrier flight is going to takeoff from an airport that is not listed in its operations specifications, the pilot must observe the takeoff weather minimums published for that airport. If no takeoff weather minimums are published for that airport, then the pilot must be sure that the ceiling and visibility meet a sliding scale requirement of 800-2 or 900-1-1/2 or 1,000-1.

$V_1$  is the critical engine failure speed or decision speed. Engine failure below this speed shall result in an aborted takeoff; above this speed the takeoff run should be continued.

$V_R$  is defined as the speed at which the rotation of the aircraft should be initiated to takeoff attitude. Rotation speed ( $V_R$ ) cannot be less than  $V_1$ . If it is greater than  $V_1$  and it is found that, at  $V_R$ , rotation cannot be achieved, a subsequent rejected take off may not be possible within the remaining runway length and is likely to result in a Runway Excursion.

# Instrument Approaches

This section is limited to rules and procedures common to most, or all approaches, or procedures that may be used in connection with published instrument approaches.

Contact and visual approaches are both IFR authorizations to proceed to an airport visually. A visual approach may be authorized by ATC to reduce pilot or controller workload and to expedite traffic by shortening flight paths to the airport. The weather must be VFR and the pilot must report either the airport or the preceding aircraft in sight. Either the pilot or ATC may initiate a visual approach. A contact approach may be initiated only by the pilot. The weather need not be VFR but the aircraft must be clear of the clouds, have at least 1 mile visibility and be able to proceed to the landing airport visually.

When an airport has ILS or MLS approaches to parallel runways at least 4,300 feet apart, ATC may conduct approaches to both runways simultaneously. The pilots will be informed if simultaneous approaches are in progress. To ensure safe separation between aircraft, radar monitoring is provided on the tower frequency. A pilot must report any malfunctioning aircraft receivers if he/she has been informed that simultaneous approaches are in progress.

Occasionally, a pilot will be asked to fly an instrument approach to a runway and then fly a visual "sidestep" maneuver to land on a parallel runway. This sidestep maneuver should be executed as soon as possible after the runway environment is in sight.

If a pilot is being radar vectored when an approach clearance is received, he/she must maintain the last assigned altitude until the aircraft is established on a segment of a published route or approach procedure unless a different altitude is assigned by ATC. If a flight is being radar vectored to the final approach course and intercepts a published portion of the course, the pilot may not descend to the published altitudes until cleared for the approach. If a flight has not been cleared for approach while on a radar vector and it becomes apparent that the current vector will take it across the final approach course, the pilot should advise ATC of the situation. Do not turn to intercept the approach course unless cleared to do so.

Unless ATC issues a clearance otherwise, no pilot may make a procedure turn on an instrument approach if any of the following apply:

- The flight is radar vectored to the final approach course or fix
- The flight makes a timed approach from a holding fix
- The approach procedure specifies "No PT"

When the approach procedure involves a procedure turn, a maximum speed of not greater than 200 KIAS should be observed from first overheading the course reversal IAF through the procedure turn maneuver, to ensure containment with the obstruction clearance area.

Except for Category II and 111 approaches, if RVR minimums for takeoff or landing are prescribed in an instrument approach procedure, but the RVR is not reported for the runway intended, the ground visibilities may be substituted. These may be found in FAA Legend 7.

A pilot may not continue an approach past the final approach fix or on to the final approach segment unless the latest weather report for the airport indicates that the visibility is equal to, or greater than, the visibility required for the approach procedure. If a pilot has begun the final approach segment and then receives a report of below minimum conditions, he/she may continue the approach to the DH or MDA.

To descend below the published DH or MDA on an instrument approach, one of the following must be distinctly visible and identifiable to the pilot:

- Approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or red side row bars are also distinctly visible and identifiable.
- Threshold or threshold markings
- Touchdown zone or touchdown zone markings
- Threshold lights
- Touchdown zone lights
- Runway or runway markings
- Runway end identifier lights
- Runway lights
- Visual approach slope indicator

A pilot must initiate a missed approach from an ILS upon arrival at the DH on the glide slope if none of the required visual references is distinctly visible. If visual contact is lost anytime after descending below the DH but before touchdown, the pilot must start a missed approach.

If a pilot loses visual reference while circling to land from an instrument approach, he/she should follow the missed approach procedure published for the approach used. The pilot should make an initial climbing turn toward the landing runway to establish the aircraft on the missed approach course.

An **Airport Surveillance Radar (ASR)** approach is one in which an ATC radar controller provides directional guidance and distance to the runway information to the pilot. The only airborne equipment required is an operating radio receiver. The controller will tell the pilot when the aircraft is at the missed approach point and give missed approach instructions as required. If the pilot desires to execute a missed approach prior to the missed approach point, he/she should inform the controller, who will then issue missed approach instructions.

**Precision Runway Monitor (PRM)** is a high update-rate radar surveillance system, certified to provide simultaneous independent approaches to closely-spaced parallel runways.

If there is penetration of the obstacle identification surfaces (OIS), the published approach visibility can be no lower than 3/4 SM.

## Landing

Except for emergencies, the landing priority of aircraft arriving at a tower controlled airport is on "first-come, first-served" basis. When landing at a tower controlled airport, an aircraft should exit the runway at the first suitable taxiway and remain on the tower frequency until instructed to do otherwise. The aircraft should not turn onto any other taxiway unless a clearance to do so has been received.

If a flight is making an IFR approach at an uncontrolled airport, radar service will be terminated when the aircraft lands or when the controller tells the pilot to change to advisory frequency. After changing to the advisory frequency, the pilot should broadcast his/her intentions and continually update position reports. The advisory frequency will be an FSS frequency, or if there is no FSS on the field, a UNICOM frequency.

ATC furnishes pilots' braking action reports using the terms "good," "fair," "poor" and "nil" If you give a braking action report to ATC, you should use the same terminology.

# Communications

The "Sterile Cockpit" Rule: Regulations say only those duties required for the safe operation of the aircraft are allowed during critical phases of flight. Critical phases of flight are defined as climb and descent when below 10,000 feet, taxi, takeoff, and landing. Excluded from the definition of critical phase of flight are any operations at or above 10,000 feet and cruise flight below 10,000 feet. Activities which are prohibited during critical phases of flight include filling out logs, ordering galley supplies, making passenger announcements or pointing out sights of interest. Activities such as eating meals or engaging in nonessential conversations are also prohibited.

The following should be reported without ATC request:

- Vacating a previously assigned altitude for a newly assigned one.
- An altitude change when operating under a VFR-On-Top clearance.
- When unable to climb or descend at a rate of at least 500 feet per minute.
- When an approach has been missed.
- A change in cruising true airspeed of 10 knots or 5%, whichever is greater.
- The time and altitude (or Flight Level) upon reaching a holding fix or clearance limit.
- When leaving an assigned holding fix or point.
- The malfunction of navigation, approach or communication equipment.
- Any information pertaining to the safety of flight.

In addition to the reports listed above, when not in radar contact a pilot must report:

- When over designated compulsory reporting points.
- When leaving the final approach fix inbound on an instrument approach.
- When it becomes apparent that an estimate of arrival time over a fix is in error by more than 3 minutes.

Occasionally an ATC controller will query a pilot about the aircraft's altitude or course. For example, a controller says "Verify 9000," meaning he/she wants confirmation that the aircraft is at 9,000 feet altitude. If the aircraft is not at that altitude, the pilot should reply, "Negative, maintaining 8,000 as assigned." No climb or descent should be started unless specifically assigned by the controller.

Pilots should notify controllers on initial contact that they have received the ATIS broadcast by repeating the alphabetical code used appended to the broadcast. For example, "Information Sierra received."

## Speed Adjustments

ATC controllers often issue speed adjustments to radar controlled aircraft to achieve or maintain the desired separation. The following minimum speeds are usually observed:

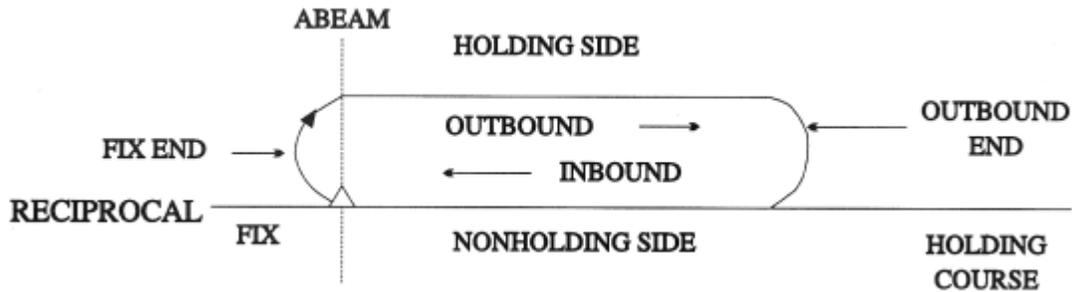
- Turbine-powered aircraft below 10,000 feet: 210 knots.
- Turbine-powered aircraft departing an airport: 230 knots.

If an ATC controller assigns a speed which is too fast or too slow for the operating limitations of the aircraft under the existing circumstances, the pilot should advise ATC of the speed that will be used. The controller will then issue instructions based on that speed.

Because of the great differences in speed and operating characteristics of helicopters and airplanes, they are usually assigned different routing. Occasionally, larger/faster helicopters are integrated with fixed-wing aircraft. These situations could occur on IFR flights, routes that avoid noise-sensitive areas, or when the helicopter is assigned runways or taxiways to avoid downwash in congested areas.

# Holding

Holding may be necessary when ATC is unable to clear a flight to its destination. VORs, nondirectional beacons, airway intersections, and DME fixes may all be used as holding points. Flying a holding pattern involves two turns and two straight-and-level legs as shown in Figure 6-4.



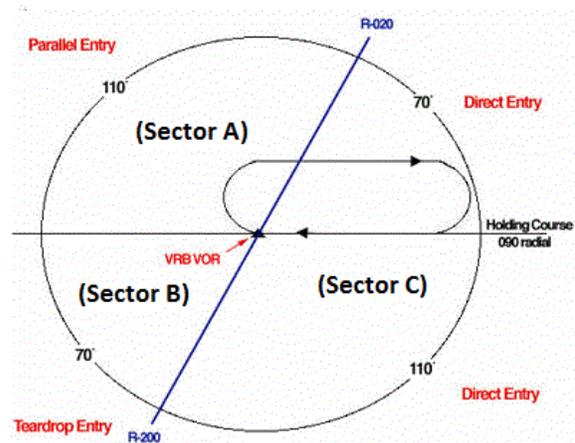
Standard pattern: Right turns (illustrated)  
 Non-Standard Patterns: Left turns

At and below 14,000 feet MSL (no wind), the aircraft flies the specified course inbound to the fix, turns to the right 180°, flies a parallel course outbound for 1 minute, again turns 180° to the right, and flies 1 minute inbound to the fix. Above 14,000 feet MSL, the inbound leg length is 1-1/2 minutes. If a nonstandard pattern is to be flown, ATC will specify left turns.

When 3 minutes or less from the holding fix, the pilot is expected to start a speed reduction so as to cross the fix at or below the maximum holding airspeed. For all aircraft between MHA (minimum holding altitude) and 6,000 feet MSL, holding speed is 200 KIAS. For all aircraft between 6,001 and 14,000 feet MSL, holding speed is 230 KIAS. For all aircraft 14,001 feet MSL and above, holding speed is 265 KIAS. Exceptions to these speeds will be indicated by an icon.

The aircraft is in a holding pattern as of the initial time of arrival over the fix, and that time should be reported to ATC. The initial outbound leg is flown for 1 minute at or below 14,000 feet MSL. Subsequently, timing of the outbound leg should be adjusted as necessary to arrive at the proper inbound leg length. Timing of the outbound leg begins over or abeam the fix, whichever occurs later. If the abeam position cannot be determined, start timing when the turn to outbound is completed. The same entry and holding procedures apply to DME holding, except distance in nautical miles are used to establish leg length.

The FAA has three recommended methods for entering a holding pattern, as shown in Figure 6-5. An aircraft approaching from within sector (A) would fly a parallel entry by turning left to parallel the outbound course, making another left turn to remain in protected airspace, and returning to the holding fix. Aircraft approaching from sector (B) would fly a teardrop entry, by flying outbound on a track of 30° or less to the holding course, and then making a right turn to intercept the holding course inbound to the fix. Those approaching from within sector (C) would fly a direct entry by turning right to fly the pattern.



If the holding pattern is charted, the controller may omit all holding instructions, except the holding direction and the statement "as published." Pilots are expected to hold in the pattern depicted even if it means crossing the clearance limit. If the holding pattern to be used is not depicted on charts, ATC will issue general holding instructions. The holding clearance will include the following information: direction of holding from the fix in terms of the eight cardinal compass points; holding fix; radial, course, bearing airway, or route on which the aircraft is to hold; leg length in miles if DME or RNAV is to be used; direction of turn if left turns are to be made; time to expect further clearance and any pertinent additional delay information.

# Charts

The pilot-in-command must ensure that the appropriate aeronautical charts are on board the aircraft for each flight.

There are a number of questions that require reference to a segment of the Chart Supplements U.S. (previously A/FD). The legend for this publication is available in the FAA Legends 13 through 19.

Most of the questions concerning interpretation of Approach Charts, DPs and STARs can be answered by referring to the appropriate legend. These legends are available during the test in FAA Legend 40. There are a few questions that require you to interpret the symbology on Enroute Charts. Unlike the other charts, no legend is available in the test book.

Departure Procedures (DPs) are depicted in one of two basic forms. Pilot Navigation (Pilot NAV) DPs are established where the pilot is primarily responsible for navigation on the DP route. Vector DPs are established where ATC will provide radar navigational guidance to an assigned route or fix. A vector DP will often include procedures to be followed in the event of a two-way communication radio failure.

Standard Terminal Arrival Routes (STARs) are ATC-coded IFR arrival routes established for certain airports. STARs purpose is to simplify clearance delivery procedures. ATC will assign a STAR to a civil aircraft whenever they deem it appropriate.

The Jet Route system consists of jet routes established from 18,000 feet MSL to FL450 inclusive.

The GPS Approach Overlay Program permits pilots to use GPS avionics under IFR for flying existing instrument approach procedures, except localizer (LOC), localizer directional aid (LOA), and simplified directional facility (SDF) procedures. Aircraft navigating by GPS are considered to be RNAV aircraft. Therefore, the appropriate equipment suffix must be included in the ATC flight plan. The word "or" in the approach title indicates that approach is in Phase III of the GPS Overlay Program. This allows the approach to be flown without reference of any kind to the ground-based NAVAIDs associated with the approach. When using GPS for the approach at the destination airport, the alternate must be an approach other than a GPS.