Attention

I know that if I can just get out of this airport I will be fine the rest of the way. Can I get away without filing an IFR plan?

Objective

To know about types of approaches including special VFR outside of ILS, LOC, VOR, and GPS approaches.

Schedule

Ground instruction – 15 minutes

Reference Material

https://en.wikipedia.org/wiki/Contact_approach
https://en.wikipedia.org/wiki/Special_visual_flight_rules
https://en.wikipedia.org/wiki/Visual_approach
https://www.aopa.org/training-and-safety/pic-archive/operations/precision-runway-monitoring-prm-operations
https://en.wikipedia.org/wiki/Surveillance_radar_approach

Material

Contact Approach

A Contact Approach is an approach available to aircraft operating on an IFR flight plan, where the pilot may deviate from the published instrument approach procedure (IAP) and proceed to the destination airport by visual reference to the surface.

Only pilots may initiate a request for this type of approach, as regulations prohibit air traffic control (ATC) from asking pilots to perform them. A contact approach will only be issued if the aircraft is operating clear of clouds with at least 1-mile of flight visibility, with a reasonable expectation of continuing to the destination airport under those conditions. Additionally, the reported ground visibility at the destination airport must be at least 1 statute mile.

In the execution of a contact approach, the pilot is responsible for obstruction clearance, but ATC will still provide separation from other IFR or Special VFR traffic. If radar service is being received, it will automatically terminate when the pilot is instructed to change to the airport's advisory frequency.

The pilot must advise ATC immediately if unable to continue the contact approach or if s/he encounters less than 1-mile flight visibility; new instructions will then be provided by ATC. Also, ATC may issue alternative instructions if, in their judgment, weather conditions may make completion of the approach impracticable.

The contact approach is often used as time- and fuel-savings method of working the air traffic control system to a pilot's advantage. However, this shortcut comes with two important warnings:

It is essentially a legalized form of scud-running, a potentially very dangerous practice.
It works safely only if the pilot is completely familiar with local terrain.

Special VFR

According to Federal Aviation Regulations, SVFR operations can only be conducted in the controlled airspace around an airport where that controlled airspace extends down to the surface (so-called surface area). SVFR can only be conducted below 10,000 feet MSL in such areas.

SVFR at night requires an IFR-equipped aircraft and an IFR-rated pilot in command. In helicopters, there is no minimum flight visibility requirement, or a requirement for an IFR-equipped aircraft or an IFR-rated pilot in command.

The aircraft need not necessarily be equipped for flight under IFR, and the aircraft must remain clear of clouds with the surface in sight, and maintain one statute mile visibility in the US. The pilot continues to be responsible for obstacle and terrain clearance.

An example of the use of SVFR is when a flight wishes to leave an airport in a control zone, to fly VFR in uncontrolled airspace, when the visibility is below the minimum for VFR flight in the control zone but not below the lower minimum for VFR flight in uncontrolled airspace. SVFR is never offered by ATC, it must be requested.

Visual Approach

A visual approach is an approach to a runway at an airport conducted under instrument flight rules (IFR) but where the pilot proceeds by visual reference and clear of clouds to the airport. The pilot must at all times have either the airport or the preceding aircraft in sight. This approach must be authorized and under the control of the appropriate air traffic control (ATC) facility.

Precision Runway Monitoring

Precision Runway Monitoring (PRM) approaches are simultaneous ILS approaches to closely spaced parallel runways that are less than 4,300 feet apart.

ILS PRM approaches have their own approach charts with a special page of instructions called "Attention All Users of ILS Precision Runway Monitor (PRM)" that must be read by the pilot before the approach is flown.

PRM approaches involve two air traffic controllers: a Tower Controller and a Monitor Controller.

Specific Air Traffic procedures have been established at airports conducting ILS PRM approaches. All pilots must meet FAA pilot requirements to accept an ILS PRM or LDA PRM approach clearance.

PRM ILS approaches require an ILS navigation receiver and two communication receivers — one for the Tower Controller and one for the Monitor Controller (or one communication receiver with the ability to monitor two frequencies simultaneously). Pilots both transmit and receive on the Tower frequency, but the Monitor frequency is for receiving only. Pilots should never transmit on the Monitor frequency.

Once a pilot accepts a PRM ILS approach, the pilot must fly the ILS approach and monitor the two frequencies (Tower and Monitor).

If the "no transgression zone" (space between the runways) is violated, the Monitor Controller will issue "breakout" instructions that must be complied with immediately. All breakout maneuvers must be hand flown (no autopilot).

Most breakout maneuvers will consist of a turn and a climb. However, if climbing is not an option, as in the case of conflicting traffic above, descending breakout instructions may be given. If instructed to descend, the descent altitude will always include a 1,000-foot obstacle clearance.

ASR Approach

In aviation, approach surveillance radar (ASR or SRA) is a type of radar instrument approach provided with active assistance from air traffic control. The only airborne radio equipment required for radar approaches is a functioning radio transmitter and receiver. The radar controller vectors the aircraft to align it with the runway center line. The controller continues the vectors to keep the aircraft on course until the pilot can complete the approach and landing by visual reference to the surface.

There are two types of radar approaches: Precision (PAR) and Surveillance (ASR). A radar approach may be given to any aircraft upon request and may be offered to pilots of aircraft in distress or to expedite traffic; however, an ASR might not be approved unless there is an ATC operational requirement, or in an unusual situation or emergency. Acceptance of a PAR or ASR by a pilot does not waive the prescribed weather minimums for the airport or for the particular aircraft operator concerned. The decision to make a radar approach when the reported weather is below the established minimums rests with the pilot. PAR and ASR minimums are published on separate pages in the FAA's terminal procedures publication.

A precision approach (PAR) is one in which a controller provides highly accurate navigational guidance in azimuth and elevation to a pilot. Pilots are given headings to fly, to direct them to, and keep their aircraft aligned with the extended centerline of the landing runway. They are told to anticipate glidepath interception approximately 10–30 seconds before it occurs and when to start descent. The published decision height will be given only if the pilot requests it. If the aircraft is observed to deviate above or below the glidepath, the pilot is given the relative amount of deviation by use of terms “slightly” or “well” and is expected to adjust the aircraft rate

of descent/ascent to return to the glidepath. Trend information is also issued with respect to the elevation of the aircraft and may be modified by the terms “rapidly” and “slowly” (e.g., “well above glidepath, coming down rapidly”). Range from touchdown is given at least once each mile. If an aircraft is observed by the controller to proceed outside of specified safety zone limits in azimuth and/or elevation and continue to operate outside these prescribed limits, the pilot will be directed to execute a missed approach or to fly a specified course unless the pilot has the runway environment (runway, approach lights, etc.) in sight. Navigational guidance in azimuth and elevation is provided the pilot until the aircraft reaches the published decision height. Advisory course and glidepath information is furnished by the controller until the aircraft passes over the landing threshold, at which point the pilot is advised of any deviation from the runway centerline. Radar service is automatically terminated upon completion of the approach.

A surveillance approach is one in which a controller, in ASR, provides navigational guidance in azimuth only. The pilot is furnished headings to fly to align the aircraft with the extended centerline of the landing runway. Since the radar information used for a surveillance approach is considerably less precise than that used for a precision approach, the accuracy of the approach will not be as great and higher minimums will apply. Guidance in elevation is not possible but the pilot will be advised when to commence descent to the minimum descent altitude (MDA) or, if appropriate, to an intermediate stepdown fix Minimum Crossing Altitude (MCA) and subsequently to the prescribed MDA. In addition, the pilot will be advised of the location of the MAPt prescribed for the procedure and the aircraft position each mile on final from the runway, airport, heliport, or MAPt, as appropriate. If requested by the pilot, recommended altitudes will be issued at each mile, based on the descent gradient established for the procedure, down to the last mile that is at or above the MDA. Normally, navigational guidance will be provided until the aircraft reaches the MAPt. Controllers will terminate guidance and instruct the pilot to execute a missed approach unless at the MAPt the pilot has the runway, airport, or heliport in sight or, for a helicopter point-in-space approach, the prescribed visual reference with the surface is established. Also, if, at any time during the approach the controller considers that safe guidance for the remainder of the approach cannot be provided, the controller will terminate guidance and instruct the pilot to execute a missed approach. Similarly, guidance termination and missed approach will be effected upon pilot request and, for civil aircraft only, controllers may terminate guidance when the pilot reports the runway, airport, heliport or visual surface route (point-in-space approach) in sight or otherwise indicates continued guidance is not required. Radar service is automatically terminated at the completion of a radar approach.