

IFR Radio Communications:

From the "[Instrument Procedures Training Manual](#)" at RealCFI.com

IFR Clearance at towered airports (Class B, C, D).

Ground or Clearance Delivery as directed by ATIS

	PILOT	GROUND
-who calling	"Rockford Ground"	C - Cleared to Poplar Grove
-who UR	"Skyhawk 723 PG"	R - IFR as filed*
-where	"Emery Air FBO"	A - climb to 3000 ft, expect 6000
-what want	"IFR Clearance to C77"	F - Departure freq 128.7
- inform	"information Sierra"	T - squawk 4245

You should anticipate some change to your IFR flight plan and be ready to copy a sometimes-lengthy variation in what you filed. Typically, you may get something that sounds like this:

Skyhawk 723PG

Cleared to Mesa Grove Airport

Via Hocut 5 departure, Rogue Valley (VOR), Victor 275, Lynda, Direct Mesa Grove

Climb and maintain 4000, expect 8000 ft 10 minutes after departure

If you have done your homework and familiarized yourself with the departure procedures, common fixes near the airport, you will not be surprised by the amended clearance. If there is any fix or departure procedure you do not understand, ask the controller to clarify or spell the name of the fix. Better to do this now than violate your clearance.

After you have received, copied, and repeated back your **CRAFT clearance, tell them you are ready to taxi and expect taxi instructions to the active runway.**

IFR clearance and departure from NON-towered airports.

At non-towered airports, there are a few options to get your clearance:

- 1) Telephone a flight service station (they will often tell you how to get clearance if you are not certain). 1-800-WXBRIEF
- 2) Telephone Controller listed in Chart Supplement for airport you are departing or the tower at the nearest airport with radar services
- 3) **CLNC DEL** freq on Airport facility directory, approach plate, or other publication.
- 4) **Remote Communications Outlet (RCO)**- freq on aprch plate or AF/D Chart Supp. .
- 5) **Ground Communications Outlet (GCO)**: freq on aprch plate or AF/D Chart Supp
 - a. load in comm
 - b. click the PTT switch either 4 (FSS) or 6 (ATC) times
 - c. Phone rings in head seat over comm
 - d. FSS or ATC will answer.
- 6) Depart VFR and then radio the ARTCC or Departure Controller for the airport you are departing. *May require you climb to minimum safe altitude VFR* before they will give clearance. May ask if you can **maintain your own obstruction clearance up to a certain altitude** (MSA or MVA). If unable to comply, you **might be required to return to airport** and get clearance on ground.

If you are calling for clearance on the phone or making radio call to a remote FSS or controller, you give them similar information as listed above for the ground control or clearance delivery. The clearance will then give a **CRAFT** clearance and the current universal time with a “wheels up” void time for the clearance. Make sure the wheels up “void time” is reasonable and you are not rushing to meet the time. Rushing will make you forget or skip important check list items and is a potential risk for adverse events (crashing).

Departing VFR and then picking up your clearance in the air is an easy and fast way to get your clearance. **CAUTION:** if you are not familiar with the area and procedures, this could be hazardous to try and fly the aircraft and copy down a complicated amended clearance.

Example of in the air clearance after departing VFR:

	PILOT	ATC
-who calling	“Rockford Approach”	723PG, maintain VFR”
-who UR	“Skyhawk 723 PG”	“Squawk 4245”
-where	“4 miles west C77, 2500”	
-what want	“request IFR Clearance to Columbia”	

After a couple of minutes, ATC will then respond: “723PG, Radar Contact
Cleared to Columbia as filed
Climb to 3000, expect 6000
in 2 minutes”

Enroute IFR Communications

Radio communication are the same as outlined in the VFR departure procedures for towered airports. You will stay with the departure controller until handed off to another air traffic controller (approach controller at another facility or ARTCC). ALWAYS read back frequency:

Controller: “723PG, contact Chicago Center, 132.15”.

Pilot: “132.15. 723 PG”

Switch frequencies and call: “Chicago Center, Skyhawk 723PG, 8000”

Next Controller “Skyhawk 723PG, Chicago Center, Quincy altimeter 29.93”

Pilot: “2993, 723PG”.

Contact the approach controller for your destination airport

Do not relax yet. There are several things that should be done so you are ready to talk to the final approach control at the destination airport. Here are some tips that will make you seem like you are a pro.... Or at least minimize the pauses, gasps and “uh..um ...uh” on the radio.

ATIS or AWOS copied: Get this information **BEFORE** you contact the approach control at the destination airport. You want to say three “A’s” when you contact approach control:

- 1) **Altitude** (i.e., “7000”)
- 2) **ATIS** (i.e., “Whiskey”)
- 3) **Approach** (“Request”.... ILS, VOR etc.)

So, it will sound something like this:

PILOT: “Approach, 91FR, 7000, Whiskey, Request”.

APPROACH: “91FR, say request”

You then tell them 1) what you want to do and 2) how the approach will terminate.

PILOT: “Request the ILS 7, missed with the published HOLD”

OR

“Request ILS 7, full stop”

Descent on Approach or Arrival (STAR): You cannot begin your descent until you have:

- 1) Established on a published segment of the procedure (needle alive)
- 2) You are “cleared” for the approach or arrival

❑ **Vectors to Final Approach Clearance:** The Controller will give you a **PTAC**.

Position: “158SB you are 5 miles from LINDA (FAF)
Turn: Turn to heading 140
Altitude: Maintain 3500 until intercept localizer
Clearance: Cleared for the ILS 7 approach”

Pilot response: “maintain 3500, cleared for ILS 7 approach, 158SB”

Once you have been given your final approach intercept vector, you have some liberty to modify your heading for the intercept. ATC is mostly concerned that you maintain the altitude until intercept.

❑ **Full approach Clearance:** Controller will give you: **IAF, altitude, and clearance.**

IAF: “158 SB, cleared direct to Janesville (JVL) VOR
Altitude “maintain 4000 feet”
Clearance “cleared VOR Alpha to Beloit”

Pilot Response: “Direct Janesville, 4000 ft, cleared for the approach, 158 SB”

❑ **Before the FAF -Hand off to Tower:** Some time before the FAF, Approach should hand you off to tower.

Approach Control: “158SB, contact tower 119.3”
Pilot: “119.3, 158SB”

❑ **Switch to Tower frequency:**

Pilot: “Tower, 158SB, ILS 7”
Tower: “158SB, report LUCY” (usually FAF)

❑ **When over reporting point:**

Pilot: “Tower, 158SB, LUCY inbound”
Tower: “158SB, winds are 220 at 10 kt, cleared to land 14”
Pilot: “158SB is Cleared to land, 14”

❑ **Executing the Missed approach:**

Pilot: “158SB going missed”
Tower: “execute published missed and contact departure 121.0”
Pilot: “published missed, over to departure”

Compulsory Reporting: ID, position, UTC, Altitude, ETA next waypoint.

- **Time and altitude when arriving holding fix or clearance limit**
- **Leaving assigned holding point/fix**
- Changing altitude
- Unable to climb/descend 500 fpm
- Missed approach
- Change TAS 5% or 10 kts from flight plan
- Loss of nav/comm.
- PIREP/Safety/unexpected weather

When not in radar contact:

- Leaving FAF for non-precision approach
- Leaving OM for precision approach (ILS/PAR/MLS)
- ETA is > 3 min in error and revision required

LOST COMMS: CFR 91.185, AIM 6-4-1(a)

The most common reason for lost comms is flying beyond ATC radio range before they hand you off or you miss a call. Monitor 121.5. If ATC cannot reach you, they will attempt to contact you on 121.5 (Guard) frequency. If you lose contact, look at Low Altitude Enroute chart for the nearest “postage stamp” for best ATC frequency or use EFB and look up ATC at nearest airport.

Trouble shoot: If you really lose comms, trouble shoot first. Try other radio. Try other headset. Listen on guard (121.5). Try your cell phone. If all fails, squawk 7600 and transmit position and intentions blindly in case you just lost receipt of radio signals. Then follow the following:

Route: “AVEF” **A**ssigned, **V**ectored, **E**xpected, **F**iled

- ☐ last ATC clearance
- ☐ if being vectored, go direct to fix, route or airway specified in clearance
- ☐ if clearance then per the EFC info given
- ☐ if no EFC, then as filed

Altitude- “MEA” highest of **M**inimum, **E**xpected, **A**ssigned for each segment

- ☐ Min Published Altitudes (MSA/MEA/OROC)
- ☐ EFC info given last
- ☐ ATC last clearance

Leave clearance limit at EFC. if no EFC, then upon arrival at fix CFR 91.185, AIM 6-4-1(a). *99% of time, your clearance limit is the destination airport & NO EFC. So, fly to destination airport then to IAF of your choice and begin the approach.*

- ☐ **When limit is not an approach fix** (airports, waypoint, navaid), Fly to the clearance limit fix.
- ☐ **When limit is approach fix**, Hold, if needed to begin approach at EFC (or ETA)
- ☐ **If given EFC**, hold over fix till EFC then proceed to any IAF to begin approach
- ☐ **If no EFC**, hold not expected, proceed to IAF and begin approach at ETA

Consider an EFC a hard stop. You cannot go beyond the fix until EFC time. Does not matter if Clearance limit is IAF or an airport. Once you reach EFC time, proceed to an IAF and shoot an approach. If already at an IAF, begin the approach.

NOTE: Filing an IAF in your flight plan does not allow the pilot to bypass the clearance limit and start an approach. *If you lose comms, you will have to fly to and through ALL filed fixes (including any IAF) to the clearance limit (usually the airport) then fly back to the IAF to start the approach.*

Common ATC instructions:

Maintain: “Maintain 7,000” = go to that altitude NOW and stay there. Often, but not always combined with “Descend and maintain” or “climb and maintain”

Fly Runway heading, Fly Heading 230: These are instructions to fly a “Heading” and not a track. The controller understands there is wind drift

Cross “Tirro” at or above 4000 ft: cross a fix at or above a particular altitude.

“how’s your ride”? this is a request for a PIREP, usually for level of turbulence. Responses are smooth, light chop, moderate or severe turbulence etc.

Say flight conditions: this is a request for a PIREP of any significant weather such as turbulence, IMC, cloud tops, OAT et

Descend at pilot’s discretion to one-one thousand (11,000): response is “discretion to one-one thousand”. Then descend when you want. If you are to slow, they will let you know.

Expedite: means hurry up, there is a traffic conflict they need to resolve

Best forward speed also means hurry up, there is a bigger larger faster aircraft riding your tail... with teeth.

No delay, traffic on 5 mile final: also means hurry up. They are trying to fit you in between traffic and are doing you a favor. The time to hesitate is past.

Say altitude: ATC wants you to report your current altitude to verify what they are seeing on their radar. You may be higher or lower than you are supposed to be, or ATC is verifying who you are with altitude confirmation.

Squawk 4727: that is the code you are supposed to put in the transponder

Traffic (or Target) at One o’clock, 4 miles, northbound: Your response should be “looking” or “negative contact” (some say, “no joy”) or “I have traffic, not a factor”.

There may be several targets in the area, be sure you are identifying the specific target called out by ATC. It is easy to mistake an aircraft higher, lower or 30 degrees off what ATC called out. If you are uncertain, say “negative contact” and the controller will give you a vector away from the threat.

Helpful Pilot Responses/requests:

UNABLE: *this is the most important thing you can learn to say.* If they tell you to do something that is unsafe, unreasonable, or technically impossible for you to accomplish say “Unable.” They will have to figure it out. Times I have had to say UNABLE:

- Told to hold at a fix 2 or 3 miles in front of you. Not gonna happen
- Told to intercept course or fix that is 1 mile and 140-degree turn
- Told to do a procedure when you do not have correct equipment
- Given a vector into oncoming traffic
- Given a vector into terrain or into thunderstorm
- Told to maintain an altitude after sustaining an engine failure
- Cleared to land immediately behind a Large aircraft on short runway
- Cleared for the approach 3 miles before FAF and 2,000 ft too high
- Maintain 8000 ft while in severe turbulence

Request delay vectors: If given an instruction and you have not a clue where to go or would be wandering around for 5 minutes programming to accomplish the clearance, tell them you need delay vectors. *Do NOT RUSH programming. Be PIC, make ATC wait.*

Vectors for programming or initial heading: Most commonly used to leave hold and program next approach. Or get going in right direction and then program GPS.

Request Deviation 20 degrees right for thunderstorm/buildup. Self-explanatory

MINIMUM FUEL- when your reserves are low and you cannot stay in hold for 10 min

Request Diversion to XXX Airport: for full bladder, sick passenger, to get fuel, weather