

RADIO COMMUNICATIONS

Controlled Airport and Airspace

Radio communications may seem complicated at first, but you'll get used to them. Most things a controller will say are standard and will become familiar to you. The order of most of your initial communications is standard, too.

Think of these five items: YOU ME WHERE WHAT WITH

1. YOU: Whom you're talking to
2. ME: Who you are
3. WHERE: Where you are
4. WHAT: What you want
5. **WITH**: Airport information (ATIS)

In other words:

	<u>ITEM</u>	<u>MEANS</u>	<u>EXAMPLE 1</u>	<u>EXAMPLE 2</u>
YOU	1. Whom you're talking to	Control	<i>Salinas Ground</i>	<i>Lawrence Tower</i>
ME	2. Who you are	Aircraft ID	<i>Katana N35426*</i>	<i>Cessna N92747*</i>
WHERE	3. Where you are	Position	<i>On the West Ramp</i>	<i>Eight miles southwest</i>
WHAT	4. What you want	Request	<i>Ready for taxi</i>	<i>Inbound for landing</i>
[WITH]	5. Are you informed	ATIS	<i>With X-Ray</i>	<i>We have Bravo</i>

(*Note: don't say, "This is Katana N35426." That's implied. You can always tell an amateur because they say, "This is...")

ATIS needs only be mentioned on first contact with a new control facility.

You won't need to say all five of every time you talk. For a typical flight out of controlled airspace, here is the order in which you'll talk on the radio, and the items to be included:

1. CLEARANCE 1, 2, 3, 4, 5
2. GROUND 1, 2, 3, 4
3. TOWER 1, 2, 3, (4)
4. DEPARTURE 1, 2, 3
5. CTAF
6. APPROACH (or tower) 1, 2, 3, 4, 5
7. TOWER (if handed off) 1, 2, 3
8. GROUND 1, 2, 3, 4
9. FUEL

Notice that "You and me" is in everyone. In your first contact with someone, you identify yourself by aircraft make and tail number, e.g. "Cessna N173ND," or "Katana N35426." In future communication, the tail number gets abbreviated to just the last three numbers/letters, if there is no confusion with any other similarly tailed aircraft.

The idea is to keep communications brief. Practice in your head before you push the button. We often shorten communications down to just a few words, e.g. "426 downwind." Over time, communications will become easy for you.

Things you might want to say:

(Note: in the following explanations, "ATC" means "air traffic control," also known as the controller; the explanations all assume that you are flying in tail number N49931. As noted, N49931 could be abbreviated to just 931 after the first call, if there are no similar call letters on the same frequency.)

"..."

Repeat whatever they said. If they say, "426 cleared to land," you say, "Cleared to land, 426." (Note: Typically, when reading back, we put the aircraft ID at the end.) It lets them know that you got your instructions, and that you'll follow them. These conversations also get put on to the recording, so if anything goes wrong, you're safer. It's much better than...

Roger/Wilco

"Roger" means, "I understand." "Wilco" means "I will comply." These are abbreviations used sometimes when the airwaves are very busy, but as a general rule they aren't a good idea. The problem is that the ATC does not know what you think you understand or will comply with. "Roger," by the way, does not mean "Yes." That is said by:

Affirmative/Negative:

Pilot-speak for "Yes," and "No." (Short words sometimes can be cut off by the microphone or misunderstood.) These are used only in response to a question from ATC.

Say again:

This is the proper form to ask ATC to repeat something. (don't be afraid of using this)

Request

Use this word to ask for something or prepare ATC for an upcoming request. Example: You're flying in Class B at an assigned altitude of 5,500 feet and there are clouds ahead "Boston approach, N35426 request." Wait. Boston approach responds: "N35426 go ahead." You answer: "N35426 would like to descend to 3,500 because of clouds. (or weather)" Use this word also to make a request at any time, without waiting, e.g. "Salinas tower, N35426 requests the right base to 23"; "Cessna N92747 requests you call my base."

Looking for the traffic (or just "Looking")

An acknowledgement after ATC tells you about another aircraft in your area.

Traffic in sight

ATC has given you a traffic report and you see the other aircraft.

Negative contact

ATC has given you a traffic report, and after a reasonable search you still don't see the other aircraft.

Student pilot:

You will be amazed at how much help, cooperation, and forgiveness you can get, and often how much nicer ATC becomes, when you tell them you're a student pilot. If you're having trouble understanding what they're saying or what they want, this is a good phrase to start with. There is no shame in telling them this. Example: "Salinas tower, November three five four two six student pilot say again?"

General tip: Keep it short; don't be chatty.

Things an air traffic controller might say:

Cleared to/for
Cleared for the option
Continue
Go Ahead
Report downwind/base
State (your) intentions
Maintain [1500] until...
Climb to...
Descend to...
Fly heading...
Make [left] closes
You're number [three] following a...
Traffic at two o'clock [high/low] is a...
Check wheels down
Confirm...
Hold short of...
...the ILS critical area
Line up and wait
Do you want advisories?
Squawk xxxxx and Ident
Ident
Radar contact
Contact [tower] on [118.5]
Cleared out of class [D]
Squawk VFR
Frequency change approved
Radar service is terminated
Recycle transponder
Taxi to...
Extend downwind
I'll call your base
Do a 360 and re-enter the [downwind]

WHAT THEY MEAN:

Cleared...

ATC has given you the permission and right to do something. "Cleared to land, runway 11" "Cleared for takeoff." "Cleared to enter Class B."

Cleared for the option

Said when preparing for a landing, without further clearance you may do any of these things as you wish: full stop, stop-and-go, touch-and-go, or go-around.

Continue

Keep doing what you're doing. Go straight if you were told to go straight. If you were told earlier to enter the pattern downwind on the 45, then do that.

Go ahead

Talk to ATC. Perhaps the airwaves have been very busy and you finally manage to get in, saying, "Salinas tower, Katana N35426." Then wait until the tower says, "N35426 go ahead." It's your turn to talk, now.

Report...

ATC is telling you that when you arrive at the given position, you should radio the tower and tell them so. "Report downwind": when you're established on the downwind and are at midfield, call the tower and say, "N35426 downwind." "Report base": call the tower as you start to turn base and say, "426 turning base."

State (your) intentions

This is most often tower's polite way of saying that they don't understand what you're doing, or that you are not on the right heading, or that you are not following instructions. They want to know what you want to do, or what you think you're doing. Then they can give you appropriate guidance.

Maintain...

Stay at a given altitude. "Climb and maintain 4500" means you should climb up to 4500 MSL and stay there until they tell you otherwise. "Maintain 1500 until Cider Hill": do not descend below 1500 until you reach this landmark.

Climb to/descend to...

Go to the altitude they give you.

Fly heading...

Turn to the direction given. "Fly heading 180": go south until told otherwise.

Make [left/right] closes

This could also be phrased, "**Make (left/right) close traffic.**" You are going to work in the traffic pattern, and make left or right turns, as instructed.

You're number [three] following a...

You are in the traffic pattern, and there will be planes landing in front of you. "You're number three following a Cessna" means that one plane is cleared to land, there's a Cessna behind that, and you should be looking for the Cessna so you can follow behind it.

Traffic at two o'clock [high], [three miles] is a [Dash 8].

The standard traffic advisory: in this example, look forward and to the right for a big twin commuter plane above you and a few miles away. This advisory will often be accompanied by information on the direction that the Dash 8 is traveling.

Check wheels down

At some airports, this is a standard thing to say whether your wheels are down or not. It would be a good time to check, though, as this is only said once you're cleared to land.

Confirm...

ATC wants you to repeat some instructions you've been given.

Hold short of...

Said when taxiing. Stop before reaching and do not cross the given runway or taxiway. **Always repeat this instruction back to the controller.**

Hold short of the ILS critical area

Stay behind not just the runway hold-short solid lines, but behind the ILS hold-short line (looks like a ladder with double rungs).

Recycle

ATC isn't reading your transponder, so they want you to turn your transponder off, then turn it back on again.

Ident

Push the little button on the transponder. This makes your radar blip blossom on their screen, so they can find you easily and know who you are.

Radar contact

ATC is informing you that it has you on radar. You don't need to respond to this.

Contact [tower] on [TWR frequency]

ATC is "handing you off" to another controller, telling you to change your radio frequency and talk to someone else. In this example, you would respond, "N35426 going to tower," switch your radio frequency to TWR frequency, and report in by saying, for example, "Salinas Tower, Katana N35426 at 2000."

Cleared out of class [D]

ATC is informing you that you are leaving its airspace and can go on your own recognizance. This phrase is often followed by...

Radar service is terminated

ATC is telling you that it will not provide separation or traffic advisories anymore. This phrase is often followed by...

Squawk VFR

Change your transponder code to 1200. And this phrase is often followed by...

Frequency change approved

This call is permission to stop communications with ATC, usually because you're leaving their airspace and continuing on a visual flight.

Do you want advisories?

You can request to stay on the radio with a controller, and be advised of traffic in your vicinity, as ATC's workload allows. This is called traffic advisories, or "flight following.

Taxi to [runway 29] [via Juliet and Echo]

A taxi clearance: if cleared to taxi TO a runway, you are allowed to cross all other taxiways and runways on the way there, but you must hold short of the final runway. In the case of this example, you should go on taxiway Juliet, turn on to Echo, and taxi up to the hold-short line of runway 29.

Line up and wait

Drive your airplane on to the beginning of the runway and stop. Do not take off. You are being put in position for your takeoff, but another plane is still on the runway, or other traffic considerations (e.g. wake turbulence) make your departure unsafe.

Extend downwind

Don't turn from downwind to base yet. This is to separate your plane from other traffic in the pattern. This is often followed by...

I'll call your base

Stay on downwind, at traffic pattern altitude, until the tower tells you to turn in.

Do a 360 and re-enter the [downwind]

The controller wants you to do a standard two-minute turn-around-a-point in the pattern (360 degrees of turn), and reenter the pattern wherever you left it. This is for spacing purposes. This instruction could also happen on base or final. If you're just about to turn left base, ATC could also tell you to do a right 270 (degree turn) and come back in on base. A 360 gives you the perfect opportunity to use that stuff you learned in "turns around a point," and to practice one.

Likely calls when coming in to Hanscom (example airport)

The pilot of N3572M (November 3572 Mike) has gotten ATIS C (Charlie) on 124.6 and found out that the active runway is 29. The plane is now ten miles out, heading southeast toward Hanscom from the practice area.

N3572M: "Hanscom Tower, Warrior November 3572Mike, one-zero miles northwest, landing, with Charlie."

Hanscom Tower: "Warrior November 3572M, Hanscom Tower, report the right downwind to runway two-niner."

N3572M: "Report right downwind to two-niner. 72M"

Note that when you call, the tail number goes first. When you respond, the tail number comes at the end

Here are instructions that tower commonly gives, after a first call:

"Report entering a right downwind to two-niner."

"Report a two-mile right base to runway two-three."

"Report a three-mile left base turn to final, runway five."

"Fly a straight-in for runway one-one. Report a three-mile final."

"Remain clear of class D and give me a call in ten minutes."

(In these examples, all runway numbers are interchangeable.)

Flight Service Station

What to say to FSS, to open a flight plan in the air.

When you go on a cross country, file a flight plan by calling 1-800-WX-BRIEF. Open the plan using the radio, after you've taken off and are outside of controlled airspace.

Flight Service Stations are called "[City] Radio." For example, "Oakland Radio,". The city name is the one that's listed on the nearby VOR or RCO boxes on the sectional. Those boxes also tell you frequencies you can use to contact them. First try 122.2. This is the standard FSS frequency everywhere. The first call is merely: you, me, frequency.

Pilot: "Oakland Radio, Katana N303EC on 122.2."

Wait for a response. The operator may be working on several different frequencies at once, talking to other people. If you wait a full minute without getting at least a "Katana N303EC, stand by," then try again. If that doesn't work, try another frequency, or listen over a VOR, as listed on the sectional.

Oakland Radio: "Katana N303EC, Oakland Radio, go ahead."

Tell them you'd like to to open your flight plan, from where to where, and what time you took off.

Pilot: "We'd like to open our flight plan from Bedford to White Plains. Our time off was One-four-five-five Zulu."

Oakland Radio: "Roger Katana N303EC, that flight plan is now activated."

Uncontrolled airport procedure

When coming into an uncontrolled airport, such as Hollister (KCVH), start by getting pertinent information, such as ASOS (if it's available).

You may then want to talk to their UNICOM-which is simply somebody sitting at the FBO desk waiting to fuel planes and listening to the radio-to find out which runway is in use:

Pilot: "Hollister UNICOM, Tomahawk 9171A requests the active."

UNICOM: "Active at Hollister is three-one."

From then on, you're talking to other traffic in the area, in order that everyone be aware of each other. Call the traffic by "[City name] traffic." For uncontrolled airport communications, it's still: YOU, ME, WHERE, WHAT, and then add to the end the city name again.

The first call for the sake of traffic control should be made when still 5-10 miles away, declaring your intention to enter the pattern.

Pilot: "Hollister traffic, Tomahawk N9171A, 10 miles southeast, will overfly the field at two thousand feet for a left downwind entry to runway three one, Hollister."

Pilot: "Hollister traffic, Tomahawk N9171A, 5 miles southeast, will overfly the field at two thousand feet for a left downwind entry to runway three one, Hollister."

The next call is from a mile or two out, on the 45 to enter the downwind.

Pilot: "Hollister traffic, Tomahawk N9171A is one mile to the west, to enter the left downwind for runway three one, Hollister."

Thereafter, the calls are on downwind, on base, on final, and exiting or entering the runway. On final, you could announce your intentions.

Pilot: "Hollister traffic, Tomahawk N9171A, left downwind for runway three-one, Hollister."

Pilot: "Hollister traffic, Tomahawk N9171A, left base for runway three-one, Hollister."

Pilot: "Hollister traffic, Tomahawk N9171A, turning/on final for runway three-one, touch-and-go, Hollister."

Pilot: "Hollister traffic, Tomahawk N9171A is clear of runway three one, Hollister."

Pilot: "Hollister traffic, Tomahawk N9171A, taking the active three one (or departing runway 31) [for departure to the west] [for work in the pattern], Hollister."

Note: You are probably not alone out there. The purpose of these calls is to make others aware, and for you to be aware of others. Keep your eyes open and be courteous and cautious about your place in the pattern, and your turn.

Note: None of these calls are mandatory, and there could very well be people in the pattern who don't even *have* radios. Radio calls are not a substitute for awareness, so keep your eyes open. It is always your responsibility to see and avoid other traffic, regardless of radio calls.

Final note: Not all of these calls may be necessary, and in fact some examiners and experienced pilots prefer that people not jam up the airways with every single detail of their pattern. Use your judgment and keep the calls short.

For Watsonville (KWVI) (If there is no chance of getting confused with other call sign in the pattern, you can shorten your call sign to the last three characters, in this case 51B, 51 Bravo)

From Parking at Watsonville

Before rwy 09-27	Watsonville traffic, Cessna N35412, crossing runway 9-27, Watsonville.
Before entering Runway	Watsonville traffic, Cessna N35412, departing runway 20, crosswind departure, Watsonville. Or Watsonville traffic, Cessna N35412, departing runway 20, staying in pattern, Watsonville. Or Watsonville traffic, Cessna N35412, departing runway 20, downwind departure, Watsonville.
After takeoff	Watsonville traffic, Cessna N35412, upwind, runway 20, Watsonville.

If staying in the pattern

Before Crosswind leg	Watsonville traffic, Cessna N35412, turning Left Crosswind, runway 20, Watsonville.
Before Downwind leg	Watsonville traffic, Cessna N35412, Turning Left downwind, runway 20, Watsonville.
Before Base leg	Watsonville traffic, Cessna N35412, Turning left base, runway 20, Watsonville.
Before Final leg	Watsonville traffic, Cessna N35412, Turning final, runway 20, Watsonville.
Out of runway	Watsonville traffic, Cessna N35412, clear of runway 20, Watsonville.

Approaching Watsonville from the south

10 miles out	Watsonville traffic, Cessna N35412, 10 miles South, inbound for landing, Watsonville
5 miles out	Watsonville traffic, Cessna N35412, 5 miles South, 2000ft?, inbound for landing, Watsonville
River and Bridge	Watsonville traffic, Cessna N35412, Over river & the bridge, 1200 ft, inbound for the 45 Left 20, Watsonville.
45° leg	Watsonville traffic, Cessna N35412, on 45 for Left downwind runway 20, Watsonville. (can also just say on 45 for left downwind 20, Watsonville)
Downwind leg	Watsonville traffic, Cessna N35412, on Left downwind, runway 20, Watsonville.
Base leg	Watsonville traffic, Cessna N35412, on left base, runway 20, Watsonville.
Final leg	Watsonville traffic, Cessna N35412, on final, runway 20, Watsonville.
Out of runway	Watsonville traffic, Cessna N35412, clear of runway 20, Watsonville.

Uncontrolled Airport Operation example at San Martin

Fly over the airport 1000ft above TPA.

Circle over the airport, Check wind, traffic flow. Traffic pattern

Depart airport perpendicular to the runway in the direction of downwind.

After passing downwind, start descent to TPA. Before landing check.

1/2 mile after passing downwind, turn and fly parallel to the active runway.

Turn to 45° leg so that you can enter downwind midfield.

Level off at TPA before entering downwind.

Enter downwind. Resume normal traffic pattern operation.

10 miles out	San Martin traffic, Cessna N35412, 10 miles northwest, request airport advisory, San Martin.
5 miles out	San Martin traffic, Cessna N35412, 5 miles northwest, inbound for landing, San Martin
3 miles out	San Martin traffic, Cessna N35412, 3 miles northwest, inbound for landing, San Martin.
Over the airport	San Martin traffic, Cessna N35412, over the airport at 2,300, landing runway 32, San Martin.
45° leg	San Martin traffic, Cessna N35412, on right 45, runway 32, San Martin.
Downwind leg	San Martin traffic, Cessna N35412, on right downwind, runway 32, San Martin.
Base leg	San Martin traffic, Cessna N35412, on right base, runway 32, San Martin.
Final leg	San Martin traffic, Cessna N35412, on final, runway 32, San Martin.
Out of runway	San Martin traffic, Cessna N35412, clear of the active, runway 32, San Martin.

Flight following

"Flight following" means staying in constant contact with a tower or flight control center, who watches your position and gives you reports of other traffic in your area when they have the time (which is almost always). It is also known as getting "advisories." ATC will give you a squawk code for your transponder and watch on the radar.

There are several ways to start flight following. You can ask for help from the tower while you're still on the ground:

Pilot: "Salinas Tower, Cessna niner two seven four seven at runway two-three, ready for departure, request coordination for flight following to King City."

Tower: "Seven four seven roger, squawk 6245."

Tower may be able to help you with this and may not. ATC may tell you whom to contact once you're flying. Around here, it's most common to get flight following once you're in the air, by contacting NORCAL. To do this, tune to 127.15, and say only Norcal, your call sign and wait for a response. (The approach controllers may be talking on several frequencies at once. They'll reply when able.)

Pilot: "Norcal, Cessna November niner two seven four seven."

Approach: "Cessna November niner two seven four seven, Norcal, go ahead."

Pilot: "Seven four seven requests flight following to King City at 6500 feet."

Approach: "Seven four seven squawk 5669."

Set the transponder to 5669 (or whatever code they give you)

Approach: "Cessna November niner two seven four seven, radar contact."

The controller will then tell you when other traffic is in your area. Later, he/she will give you to another controller on a different frequency.

Approach: "Cessna November niner two seven four seven, contact Norcal on xxx.xx"

Pilot: "Switching to Norcal on xxx.xx, seven four seven."

THE AVIATION PHONETIC ALPHABET

A	Alpha (AL-FAH)	1	One (WUN)
B	Bravo (BRAH-VOH)	2	Two (TOO)
C	Charlie (CHAR-LEE) or (SHAR-LEE)	3	Three (TREE)
D	Delta (DELL-TAH)	4	Four (FOW-ER)
E	Echo (ECK-OH)	5	Five (FIFE)
F	Foxtrot (FOKS-TROT)	6	Six (SIX)
G	Golf (GOLF)	7	Seven (SEV-EN)
H	Hotel (HOH-TEL)	8	Eight (AIT)
I	India (IN-DEE-AH)	9	Nine (NIN-ER)
J	Juliett (JEW-LEE-ETT)	0	Zero (ZEE-RO)
K	Kilo (KEY-LOH)		
L	Lima (LEE-MAH)		
M	Mike (MIKE)		
N	November (NO-VEM-BER)		
O	Oscar (OSS-CAH)		
P	Papa (PAH-PAH)		
Q	Quebec (KEH-BECK)		
R	Romeo (ROW-ME-OH)		
S	Sierra (SEE-AIR-RAH)		
T	Tango (TANG-GO)		
U	Uniform (YOU-NEE-FORM)		
V	Victor (VIK-TAH)		
W	Whiskey (WISS-KEY)		
X	Xray (ECKS-RAY)		
Y	Yankee (YANG-KEY)		
Z	Zulu (ZOO-LOO)		