Radio Communications Handout

Radio communication may seem complicated at first, but you'll get used to it. Most things controllers will say are standard and will become familiar to you. The order of most of your initial communications is standard, think of these five items. **THEM, YOU, WHERE, WHAT, WITH**

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

Example:

	Item	Means	Example 1
1. **THEM**	Whom you're talking to	Control	Des Moines Ground
2. YOU	Who you are	Aircraft ID	Cessna 7069G
3. WHERE	Where you are	Position	At Signature
4. WHAT	What you want	Request	Ready to taxi
5. WITH	You are informed with	(ATIS)	with Papa

*NOTE: don't say "THIS IS" Cessna 7069G, That's implied. Adding unnecessary words in your radio calls creates radio congestion.

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

- Clearance: 1, 2, 3, 4, 5
- Ground: 1 , 2, 3, 4, 5
- Tower: 1, 2, 3, 4
- Departure: 1, 2, 3
- Approach: 1, 2, 3, 4, 5
- Tower: 1, 2, 3
- Ground: 1, 2, 3, 4

Notice that **THEM** and **YOU** are in every one. In your first contact with someone new, you identify yourself by aircraft make and tail number, ex. Cessna 7069G or Cherokee 40984. In future communication, the tail number gets abbreviated to just the last three numbers/letters, as long as there is no confusion with any other similarly tailed aircraft. Also note that the N or "november" at the beginning is usually omitted in the call sign. The N-number signifies that the airplane has a U.S. registered tail number.

Knowing the aviation phonetic alphabet is imperative. All pilots have it memorized. The sooner you memorize it the easier it'll be for you to talk on the radio. The phonetic alphabet is widely used for labeling taxiways, classifying airspace, aircraft call signs and many other aspects of aviation. You can assume that the letters in each call sign or tail number will be pronounced "seven zero six nine golf" or for shorten communications "six nine golf."

Always test the volume with the squelch button before transmitting. It's not uncommon that your hand accidentally bumps the volume control knob during taxi operations or when encountering turbulence. There's nothing more embarrassing than not hearing ATC because your volume wasn't loud enough.

When pushing the transmit button make sure to pause a second before speaking. The first word spoken will be cut off unless we pause after pressing the button and before talking.

Know how to troubleshoot your equipment. Most of the airplanes you will be flying will have volume controls on the headset, the audio panel and the radio. Sometimes you'll need to adjust the squelch or make sure your headphones are plugged in correctly. Take the time to learn how these things work so that you're not preoccupied with the radio when flying the airplane.

In the beginning most student pilots usually have a little radio fright. Over time and with practice, communications will become easy for you. Start by practicing in your head. Much like many other aspects of life, it is important to engage the brain before opening your mouth. It doesn't hurt to rehearse before you push that little transmit button. The idea is to keep communications as brief as possible. Flying the airplane and navigation are always a priority over talking on the radio. You'll hear your instructor preach, "**aviate, navigate, communicate"** and always in that order.

Things YOU will say

Roger/Wilco
"Roger" means, I understand. "Wilco" means that 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's said by "affirmative"

Affirmative/Negative
Pilot-speak for Yes and No. (Short words can sometimes 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

Request
Use this word to ask for something, or prepare ATC for an upcoming request.

Looking for traffic
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 Solo
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 are a student pilot solo. If you are having trouble understanding what they're saying or what they want, this is a good phrase to start with.
At US Flight Co we require that every student solo pilot advice clearance, ground, tower, and approach you are a student solo pilot

All in all, it is always great to keep all your calls short and to the point, don't be chatty on the radios.

Things an AIR TRAFFIC CONTROLLER might say

Cleared for ___
ATC has given you the permission and right to do something.
- Takeoff - Cleared to takeoff of runway
- Landing - Cleared to land on runway
- Option - Cleared to do either a touch and go, stop and go, full stop, or go around

*__NOTE__ - for every call, the runway number will be included in your call and should be also repeated in your call back. Ex. “69G cleared to land 31”

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 at midfield, then do that.

Go Ahead
It’s now your turn to talk to ATC. Perhaps the radios have been very busy and you finally manage to get your turn to say your request

Report
ATC is telling you that when you arrive at the given position, you should radio the tower and them so
Ex. “report midfield left downwind 13” when you are established on the downwind and are midfield, call the tower and report your position.
Ex. “report left base 13” call the tower as you start the turn to base and say “69G turning base 13”

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

Maintain
Stay at a given altitude, “climb and maintain 3500” means you should climb up to 3500 MSL and stay there until they tell you otherwise

Climb to/descend to
Fly to the altitude they give you

Fly heading
Turn to the direction given, Fly HEADING they give you, not the ground track of the heading given to you

Make (left/right) closed
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. “Your number three following a 737” means that one plane is cleared to land, there's a 737 behind that plane but you are looking for the 737 that you are following

Traffic at two o'clock
This is standard traffic advisory

Confirm
ATC wants you to repeat some instruction 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

Line up and wait
Go on the runway and wait in position but DO NOT TAKE OFF. There's probably another airplane crossing the runway downfield

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

Radar Content
ATC is informing you that they have you on radar. You don't need to respond to this. Just listen up for your call sign and expect traffic advisories.

Traffic Alert
ATC is aware of another aircraft that is not under their control at an altitude that in the controllers judgment, places both aircraft in an unsafe proximity to each other. With the alert ATC will offer the pilot an alternate course of action

Contact (tower) on (118.3)
ATC is 'handing you off' to another controller, telling you to change your radio frequency and talk to someone else.

Radar service is terminated
ATC is telling you that it will not provide separation or traffic advisories any more. 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 radar 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 13) (via papa) and hold short of (runway 13/31)
A taxi clearance: if cleared to taxi TO a runway, are allowed to cross all other taxiways on the way there, but you must hold short of ALL runways. In this case you should go on to taxiway Papa, and taxi via papa to the hold short line of runway 13/31

Extend downwind
Don't turn 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 tell you to turn base

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, and reenter the pattern wherever you left it. This is for spacing purposes. This instruction could also happen on a base or final. If you're about to turn left base, ATC could also tell you to do a right 270 and come back in on a base.

Likely calls when coming into the Des Moines Airport

Scenario: The pilot of 7069G has received ATIS C on frequency 123.9 and found out that the active runway is 31. The plane is 20 miles to the north over Saylorville lake heading south to the Des Moines airport from the practice area.

Pilot: Des Moines approach, Skyhawk 7069G, Two Zero miles north inbound full stop with Charlie

ATC: Skyhawk 7069G
- Fly heading ___ for 31 vectors for traffic
- Join midfield right downwind 31

Pilot join midfield right downwind 31 69G

ATC 69G contact tower 118.3

Pilot contact tower 69G

Pilot Des Moines tower, Skyhawk 7069G for midfield right downwind 31

ATC 7069G runway 31 cleared to land

Pilot cleared to land 31 69G

Scenario: The pilot of 7069G has received ATIS C on frequency 119.55 and found 13 is the active runway, and has completed their runup on the signature ramp. The plan for the flight is to go to Saylorville lake for maneuvers at 3500 ft.

Pilot Des Moines Clearance Delivery, Skyhawk 7069G at Signature with Charlie, Saylorville lake for maneuvers at 3500

ATC Skyhawk 7069G fly runway heading on departure, maintain at or below 3500, departure frequency 123.9, squawk 0335

Pilot Runway heading, at or below 3500, 123.9, squawk 0335, 69G

ATC 69G readback correct

Pilot Des Moines Ground, skyhawk 7069G at signature with Charlie ready to taxi

ATC 7069G taxi 13 via papa hold short 13 at papa

Pilot 13 via papa hold short 13 at papa 69G

ATC 69G cross 13, left on delta, cross 23

Pilot Cross 13, left delta, cross 23 69G

the pilot would then continue his taxi all the way to the end of runway 13 to the hold short line

Pilot Des Moines Tower, Skyhawk 7069G holding short 13 at D6 ready for takeoff

ATC Skyhawk 7069G cleared for takeoff 13 at D6

Pilot Cleared for takeoff 13 at D6 69G

in this scenario, the pilot would fly runway heading since that is what was given in his clearance

ATC 69G contact departure

Pilot contact departure 69G

Departure frequency is 123.9 which is also given in the clearance

Pilot Des Moines Departure, Skyhawk 7069G, runway heading 1,300 climbing

ATC Skyhawk 7069G, radar contact, proceed on course Saylorville, altitude your discretion

Pilot On course Saylorville, altitude my discretion 69G

Altitude your discretion amends the at or below 3500 restriction given on your clearance

Uncontrolled Airport Procedure

When flying into an uncontrolled airport, such as Ankeny (KIKV), start by getting the pertinent information, such as ASOS (Automated Surface Observation System) if it's available.

From then on you're talking to other traffic in the area, in order that everyone is aware of each other, their location in the pattern and their intentions. Call the traffic by "(city name) traffic." For uncontrolled airport communications, it's still: **YOU, ME, WHERE, WHAT,** and then add to the end 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.

Unlike towered communications, for every radio call your full tail number and aircraft type should be in every radio transmission, not just the first radio call. This is because you are talking to other pilots not just one controller, some people may join in the pattern after your first call and they didn't hear what type of aircraft you are so they can know what type of airplane they are looking for when scanning for traffic

Pilot: Ankeny traffic, Skyhawk 7069G, five miles west, will over fly midfield for a left downwind one-eight, Ankeny

*note, runway numbers are said "one-eight" NOT "eighteen"

PIlot: Ankeny traffic, Skyhawk 7069G entering left downwind for 18, Ankeny

Thereafter: on downwind, on base, on final, and exiting or entering the runway. Finally, you should announce your intentions (full stop or touch and go).

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 are experienced pilots and prefer that people not jam up the airways with every single detail of their pattern. Use your judgment and keep the calls short.