

## PHONETIC ALPHABET

Pilots use a radio to communicate with other aircraft and Air Traffic Control. When talking on the radio, they use the phonetic alphabet to avoid confusion.

Alpha	Juliet	Sierra
Bravo	Kilo	Tango
Charlie	Lima	Uniform
Delta	Mike	Victor
Echo	November	Whiskey
Foxtrot	Oscar	X-ray
Golf	Papa	Yankee
Hotel	Quebec	Zulu
India	Romeo	

0 - Zero  
1 - One  
2 - Two  
3 - Tree  
4 - Fower  
5 - Fife  
6 - Six  
7 - Seven  
8 - Eight  
9 - Niner  
10 - One-zero

Using the Phonetic alphabet reduces errors. Here is an example of a typical aircraft communication to the control tower:

**"Bismarck tower, this is Cessna One, Eight, Two, November Delta ready for takeoff on runway One Three."**

Aircraft are identified using a tail number. This is similar to a license plate.

## TYPES OF AIRCRAFT



Single Engine Aircraft



Twin Engine Aircraft



Cargo Plane Aircraft



Helicopter



Commercial Plane Aircraft



Float Plane



Business Jet Aircraft



Military Aircraft

## PARTS OF AN AIRPLANE

An airplane flies using four forces: **THRUST, DRAG, LIFT and WEIGHT.**  
Parts of the airplane include:

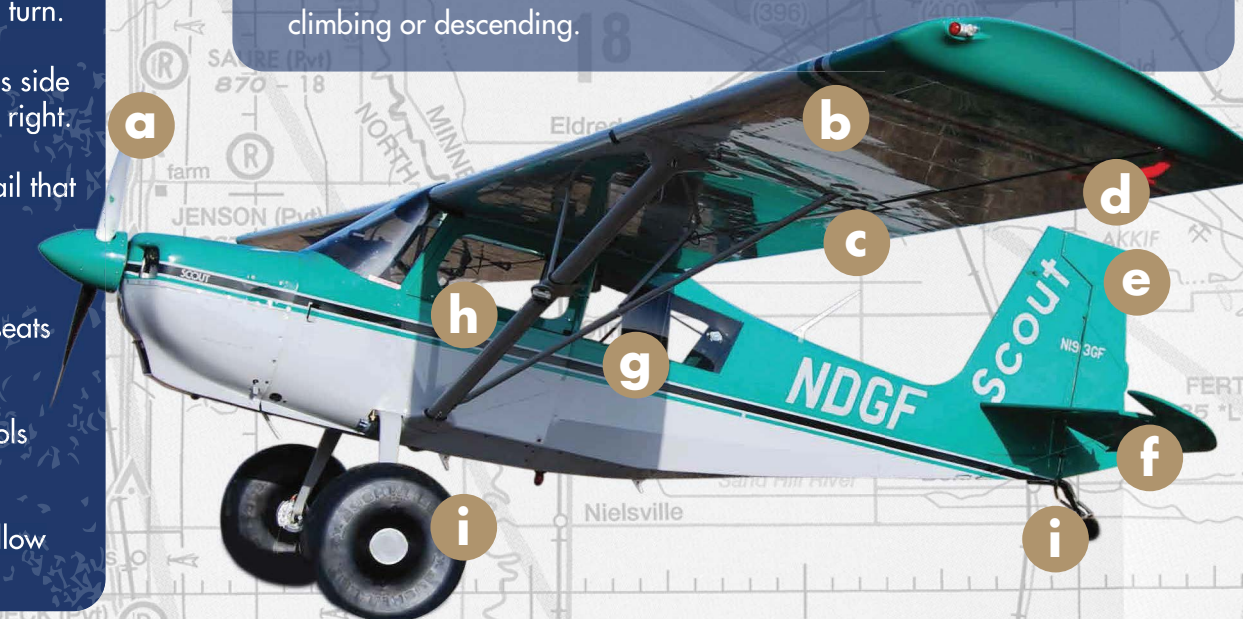
- a PROPELLER** (prō-pel-ler): A rotating blade on the front of the airplane that pulls the airplane forward through the air. The propeller provides **THRUST** for the aircraft. The thrust produced must be greater than **DRAG** for the aircraft to move forward. Drag resists forward motion.
- b WING:** The part of the airplane that provides enough lift to support the weight of an airplane. The wing produces **LIFT** which causes the aircraft to gain altitude. Lift must exceed **WEIGHT** for the aircraft to climb. Fuel is also stored in the wing.
- c FLAPS:** The rear, moveable sections of the inner sections of the wings that enable an airplane to fly more slowly.
- d AILERON** (ā-ler-on): The rear, movable sections on the outer sections of the wings that enable an airplane to turn.
- e RUDDER:** The moveable vertical surface that controls side to side movement and allows the nose to move left or right.
- f ELEVATOR:** A moveable horizontal "wing" on the tail that causes the nose of the aircraft to go up or down in flight.
- g FUSELAGE:** The body of an airplane where all the seats and cargo are.
- h COCKPIT:** Where the pilot sits and has all the controls and instruments.
- i LANDING GEAR:** The wheels, skis, or floats that allow an aircraft to be on the surface.

## BASIC AIRCRAFT INSTRUMENTS



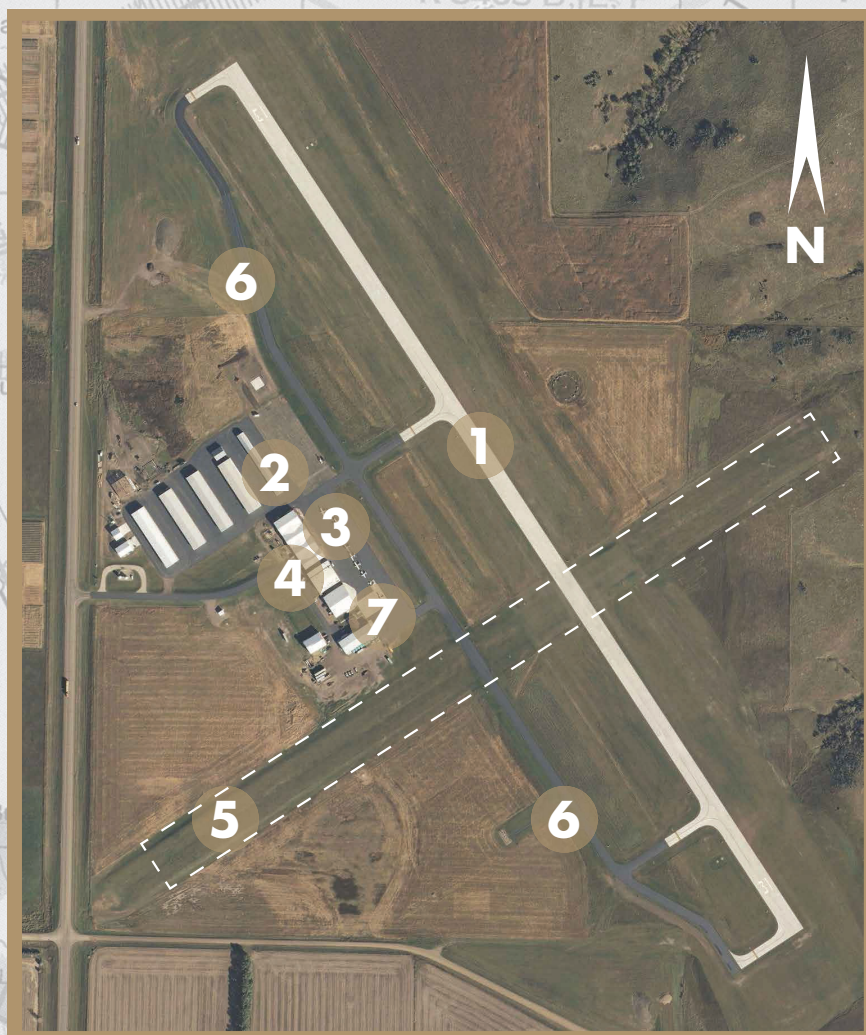
CESSNA 172 COCKPIT

- 1. AIRSPEED INDICATOR:** measures the speed of the aircraft through the air.
- 2. ATTITUDE INDICATOR:** or artificial horizon, depicts the position of the airplane in relation to the horizon.
- 3. ALTIMETER:** measures the altitude or height of the aircraft above sea level.
- 4. TURN COORDINATOR:** gives the pilot information about the direction and rate of a turn.
- 5. HEADING INDICATOR:** or directional gyro, is the primary instrument used to determine the direction an aircraft is flying.
- 6. VERTICAL SPEED INDICATOR:** measures the rate at which an aircraft is climbing or descending.



## GENERAL AVIATION AIRPORT

Mandan Municipal Airport or Y19

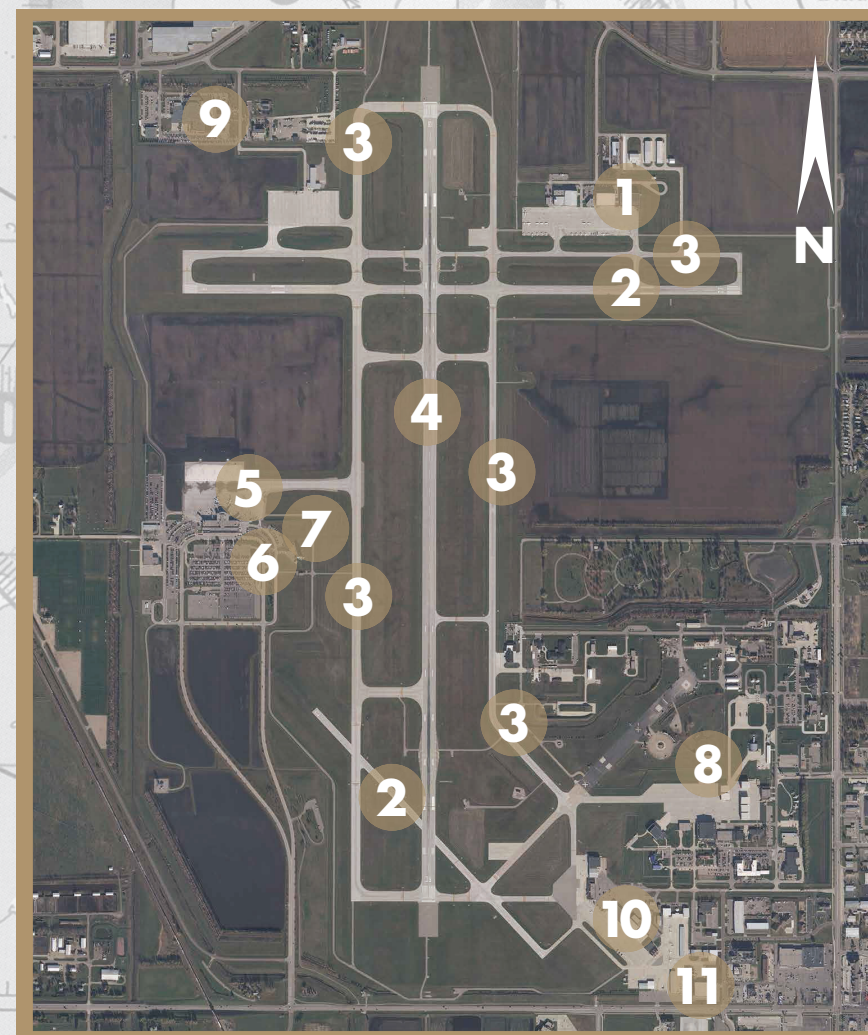


1. Runway (Concrete)
2. Hangars
3. Ramp
4. General Aviation Terminal
5. Crosswind Runway (Turf)
6. Taxiway
7. Fixed Based Operator (FBO)

A general aviation airport does not support commercial airlines.

## COMMERCIAL SERVICE AIRPORT

Hector International Airport - Fargo, ND or KFAR



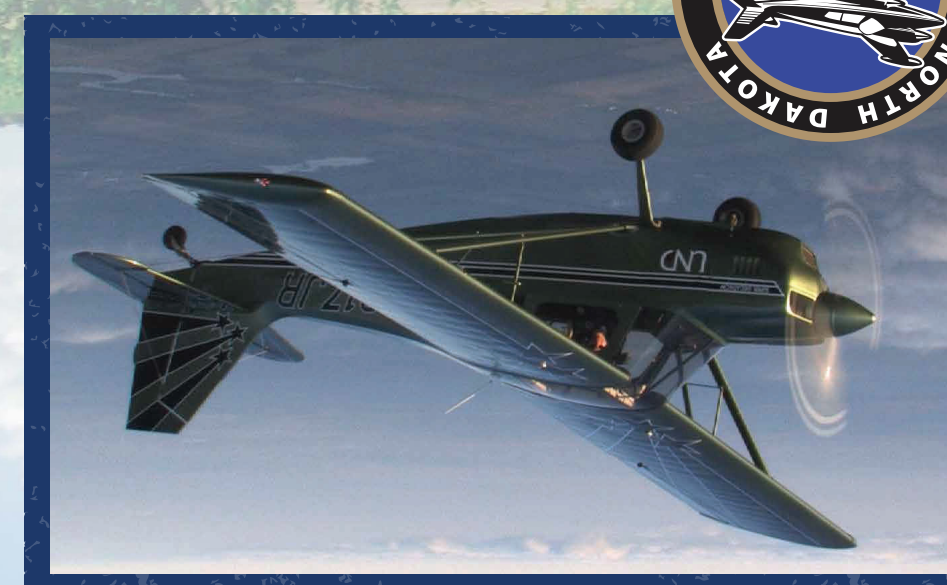
1. Fixed Base Operator (Fuel, Hangars, and Snacks)
2. Crosswind Runway
3. Taxiway
4. Primary Runway
5. Commercial Ramp
6. Commercial Terminal and Parking Lot
7. Control Tower
8. Military Operation (Air National Guard)
9. Military Operation (Army Reserve)
10. General Aviation Ramp
11. Air Museum

[www.aero.nd.gov](http://www.aero.nd.gov)



- Careers in Aviation
- How to Start Flight Training
- Aviation Basics and Facts

A Statewide Voice for Aviation.



**Flight Plan to Aviation in North Dakota**

- Airport Grant Funding
- Aviation Community Outreach
- Aviation Education Grant Funding
- Aviation Publications
- ND Airport Development and Planning

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For more information about Aviation in North Dakota please visit:  
[www.aero.nd.gov](http://www.aero.nd.gov)