**RESTRICTIONS TO VISIBILITY**

* Cloud;
* Precipitation;
* Fog;
* Haze;
* Smoke;
* blowing snow;
* blowing dust; and
* blowing sand.

**VISIBILITY IN RELATION TO STABILITY**

**Stable Air:**

* Impurities are trapped in the lower levels;
* Drizzle; and
* Fog.

**Unstable Air**:

* May cause blowing snow, sand or dust.

# VISIBILITY TERMS

**Visibility:**

The distance at which prominent objects may be seen and identified by day and prominent lighted objects by night.

## Flight Visibility:

Range of visibility forward from the cockpit of an aircraft.

**Slant Range Visibility:**

The distance a pilot can see over the nose of an aircraft towards the ground.

**Ground Visibility:**

The visibility at an airport as reported by an accredited observer. Generally considered as visibility at eye level.

### **Prevailing Visibility:**

The distance at which objects of known distance are visible over at least half of the horizon.

## Runway Visual Range:

A mechanical device measuring changes in light intensity to estimate the visibility near the touchdown point or midpoint of a runway.

**ICING**

In temperatures at or below freezing, supercooled water droplets may strike your aircraft and freeze. This is known as icing. Dangerous icing can occur in cloud, freezing rain or

freezing drizzle.

***TYPES OF ICING****:*

**Frozen Dew:**

* Sometimes dew will form on an aircraft parked outside at night. If the aircraft skin temperature falls below freezing, this dew will freeze; and
* Must be removed before take-off.

**Hoar Frost:**

* A white, feathery, crystalline formation that covers the entire surface of the aircraft;
* Forms by sublimation on cold clear nights;
* Must be removed before take-off since it can increase stall speed and reduce lift;
* Can form in clear air when a cold aircraft enters warmer, damper air during a steep descent;
* May obscure vision by coating the windshield;

**Rime Ice:**

* An opaque or milky white ice that forms on an aircraft;
* Forms by the almost instantaneous freezing of small supercooled water droplets;
* Has no great weight;
* Alters the aerodynamics of the airfoils;
* Chokes off the orifices of the carburetor and the instruments; and

#### Is very brittle and easily dislodged by de-icing equipment.

## Clear Ice:

* A coating of glassy-like ice;
* Forms as large supercooled water droplets freeze slowly and spread;
* Can form a strong, solid sheet of ice which is difficult to dislodge;
* Can increase drag by as much as 300% to 500%;
* Increases the weight of the aircraft;
* Disrupts the smooth air flow over the wings and tail surfaces decreasing lift;
* Unequal loading may cause vibrations; and
* As large blocks break off, the structure of the aircraft may be impaired.

**Protection From Icing**

**Fluids** – released on leading edge to flow over the blades of propellers and wing surfaces.

**Rubber Boots** – membranes of rubber attached to the leading edges. They can be made to pulsate in such a way that ice is cracked and broken off after it has already formed.

**Heating Devices** – Heating vulnerable areas with hot air from the engine or special heaters is a method of preventing the buildup of ice.