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CATEGORIES AND CLASSES

Certification of AIRMEN

CATEGORY	CLASS	TYPE
Airplane	Single-Engine Land Single-Engine Sea Multi-Engine Land Multi-Engine Sea	PA-28, PA-38, C-172, B-747
Rotorcraft	Helicopter Gyroplane	Sikorsky, R-22, ELA-07
Lighter-than-air	Free Air Balloon Airship	Lindstrand 77A, Firefly 7 Skyship 500HL, GZ-19A
Glider		Schweizer 2-33

Certification of AIRCRAFT (mix and match)

CATEGORY	CLASS	TYPE
Normal	Airplane	PA-28, PA-38, C-172, B-747
Utility	Rotorcraft	
Acrobatic	Glider	Sikorsky, R-22, ELA-07
Transport	Balloon	
Limited	Landplane	Lindstrand 77A, Firefly 7
Restricted	Seaplane	Skyship 500HL, GZ-19A
Provisional		Schweizer 2-33
Light Sport		
Experimental		

PITOT-STATIC SYSTEM BLOCKAGE

When solving all pitot-static system blockage problems, keep in mind that the pitot tube reads TOTAL pressure which the sum of DYNAMIC PRESSURE (result of the aircraft moving through the air) and STATIC PRESSURE (atmospheric pressure). $T = D + S$. Airspeed indicator converts dynamic pressure to airspeed indication. In order to do this, it subtracts static pressure supplied by the static port(s) from total pressure supplied by the pitot tube: $T - S = D$. This is the main formula that should be analyzed in all blockage problems related to airspeed indicator.

1. Static port blockage. Airspeed indicator acts as a wacky altimeter. It reads lower than actual airspeed at higher altitudes and higher than normal at lower altitudes.

a) Same altitude as the blockage altitude. Airspeed indicator will read correctly since the trapped pressure equals the outside pressure.

b) Altitude above the blockage altitude. The trapped static pressure is higher than should be at this altitude, so the airspeed indicator will read lower than actual airspeed: $T - S \uparrow = D \downarrow$

c) Altitude below the blockage altitude. The trapped static pressure is lower than should be at this altitude, so the airspeed indicator will read higher than actual airspeed: $T - S \downarrow = D \uparrow$

2. Pitot port blockage – drain hole free. Air pressure escapes from the drain hole and the total pressure equals static pressure. Airspeed indicator reads zero: $S - S = 0$

3. Total pitot tube blockage. (Assuming the static port is clear). The airspeed indicator acts as an altimeter

a) Same altitude as the blockage altitude. No changes in airspeed will be registered.

b) Altitude above the blockage altitude. The trapped total pressure is higher than it supposed to be at this altitude, so the airspeed indicator reads higher: $T \uparrow - S = D \uparrow$

c) Altitude below the blockage altitude. The trapped total pressure is lower than it supposed to be at this altitude, so the airspeed indicator reads lower: $T \downarrow - S = D \downarrow$

AIRSPACE

CLASS A

Depiction on Charts	Not depicted
Lateral Dimensions	Over 48 contiguous United States and Alaska including the area extending 12 nautical miles out from the U.S. coast
Vertical Dimensions	18,000 feet MSL – 60,000 feet MSL
Minimum Pilot Qualifications	Private Pilot with Instrument Rating
Entry Requirements	IFR Flight Plan and IFR Clearance
Equipment Requirements	All instruments required for IFR flight plus Transponder with Mode C and DME at or above FL240 (if VOR is used)
Basic VFR WX Minimums	N/A
VFR Minimum Visibility and Distance from Clouds	N/A
Speed Restrictions	None
VFR ATC Services	Separation from all traffic

CLASS B

Depiction on Charts	Solid blue line
Lateral Dimensions	Concentric circles with different bases out to up to 20 nm from the primary airport
Vertical Dimensions	Surface – 10,000 feet MSL
Minimum Pilot Qualifications	Student Pilot with Class B endorsement
Entry Requirements	Explicit Class B Clearance
Equipment Requirements	Two-way radio, Transponder with Mode C
Basic VFR WX Minimums	Visibility: 3SM, Ceiling: 1,000 feet
VFR Minimum Visibility and Distance from Clouds	Visibility: 3SM, Clear of clouds
Speed Restrictions	None, but the general restriction of maximum 250 KIAS below 10,000 feet MSL applies 200 KIAS below Class B and in VFR corridors
VFR ATC Services	Sequencing and separation from all traffic