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1. Mount the antenna as close to level as possible with respect to the normal cruise flight attitude of the aircraft. If the normal flight attitude is not known, substitute the waterline, which is typically referenced as level while performing a weight and balance check.
 2. The GPS antenna should be mounted in a location to minimize the effects of airframe shadowing during typical maneuvers. Typically mounting farther away from the tail section reduces signal blockage seen by the GPS antenna.
 - 3a. The GPS antenna should be mounted no closer than two feet from any VHF COM antenna or any other antenna which may emit harmonic interference at the L1 frequency of 1575.42 MHz. An aircraft EMC check (reference VHF COM interference check in Post Installation Checkout procedures) can verify the degradation of GPS in the presence of interference signals. If an EMC check reveals unacceptable interference, insert a GPS notch filter in line with the offending VHF Com or the (re-radiating) ELT transmitter.

Note: This does not apply to GPS and COM combination antennas, provided the antenna model is TSO authorized and has been tested to meet Garmin's minimum performance standards. The separating requirement includes the combination with an XM antenna element as well.
 - 3b. The GPS antenna should be mounted no closer than two feet from any antennas emitting more than 25 watts of power. An aircraft EMC check can verify the degradation of GPS in the presence of interference signals.
 - 3c. To minimize the effects of shadowing at 5° elevation angles, the GPS antenna should be mounted no closer than 6 inches (edge to edge) from other antennas, including passive antennas such as another GPS antenna or XM antenna.
 4. To maintain a constant gain pattern and limit degradation by the windscreen, avoid mounting the antenna closer than 3 inches from the windscreen.
 5. For multiple GPS installations, the antennas should not be mounted in a straight line from the front to the rear of the fuselage. Also varying the mounting location will help minimize any aircraft shading by the wings or tail section (in a particular azimuth, when one antenna is blocked the other antenna may have a clear view).

Figure 2-1 shows the recommended placement of antennas.

2.4.2 COM Antenna Location

The GNC 420W/GNS 430W COM antenna should be well removed from all projections, engines and propellers. The ground plane surface directly below the antenna should be a flat plane over as large an area as possible (18 inches square, minimum). The antenna should be mounted a minimum of six feet from any DME or other COM antennas, four feet from any ADF sense antennas, and two feet from the 400W Series and its GPS antenna. The COM antenna should also be mounted as far apart as practical from the ELT antenna. Some ELTs have exhibited re-radiation problems generating harmonics that may interfere with GPS signals. This can happen when the COM (400W Series or any other COM) is transmitting on certain frequencies such as 121.15 or 121.175 MHz, which may cause the ELT output circuit to oscillate from the signal coming in on the ELT antenna coax.

If simultaneous use of two COM transceivers is desired (Split-COM or simul-comm), use of the TX interlock function is mandatory. In addition, the COM antennas should be spaced for maximum isolation. A configuration of one topside antenna and one bottom side antenna is recommended.

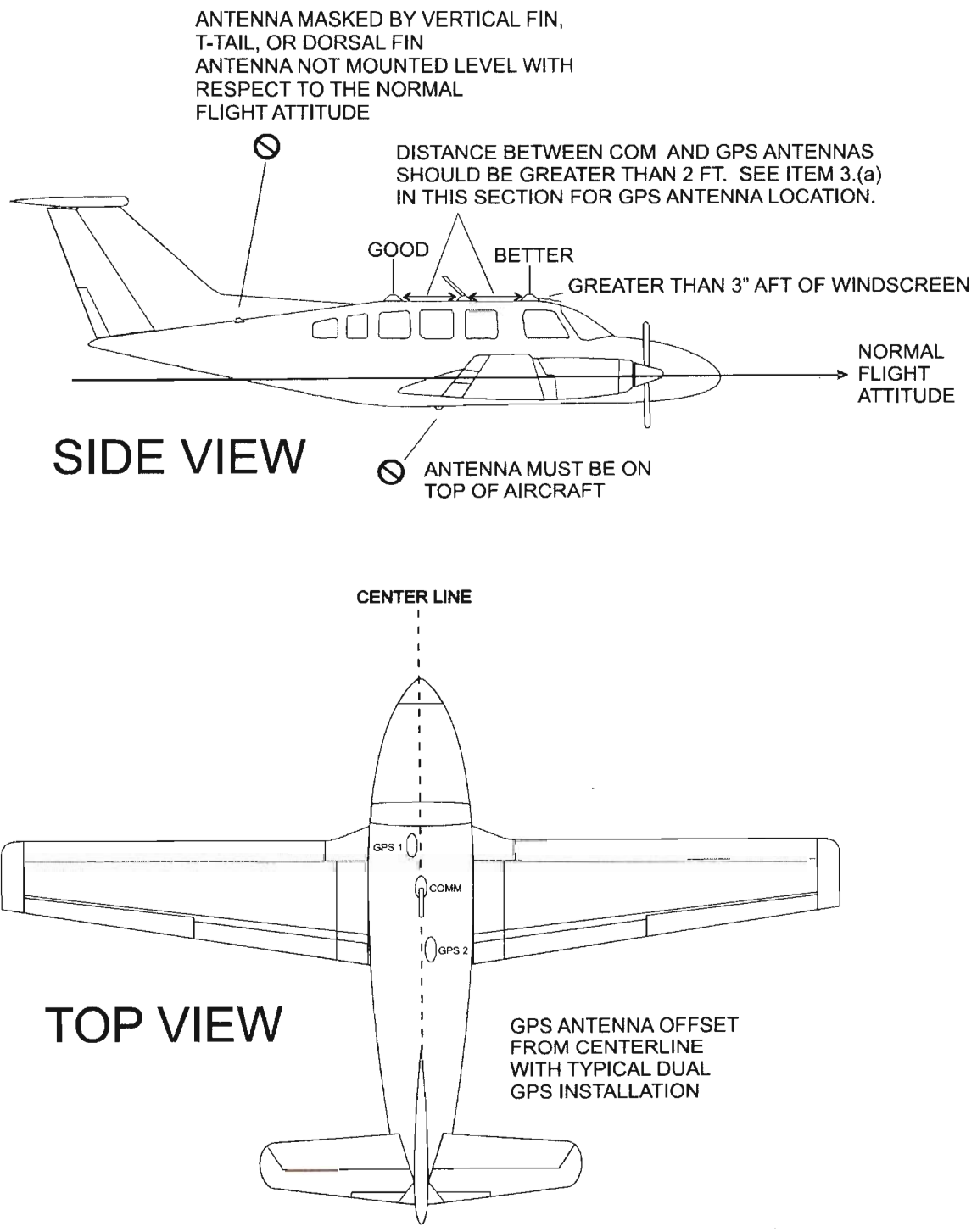


Figure 2-1. GPS Antenna Installation Considerations