Flight with Unreliable Airspeed

Use this procedure anytime the airspeed system becomes inoperative or erroneous airspeed is suspected, with or without loss of radome.

Unreliable airspeed indications may result from *blocking or freezing of the pitot system*. Airspeed indications and associated air data parameters would be abnormal.

Loss of a major portion of the nose radome may disrupt the airflow over the pitot probes, thereby affecting the measured total pressure. Should this occur, those functions dependent on total pressure from the pitot probes (such as indicated airspeed and Mach number, overspeed warning, and certain autopilot functions) may become erroneous or inoperative. Loss of a major portion of the nose radome is usually accompanied by noise and low frequency buffeting that is distinguishable from stall buffet in that it does not change greatly with changes in speed or attitude. Damage or loss of a radome will also be accompanied by a relatively small loss of airplane performance. No significant change will occur in airplane handling characteristics, stall, or buffet onset speeds due to radome damage.

Once the problem is identified, and airspeed appears suspect, no difficulties should be encountered as long as pitch attitude is used as the primary reference and indicated airspeed readings are disregarded.

Hail encounter, in addition to causing radome and/or pitot tube damage, may also cause damage to the wing leading edges, thereby resulting in an increase in airplane stall speeds and degraded handling characteristics at, or near, stall. Further, the angle-of-attack probes may be damaged, thereby invalidating stall warning. The terminal area and final approach speeds shown in the following table contain an arbitrary margin to account for the degree of wing leading edge damage nominally occurring due to hail encounter. The final approach speeds should be taken into consideration when determining landing field length requirements.

Information for pitch attitude flying is contained in the following tables and may be used any time airspeed indications are suspect. Linear interpolation for the target pitch attitude corresponding to the appropriate gross weight is permissible.

Climb

-217A / -217C Engines

	Flaps / Slats	Altitude (ft)	Weight (1000 lbs)	Target Pitch Attitude (Deg.)	Approx. N_1 RPM Required (%)	Approx. Airspeed (knots)	Approx. Rate of Climb (fpm)
Climb Fly to pitch attitude.	O / RET	SL	80	20.1	85.7	194	5660
			120	12.7	85.5	235	3798
			160	9.3	85.5	270	2684
		5,000	80	17.7	86.3	194	5223
			120	11.3	86.4	235	3470
			160	8.4	86.4	270	2419
		10,000	80	15.2	87.2	194	4676
			120	9.8	87.3	235	3018
			160	7.3	87.3	270	2030
		15,000	80	12.9	88.4	195	4076
			120	8.4	88.2	237	2528
			160	6.3	88.1	273	1605

-219 Engines

	Flaps / Slats	Altitude (ft)	Weight (1000 lbs)	Target Pitch Attitude (Deg.)	Approx. N_1 RPM Required (%)	Approx. Airspeed (knots)	Approx. Rate of Climb (fpm)
Climb Fly to pitch attitude.	O / RET	0	80	21.4	86.5	194	6080
			120	13.6	86.5	234	4160
			160	9.8	86.5	270	2990
		5,000	80	18.7	87.4	193	5610
			120	12.0	87.5	234	3760
			160	8.7	87.6	270	2640
		10,000	80	16.2	89.6	193	5100
			120	10.5	89.4	234	3350
			160	7.7	88.9	270	2270
		15,000	80	13.9	91.3	195	4490
			120	9.0	90.7	237	2850
			160	6.6	90.3	273	1860

Cruise

-217A / -217C / -219 Engines

	Flaps / Slats	Altitude (ft)	Weight (1000 lbs)	Target Pitch Attitude (Deg.)	Approx. N_1 RPM Required (%)	Approx. Airspeed (knots)	Approx. Rate of Climb (fpm)
Cruise	O / RET	20,000	80 120 160	.6 1.9 3.3	71.8 73.8 77.5	285	0
		25,000	80 120 160	.6 2.0 3.4	74.4 77.0 80.5	285	0
		30,000	80 120 160	.7 2.1 3.6	77.1 79.9 84.6	285	0
		35,000	80 120	1.2 2.8	78.2 84.5	268 (.79 Mach)	0

Descent

-217A / -217C / -219 Engines

	Flaps / Slats	Altitude (ft)	Weight (1000 lbs)	Target Pitch Attitude (Deg.)	Approx. N_1 RPM Required (%)	Approx. Airspeed (knots)	Approx. Rate of Descent (fpm)
Descent Fly to pitch attitude.	O / RET	10,000	80 120 160	-4.8 -2.2 -0.3	Idle Thrust	285	3031 2283 1974
		20,000	80 120 160	-4.2 -1.7 0.1	Idle Thrust	285	3200 2426 2144
		30,000	80 120 160	-3.5 -1.1 0.7	Idle Thrust	285	3273 2509 2239

Approach and Landing

-217A / -217C / -219 Engines

	Flaps / Slats	Alti tude (ft)	Weight (1000 lbs)	Target Pitch Attitude (Deg.)	Approx. N_1 RPM Required (%)	Approx. Airspeed (knots)	Approx. Rate of Descent (fpm)
Holding Adjust power to maintain pitch attitude, level flight.	O / RET	10,000	80 120 160	4.1 4.1 4.1	56.4 64.5 70.3	184 225 260	0 0 0
Terminal Area Flight Adjust power to maintain pitch attitude, level flight.	O / RET	SL	80 120 160	4.1 4.1 4.1	50.3 59.0 65.1	184 225 260	0 0 0
	15 / EXT	SL	80 120 160	8.3 8.3 8.3	53.4 62.4 68.6	123 151 174	0 0 0
	28 / EXT	SL	80 120 160	6.8 6.8 6.8	58.2 66.6 72.7	115 141 162	0 0 0
Final Approach Based on three degree glide slope. Adjust power to main-tain pitch atti-tude. Fly glide slope or, if not available, fly to rate of descent.	40 / EXT	SL	80 120 160	2.2 2.2 2.2	51.9 61.1 67.1	111 136 157	600 735 849

Go-Around

-217A / -217C Engines

	Flaps / Slats	Alti-tude (ft.)	Weight (1000 lbs)	Target Pitch Attitude (Deg.)	Approx. N_1 RPM Required (%)	Approx. Airspeed (knots)	Approx. Rate of Climb (fpm)
Go-Around (V_2 + 20 KIAS) Fly to pitch attitude.	15 / EXT	SL	80	24.1	92.0	146	5240
			120	18.6	92.1	157	3268
			160	14.8	92.3	179	2340
		5,000	80	22.6	95.8	139	4713
			120	16.9	96.0	157	2989
			160	13.5	96.2	179	2082
		10,000	80	19.9	93.9	132	3709
			120	14.2	94.3	157	2345
			160	11.5	94.5	179	1516

-219 Engines

	Flaps / Slats	Alti-tude (ft)	Weight (1000 lbs)	Target Pitch Attitude (Deg.)	Approx. N_1 RPM Required (%)	Approx. Airspeed (knots)	Approx. Rate of Climb (fpm)
Go-Around (V_2 + 20 KIAS) Fly to pitch attitude.	15 / EXT	0	80	24.3	92.8	149	5560
			120	19.2	92.9	157	3420
			160	15.2	93.1	178	2450
		5,000	80	22.6	94.9	141	4820
			120	17.1	95.1	157	3040
			160	13.7	95.3	178	2120
		10,000	80	20.1	93.1	132	3780
			120	14.4	93.4	157	2370
			160	11.7	93.7	178	1550

END