SESSION 55: NAVIGATION — TRANSITION LEVELS, SPEED RESTRICTIONS, AND ALTITUDE CLEARANCES

1. In the United States, when climbing through 18,000 feet MSL (the transition altitude), the pilot sets the altimeter to:

A. The local altimeter setting

B. 29.92 inches Hg (standard)

C. The field elevation

D. The destination altimeter setting

2. At and above 18,000 feet MSL in the U.S., altitudes are expressed as:

A. Flight levels (e.g., FL180, FL230) based on 29.92" Hg

B. MSL altitudes using local pressure

C. AGL altitudes

D. Pressure altitudes only below FL240

3. When descending through the transition level (FL180) into the lower airspace, the pilot resets the altimeter to:

A. 29.92" Hg

B. The standard datum

C. The current local altimeter setting

D. The departure airport setting

4. The lowest usable flight level depends on the altimeter setting because:

A. Flight levels are unaffected by pressure

B. The transponder requires it

C. Speed limits change

D. A low altimeter setting can raise the lowest usable flight level above FL180

5. The maximum indicated airspeed below 10,000 feet MSL under 14 CFR §91.117(a) is:

A. 250 knots

B. 200 knots

C. 230 knots

D. 288 knots

6. The 250-knot limit below 10,000 feet MSL applies:

A. Only in Class B airspace

B. Only above FL180

C. Generally below 10,000 feet MSL (with limited exceptions)

D. Only to turbine aircraft

7. Under §91.117(b), the maximum indicated airspeed at or below 2,500 feet AGL within 4 NM of the primary airport of a Class C or Class D airspace area is:

A. 250 knots

B. 200 knots

C. 230 knots

D. 156 knots

8. Under §91.117(c), an aircraft in the airspace underlying Class B airspace, or in a VFR corridor through Class B, is limited to a maximum indicated airspeed of:

A. 250 knots

B. 230 knots

C. 156 knots

D. 200 knots

9. The speed limit inside Class B airspace itself is:

A. 200 knots

B. 250 knots below 10,000 feet (the general limit; no special 200-knot Class B interior limit)

C. 156 knots

D. 230 knots

10. A published speed restriction on a SID or STAR (e.g., "250 KIAS") must be:

A. Disregarded under radar control

B. Complied with as part of the procedure, unless ATC amends or deletes it

C. Applied only above FL180

D. Treated as advisory

11. When ATC issues a speed assignment (e.g., "maintain 210 knots"), the pilot must:

A. Maintain the previous speed

B. Choose any speed below the assignment

C. Comply with the assigned speed, advising if unable

D. Disregard it in IMC

12. If a pilot cannot comply with an ATC speed assignment, the pilot should:

A. Comply with the closest speed silently

B. Maintain the published procedure speed

C. Slow to the minimum safe speed regardless

D. Advise ATC "unable" and state the limitation

13. A pilot descending through 10,000 feet MSL at 270 knots must:

A. Continue at 270 knots

B. Slow to 250 knots or less by 10,000 feet (absent an authorized exception)

C. Slow to 200 knots

D. Maintain the cruise speed until below 5,000 feet

14. When ATC clears a pilot to "delete speed restrictions," the pilot may:

A. Disregard the published procedural speed restrictions, while still observing the regulatory limits (e.g., 250 below 10,000)

B. Exceed 250 knots below 10,000 feet

C. Disregard all altitude restrictions

D. Climb at will

15. The altimeter setting procedure exists to ensure that:

A. The aircraft flies faster at altitude

B. The transponder reports correctly

C. All aircraft at flight levels use a common pressure reference (29.92") for vertical separation

D. The fuel reserve is adequate

16. Below the transition altitude, aircraft use the local altimeter setting so that:

A. Flight levels remain accurate

B. Indicated altitude reflects height above sea level for terrain and obstacle clearance

C. The 250-knot limit applies

D. The transponder reports pressure altitude

17. A pilot climbing to a flight level should set 29.92" passing:

A. The local field elevation

B. 10,000 feet MSL

C. The first crossing restriction

D. 18,000 feet MSL (the transition altitude)

18. A "speed restriction" published at a STAR waypoint (e.g., "cross WAYPT at 250K") is part of:

A. The "descend via" clearance the pilot must comply with

B. The takeoff minimums

C. The missed approach

D. The alternate requirement

19. Combining the 250-knot rule with a STAR, a pilot below 10,000 feet on a STAR must observe:

A. Both the 250-knot regulatory limit and any more restrictive published or assigned speed

B. Only the published speed

C. Only the regulatory limit

D. Neither, under "descend via"

20. A pilot cleared "descend via" a STAR with a published 280-knot speed at a high-altitude waypoint must, upon descending through 10,000 feet:

A. Maintain 280 knots

B. Disregard the regulatory limit

C. Comply with the 250-knot regulatory limit below 10,000 (the procedure speed cannot exceed the regulatory limit there)

D. Accelerate to 280 knots

21. The transition from local altimeter setting to 29.92" is important to a descending pilot because:

A. It changes the speed limit

B. It affects the transponder code

C. Resetting to local pressure ensures correct terrain/obstacle clearance in the lower airspace

D. It cancels the STAR

22. A pilot should verify the current altimeter setting on descent because:

A. An incorrect setting can produce a significant altitude error affecting terrain clearance and crossing restrictions

B. It changes the speed restriction

C. It affects the GPS database

D. It cancels ATC clearances

23. ATC speed adjustments are used to:

A. Replace altitude clearances

B. Set the transponder code

C. Manage spacing and sequencing of traffic

D. Determine the alternate

24. A pilot who receives "resume normal speed" may:

A. Exceed 250 knots below 10,000 feet

B. Disregard altitude restrictions

C. Climb at will

D. Return to the appropriate speed for the operation, still observing regulatory and any published limits

25. The fundamental principle governing altimeter settings and speed restrictions is that the pilot must:

A. Always use 29.92" Hg

B. Always fly 250 knots

C. Apply the correct altimeter reference for the altitude/level and comply with the applicable regulatory, published, and ATC-assigned speed limits

D. Disregard published speeds under radar control

ANSWER KEY & EXPLANATIONS — SESSION *55*

1. B. 29.92" — Climbing through 18,000 feet (the transition altitude) in the U.S., the altimeter is set to 29.92 inches Hg (standard).

2. A. Flight levels — At and above 18,000 feet, altitudes are expressed as flight levels based on 29.92".

3. C. Local setting — Descending through the transition level (FL180) into lower airspace, the altimeter is reset to the current local altimeter setting.

4. D. Low setting raises lowest FL — The lowest usable flight level depends on the altimeter setting because a low setting can raise the lowest usable flight level above FL180.

5. A. 250 knots — The maximum indicated airspeed below 10,000 feet MSL under §91.117(a) is 250 knots.

6. C. Generally below 10,000 — The 250-knot limit applies generally below 10,000 feet MSL (with limited exceptions).

7. B. 200 knots — Under §91.117(b), the limit at or below 2,500 feet AGL within 4 NM of a Class C/D primary airport is 200 knots.

8. D. 200 knots — Under §91.117(c), aircraft below Class B or in a VFR corridor through it are limited to 200 knots.

9. B. 250 below 10,000 — Inside Class B airspace, the general 250-knot-below-10,000 limit applies (there is no special 200-knot Class B interior limit).

10. B. Comply unless amended — A published procedural speed restriction must be complied with as part of the procedure, unless ATC amends or deletes it.

11. C. Comply/advise if unable — An ATC speed assignment must be complied with, advising if unable.

12. D. Advise "unable" — If unable to comply with an ATC speed assignment, the pilot advises ATC "unable" and states the limitation.

13. B. Slow to ≤250 by 10,000 — Descending through 10,000 feet at 270 knots, the pilot must slow to 250 knots or less by 10,000 feet (absent an authorized exception).

14. A. Disregard procedural speeds, keep regulatory — "Delete speed restrictions" allows disregarding the published procedural speed restrictions while still observing the regulatory limits (e.g., 250 below 10,000).

15. C. Common reference — The altimeter setting procedure ensures all aircraft at flight levels use a common pressure reference (29.92") for vertical separation.

16. B. Height above sea level — Below the transition altitude, the local altimeter setting makes indicated altitude reflect height above sea level for terrain and obstacle clearance.

17. D. 18,000 feet — Climbing to a flight level, the pilot sets 29.92" passing 18,000 feet (the transition altitude).

18. A. Descend-via clearance — A published STAR speed restriction is part of the "descend via" clearance the pilot must comply with.

19. A. Both limits — Below 10,000 feet on a STAR, the pilot observes both the 250-knot regulatory limit and any more restrictive published or assigned speed.

20. C. Regulatory limit governs — Descending through 10,000 feet, the pilot complies with the 250-knot regulatory limit (the procedure speed cannot exceed the regulatory limit there).

21. C. Correct terrain clearance — Resetting to local pressure on descent ensures correct terrain/obstacle clearance in the lower airspace.

22. A. Altitude error — Verifying the altimeter setting on descent matters because an incorrect setting can produce a significant altitude error affecting terrain clearance and crossing restrictions.

23. C. Spacing/sequencing — ATC speed adjustments are used to manage spacing and sequencing of traffic.

24. D. Return to appropriate speed — "Resume normal speed" allows returning to the appropriate speed for the operation, still observing regulatory and published limits.

25. C. Correct reference + limits — The fundamental principle is to apply the correct altimeter reference for the altitude/level and comply with the applicable regulatory, published, and ATC-assigned speed limits.