Seven Peaks Aviation
High Performance Endorcement Test

Regulations

1. When is a high-performance endorsement required?
    a) Any airplane with 200hp or more
    b) Any airplane 200hp or more and a constant speed prop
    c) Any airplane with a constant speed prop
    d) An airplane with a constant speed prop or over 200hp

2. A high-performance endorsement expires and needs to be renewed
    a) True
    b) False

3. Do you need to have your high-performance endorsement on you while acting as PIC?
    a) Yes, I need to have it in the airplane with me like my medical
    b) No, I can leave it at home
    c) A photo of it on my phone is sufficient
    d) No, as long as I can produce it to the FAA during an investigation

Turbos and Superchargers

1. What advantages does higher horsepower give an airplane?

_____
_____
_____
_____

2. Turbochargers and superchargers help increase the power produced by an engine. What core principle do they use to do that?

_____
_____
_____
_____

3. What does a Turbocharger use to spin the compressor?
    a) Electrical power
    b) Exhaust from the engine
    c) The engine by either a belt or gear
    d) Hydraulic pressure

4. What does a Supercharger use to spin the compressor?
    a) Electrical power
    b) Exhaust from the engine
    c) The engine by either a belt or gear
    d) Hydraulic pressure

5. What does 'Turbo-Normalized' mean?

_____
_____

6. What does 'Critical altitude" mean?

_____
_____

7. Where should the mixture be in a turbo/supercharged engine during take-off and landing?

a) Full-Rich below 3,000 Feet
b) Full-Rich at any altitude
c) Leaned to max RPM during runnup
d) Full-Lean

8. Describe some concerns with a Turbo/Supercharger when landing at a high-altitude airport

_____
_____
_____
_____

How do we mitigate this concern, and what can we be prepared for on a go-around?

_____
_____
_____
_____

9. What are some pros and cons of a boosted aircraft engine? What are the pros and cons between a supercharger and a turbocharger?

_____
_____
_____
_____
_____
_____

10. Turbo lag describes:

a) The lack of added horsepower at sea level
b) The excess heat causing a decrease in power
c) The delayed throttle response on a go-around
d) The delay in boost caused by the 'spin up' of the compressor as throttle is added

11. Turbo's work at some level at all RPM settings

a) true
b) false

12. What is a waste gate?

a) It collects extra air to boost the turbo
b) where excess heat is expelled from a supercharger
c) allows oil to enter and carry away debris from the turbo
d) opens to relieve extra pressure when too much boost is produced

13. Describe what happens when a turbo fails

_____
_____
_____
_____

CowlFlaps

1. Why do most high-performance aircraft have cowl flaps?

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_____
_____
_____

2. What is shock cooling?

_____
_____
_____
_____

3. During climb, cowlflaps should *typically:*

a) Be full-open
b) Be fully closed
c) Be half open / half closed
d) Be monitored and adjusted as needed

4. During cruise, cowlflaps should *typically:*

a) Be full-open
b) Be fully closed
c) Be half open / half closed
d) Monitored and adjusted as needed

5. During descent, cowflaps should *typically:*

a) Be full-open
b) Be fully closed
c) Be half open / half closed
d) Monitored and adjusted as needed

Constant Speed Propellers

1. A constant speed propeller is another name for variable pitch prop
    a) true
    b) false

2. A constant speed propeller is another name for a fixed pitch prop
    a) true
    b) false

3. When the pilot moves the propeller control lever, he/she is
    a) setting an RPM speed
    b) setting a desired pitch angle for the propeller
    c) adjusting the manifold pressure
    d) adjusting fuel flow

4. What is the advantage of a variable pitch prop? How does it improve performance?

_____
_____
_____
_____
_____
_____

5. The propeller's pitch is constantly changing without the pilot's input to constantly maintain a set RPM
    a) true
    b) false

6. How does the change in pitch speed up or slow down the RPM of the propeller?

_____
_____
_____
_____

7. Describe how a propeller governor works

_____
_____
_____
_____
_____
_____
_____

8. What RPM should be used for takeoff and landing?
    a) Full for takeoff and 2450 for landing
    b) 2450 for takeoff and landing
    c) 2450 for takeoff and full for landing
    d) Full for takeoff and full for landing

9. Describe what 'Squaring' the engine and propeller means

10. What is manifold pressure a measurement of?

11. In what order should the throttle and propeller lever be adjusted when increasing?

Decreasing?

12. What happens when oil pressure is lost in flight?

Your questions and notes