

MEI Homework

- ❑ Briefly describe or outline a multi-engine training program to prepare a COMM SEL pilot for an added multi-engine rating. What resources would you use to determine the content?
- ❑ What is minimum ground and flight training required? 61.63. How must this be documented?
- ❑ What endorsements will you need to provide the applicant? 61.63, complex, hi perfm, flight review etc.
 - Provide examples of the endorsements
- ❑ How is this different than training a PVT SEL for initial COMM in a multi-engine aircraft?
- ❑ What records do you as the CFI need to keep?
- ❑ Give examples of how you might incorporate Scenario based training
- ❑ Give examples how you would apply Authentic or Collaborative assessment to maneuvers and ADM.
- ❑ Describe the safety brief you would provide prior to MEL training regarding OEI operations
 - Runway Length/width, How Vmc demo done, Power application on stall recover or Vmc demo
- ❑ How are you going to mitigate against actual Vmc accident during training with an applicant that is not proficient in handling engine failures in each phase of flight.
- ❑ Describe what performance charts you would emphasize for a MEL COMM add on rating and why?
 - Give examples or scenarios where this would be applicable
 - Single Engine Service ceiling and decision-making departing from high altitude airport
 - Accel stop distance and choosing shortest runway you might land at
 - One engine inop climb performance and required Climb for ODP/SID
 - Demonstrate how you would instruct using at least 3 performance charts including
 - Single engine climb performance
- ❑ Describe how you would perform a short field take off, risks, mitigation in MEL aircraft. **Use flaps?**
- ❑ How would you instruct handling an engine failure in various stages of take off, flight and landing.
 - Explain risks, mitigation strategies and ADM in each phase of flight.
 - Before Rotation
 - After Rotation wheels down/below 500ft
 - Wheels up/above 500ft
 - Cruise
 - Approach to landing

- Explain how and when you would pull power/land, feather immediately and continue vs troubleshoot then feather and secure
- Consider following in decision process for each phase take off thru cruise and landing:
 - instrument conditions?
 - high altitude density?
 - High or Rising terrain?
- Consider an engine failure on climb out, you decide to feather and continue. What things do you want accomplish prior to initiating a turn in either direction back to a runway? why?
- **How Maximize climb rate** and aircraft control? Which factors affect?
 - Vyse
 - Drag factors -gear, flaps, unfeathered prop, zero-side slip, bank angle
 - Weight vs Power available
- How do you plan for a departure in mountainous terrain with consideration of a possible engine failure?
 - Single engine climb/service ceiling
 - Vmc?
 - Ident verify feather and continue? Same as flat land or something different
 - Departure procedures and minimum climb on single engine
- Explain Concept of Vmc and flight conditions where there is highest risk and mitigation strategies.
 - Prop/power/bank angle
 - Relationship of Vmc and stall speed
 - Critical density altitude
 - Estimating Vmc relative to stall speed
 - Feathered vs unfeathered prop
- Discuss how you would instruct maneuvering one engine inop. Explain the risks and when it is safe or not safe to bank into the inop engine.
- Explain the concept of a critical engine and the aerodynamics that determine which is critical.
 - Yaw torque- P factor x arm. Roll torque-Accel slip stream x arm
 - Counter Torque-from engine. Rudder torque-spiral slip stream
- Discuss the concept of Zero Side slip and how this is accomplished.
- Describe how bank angle affects Vmc vs climb performance