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MISSED APPROACHES

1. General Information
   a. The objective of this task is to determine your knowledge and ability to perform missed approach procedures.
   b. You will execute a missed approach when one of the following conditions exists:
      1) Arrival at the missed approach point (MAP) or the decision height (DH) and visual reference to the runway environment are insufficient to complete the landing.
      2) A safe landing is not possible.
      3) You are instructed to do so by ATC.
2. Task Objectives
   a. **Exhibit adequate knowledge of the elements related to missed approach procedures associated with standard instrument approaches.**
      1) A missed approach procedure is designed for each instrument approach procedure. Thus, each procedure is unique.
         a) Protected obstacle clearance areas for missed approach are predicated on the assumption that the missed approach is initiated at the DH or at the MAP and not lower than the MDA.
            i) A climb of at least 200 feet per nautical mile (FPNM) is required, unless a higher climb gradient is published on the approach chart.
         b) If you decide, or are directed by ATC, to make a missed approach before the MAP, you need to remember that no obstacle clearance consideration is given to an early turn.
            i) Unless otherwise cleared by ATC, fly the approach as depicted on the IAP to the MAP at or above the MDA or DH before turning.
            ii) There is no restriction on climbing early.
      2) Missed approaches can be caused by many factors.
         a) The primary factor is weather below minimums, especially when the visibility decreases. Decreased visibility causes more missed approaches than the ceiling.
         b) Full-scale needle deflections experienced past the FAF require a missed approach.
            i) Once the needle indicates a full-scale deflection, you cannot measure how far off course you are.
         c) Although rare, equipment failures do happen. If your primary navigation equipment for the approach fails, you should execute a missed approach.
         d) Outside factors, such as traffic, aircraft spacing, turns to final approach course that are too sharp or too late, and controller errors, can also cause missed approaches.
         e) Pilot errors, such as setting the avionics wrong or failing to descend quickly enough, can lead to a missed approach.
         f) Any loss of the required visual references between the MDA (or DH) and touchdown can cause a missed approach.
         g) Above all else, if something seems wrong or you are uncertain, execute the missed approach. You may be averting a disaster.
      3) When you are flying a circling approach, you must maintain visual references. If you lose them, execute the missed approach immediately.

a) To become established on the missed approach course, you should make an initial climbing turn toward the landing runway and continue the turn until established on the missed approach course.

i) This procedure will assure that you will remain within the circling and missed approach obstruction clearance areas.

4) The missed approach is potentially the most critical and dangerous maneuver after takeoff.

a) It normally occurs at a very low altitude.

b) Your airplane must transition from a descent to a climb promptly without a danger of stalling.

c) You are transitioning or expecting to transition from instruments to visual, and suddenly you must to go back to instruments.

d) The procedure requires precise airplane handling and execution.

5) You must read the missed approach procedures before you arrive at the FAF.

a) Memorize at least the initial headings and altitudes.
b) If possible, set your No. 2 NAV for the missed approach fix.
c) If the procedure calls for a turn, use standard or one-half standard rate.

6) Every instrument approach should be flown with the full intention of executing the missed approach.

a) Your having this mind-set will help you avoid any uncertainty at the MAP as to your course of action.

b) Sight of the visual references should be treated as a pleasant surprise, not as an expected event.

b. **Initiate the missed approach promptly by applying power, establishing a climb attitude, and reducing drag in accordance with your airplane manufacturer's recommendations.**

1) At the MAP or anytime between the MAP and touchdown that the required visual references are not visible, you should execute a go-around procedure.

2) The first step is to add maximum allowable power promptly, but smoothly, and adjust the pitch attitude for V_X to establish a climb attitude.

a) Inyour airplane, $V_X$is_____.

b) This step assumes that you are executing the approach with approach flaps (not full flaps) and that $V_X$is the recommended go-around airspeed.

c) Use the airspeed recommended in your airplane's POH/AFM.

3) Next, reduce drag by following the procedures described in your POH/AFM.

a) Once you have established a positive rate of climb by checking the VSI and confirming it with the ALT, retract the landing gear (if retractable), and accelerate to V_Y.

i) In your airplane, $V_Y$is_____.

b) When reaching a safe altitude (e.g., 500 ft. AGL), retract the flaps.

c. **Report to ATC that you are beginning the missed approach procedure.**

1) Your first priority when beginning the missed approach procedure is to fly your airplane.

2) Once you have established a climb and have performed the initial tasks of applying power, climbing, and doing an initial cleanup of your airplane, inform ATC of your missed approach.

d. **Comply with the published or alternate missed approach procedure.**

1) You must perform the missed approach procedure that is written on the

IAP chart.

a) At times, ATC may instruct you to perform an alternate missed approach procedure.

2) You should study the missed approach procedure before the FAF so that at the MAP you can concentrate on your flying without the need to look down to read instructions.

e. **Advise ATC or your examiner anytime your airplane is unable to comply with a clearance, restriction, or climb gradient.**

1) You must inform ATC (or your examiner) anytime your airplane's operating limitations forbid compliance with a clearance, restriction, or climb gradient.

a) Inform ATC (or your examiner) that you are unable to comply, and request an amended clearance.

f. **Follow the recommended checklist items appropriate to the go-around procedure.**

1) Initiating the missed approach procedure is identical to a go-around procedure. Thus, you should follow and complete the go-around (or balked landing) checklist in your POH/AFM.

g. **Request, if appropriate, ATC clearance to your alternate airport or a clearance limit, or follow your examiner's directions.**

1) When you have missed the approach, you must decide what you will do next. If your approach was done in IMC and the weather is below minimums, your decision will be based on how much fuel is remaining and what is needed to reach your alternate airport.

2) Normally you will take one of three steps:

a) Request a clearance to your alternate airport. You may want to ask the controller if (s)he knows a closer airport than your alternate where aircraft are able to make successful approaches.

i) If there is, request to go to that airport.

b) Request a clearance to a fix (limit) and hold. This option is good, provided the weather is to improve shortly and you have enough fuel to attempt another approach later and, if necessary, fly to your alternate airport.

c) Request to be sequenced into the traffic flow for another approach. This option is good, especially if other aircraft are able to complete the approach.

i) Ask for the same approach, or maybe try a different approach to the same airport.

3) During your practical test, your examiner may direct your actions.

h. **Maintain the recommended airspeed within 10 kt.; heading, course, or bearing within 10°; and altitudes within 100 ft. during the missed approach procedure.**

1) Maintain your basic instrument flying techniques throughout the missed approach procedure.

2) This is important at the beginning since you must transition from looking outside for the runway environment to looking back inside the cockpit and reestablishing your instrument cross-check, instrument interpretation, and airplane control.

3. Common Errors during a Missed Approach
   a. **Failure to have essential knowledge of the information on the instrument approach procedure chart.**
      1) While you study the IAP chart for your approach, you must also study the missed approach procedure.
      2) You should know the MAP and memorize at least the initial steps of the missed approach procedure.
      3) Know how to find the missed approach holding fix (if one exists).
   b. **Failure to have the missed approach procedures committed to memory.**
      1) Be prepared mentally for a missed approach on each approach you make.
      2) Review your POH/AFM for the missed approach procedures (i.e., go-around).
   c. **Failure to recognize conditions requiring a missed approach procedure.**
      1) You must execute a missed approach procedure anytime you arrive at the MAP (or DH) and do not have the required elements of the runway environment in sight and identified.
         a) Anytime after the MAP (or DH) to touchdown that you lose the runway visual contact with the required element, you must execute a missed approach.
      2) Execute a missed approach when instructed to do so by ATC.
   d. **Failure to promptly initiate a missed approach procedure.**
      1) Protected obstacle clearance areas for missed approach are based on the assumption that the procedure is initiated at the MAP, not lower than the MDA or DH.
      2) Do not attempt to go even a little farther to attempt to see the runway.
      3) It is a good practice to announce aloud your descent to minimums; e.g., 500 ft. to MDA/DH, 200 ft. to MDA/DH, 100 ft. to MDA/DH.
   e. **Failure to make the required report to ATC.**
      1) Once you complete the initial go-around checklist items and have your airplane stabilized on the missed approach procedure, you must inform ATC of your missed approach and the reason that it occurred.
   f. **Failure to comply with the missed approach procedure.**
      1) You must comply with the published missed approach procedure or follow an alternative missed approach procedure provided by ATC.
      2) Inform ATC if you are unable to comply with any clearance, restriction, or climb gradient.
   g. **Faulty basic instrument flying technique.**
      1) It is a busy time in the cockpit, but you must continue your cross-check and instrument interpretation throughout the missed approach procedure.
      2) Remember to fly your airplane first.