Task V.B: Cockpit Management

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Lesson Overview

Objective

The student should develop knowledge of the elements related to single pilot resource management. The student should maintain an organized cockpit and properly position all controls for correct use. The student should understand all equipment in order to use all possible resources.

Reference

- FAA-H-8083-3B, Airplane Flying Handbook (Chapter 2)
- FAA-H-8083-25B, Pilot's Handbook of Aeronautical Knowledge (Chapter 2)
- POH/AFM

Key Elements

- Passenger briefings
- Internal and external resources

Elements

- Arranging and securing materials and equipment
- Use and adjustment of cockpit items
- Occupant briefing
- Resource utilization

Equipment

- White board
- Markers

- References

Schedule

1. Discuss objectives
2. Review material
3. Development
4. Conclusion

Instructor Actions

1. Discuss lesson objectives
2. Present lecture
3. Questions
4. Homework

Student Actions

1. Participate in discussion Take notes

Completion Standards

The student can efficiently and safely make use of all resources to complete a flight.

Instructor Notes

Attention

All pilots need to learn to be good housekeepers. An orderly cockpit helps facilitate a safe flight.

Overview

Review Objectives and Elements/Key ideas

What

Cockpit management (single pilot resource management) is a process that combines you, the airplane, and the environment for safer and more efficient operations.

Why

Understanding the elements behind cockpit management (single pilot resource management) provides for a considerably more efficient and safer flight.

Lesson Details

A safe flight utilizes a number of materials and equipment. At times the workload on the pilot can become high, and knowing exactly where the information and equipment needed at any given moment can help insure that the required work items get performed in a timely and safe manner. Therefore it is important to arrange and secure all materials and equipment for the flight.

First ensure that all necessary equipment, documents, checklists, and charts are on board. They

should be neatly organized to make them readily available to the pilot. Any wires for portable equipment should be routed such that they do not interfere with the safe motion and operation of aircraft controls. Any items that could be tossed around in turbulence should be adequately secured. Everything which may be accessed or utilized during flight should be readily available, and well organized.

Arranging and securing materials and equipment

All necessary equipment, documents, checklists, and appropriate navigation charts should be on board—neatly arranged and organized so that they are readily available.

Wires for equipment should not interfere with the motion and operation of any of the controls.

Check the flight deck for articles that could be tossed around in turbulence and secure loose items. Don't use the top of the instrument panel for storage.

⚠️**Common Errors**

Failure to place and secure essential materials and equipment for easy access during flight.

Use and adjustment of flight deck items

The pilot needs to have an unobstructed view of inside and outside references. Use a cushion if necessary to sit at an appropriate height. Adjust seat belt and shoulder harnesses should to a comfortably snug fit.

- Wear shoulder harnesses at least for taxi, takeoff, and landing.
- Wear the seat belt at all times while at the controls.

If able, adjust the rudder pedals forward or backward so that the knees are slightly bent, and full movement is available with heels on the floor and balls of the feet on the pedals. The brakes should be able to be actuated using the toes.

⚠️**Common Errors**

- failure to properly adjust cockpit items, such as safety belts, harnesses, rudder pedals, and seats.
- failure to provide proper adjustment of equipment and controls.

Occupant briefing

SAFETY

- **S**eat belts—brief each passenger on how to fasten/unfasten the safety belt and shoulder harnesses; you cannot taxi without ensuring each person has fastened their safety belts.
- **A**ir vents—show the passengers how to adjust the airflow to assist in providing a comfortable flight.
- **F**ire extinguisher—show the passengers where the fire extinguisher is located and how to

unlatch and use it.

- **E**xit, emergencies, and equipment—inform the passengers what should be done before, during, and after an off-airport landing, and ensure that everyone knows how to open all exit doors and unfasten safety belts. Designate a gathering point and point out survival equipment. Have a departure plan: which runways are available, how much runway is required, emergency procedures during takeoff.

- **T**raffic and talking—passengers can help scan for traffic and on expectations for communications. Sterile cockpit during takeoff and landing.

- **Y**our questions—allow passengers to ask questions about any part of the flight.

> 🛑 **Common Error**
>
> Failure to provide occupant briefing on emergency procedures and use of safety belts.

Resource utilization

Be aware of all resources available to you to make informed decisions.

Use all of them during preflight planning and during flight.

Internal resources

- The POH can help the pilot plan the flight accurately and to resolve equipment malfunctions.
- Checklists can be used to verify that instruments and systems are checked, set, and operating properly, and to ensure that the proper procedures are performed in the case of an emergency.
- Thorough understanding of equipment is necessary to fully make use of all resources—program ahead of time (radio frequencies, fixes, …) but do not rely on it so much that you become complacent.
- Passengers can help look for traffic and provide information (checklist help, …)
- Charts, other pilots, and your ingenuity, knowledge, and skill are also internal resources.

External resources

- ATC, maintenance technicians, flight service personnel.
- ATC and Flight Service can decrease work with traffic advisories, vectors, and emergency assistance, and may be able to access maintenance personnel or other assistance in an emergency.
- FSS can provide weather and airport conditions.
- Other airplanes can provide PIREPs.
- ASOS/AWOS to get weather conditions in flight.

> 🛑 **Common Error**
>
> failure to utilize all resources required to operate a flight safely.

⚠️Common errors ⚠️

⚠️
- Failure to place and secure essential materials and equipment for easy access during flight.
- Failure to properly adjust cockpit items, such as safety belts, shoulder harnesses, rudder pedals, and seats.
- Failure to provide proper adjustment of equipment and controls.
- Failure to provide occupant briefing on emergency procedures and use of safety belts.
- Failure to utilize all resources required to operate a flight safely.

Conclusion

- Brief review of main points.
- Use all resources available to reduce workload and mental stress and fatigue.

ACS Requirements

To determine that the applicant:

1. Exhibits instructional knowledge of the elements of cockpit management by describing:
   a. Proper arranging and securing of essential materials and equipment in the cockpit.
   b. Proper use and/or adjustment of cockpit items such as safety belts, shoulder harnesses, rudder pedals, and seats.
   c. Occupant briefing on emergency procedures and use of safety belts.
   d. Proper utilization of all resources required to operate a flight safely; dispatchers, weather briefers, maintenance personnel, and air traffic control.

2. Exhibits instructional knowledge of common errors related to cockpit management by describing:
   a. Failure to place and secure essential materials and equipment for easy access during flight.
   b. Failure to properly adjust cockpit items, such as safety belts, shoulder harnesses, rudder pedals, and seats.
   c. Failure to provide proper adjustment of equipment and controls.
   d. Failure to provide occupant briefing on emergency procedures and use of safety belts.
   e. Failure to utilize all resources to operate a flight safely.

3. Demonstrates and simultaneously explains cockpit management from an instructional standpoint.