Green Castle Aero Club Foundation

Green Castle Advanced Aviation Training Device (AATD)

Checkout Manual

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Revision #2

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1. Table of Contents

2. Log of Revisions

Description of Changes	Revision	Affected Pages	Edited By
Initial Version	1	All	MN
Replaced several items on the checklist by simply completing the startup and shutdown checklists. Added simulated failure practice. Added introduction to flight deck elements.	2	6,7	MN

3. Introduction

This document contains training and checkout procedures to ensure pilots using the Green Castle AATD have the requisite knowledge to correctly and safely use the system.

3.1. WARNING

This AATD is an advanced training device that requires operators to receive training and a formal checkout before they may use it on their own. **Do not attempt to use this system without proper training and checkout as described in this manual.**

3.2. Simulator Components

The Green Castle AATD consists of several components that function together to produce an immersive experience for pilots. The system includes a comprehensive set of tools for CFIs to provide high-quality student instruction. These integrated components include:

- Instructor Operating Station (IOS): This is where the instructor can control the parameters of the training session. It consists of a monitor, mouse, and keyboard. See the Green Castle AATD Instructor Operator Station (IOS) Manual for more information.
- Wall Power Box: Controls the power supplied to all simulator system components.
- PC: As the "central nervous system" of the simulator, the PC controls the hardware, software, and all graphics output (IOS & primary displays).
- Flight Deck: The main cockpit of the simulator.
- Primary Displays: Three projector screens showing an immersive projection of the outside world.

The simulator can be operated by a single person who will interact with all elements listed above, or by any combination of instructor, student, or multiple pilots who may share responsibility for operating these elements. In any case, it is necessary that each operator understands how all elements of the system operate and interact to successfully and safely operate the simulator.

4. Checkout Checklist

The Green Castle AATD is an advanced training device that requires operators to receive training and a formal checkout before they may use it on their own. **Do not attempt to use this system without proper training and a completed checkout as described below.**

Please complete each step of the following checklist. If needed, reference the detailed instruction manuals specific to this simulator. Hard copies of these manuals are kept with the simulator and digital copies are available upon request.

Retain a signed copy of the checkout form upon completion of all items below.

- ☐ Ensure the new user can locate and has reviewed the following documents prior to the checkout
  - ☐ *Qualification and Approval Guide*
  - ☐ *System Startup and Shutdown Manual*
  - ☐ *Avionics Manual*
  - ☐ *Instructor Operator Station (IOS) Manual*
- ☐ Complete the step-by-step startup checklist (ref. *System Startup and Shutdown Manual*)
  - ☐ Ensure X-Plane software has started
  - ☐ Allow X-Plane software to update if prompted
- ☐ Complete these scenario setup steps
  - ☐ Complete the Startup Checklist (ref. *System Startup and Shutdown Manual*)
  - ☐ Safely enter & exit the flight deck (use care to lift & open doors without bumping projector screens)
  - ☐ (optional) Connect electronic flight bag (EFB) to the AATD WiFi network
- ☐ Introduction to simulated flight deck elements
  - ☐ Steam-gauge, six-pack instrument panel
  - ☐ Flaps
  - ☐ Fuel Selector (left / right / both / off)
  - ☐ Audio panel / GPS & radio units / transponder
  - ☐ Headset jacks for pilot and instructor
  - ☐ Engine instruments, throttle, and mixture
  - ☐ Alternate static source
  - ☐ Annunciator lights
  - ☐ Hobbs meter
  - ☐ Davtron timer
  - ☐ Flight deck lighting
- ☐ Conduct a short flight to demonstrate how the AATD simulates a Cessna 172SP
  - ☐ Reference the appropriate Cessna 172SP checklists throughout ground & flight operations
  - ☐ Takeoff from Green Castle airport (IA24)
  - ☐ Perform a lap in the pattern or fly in the local area
  - ☐ Land at Green Castle airport or other suitable airfield
- ☐ Practice inducing failures
  - ☐ Catastrophic Failure of the Engine (Engines -> Failures -> Engine Fail 1)
  - ☐ Loss of oil pressure (Engines -> Accessory -> Oil Pump 1)
  - ☐ Alternator failure (Systems -> Electrical -> Generator 1)
  - ☐ Vacuum pump failure (Instruments -> Sensor -> Vacuum Pump #1 & Vacuum Pump #2)

- ☐ Turn coordinator (Instruments -> Primary -> Pilot Turn Indicator)
- ☐ Pitot tube blockage (Instruments -> Sensor -> Pitot-tube #1 blockage)
- ☐ Flap malfunction (Control surfaces -> Lock at current -> Left/Right flap 1: Lock)
☐ Complete the step-by-step Shutdown Checklist (ref. *System Startup and Shutdown Manual*)