

## Portable EVAS<sup>®</sup> Training Outline

### What is EVAS<sup>®</sup>?

EVAS<sup>®</sup> is an acronym for “Emergency Vision Assurance System.” EVAS<sup>®</sup> is a self-contained system that includes a battery powered blower which draws smoky air in through a filter, filtering out the visible particles, and out to a flexible air duct, which is connected to an inflatable transparent envelope, called the “Inflatable Vision Unit” (IVU). The entire EVAS<sup>®</sup> system is contained in an aluminum container that is approximately the size of a Jeppesen manual, and weighs approximately 6 pounds.



EVAS<sup>®</sup> container, closed with IVU inside



EVAS<sup>®</sup> container with cover open & IVU out

While in use, EVAS<sup>®</sup> will inflate the IVU with filtered, clear air at a pressure slightly above that of ambient air, thus completely displacing all smoke from the volume of the IVU. As the IVU is transparent, this gives the pilot a clear vision path to the essential flight instruments and forward along the flight path. A separately powered small light is provided to illuminate the instruments and checklists, if needed.



Inflated IVU with checklists



View of instruments through inflated IVU

## Principles of Operation

- Displaces all smoke in the vision path, regardless of density.
- Provides clear vision of basic instruments and flight path, and lights instruments.
- Allows use of check lists, approach charts, etc.
- Continuous operation for several hours. Intermittent operation conserves power and provides satisfactory performance for a more extended period.

## What EVAS<sup>®</sup> is Intended to Do

- Ensures pilot vision during emergencies when dense smoke in the cockpit can not be stopped.
- Works with oxygen system and smoke goggles (not in place of them).
- Provides view of primary flight instruments (basic “T”).
- Instrument window may be shifted right or left to view adjacent instruments.
- Provides view of flight path.
- Provides the ability to read approach plates and emergency procedure checklists.
- Provides a “last ditch” chance to save the airplane (and self).

## What EVAS<sup>®</sup> is not Intended to Do

- Does not cover engine instruments and controls, electronics panels and controls, or overhead or console installations.
- Does not contemplate “normal” or prolonged flight, nor does EVAS<sup>®</sup> provide for fine or efficient control of engines or electronics.

### **Note**

Do not deploy the IVU during maintenance inspections. The IVU should only be deployed in an actual emergency.

### **Caution**

Although EVAS<sup>®</sup> should be deployed when the pilot considers it necessary, all prescribed emergency procedures must be completed without delay.

## EVAS<sup>®</sup> Deployment Procedure

1. In the event of smoke entering the cockpit, do not wait until the smoke obscures vision seriously. Deploy EVAS<sup>®</sup> after completing the emergency checklist, and as soon as there is the threat of vision decrease.
2. Assure EVAS<sup>®</sup> unit is located on the side of the pilot indicated on the Cover Strap label, either Inboard or Outboard. **The label for a left pilot unit is red, and the label for a right pilot unit is green.**

<p>OPEN ONLY IN EMERGENCY USE ONLY WITH PROPER TRAINING</p> <p>LOCATION: <b>OUTBOARD OF LEFT SEAT (PILOT)</b></p> <p>DEPLOYMENT LOCATION IS CRITICAL TO THE OPERATION AND FUNCTIONALITY OF EVAS.</p>	<p>OPEN ONLY IN EMERGENCY USE ONLY WITH PROPER TRAINING</p> <p>LOCATION: <b>OUTBOARD OF RIGHT SEAT (CO-PILOT)</b></p> <p>DEPLOYMENT LOCATION IS CRITICAL TO THE OPERATION AND FUNCTIONALITY OF EVAS.</p>	<p>OPEN ONLY IN EMERGENCY USE ONLY WITH PROPER TRAINING</p> <p>LOCATION: <b>INBOARD OF LEFT SEAT (PILOT)</b></p> <p>DEPLOYMENT LOCATION IS CRITICAL TO THE OPERATION AND FUNCTIONALITY OF EVAS.</p>	<p>OPEN ONLY IN EMERGENCY USE ONLY WITH PROPER TRAINING</p> <p>LOCATION: <b>INBOARD OF RIGHT SEAT (CO-PILOT)</b></p> <p>DEPLOYMENT LOCATION IS CRITICAL TO THE OPERATION AND FUNCTIONALITY OF EVAS.</p>
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Open the Cover Strap by peeling apart the reclosable fasteners. Remove the metal cover, which is tethered to the EVAS<sup>®</sup> unit.

3. Remove the white Inflatable Vision Unit (IVU), complete with the IVU fabric Tie-Down Strap (wrapper), from the EVAS<sup>®</sup> container by inserting the hand into the EVAS<sup>®</sup> container and grasping the IVU package. Place the IVU package on the glare shield. The IVU position on the glare shield will be approximately correct if the base of the hand holding the IVU package is placed on the rear edge of the glare shield directly forward of the center of the control wheel. The label on the wrapper should be facing the pilot.
4. The flexible air duct must be positioned on the same side of the IVU as the EVAS<sup>®</sup> location, i.e., outboard of the IVU if the EVAS<sup>®</sup> is deployed from outboard of the pilot, and inboard of the IVU if the EVAS<sup>®</sup> is deployed from inboard of the pilot, and should be routed to avoid interference with any airplane control.
5. Removal of the IVU package from the container pulls a lanyard, closing the lanyard switch, thereby automatically starting the blower and switching the internal light ON. If the blower does not start, EVAS<sup>®</sup> was installed with the master switch off, and the blower must then be started manually by pushing firmly down on the master switch, located in one corner of the open side of the container. When the blower is started, the IVU is kept compressed by the wrapper.



Wrapped IVU on Glare Shield for Left pilot Inboard deployment



Wrapped IVU on Glare Shield For Left pilot Outboard deployment

6. As soon as vision assistance is needed, hold the IVU in place on the glare shield and release the IVU for inflation by sharply pulling on the tab of the wrapper.

**Caution**

Do not open the wrapper to inflate the IVU unless the IVU is in place on the glare shield.



Releasing the IVU wrapper



IVU on Glare Shield with wrapper open

7. With the wrapper open and one hand holding the IVU in position on the glare shield, use your other hand to tuck the wrapper ends under the IVU. After the wrapper ends are tucked away, assist deployment of the IVU as described below.
8. Gently rake towards you the nearest portion of the IVU (the instrument tunnel portion). Some IVUs are "pinched" between the windscreen and glare shield and will require more pilot assistance than others. If the tunnel portion drops down between the pilot and the yoke, push the tunnel portion of the IVU to a position forward of the yoke. If equipped with sidestick controllers and a table is in use, lift and push the tunnel portion of the IVU over the table and towards the instruments.

**Note**

Step 9 below may require the pilot to temporarily loosen or remove his shoulder straps, loosen his seat belt and position himself more forward on the seat in some aircraft so as to reach (or nearly reach) the forward left and right corners of the IVU where the windscreen meets the glareshield.

9. Move both hands up to the windscreen to unfold and smooth out the windscreen portion. After you have the windscreen portion of the IVU open and laying flat on the glare shield, hold the left lower corner (as best you can reach) of the windscreen portion of the IVU against the left lower corner of the windscreen. At the same time, hold the right lower corner (as best you can reach) of the windscreen portion of the IVU against the right lower corner of the windscreen. Hold or push these lower corners in position until the air pressure is sufficient to hold these points of the IVU in place. Then move your hands slowly upwards on the windscreen and continue assistance by smoothing out any large wrinkles. If the wrapper of the IVU obstructs any of the instrumentation, fold it up onto the glare shield underneath the IVU. With the windscreen portion near full inflation, check the instrument tunnel portion to ensure the IVU covers the flight instruments. Make final adjustments to IVU as necessary. Reposition yourself in seat; ensure seat belt and shoulder harness are secure.

10. IVU will inflate in approximately sixty (60) to one hundred twenty (120) seconds, depending on IVU size and ducting length..



IVU inflating



Both pilot IVUs inflated

11. Place any necessary emergency procedure/approach plate in a pocket on the side and/or the bottom of the IVU.
12. The blower will operate continuously for several hours, and will compensate for any air that may be forced out of the IVU by control wheel movement. The blower may be switched OFF and ON as needed, to extend battery life.

**Note**

During emergency egress steps 13-15 may be ignored.

13. When EVAS<sup>®</sup> is no longer needed, actuate the master switch in the open end of the container to switch the blower off, and deflate the IVU by manual pressure.
14. Remove the IVU to a convenient temporary storage place.
15. EVAS<sup>®</sup> units deployed in an emergency should be reported to VisionSafe Corporation Quality Assurance Department at 1-800-441-9230 as soon as practical. The units must be removed from the aircraft immediately and returned to VSC for a Special Inspection.

End of Training Outline