

EVAS[®] Training Outline

What is EVAS?

EVAS is an acronym for the “Emergency Vision Assurance System.” The EVAS unit is a totally self-contained system that includes an Alkaline Battery Pack which powers a blower to force smoke contaminated cockpit air through a filter. The filter removes all visible smoke particulates and directs the filtered air through a flexible duct and into an Inflatable Vision Unit (IVU) which is placed on top of the glare shield and inflated to provide the Pilot with a clear vision pathway to the primary flight instruments and the forward windscreen. The EVAS is used in conjunction with the aircraft’s emergency oxygen mask and goggles to allow the flight crew to maintain positive aircraft control when the cockpit is fully immersed in smoke. The entire EVAS system is contained in an aluminum container that is approximately the size of a Jeppesen manual, and weighs approximately 6 pounds.



EVAS container, closed with IVU inside



EVAS container with cover open & IVU out

While in use, EVAS will inflate the IVU with filtered, clear air at a pressure slightly above that of ambient pressure, thus completely displacing all smoke from the internal 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 (LED) is provided to illuminate the instruments and checklists, if needed.



Inflated IVU with checklists



View of instruments through inflated IVU

EVAS Training Online and Options

Please visit <http://www.visionsafe.com/training.html> to view our online Training Video or, to enroll in one of the Training Programs VisionSafe, LLC offers.

For more information, please contact Training@VisionSafe.com or call +1 (808) 235-0849 ext 4678.

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 checklists, approach charts, personal devices, etc.
- Continuous operation for 2 1/2 hours. Intermittent operation conserves power and provides satisfactory performance for a more extended period.

What EVAS is Intended to Do

- Ensures pilot vision during emergencies when dense smoke in the cockpit cannot be stopped.
- Works with oxygen system and smoke goggles (not in place of them).
- Provides view of primary flight instruments. On EFIS aircraft, provides view of the Primary Flight Display plus Navigation Display (installation dependent).
- Instrument window may be shifted right or left to view adjacent instruments.
- Provides view of visual and electronic flight path.
- Provides the ability to read approach plates and emergency procedure checklists.
- Provides a “last ditch” chance to save the airplane.

What EVAS 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 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® should be deployed when the pilot considers it necessary, all prescribed emergency procedures must be completed without delay.

EVAS[®] Deployment Procedure

NOTE: These instructions are generic and apply to many different aircraft types. Refer to the FAA approved Airplane Flight Manual Supplement specific to the EVAS installation in your aircraft, or to Company training guidance for EVAS in your aircraft.

1. In the event of smoke entering the cockpit, do not wait until the smoke obscures vision seriously. Deploy EVAS after completing the emergency checklist., and as soon as there is the threat of vision decrease.
2. Assure EVAS[®] 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.**

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

3. Remove the white Inflatable Vision Unit (IVU), complete with the IVU fabric Tie-Down Strap (wrapper), from the EVAS container by inserting the hand into the EVAS container and grasping the IVU package, or yellow handle, and pulling the IVU out of the EVAS container. Place the IVU package on the glare shield so that the hook fastener on the bottom of the IVU wrapper mates with the previously installed loop fastener on the glare shield, and the label on the wrapper is facing toward the pilot. 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. If vision is already impaired, pilot should feel for the location of the loop fastener.
4. The flexible air duct must be positioned on the same side of the IVU as the EVAS location, i.e., outboard of the IVU if the EVAS is deployed from outboard of the pilot, and inboard of the IVU if the EVAS 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 a micro switch, thereby automatically activating the blower and internal light. If the blower does not start, EVAS 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.



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

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, put 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 glare shield.

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 lying flat on the glare shield. Monitor the inflation of the windscreen portion of the IVU as it inflates. Manually assist in repositioning of the IVU as it inflates to the windscreen. If the wrapper of the IVU obstructs any of the instrumentation, fold it up onto the glare shield underneath the IVU. 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 30 to 60 seconds, depending on IVU size and ducting length. IVU will be usable before it is fully inflated.



IVU inflating



Both pilot IVUs inflated

11. Place any necessary emergency procedure/approach plate, or EFB Tablet, in a pocket on the side and/or the bottom of the IVU, if necessary.
12. The blower will operate continuously for 2 ½ 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.
13. When EVAS is no longer needed, depress 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 units deployed in an emergency should be reported to VisionSafe, LLC 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