

**Title:**        *Operation: EasyCAFS*  
**Client:**     **United States Marine Corps**

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**VIDEO**

**AUDIO**

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**M.1** Fade up on a medium shot of a fire that fills the screen. This shot is followed by a sequence of close-ups and medium close-ups of the EasyCAFS being started and foam spraying from the hose extinguishing the fire. Video freezes on a shot of the foam as it hits the fire. *2:13:53-14:15 Firefighter low angle*  
*2:14:15-15:28 low angle (feet of fire fighters)*

*(Driving, upbeat music fades up full :20)*

**G.1** The title, “*Operation: EasyCAFS*” comes up full screen.

Dip to black

*(Music stings and fades with video)*

**M.2** Fade up on a montage of images showing the EasyCAFS being installed

*(An upbeat music bed fades up under :05)*

**Voice-Over Narrator:** When fuel fires occur, the potential for casualties and destruction is high. A quick, effective response with a compressed air foam system is essential to manage these type of fires.

**G.2** Video freezes and text reinforcing the objectives is keyed over the frozen image:

The EasyCAFS™ system is the compressed air foam system utilized by the United States Marine Corps to extinguish fuel fires. Over the next few minutes, we will outline the components of the EasyCAFS system, and review the procedures for:

- Pre-operation checks
- Operation checks
- Post-operation procedures
- Cold Weather Operation

- ◆ Pre- operation checks,
- ◆ Operation checks,
- ◆ Post-operation procedures and
- ◆ Cold weather operation.

**S.1** MS Marines operating the EasyCAFS to extinguish a fire

As with all operations, safety is of utmost importance when extinguishing a fuel fire. When used properly, the EasyCAFS system is safe. Improper use, however, can result in serious, even deadly injuries.

Throughout this program we will draw your attention to potential hazards with a safety alert. When you hear this sound:

*(SFX: Safety Alert)*

**G.3** Dissolve to *Safety Alert* graphic

**3:15:40-17:59**

**Voice-over Narrator:** And see this graphic, you will want to pay particular attention to the instructions that are provided. What you learn could save your life.

*Safety Alert* graphic slides off screen

*(SFX: Safety Alert out)*

**G.4** Dissolve to a full screen graphic  
***The Components of the EasyCAFS System™***

*(Music fades up to bridge then fades out under narration)*

**S.2, 1:11:30**

**S.3, 1:00:37**

**Voice-Over Narrator:** The EasyCAFs system includes:

- A diesel-engine driven pump,
- A three-gallon diesel fuel tank with quick

**S.4, 1:01:01**

**S.5, 1:22:40**

**S.6, 2:01:06**

**S.7 1:10:00**

Dissolve to each of the components as they are referenced. Component images build to create an on-screen montage.

**G.6** Superimpose graphic illustrating flow of foam, water, and air to create suppressant

**S.8** Cut to MS of engine and pump **1:11:40**

**G.7** Dissolve to a full screen graphic:  
**Pre-Operation Checks**

**S.9** Dissolve to Marines inspecting the unit.  
**1:01:15**

**G.3** Dissolve to *Safety Alert* graphic over video

**G.8** Dissolve background to a damaged unit or graphic and key: **1:23:26 (or 24:35)**

disconnect hoses,

- A hose reel assembly with 150 feet of one-inch non-collapsible hose,
- A 200 gallon water supply tank,
- An eleven-gallon foam concentrate tank, and
- Flexible hose and tubing to connect the components of the system.

The pump is used to mix the foam concentrate with the water and compressed air to create the fire suppressant foam. The pump and its diesel engine are self-contained and enclosed in a stainless steel container with the battery and controls and gauges.

*(Music cross fades under the transition and out)*

**Voice Over Narrator:** When you receive the EasyCAFS system, you will want to carefully inspect each component of the unit and all materials. Check carefully to make sure that bolts or other fasteners didn't come loose during shipping.

*(SFX: Safety Alert)*

**Narrator:** If a system has been damaged during shipping do not attempt to operate it.

- **Do NOT operate a damaged unit**

Operating a damaged unit may cause severe bodily harm or property damage.

**S.10** Dissolve to a shot of a Marine reporting shortage or damage **3:04;31**

Report all shipping damages or package shortages to Marine Corp Logistics Base, Albany, immediately.

**G.3** *Safety Alert* graphic slides off screen

*(SFX: Safety Alert out)*

**Narrator:** Be sure that an acceptance limited technical inspection is completed prior to operation.

**S.11** Marine checking oil **1:13:45**

Next, check the oil. Using the correct lubricant is crucial for proper operation. For more specific information on the type of oil needed, please refer to your Model 25 Diesel EasyCAFS Operation, Maintenance and Parts Manual.

**S.12** Dissolve to MS of EasyCAFS operations manual **2:05:26**

**S.13** Cut to a shot of fuel being poured into the fuel tank. **1:15:37**

The fuel tank also needs to be filled with three gallons of diesel, JP-8 or JP-5 fuel. Always use clean fuel in the EasyCAFS system. Contaminated fuel may result in engine damage.

**S.14** Cut to CU of vent hole on fuel cap **1:16:05**

It's important to keep the vent hole on the fuel tank filler cap clean. When the tank is filled for the first time, or refilled after being completely drained, you may need to start the engine by

**S.15** Cut to MS of Marine alternating between

cranking and resting

alternating between cranking and resting periods of 15 seconds until the engine starts to expel any air that may be in the fuel lines.

**S.16A** Pull out as a Marine checks the battery terminal. **3:18:36**

The EasyCAFS system is also equipped with a maintenance free battery.

**S.17** Cut to MS of foam concentrate being poured into storage tank **2:00:00+**

**Voice Over Narrator:** Next, you will need to add the foam concentrate and water to the appropriate storage tanks.

**S.18** Cut to MCU of hand opening foam tank and filling with concentrate **2:00:30**

The foam tank fill tower is located on the driver's side of the skid and is built into the water tank. To fill the foam tank, open the lid and fill with two five-gallon pails of Class A or Class B foam concentrate. Replace the lid on the foam tank, clean up any residue that may have spilled and properly dispose of the 5-gallon container.

**S.19** Cut to MCU of hand cleaning up residue **02:03:00**

**S.20** Dissolve to personnel opening the lid to the water tank and inserting hose **1:20:21**

The water tank fill tower is located in the front passenger side of the unit. To fill the tower, lift the lid and insert a water hose into the top of the tank. Add water until the tank is full, then remove the hose and replace the lid.

**S.21** Dissolve to full tank as hose is removed and lid is closed **1:23:22**

**G.3** Dissolve to *Safety Alert* graphic

*(SFX: Safety Alert)*

**S.22** FF of foam concentrate bucket **2;00:30**

**Voice Over Narrator:** Do not allow the foam concentrate to come into contact with your skin

**G.14** Key:

***If spilling occurs, contact foam manufacturer's MSDS for cleanup and medical procedures***

**S.23** Dissolve to MS of water tank ***1:22:ish***

**G.15** Key:

***Do not allow debris to fall into water tank.***

**S.24** Dissolve to CAFS Pump

**G.16** Key:

***Do not operate with foam concentrate or water tank empty***

**G.3** *Safety Alert* graphic slides off screen

**S.25** Dissolve to WS of system ***1:03:33***

**G.7** Dissolve to a full screen graphic:  
*Operation checks*

**S.26** Dissolve MS of hand starting position  
***1:07:00***

or eyes. If spilling or skin contact does occur, refer to the foam manufacturer's M-S-D-S for cleanup and medical procedures

Do not let debris like sand, dirt or leaves fall into the water tank. This could damage the foam pump.

The EasyCAFS pump should not be operated for more than 30 seconds without water and foam concentrate. Operating the pump without water or foam concentrate for a longer period of time will result in excessive wear and tear and engine stalling.

*(SFX: Safety Alert out)*

**Voice Over Narrator:** Once all of the fluids are filled, and the system is in an appropriately ventilated area, the engine can be started and the system is ready for operation.

*(Music fades up to bridge then fades out under narration)*

**Voice Over Narration:**

To start the engine, turn the ignition knob all the way to the start position. Once the engine is started, release the knob and allow it to return to the run position.

**S.27** Dissolve to CU of hand closing compressor air inlet **1:17:30 (out)**

Next, close the compressor air inlet by turning the handle clockwise 90 degrees. This helps prime the water and foam concentrate pumps. Hold the handle in the 90-degree position until water begins to flow and then release it when the water pump is primed. The priming valve is normally open, but can be closed when additional suction is needed to prime the foam or water pumps.

**S.28** Dissolve to CU of tip **1:19:24**

A smooth bore tip of not less than 7/8 inch bore diameter is required at the hose end for hoses 150 feet or shorter. For hoses longer than 150 feet, a one-inch diameter nozzle is required.

**G. 28** Dissolve to graphic illustrating how suction line must draw from below the foam concentrate level **3:24:40**

The suction line must always draw from below the level of the foam concentrate to prevent foaming, so be sure the line is secured in the foam concentrate tank and drawing from the lowest point in the tank.

**S.29** Dissolve to hands connecting the water suction line **1:27:45**

Once all of the hoses are properly connected, set the wet/dry selector slightly to the right of the 10 to 1 setting.

**S.31** Dissolve to MS of hand moving selector to 10:1 setting **1:08:30 (out)**

**S.32** Dissolve to MS of nozzle tip being attached to the discharge end of the hose **1:18:??**

Attach the desired nozzle tip to the ball shut-off grip at the discharge end of the hose.

**S.33** Dissolve to MS of hand moving selector to “normal” **3:19:34**

CU of PSI gauges on the control panel for air and water pressure) **3:23:22**

**S.34** Dissolve to hand opening the foam concentrate meter 2 full turns **3:20:18**

**S.35** Dissolve to CU of nozzle indicating “off” position with a hand holding the nozzle **3:13:40**

**G.3** Dissolve to *Safety Alert* graphic

**S.36** FF of video dispensing foam

**G.28** Key:

***Always check to make sure nozzle is closed prior to starting the system***

**G.3** *Safety Alert* graphic slides off screen

**S.37** Dissolve to MS of Marine moving the selector to full throttle **1:08:30-1:10:00; 3:13:45**

Set the operation mode switch to the normal setting. The green needle on the PSI gauge on the control panel will show you the air pressure and the red needle will indicate your water pressure.

Now, open the foam concentrate-metering valve two full turns counterclockwise to set the concentrate-metering valve at three percent.

Make sure the nozzle is in the “off” position and have either the nozzle operator or second operator hold the nozzle. Then, completely unroll the hose from the reel to eliminate any kinks.

*(SFX: Safety Alert)*

**Voice Over Narrator:** Turning the CAF Pump on with the nozzle in the “on” position may cause the hose to swing violently and injure personnel. Always check to make sure the nozzle is closed prior to starting the system.

*(SFX: Safety Alert out)*

**Voice Over Narrator:** Next, increase the engine speed to full throttle.



**S.38** Cut to CU of pump switch being turned to “on” **3:13:22-3:13:43\***

Turn the CAFPump switch to “on.” Foam will begin dispensing from the hose in no more than seven seconds.

**G.3** Dissolve to *Safety Alert* graphic

*(SFX: Safety Alert)*

**S.39** Cut to MS of hand firmly gripping nozzle and quickly turning nozzle on and off showing recoil **3:21:01**

**Voice Over Narrator:** Move quickly when opening and closing the nozzle shutoff. Have a firm grip on the nozzle and be prepared for some nozzle recoil when you open the nozzle after the hose is fully pressurized. Failure to control the nozzle could result in serious injury to personnel and property.

**G.3** Dissolve to *Safety Alert* graphic

*(SFX: Safety Alert out)*

**G.29** Dissolve to a full screen graphic: *Post-operation procedures*

*(Music cross fades under the transition and out)*

**S.39** Dissolves to the EasyCAFS mounted on the host vehicle. It is clear that the unit has just completed extinguishing a fire

**Voice-Over Narrator:** Proper shutdown and replenishing of the EasyCAFS™ is essential to making sure the unit is ready for operation the next time an emergency arises.

**S.39A** Push to hand turning pump switch to “off” and turning engine throttle to “slow” **3:22:32**

Begin shutting down the system by turning the CAFPump switch to the “off” position and moving the engine throttle to the “slow” position.

Now you will need to flush the pump and hose

**S.41** Track with Marine holding hose and turning foam concentrate-metering valve until it stops. Track as hand turns CAF Pump to maximum position

**S.42** Dissolve to water running clear from hose

**S.40** Dissolve to hand turning water-meter to “full dry” *1:08-1:10:00*

**S.44** Dissolve to CU of hand turning pump and ignition off *1:08-1:10:00*

**S.45** Dissolve to WS of Marines refilling water tank *1:22:00*

**G. 30** Key:

*Refill water, foam and fuel tanks*

**G.3** Slide on *Safety Alert* graphic

**S.46** Dissolve to Marine refueling tank away from unit *1:13:45*

**G.3** Slide out *Safety Alert* graphic

with clear water.

With the engine still idling, rotate the foam concentrate-metering valve clockwise until it stops. Open the engine throttle again to its maximum position while firmly holding the hose end. Turn the CAF Pump switch to the “on” position and open the nozzle until the water runs clear.

When the water is clear, turn the water-metering valve to the full-dry position and run the CAF Pump briefly to clear the air compressor and idle the engine.

Finally, turn the CAF Pump and ignition switches to the “off” position, close the nozzle and re-roll the hose on to the reel.

Once the system is shut down, refill the water, foam and fuel tanks to their appropriate levels.

*(SFX: Safety Alert)*

**Voice Over Narrator:** Refueling should be done outdoors or in a well ventilated area. Always refuel at a safe distance from the engine and when the engine is not running.

*(SFX: Safety Alert out)*

**S.47** Dissolve to Marine checking oil  
*1:15:37*

**S.48** Dissolve to Marine checking hoses and fittings *1:26:37*

**G.33** Dissolve to FS graphic:

*Check Weekly, Before and After Usage:*

- *Water*
- *Foam Concentrate*
- *Oil*
- *Fittings, hoses, and mountings*
- *Integrity of the system*

**G.29** Dissolve to a full screen graphic:  
*Cold Weather Operation*

**S.49** Dissolve to MS of Marines unpacking cold weather kit *2:22:01*

**S.50** CU heating pad *1:24:37*

**S.51** CU Screwplug *1;26:00*

**S.52** CU thermal blanket

**G.34** Key: Operates in temperatures as low as -25 degrees F.

**Voice Over Narrator:** Next, check the oil level.

And make sure the hose fittings and mountings are secure.

You will also want to check the overall integrity of the Hardened Slip-in system and re-check fluid supplies weekly and before and after the system is used to ensure proper operation.

*(Music cross fades under the transition and out)*

**Narrator:** In cold weather conditions, the cold weather kit must be installed in order for the system to operate safely and efficiently.

The cold weather kit consists of:

- An electric heating pad for the water tank,
- A screwplug water heater in the water tank, and
- A thermal blanket that is secured to the host vehicle on the skid

When correctly installed, the cold weather kit will enable the EasyCAFS system to operate in temperatures as low as 25 degrees below zero.

**S.53** CU mounting holes on pad, pull out to reveal pad in place *1:26:00-26:40*

**S.54** CU hands putting thermostat in proper position on the skid. *1:25:09*

**S.55** Positioning the cord and plug properly across the rail

**S.56** Dissolve to MWS and track as Marines position blanket on pickup points at the front of the skid and pull the blanket into position, fastening the back holes into place and Velcroing the corners *2:23:37*

**S.57** Dissolve to MS of Marine opening access panels for fuel tank, exhaust port, operator's panel and thermostat and power cord opening *1:26:07*

**S.58** Dissolve to front of unit as it is started

**G.3** Safety Alert graphic

**S.59** CU proper fuel being poured into fuel

The heating pad includes a three-foot cord with an automatic thermostat. Install the cord so that the thermostat is suspended in the air space within the skid frame and not on the pad itself

Next, plug in the water heater and hang the cord and plug from the cross rail on the unit.

One or two people can install the thermal blanket. Beginning from the cab-end of the skid, fit the two square holes on the top corners of the blanket over the forward pick-up points on the skid, and fold the front-end flap behind the cab. Unroll the blanket as you move toward the rear of the skid. Then, fit the back two square holes over the rear pickup points. The side flaps will overlap the end flaps and the Velcro corners keep the blanket in place.

Open and secure the access panels in the blanket for the fuel tank area, exhaust port, operator's panel and thermostat and power cord.

Next, start and run the engine for 15 minutes.

*(SFX: Safety Alert)*

Be sure to use the appropriate fuel to for the

tank

**1:00:30**

weather conditions. If the fuel is not designed to be used in cold temperatures, the system could shutdown.

**G.3** Safety Alert graphic out

*(SFX: Safety Alert out)*

**S.60** MS tracking shot of engine shut down and panels being closed

After the engine is warmed up, shut it down. Then, close all access panels except for the cover over the fuel tank. And plug the heating pad cord into a 110 volt A/C power source or greater.

**S.61** CU hand plugging in heating pad cord  
**3:02:25**

**G.3** Safety Alert graphic

*(SFX: Safety Alert)*

**G.** Key: Never plug the heating pad into a power source if the wire is frayed.

Never plug the heating pad into a power source if the wire is frayed. To do so could cause an explosion or electrocution resulting in serious injury and possible death.

**G.3** Safety Alert out

*(SFX: Safety Alert out)*

**S.53A** Tracking shot of heating pad being removed **3:23:40-58**

To operate the system during fire fighting, or in the standby mode, disconnect all electrical connections and remove the heating pad.

**S.57A**

Open and secure the operator panel access vent, hose reel access port, and engine cooling access vent. This vent can be opened or closed to accommodate weather conditions and ventilation needs.

Double check the exhaust port in the blanket to make sure it is positioned properly. Then start the engine and begin operation.

**S.63** MS – Marines folding blanket for storage  
**3:02:05**

When not in use, the heating pad and thermal blanket should be folded and stored in the pouch provided.

**S.63A** CU technical manual

If the EasyCAFS system is going to be stored for more than 30 days, consult the technical manual for cold weather storage procedures.

**M.2** Dissolve to quick montage of Marines fighting fires with CAFS

*(Music comes up to half)*

**Narrator:** Fighting fuel fires can be particularly complex and dangerous. But when used properly, the EasyCAFS system is safe and efficient.

**S.90** Dissolve to CU of manual cover **3:05:35**

**G.34** Key:

***EnviroFoam Technologies***

***(888)507-7770***

**G.35** Dissolve to fire fighting images under credits

Over the past few minutes, we have reviewed the EasyCAFS system procedures for pre-operation, operation, post operation and cold weather operation. For more information on the EasyCAFS, please refer to the Model 25 Diesel EasyCAFS Operation, Maintenance and Parts Manual, or contact EnviroFoam Technologies at (888)507-7770.

*(Music comes up full and pays off)*

Dip to black.