December 2024 Newsletter – Fixed Fire Extinguisher Manual Discharge

Photo Essay: Fixed Fire Extinguisher Manual Discharge

Fixed engine room firefighting systems are an invaluable safety option for virtually every inboard powered vessel. These familiar red bottles are capable of extinguishing fires without any input from a user, their temperature sensitive nozzles are designed to automatically discharge the clean agent most often at 175° Fahrenheit. Among other things, these systems are designed to operate most efficiently in an enclosed space, which is why engine room doors and hatches should remain closed when not in use.

In order to be ABYC compliant, fixed firefighting systems must be equipped with a manual discharge cable, this is an option for most, but not all systems, and in the case of diesel powered vessels, an automatic engine, genset and ventilation relay package must also be included.

It goes without saying that where onboard fires are concerned, time is of the essence, truly every second counts when it comes to firefighting efforts. It is for this reason that the manual discharge is required, in the event of a fire, waiting for the nozzle to reach the discharge temperature will almost certainly lead to more damage, and it may mean the fire is beyond the point of being extinguished.

The manual discharge handle shown here is located inside of a locker, with no indication on the locker door that this critical piece of firefighting gear is located within.

Ideally, manual discharge handles should be located in plain view. If more than one system is present, engine room and a lazarette bottles for instance, the handles should be clearly labeled, and if they are located within a locker, then a conspicuous placard must be located on the outside of the locker door, to alert those aboard to the presence of this critical safety device.

Ask Steve

The first question below is in response to our last editorial…

Steve,

I agree with your assessment about the potential (or lack of potential) for electric propulsion systems on boats.

There is, however, one system that has proven benefits for boat owners, and that is the wing engine (or motor, for electric drives.)

You stated that you have concerns about complexity serviceability. I have found that replacing my Yanmar diesel wing engine in my Nordhavn 40 with a 10KW electric drive has reduced complexity and reduced routine service to almost zero! Foremost among the benefits of the switch to electric are:

- No more oil changes
- No more impeller changes
- Elimination of one dedicated thru-hull and associated strainers, etc.
- Increased access to stuffing box with a direct shaft (having eliminated the Yanmar's "V-drive" which allowed zero access)
- No need fo "exercise" motor, aside from running the

motor occasionally to keep the shaft lubricated
- Instant 100% power when needed (just one key turn and lever pull)

I would guess that many wing engines suffer from lack of exercise, with the exception of ones that have PTO's that power hydraulics. For the potential emergency that may arise in only one time out of a hundred cruises, having a more reliable electric back up, for me, is the best solution.

Sadly, I'm putting my N40 on the market, having purchased a speedier Sabre 42. But I'm confident her new owner will have a reliable, efficient and safe source of reserve propulsion should he ever need it.

Best Regards,

Jared Cook

Jared:

Thanks for sharing your thoughts, and you may very well be right, electric propulsion may make sense for a get home. However, the challenge there, especially for a retrofit, is providing enough horsepower from both the electric motor, and its power source. Assuming you have a 12 kW genset, the most it could supply in the way of horsepower, taking into account some conversion inefficiency, and assuming the genset runs at 100% load, is about 14 hp. That might be sufficient in flat seas, for a smaller vessel, but in any other conditions it would be very slow going, and there would be little additional power to run the vessel's other systems.

Dear Steve,

I was wondering if you can hopefully give me some advice.

2 weeks ago, around 8 gallons of diesel was accidently put in

one of the water tanks on my Grand Banks 36. There are 2 tanks with a cross-over valve which seems to be seized at the moment. I've turned off the water pump. Hopefully only one tank is affected.

What would be the best way to proceed in order that whoever I get to do the work does it the best way? I imagine that a major problem will also be getting rid of the odor. Have you come across this problem before?

Thank you.

Peter Morton

Peter:

As regrettable as this error may be, if my memory serves me correctly, the water tank on a Grand Banks 36 is aluminum or stainless steel, and that's good as it's easier to clean than plastic.

Having dealt with this scenario on several occasions, I've settled on a technique that usually yields good results.

In your case, in order to prevent cross contamination, either free up the seized valve and close it, or cut the hose and plug it. Fuel is lighter than water, so it will float on top of the water. Dip a hose into the tank from the top and suck/siphon as much of the fuel out as possible, you don't want to expose any more of the tank to this contaminant than necessary. Once that's done, drain the tank from the bottom fitting. Be prepared to catch any remaining fuel before it goes into the bilge.

The tank interior must be accessed for the next step; if it does not have an access port, you'll need to install one. These are available as off the shelf kits; and it does not matter if you cannot access every baffled chamber. Once the tank has been opened, fill it (the top of the tank must be

submerged) with clean water and liquid dishwashing detergent. Leave that to soak for a day, then drain it. Next, wash the interior of the tank using a hot water pressure washer, these can usually be rented at home improvement stores. You need the hot water, but you don't need the pressure, so use a tip that disperses the stream as much as possible. Fill the tank, again the top must be submerged, with hot water, then drain it, and then repeat three or four more times. Hot water has a remarkable ability to emulsify and remove petroleum residue.

Finally, install an in line, "whole house" tandem filter, with the first element being charcoal/carbon, and the second particulate. The charcoal filter will capture any remaining odor (there should be none) or taste.

Finally, if you wish, for added piece of mind, you can send a sample of the water to a lab for testing.

Hi Steve,

What are the biggest problems faced when importing a yacht with USA specs to European?

I presume changing from 110/60 Hz to 230/50 Hz is the biggest problem. Is it difficult to convert the yacht so UK appliances can be used? are most American appliances (i.e. an oven) dual voltage?

Many thanks for your advice, keep doing your great posts.

Paul Aston

Paul:

There are two issues associated with an EU citizen, registering a non-EU vessel, in the EU. One is technical, and the other administrative.

Technically, converting a cruising vessel to comply with EU standards, for registration there, is no small task. There are a variety of requirements, including among others fuel, propulsion and electrical systems.

From a colleague in the industry, who is involved with CE certifications, in the UK.

"If the vessel meets the structural requirements, which is a separate set of requirements and technical file, it must meet and be tested for stability requirements for design category, [i.e. Class A, B, C or D] and then meet the Essential Requirements list [entitled "Declaration of Conformity of Recreational Craft with the Design, Construction, and Noise Emission requirements"]. Many of the standards are similar to those of ABYC, however, each must be checked, glass/windows/deadlights for example, and signed off as compliant, and the engines must meet the latest EU emissions and noise standards, which could be very costly.

The boat should/must have a technical file, and as part of that, the technical file is divided into the main detailed file, and a separate structural technical file, which includes all the lamination schedules, panel sizes and calculations, as well as rudder and rudder stocks.

Contents of the report include: Definitions; Structural Options; Composite Materials; Pressure Coefficients; Pressure Limits; Panel Laminate Summary; Panel Lay-Up; Commentary on Plating; Plating Analysis; Rudders; Rudder Stocks

Many of these standards can be self-certified, but come the day it is sold and the boat gets surveyed, or spot checked by an authority, they may check all against the standards."

Among other requirements, even where technically feasible, vessels that are less than five years old are not eligible for CE conversion.

In many cases, it is economically infeasible to make the conversion, particularly where engine emissions are concerned. If the vessel's existing engine does not meet the requirements for CE emissions standards, there are no exemptions, with the only recourse being replacement of the engine.

As far as the electrical differences, it is not mandatory to convert the vessel from 60 Hz, 120/240 VAC to 50 Hz, 230 VAC, however, provisions must of course be made for the vessel to operate in this environment, either with a frequency converter or using inverters and multi-frequency battery chargers, and the electrical system must otherwise meet CE standards. More on that subject here.

Administratively, when a vessel is built for importation to the EU, a host of documents must be provided to prove the components used in the vessel's construction are compliant. Amassing these after the vessel is built can be challenging.

There are firms that specialize in documenting EU compliance, who can, and should in my opinion, be retained for this process.

Hi Steve,

The slip in the marina we like to stay at in Grenada produces high AC voltage because it's the first pedestal in the marina. As you are aware, a lot of the marinas in the Caribbean have flaky current.

By the time the power gets down the dock, the voltage is mitigated somewhat but we like the convenience of being close to the entrance of the dock.

Problem is that the voltage is already high (often 130 and occasionally 135 volts); our isolation transformers from

Victron add another 5% (This is an actual feature that sounds good on paper as its meant to deal with low voltage on docks). When you get above 140-ish volts this causes the Victron charger to stop functioning because it detects high voltage. There is no way to bypass the voltage boost on the isolation transformers as far as I am aware.

I've been looking for an external buck converter for our dual 30-amp inputs (we use a 50-amp splitter) to reduce the voltage down to a reasonable level or clamp the input voltage at something around 115 volts but have not had any luck. They are all buck/boost and I haven't found any suitable for outdoor use.

Any recommendations?

Thanks,

Alex Tarlecky

Alex:

No 120 VAC primary isolation/polarization transformer I'm aware of offers boosting capability, including the Victron, at least according to these specs. Boosting is limited to 208/240-volt primary models

Are you sure it's boosting?

Generic buck/boost transformers are available, you might check with Ward's Marine Electric.