

Google Groups

Re: Maybe the first Electirc Drive T37?

Michael Gunning <mikegunning47@gmail.com>

Oct 26, 2018 1:34 PM

Posted in group: **TOGnews eGroup**

I have some computer projections for this boat with the 20kW motor and 400ah (19kWh) 48v battery pack (see table below):

Range at 2kts is about 48miles in calm seas - 24hours. This will give the crew steerage and stability before they would need to bring up any on demand generation power. With a 400watt solar array and 6 hours of sun, we also projected pushing the boat at about 1kt continuously. This is what the literature also tell us continuous speed for most monohulls can do 1 to 1.5kts and catamarans 2.5 to 3kts with solar alone. A small 2kW portable generator will push the boat at about 3kts and a future power source of on demand generator of about 6kW will push the boat at about 5kts continuously. This is how most modern cruise ships drive their ships.

The total power of this motor and battery pack will drive the boat at hull speed providing emergency response. With the limited power stored in its 400ah battery pack, the boat will be limited to about 1 hr at hull speed.

Finally, we have found that the projections for this boat is that it will generate up to 300w per hour under sail at max speed (not likely but 7.2kW of power under sail regeneration). Regeneration will begin in earnest at about 6kts and improve until you reach hull speed. If sailing in continuous trade winds, one may be able to compete a cruise and not use any traditional fuel.

QuietTorque 20.0 Speed & Power 48v air cooled Dual PMAC Motor System

Kts Amps Watts (Calm Seas)

2.0			Range at 2kts is about 48miles in calm seas - 24hours continuously
2.2	10	480	
2.7	20	960	You would see about 3kts with a 2kW genset and 25a 48v charger
3.5	40	1920	
4.0	60	2880	This is a good modest battery only speed = 19NM with 19.2kWh battery pack
4.4	80	3840	
5.0	120	5760	A 6kW generator would support this continuous speed
5.9	190	9120	
6.3	240	11520	
6.8	300	14400	
7.5	390	18720	Will reach hull speed

	19200 Max power of QT20 (16320w continuous)
Hull speed	7.46

Mike
Electric Yacht Pacific

On Wednesday, October 24, 2018 at 9:03:36 PM UTC-7, Mark Dixon wrote:

I have recently completed (95% anyway) the installation of a new QT20 Electric Drive kit made by Electric Yacht. I fired it up and took it for a spin last weekend around San Diego Harbor. Need to do some testing to see how much damage I did to the range.

The primary reason I did the conversion was to rid myself of the smelly, dirty, noisy Diesel engine. I have spent most of my career installing and maintaining industrial gas turbines which required me to covered with oil and diesel for the last 30+ years. I am done. Full disclosure: I still have a Honda 2000 portable generator for a backup.

The installation involved removing the steel fuel tank under the V-berth, removing the Perkins 4108 and gutting out the old rats nest of a control system. I installed an arch, solar panels, charge controllers, battery chargers, 8 - 6 volt 400 AmpHr batteries, the electric drive and a bunch of wire and miscellaneous pieces and parts. The biggest challenge was doing all this on a mooring with my faithful dinghy and oars to transport the equipment.

I would like to post some pictures if someone could tell me how!

Mark Dixon
Shady Lady
1978 T37 #178