The Prince William Sound Aquaculture Corporation (PWSAC) is a non-profit founded in 1974 by a local fishermen’s organization to optimize wild salmon resources in the Prince William Sound and Copper River regions. PWSAC operates five hatcheries to produce ocean-raised wild salmon for commercial, sport, and subsistence fisheries.

MER has been fortunate enough to have PWSAC as a long standing customer. They contacted us to help replace two 80kW CAT generators at their Main Bay Hatchery. Initially the specification called for two stand alone BOLLARD™ IG100 (100kw) radiator cooled generators. These would augment the 300 kW water turbine on site. It was later decided to add paralleling. Load sharing allows the units to auto start and auto sync as more load is applied. When load drops, one gen-set can shutdown. The other carries the lighter load, saving wear and tear on both engines. The auto start/ auto sync are controlled by a Deep Sea 8610. The motor operated circuit breakers were installed in custom MER panels, with programming and wiring provided by MER. After testing at our new facility in Seattle, the units were shipped to Main Bay and installed on site by our team.

Engine longevity is further extended with SCOR bypass oil filtration. SCOR extends engine life and oil drain intervals by removing contaminants to below .9 microns, neutralizing sulfuric acid, and replenishing additive levels.

For PWSAC, the end result has been a user friendly generator upgrade with improved efficiency, longevity, utility and savings. Learn more at www.merequipment.com
A New Home For MER

Reaching New Heights - by Michael Hudson

Since the beginning in 1964, in a building in old town Ballard that was once a Chinese laundry, we have traveled far. However, our home and our heart has remained in the center of the Northwest Maritime Industry.

We are excited to announce our new location on the Seattle ship canal, in the historic MARCO yard, just down from Fishermen’s Terminal. As this year is our 50th anniversary, 2014 will be remembered as a year of growth and major events.

The big change that comes with our new facility is a major advancement in the scope of our capabilities; allowing us to offer much more to our customers. The footprint of the new building is three times the size of the old shop; providing efficiency and capacity in production far beyond what we could offer in the past. This gives us the ability to reduce lead times and respond more quickly to customers’ specific needs. We also have improved overhead lifting capability and equipment for handling larger machinery than ever before which will increase the Bollard product range and power ratings. A new, 380 square foot, state of the art paint booth has been installed which enables us to handle big projects and apply an increased variety of paints like linear polyurethane. The improved paint finish provides increased long term durability and corrosion protection while retaining its color after many years of service.

When you come in, we’ll be happy to give you a tour which will include our engineering department, an expanded fabrication area, and our new full service electrical department. With much more space for our expanding parts inventory, our parts & service department staff are better equipped to take care of you. A new dedicated training area will enable us to continue to offer classes that have been popular in the past. The footprint of the new building is three times the size of the old shop; providing efficiency and capacity in production far beyond what we could offer in the past. This gives us the ability to reduce lead times and respond more quickly to customers’ specific needs. We also have improved overhead lifting capability and good enough to withstand a high temp pressure washer, our lights are ready for whatever the sea throws at them. Performance and efficiency are optimized with premium drivers, water proof wiring, and optics that deliver more light, less radio interference, and consume less energy than the competition. Versatility is built in with dimmable LEDs, flush mounting kits, and interchangeable lenses with a wide variety of beam focus and color options, allowing complete customization of distance, flood, and light color. We are so confident in the new models that we’re backing them with an unprecedented lifetime warranty.

The sum of these benefits together in one package creates a product that is truly incredible. They are easy to install, easy to live with, easy to maintain, and will save our customers valuable time and money.

Check them out today at www.merequipment.com or see them in action in our booth at PME! (Booth 1321)
Generator Paralleling Simplified

Paralleling two generators, essentially making two or more machines operate as a single, bigger generator, has some distinct advantages. Paralleling can provide system redundancy, backup power, reduce downtime, and prevent both under and overloading of prime movers.

Originally, due to the cost and complexity of the necessary equipment, it was impractical for a lot of operators and for use on small generators. In the last few years the process has gotten easier, requiring a LOT less equipment, and may save boat owners a great deal of money in fuel and operating costs. In part, this is because newer engines now come equipped with the hardware to synchronize them with other engines. That’s the silver lining of the electronic governing systems.

The key word there is synchronized. This is the job of a PLC, or Programmable Logic Controller. Generator frequency, or hertz, is controlled by engine speed, and engine speed on an electronically governed engine is monitored and controlled by an ECU. Since the ECU is digital, and the language it speaks is common across most engine manufacturers, some simple wiring allows the PLC to instruct the ECU to adjust engine speed. The same applies to voltage; generators usually have the option of a digital voltage regulator, so the PLC can boss it around to tweak the voltage and match it to the voltage of the other generators.

Once the separate generator voltages and frequencies are in lockstep, they are paralleled, again with the PLC calling the shots. The generators already have main breakers, so it’s just a matter of the PLC controlling their operation. To do that, the breakers are fitted with charged springs, and snap open or closed instantly once commanded.

The PLC monitors the breakers, generator status, and the demand on the main bus. If the load is low, say for housekeeping and a few lights, the PLC will only use the housekeeping generator. If the load goes up to maybe 80%, the PLC will start up a second generator, adjust its speed & voltage to match the generator already on line, close its breaker and slowly ramp up the output and share the load. Once load falls again, the PLC will ramp down the excess capacity generator, open the breaker, cool it down and shut it off to save costs.

So what about catastrophic failure? Turning a generator into a motor and causing it to “drive” an engine has always struck fear in the hearts of engineers everywhere. Unparalleled systems with multiple power supplies are traditionally fitted with split buses, mechanical lock outs, or a slide bar to protect the equipment from the harmful effects of reverse power. The PLC does the same job, never allowing two breakers to be closed on the bus unless the sources are live and synchronized. If something doesn’t read right, or fails, the system simply becomes manual. The breakers are hand operated and the engines are started and stopped manually until repairs are made. If it’s the PLC that fails, simply replace it and go back to work, no programming required.

The goal here is redundancy and reliability along with the lowest cost of ownership. It’s not for everybody but it’s making sense for many applications with the falling cost and increased reliability of digital components. For help planning a system, give us a call.

Old synchroscopes have been replaced by PLCs
It was 1969... I was a 19 year old kid just off the farm from eastern Washington, working on the beach gang at the Uganik annery. When Freddie and I met, my first impression was “this is a powerful man with kind eyes”. He was a rare bird; ran a seiner named the Chinook. The Chinook had a 38’ wooden hull, shallow draft, and a 471 Jimmie. It was once one of the Cannery owned seiners that went to private ownership after the salmon traps were made illegal in the 50s. We used the Chinook for lots of Cannery chores from pushing the pile driver around, towing the garbage barge, or filling in as the set-net tender in late season when most of the sites had hung it up.

Freddie was half Native, strikingly handsome, and a war hero, though he never spoke of the war. He held the record for the tightest grouping with an M-1 rifle at 500 yards for years; maybe he still does. He taught me how to steer a straight line in the dark back in the days when radar was a luxury and GPS hadn’t been invented yet. We used a compass and a clock with a chart and pair of parallel rulers to find our way around.

I remember Freddy telling me, “Find a star you like and follow it.” I grew to call him a good friend. Freddie had a stainless steel plate that made up a significant part of his scull compliments of some German artillery from WWII. He would laugh and say, “It’s good for radio reception”. He was a solitary man with a big heart, a patient teacher; he gave me some of the best lessons in early life on a boat.

Freddie homesteaded a cabin after the war on the back side of Sally Island, just a few miles from the Cannery. Uganik was a lonely place in the winter. He would skiff over to help the cannery watchman, have a laugh and a drink or two, and lend a hand whenever needed. Sometimes he would fill in if the watchman needed a trip to town, but mostly Freddy was content to live alone in his remote cabin, off the grid, off the radar.

Not far from Fred’s place and the cannery, was an old herring oil plant. It hadn’t been run since ’48, but the owners kept a watchman there anyway. The warehouse there had a good roof where many seine boats stored their web during the winter. That watchman was Andy Pelto, a colorful bird in his own right, and no stranger to a bottle of moonshine. He had a wide scar across his face that looked like his nose had been split in two and sewn back together by a drunk, which it had, but that’s another story. He and Freddy would get together from time to time to play cards and sample Andy’s moonshine. Andy had been an officer in the war and Freddie an enlisted sergeant, so they would often fight the war over again after the first bottle went down. One night things got out of hand and Andy shot him dead at the table. Andy got off on a plea of self defense claiming Freddie pulled a knife. Some say Andy was settling an old score over a girl. Whatever the case, the truth died with Andy, but Freddie wasn’t Andy’s only drinking buddy to die mysteriously. It was an abrupt end for my good friend. He unknowingly touched many people’s lives, including my own. His cabin still stands behind Sally Island, abandoned and alone, but a testament to the man who lived there.