Beaufort Gyre Exploration Project: Dispatch 16: Ziggy Stardust's House of Power

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Though their responsibilities and experiences vary, the many scientists, technicians, deckhands, navigators, cooks, and journalists aboard the *C* and its operations running.

This is no easy task. The *Louis* plows through ice thick enough to support the weight of an office building. It requires propelling a 120-meter (394 atmosphere with adequate electricity, plumbing, waste disposal, and heating to allow all sailors and scientists the chance to get lost in a book or middle of the Arctic Ocean.

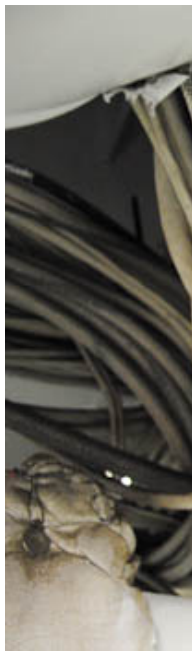
Being an engineer can be a thankless job. Your presence is most acutely noted when something goes wrong--say the electricity cuts or freshwat

The ship's engineers find a home in the engine room, an environment of constantly changing temperatures, smells, and sounds, all contained in

E / R Mechanic John Nowe climbs up a ladder alongs five massive engines that propel the *Louis*. As shown engineer's size relative to the engine, the engine roon ample space for mythological bull-man species and a 1970s celebrities.

The sixteen engineers on board know every cubic inch of this space. Each spends twelve hours per day in the engine room, combing every inch engineering department are on watch to maintain the oily water separator, which purifies bilge water to send only seawater back to the sea; disp to heat the ship's water; change oil pads; check fuel levels; maintain the seawater intake, which provides cold seawater to cool freshwater that th perform hundreds of other inspections, tests, and repairs to ensure that the cooks can cook, the navigators can navigate, scientists can do scien

Where it all goes down. In the control room, engineers monitor thousands of separate components of the ship's electrical system.



Think the nest of w
the *Louis*.

Along with the rest of the ship, the engine room underwent a major renovation in 1993, which brought the ship's original 1960s design to modern in the engine room and added power to the ship's massive propulsion system.

Though composed of millions of component parts, the basic architecture of the engine is similar to your typical car. Diesel fuel explodes in an en and powers the ship.

The overall concept may be simple, but the ship operates on a scale more comparable to spacecrafts than individual automobiles. At their peak, of holding over 4 million liters (1 million gallons) to power three propellers, each of which has a diameter the length of a Lincoln Navigator.

Each of these valves distributes fuel to a different tank.

Shaft in motion. Each of the three propelle
shafts is the thickness of a tree trunk.

In order to operate these propellers, the engines and all their component parts produce a lot of noise. The sounds, all muffled because ear prote propeller turbulence tapping amid the whistle-like whirring of turbochargers and the bass vibrations of ice scraping against the hull. It is a symph

To keep this clamor contained to as small an area as possible, the engine room is insulated and the engines all sit on thick rubber pads. Still, the monotonous music too loudly all the time, every day.

Though fantastically complex, Chief Engineer Ron Collier encapsulates the basic operating principle of the engine room. "When the light's red," I

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