FROM COPING WITH A SHIP'S MOTION AND HARSH ENVIRONMENTS IN THE NORTH SEA TO THE EXTREME TEMPERATURES OF SUB-SAHARAN AFRICA, PETER BROTHERHOOD STEAM TURBINES ARE GENERATING PROFITS FOR OUR CUSTOMERS.

Specialist application design – powering business across a range of industries

Marine & Offshore Production

Peter Brotherhood has been supplying steam turbines to the marine industry for over 100 years.

Having considerable experience of marine standards, classification society requirements and petroleum industry standards, Peter Brotherhood has found itself in a unique position to provide steam turbines for FPSO (Floating Production Storage & Offloading) vessels, FLNG (Floating Liquified Natural Gas), and FSRU's (Floating Storage Regasification Unit).

The use of such vessels for the recovery of offshore oil and gas is growing and Peter Brotherhood has supplied over 40 steam turbines that ensure reliable and efficient power supplies.

Our steam turbine packages are specifically designed to fully integrate within the confined spaces available on marine vessels. We even help layout the turbine machine space and engine room to ensure that our turbine fits and that there is enough room for disassembly and laydown areas for equipment. Peter Brotherhood will work with you to fully understand your needs and to develop solutions to the problem.

Efficiently designing a turbine's footprint is not done at the compromise of maintenance – all equipment that requires planned maintenance such as oil filters are positioned so that ease of access is maximised.

OFFSHORE EXPERTISE

Our machines are designed to withstand the harshest environmental conditions the oceans can produce. We accommodate the pitch, roll yaw, sway, heave and surge of the vessels, along with the wave induced deflections.

If our turbines can run in these conditions, they can run anywhere.

We have developed many world-firsts for the marine industry:

- First Turbo Compound System (TCS) for container ships
- First steam turbine waste heat recovery on a vessel
- First controlled extraction condensing STG on an FPSO
- Largest deck mounted turbine generator sets on an FPSO

We have also been a trusted supplier to the Royal Navy for over 140 years, including supplying turbines for the Astute class of submarine.

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Delivering power to recover "marginal oil"

Location: Offshore Brazil
Market: Marine

The FPSO required steam turbine generators to provide process power to the vessel which is capable of producing 100,000 barrels of oil per day. Peter Brotherhood supplied 3 x 24 MW steam turbine generators to fulfil the vessel's power consumption requirements.

Peter Brotherhood's reliable and robust design ensures that process power is constantly available to achieve this target. Due to vessel space constraints the steam turbine generators are located on the topside of the vessel exposed to the offshore environment – the harshest location for any equipment.

Topside, the forces, moment and accelerations transferred from the vessel motion to the steam turbine generator have to be considered during the design phase of the machine to ensure that tight clearance and alignments are not exceeded. Peter Brotherhood's considerable experience in this industry means we know and understand the rigours of topside operation to ensure the reliability of this process critical application.

Peter Brotherhood has supplied equipment up to 27 MW to many of the world's leading FPSO operators including: Woodside, Single Buoy Moorings (SBM), BW Offshore, Bluewater, Saipem, Aker Floating Production, Fred Olsen Production and Maersk.