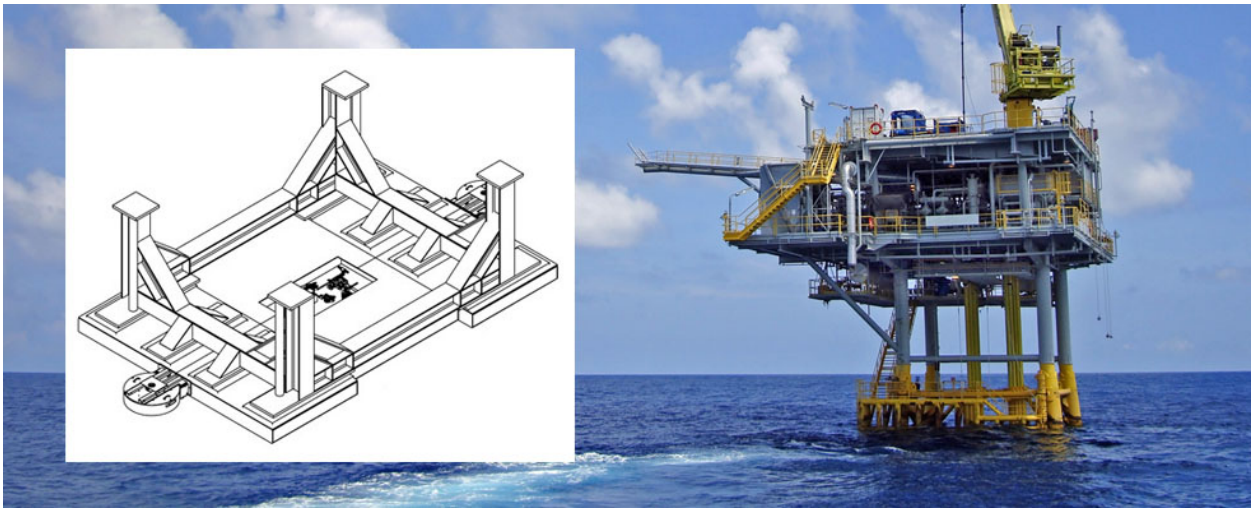
Offshoring Oil Drilling



Situation

GE Oil & Gas faced a daunting challenge at one of its Houston-area manufacturing facilities: moving a 20-ft.-high, 300-ton blowout preventer (BOP) from an existing assembly bay to a brand-new bay in a recently added building extension. A BOP is a complex mechanism that sits on the sea floor atop a well head, serving as the last line of defense if something goes wrong. After considering several options, GE ultimately partnered with Airfloat to create an air-riding crane bay shuttle system that would "float" the BOP on a thin film of compressed air.

Solution

The Airfloat shuttle is comprised of a steel transfer car equipped with eight racetrack-shaped air bearings, sometimes called "air casters" or "air skates." ("Racetrack" air bearings, as the name implies, are oval in shape. They provide the same lifting power as similar-size round air bearings, only with a narrower footprint.) The transfer car is powered by two steerable pneumatic drives with polyurethane tread wheels that engage the floor for traction.

The transfer car is steered by means of a dual-joystick radio frequency (RF) controller. It also boasts automatic line-following capability for traveling along precise paths. The drives may be steered independently of one another and rotated 180° for true omnidirectional movement.

Operation

A test stand with support columns is bolted atop the Airfloat transfer car to securely hold the sensitive load. Then the blowout preventer is lifted onto the stand by overhead crane. Air to the system is turned on, allowing the load to float virtually friction free. The load is driven to the destination bay at a top speed of 10 feet per minute. Lastly, the BOP is removed from the transfer car by crane.