

# OIL PLATFORM

## GULF OF MEXICO



MATERIAL HANDLING SOLUTIONS

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### PFlow Heliport Lift Helps Offshore Oil Platform Shuttle Luggage and Supplies



- M Series 2-Post Mechanical Lift
- Cantilever Carriage
- Lifts Loads up to 1,500 lbs.
- 32' Vertical Rise
- 2 Levels of Vertical Rise
- 25 FPM Travel Speed

Offshore oil drilling platforms are often referred to as “cities on the sea” with over 100 people living and working on the largest of them at any given time. With staggered shifts of two weeks on and two weeks off, and a steady flow of supplies needed to feed and care for the staff, there is frequent transport traffic, typically by helicopter, to and from the closest port.

Despite amenities that have been compared to cruise ships, life on board an offshore platform is hazardous, contending with the volatile elements of the open sea. In order to withstand one of the harshest inhabited environments on earth, every structural component of an offshore oil platform is designed to the most rigorous standards.

An example of the complex engineering required for oil platform infrastructure elements is a vertical reciprocating conveyor (VRC) designed and built by PFlow Industries for a Shell Oil Company platform in the Gulf of Mexico. The lift goes 32' to and from a Helipad and a top floor of the oil platform. It transports supplies and luggage for arriving and departing staff and guests. It is a two-post cantilever lift, with a 4' 0" x 4' 0" platform and a 1,500 lb. load capacity.

The lift was custom designed to the necessary specs and tolerances required to withstand the totally exposed, harsh marine environment. Every metal part was hot-dip galvanized, all hardware is stainless steel, and most non-metal parts are polycarbonate, UV resistant plastic. All other components, including controls, cables and electronics were designed and specified to withstand extensive saltwater exposure.

Shell hired Jacobs Engineering, a major global engineering firm that provides technical, professional, and construction services to manage the design and construction of the platform.

PFlow conducted wind load calculations to determine how the wind force and sway of the platform would impact the lift's structural design. The lift could then endure the type of environment an oil platform experiences in open sea storms and rough weather.

With the specs and requirements established, PFlow worked closely with Jacobs throughout the entire process. Jacobs performed three site visits to the PFlow plant during the design and initial building process, closely reviewing the initial design models and engineering submittals. Once construction began Jacobs performed several interim inspections that included a series of weld integrity tests, and other non-disruptive tests to assess the adherence of the lift structure to the necessary specifications.

“Lift installations in unique environments often have special requirements that make the project far more complex,” said Dan Walters, VP of Sales, PFlow Industries, who worked closely with Jacobs Engineering throughout the entire project. “We dedicated a project team to provide the more rigorous control needed to exceed the requested standards during all phases, from the initial specification review, intense submittal



requirements, and custom engineering, to the factory inspections, quality control verifications and field services.”

In addition to the challenges provided by the open sea environment, the oil platform is classified as an explosive, corrosive environment due to the potential presence of gas. The function of an offshore oil platform is to draw extremely flammable fluids out of the earth. For the lift, which is somewhat removed from the most hazardous areas of the platform, this results in a Class I, Group C and D, Division 2, hazardous, outdoor marine environment rating.

Class I refers to exposure to gases, vapors and liquids, Group C to ether, Group D to hydrocarbons, fuels and solvents, and Division 2 to not normally present in an explosive concentration (but may accidentally exist).

In order to satisfy the requirements, all electric controls are enclosed in NEMA 7/9 rated, heavy cast aluminum, classified explosion proof enclosures.

Visit [www.pflow.com](http://www.pflow.com) to read more on unique installations!

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This ensures that the electronics are fully protected and spark resistant, safe for environments where gas can be, but is not normally present.

The requirement from Jacobs Engineering was that no final welds could be conducted on-site at the oil platform during installation. This made the project more complex. More so than previous offshore oil platform VRC's PFlow had built. PFlow engineers worked closely with Jacobs to design the lift to accommodate a complete bolt-together process. The lift would then align and attach to the supporting lift structure.

Jacobs and Shell erected the lift equipment at a facility in Louisiana and then transported the major modular lift pieces to the offshore platform by helicopter for final assembly.

“PFlow enjoys partnering with design firms and has a proven track record of developing the best customized solution for our customers at a competitive price,” added Walters.