Due to the decreasing number of ‘cheap’ and ‘easy’ oil and gas wells and the political instability of oil and gas rich countries, the major oil companies are looking for other places in the world to find their resources. Uneconomical wells are made economical by reducing the production costs and by using new technology and new areas are being explored. Also, the political instability (which seems to be characteristic) in many ‘oil producing’ countries causes costs to rise and production to stagnate and make that companies move their investments to ‘new’ areas.

Many of these new areas lie in the deeper parts of the sea. An additional factor is the shorter life time of the production units. In the North Sea the production units have a life time of forty years, the latest Floating Production Storage and Offloading vessels (FPSOs) are built for a life time of twenty years.

Demand for tugs
For some years the trend towards deep sea production has been formed. The Middle-East, Australia and West-Africa are booming oil and gas industries and are expected to provide us with resources for the next decades.

For deep water exploration, production and transportation, increasingly more semi submersible rigs, FPSO and Floating Storage and Offloading vessels (FSOs) are used. Another reason is that at sea companies are practically out of reach for the political unstable factors. Stimulated by the high oil price and the falling behind of oil and gas production, the investments of the oil companies as well as governments have increased accordingly. Semi submersible rigs, FPSOs and the like, have become bigger, more advanced and above all more expensive. This generates a change in the demand for tugs. The major oil and gas companies demand increasingly more often more powerful, modern and sophisticated tugs.

Additionally, for the coming years over forty rigs are ordered and more than $37 billion will be invested in the production of FPSO vessels. Most of them are produced far away from the oil production site. Dry or wet, transport is needed. Only the self propelled vessels are capable of crossing the oceans on own power, the rest is not.

Decision making
This is what triggered Fairmount into ordering the next generation of ocean going tugs with anchor handling, fire fight
ing and platform supply capabilities. Where more than half of the world’s ocean going tugs have passed the age of 25 years, Fairmount now works with the strongest, newest and most modern tugs available. The increase in investment in the exploration, production and export of oil and gas is expected to create enough revenue to warrant the investment in state of the art tugs.

The new class of ocean going tugs, the Fairmount Class, is designed primarily to tow rigs, FPSOs and FSOs over long distances. Furthermore, they are also configured to support platforms with cargo in containers, use its anchor handling capability to install FPSOs, and assume a wide range of other duties. First to be operational was the Fairmount Sherpa which was delivered by the builders in May 2005. The other Fairmount vessels to be delivered are the Fairmount Summit (christened at Nigata on 14 October 2005 and already operational), Fairmount Alpine (May 2006), Fairmount Glacier (October 2006) and Fairmount Expedition (early 2007). All tugs fly Panamanian flag. With over 200 Fairmount vessels to be delivered are the Fairmount class represents the world’s strongest fleet of long distance ocean going salvage tugs.

Because worldwide all yards have full order books, new competitive tugs will not be operational for some time. Therefore, with these five super tugs Fairmount Marine positions herself as major player in the market of long distance ocean towage. For long distance towing of the largest FPSOs, jack-up and semi-submersible rigs, barges, etc., tugs have to meet certain requirements. Combined with the latest technology, for Fairmount’s tugs this results in the specifications as described below.

General technical aspects
Main dimensions of the 3,239 gt / 971 mt vessel are 75.05 (loa) / 56.60 (lbp) * 18.00 (mld) * 8.00 m. Maximum draught is 6.80 m. Deadweight is 3,568 tonnes and displacement is 6,517 tonnes. Free deck area is 384 m². The hull is strongly built with a frame spacing of 600 mm. From forward to aft the hull is divided into fore peak, bow thruster, engine room, aft fuel tank area, steering gear compartment and aft peak tanks. The massive tug counts seven decks above the tank top. Accommodation is available for 36 persons but the standard crew for towing operations is twelve. Tank capacity totals 2,201 m³ intermediate fuel oil, diesel fuel 539 m³, potable water 216 m³, foam 11 m³, dispersant 11 m³. The tug is classed with Lloyd’s as +100 A1 tug, FI-FI-1 with Water spray, SCM+LMC.

Specifics from port to stern
The double bottom houses mainly fuel tanks. Fuel tanks also form the sides of the engine room. The fore peak can also be used as a fresh water tank. Further fresh water tanks can be found aft of the fore peak flanking the bow thrusters compartment. Aft, two further water ballast/fresh water tanks were constructed. Also the aft peak tanks to port and starboard have this double functionality. Aft of the forward cofferdam and rising to main deck level are heavy-oil tanks to port and starboard. In between sits the sewage treatment compartment and the sewage tank. Double-bottom tanks below the engine room from forward to aft are two diesel oil tanks, two heavy-oil tanks, two sludge tanks to starboard, two dirty oil tanks to port and two bilge tanks. Aft of the engine room up to main deck level are four heavy-oil tanks. Aft of these are the two water ballast/fresh water tanks and two heavy-oil tanks flanking the aft thrusters room.

On top of the double bottom is the sewage treatment compartment with the bow thrusters room forward. Aft of the watertight bulkhead is the engine control room with the main switchboards flanked by two boilers. Two gen sets are fitted to port and starboard. Also situated here are the fire pumps. Slightly further aft are the two chain lockers which extend up to main deck level.

The main engines are four Wartsila W 6L 32 delivering 4,080 bhp/3,000 kW each at 750 rpm. Through gearboxes these drive two c/p propellers in fixed nozzles. Propeller diameter is 3.85 m. On an output of 12,000 kW/16,320 bhp the bollard pull is 205 tonnes. The advantage of having four main engines is the smaller size of the engines but more importantly the ability to conserve fuel. The bow thrusters has an output of 825 kW delivering 12.5 tons of thrust. The stern thrusters is 736 kW/10.5 tons of thrust.

On the tween deck forward, the refrigeration machinery room is fitted adjacent to the bow thrusters room. At this level in the engine room the fuel tanks are separated by the diesel oil day tanks, the foam tank (sb), hydraulic oil tank (sb), and dispersant tank (ps). At the aft end of the tween deck are the engine room emergency escapes and the corridors leading to the steering compartment and the aft thruster compartment.

The main deck aft of the fore peak tank...
Aft body showing propulsion arrangement.

houses the crew’s common facilities. To starboard from forward to aft are the galley with the provisions store, cooler and freezer stores. Further aft are the laundry/drying room, a sanitary space with two toilets, two showers and a space separate area with wash basins.

To port are the crew’s mess room seating some eighteen, the officer’s mess room seating twelve and the recreation room. The central corridor opens through a watertight door onto the towing deck. This area houses the towing winch. At the starboard side of the winch area is a large change room with clothes lockers. Further aft are the CO2 room and the engine room vents. Also, a deck store was fitted. To port are the salvage store and workshop. Further aft are the port side engine room vents and the paint store.

The towing winch is a 400-tons brake capacity electro-hydraulic waterfall type winch with three drums. The two towing drums each hold 1,500 m * 76 mm wire while the anchor handling drum is fitted with 300 m * 76 mm wire. A storage reel carries the spare towing wire of 1,500 m * 76 mm. Four sets of pennant wires are carried on separate storage reels. The wood-sheated aft deck is fitted with offshore - type cargo barriers which also serve as longitudinal tow bars. The tug is fitted with a hydraulic operated shark jaw, SWL 300 tons. The two hydraulic (merk) vertical tow pins have a SWL of 200 tons. Two capstans are located port and starboard aft.

The forward end of the lower forecastle deck houses a large bosun’s store. Aft of the watertight bulkhead is the accommodation area which is fitted with six 4-berth cabins, five of which are located in the sides. Centre is the sanitary space with three toilets, three showers and two wash basins. To starboard a hospital is situated, fitted with a single hospital bed, wash and toilet facilities, a bath, desk and lockers. The hospital can be reached from the deck and from the accommodation. The cabins in this area are fitted with 2*2 stacked beds, a settee, four lockers and a desk.

The accommodation area is accessible via the deck through watertight doors. Stored both on port and starboard are one 16-men life raft and two 20 men life rafts. Also on both sides dispersant booms are fitted.

Top Deck
The standard compass is fitted on the wheelhouse top. Four searchlights were installed on each corner. The monitor platform between the funnels accommodates the two remote controlled monitors which each have a capacity of 1,200 m³/hr.

Bridge deck
The spacious wheelhouse has the control desk against the forward bulkhead. At the aft bulkhead is a duplicate manoeuvring desk which is also fitted with the winch controls. The radio station is fitted with GMDSS area 3 M F and HF radio; in addition to Inmarsat C and Inmarsat F.

Aft bridge control with joystick in the centre

Accommodation deck
Around the central distribution board room, which also provides access to the wheelhouse from the inside, four crew cabins have been arranged. Forward to port and starboard the Chief Engineer and the Captain are housed in cabins consisting of a day room/office area, sleeping quarters and a sanitary space with toilet, shower and wash basin. The two other cabins are single berth cabins with adjacent sanitary space. These cabins also have a desk, settee and cupboards.

Upper forecastle deck
The anchor winch is placed on the forecastle and fitted with warp heads on both sides. The MOB boat and the work boat are stored over the winch area at the aft end of the upper forecastle deck. Two pedestal mounted slewing cranes handle the boats. The cranes have a capacity of 8 tons at 7 m outreach. The port side crane
has an extended boom with a maximum reach of 9 m to handle the m.o.b. boat. This deck area also houses three powered wire reels.

The accommodation area on this deck houses eight crew members. To port and starboard forward are two single berth cabins, while centre two twin berth cabins, with another slightly aft on the port side. These cabins are fitted with settee, desk and lockers. Each cabin is fitted with toilet, shower and wash basin. To starboard aft of the cabins is an office room with several desks and a conference table seating six. Aft of the cabins and the office - in the area between the exhausts - are a large store room to starboard and the emergency generator room to port.

**Developments Fairmount**

As said, the increase in investments of the oil and gas industry in building, converting and maintaining more drilling rigs, FPSOs and the like and the shorter life time make that the demand for towage and transport increases likewise. The owners and operators of these extreme structures do not always prefer wet tows but often they are looking for means of dry transportation.

As a result of this, Fairmount has started partnerships, cooperations and alliances in order to offer a greater variety of services and to cover a greater geographical spread. Furthermore, a higher service level, a broader range of services and greater flexibility are now characteristics of the company. In other words: Fairmount Marine B.V. has expanded beyond her own fleet.

**Partners**

For starters, the partnership with Semco Salvage & Marine works. For a stronger position in the towage market Fairmount has, together with Singaporean partner Semco Salvage & Marine Works, formed the OneAllianz group. With Fairmount and Semco both contributing five new build tugs, the OneAllianz group positions itself as the major operator in the long-haul ocean towage market. In close cooperation and with power ranging from 150 to 205 tdp the OneAllianz group can almost always offer different towages including multi-tug towages.

Besides being a prominent player in the towage industry, Fairmount is also specialised in the heavy transport service.

**Fairmount Heavy Transport N.V.** was recently established by Fairmount Marine B.V., Capricorn Offshore AS and Sea of Solutions B.V. to focus on the attractive marine heavy transportation market, with the main market segments being submersible drilling rigs and floating production units for the oil and gas industry. For this purpose, Fairmount Heavy Transport N.V. has recently acquired the semi submersible barges BOA 19 and 20 from BOA Offshore AS. These barges are renamed and are now called the FAIRMOUNT FJORD and FAIRMOUNT FJELL and will be converted into self propelled heavy lift vessels this year. Capable of lifting up to 30,000 tons positions them between the biggest players in the market.

Fairmount is also partial owner of the largest barge in the world. In a joint venture with Louis Dreyfus Armatures (Paris), Fairmount Marine B.V. forms Louis Dreyfus Faiaimort B.V. Louis Dreyfus Armatures is one of France’s leading ship operators. Louis Dreyfus Armatures operates a wide variety of vessels ranging from bulkers to LNG vessels, to various types of offshore/seismic vessels. The joint venture company Louis Dreyfus Fairmount B.V., owns the largest semi submersible barge in the world; the GAVEA LIFTER, capable of lifting up to 50,000 tons. Besides functioning as means of transporting the world’s largest objects, the GAVEA LIFTER is also used as substitute for construction yards. Especially in places where there are few yards (or yards with a full order book) the GAVEA LIFTER offers the same dry docking capacity. The Commercial and Operational management is executed by Fairmount Marine, whilst technical management is done by Louis Dreyfus Armatures.

Finally, as world wide general agents to Fukada Salvage and Marine Works Ltd., Pte, Fairmount offers a modern fleet of offshore support vessels, such as DP 2 AHTS SHIN CHOU MARU and the world’s largest fleet of sheerlegs, with lifting capacities up to 3,600 tons. Fukada Salvage is Japan’s largest towage, salvage and heavy lift contractor.

Individually, or in cooperation with her partners, Fairmount Marine B.V. can offer customers a wide variety of services. Wet or dry transport can be delivered by tug, tug barge combination or by heavy lift vessel. With the new build supertugs Fairmount has placed herself in the spotlights, even before the tugs were released from the yard (Niigata, Japan), they had a full order book. The FAIRMOUNT SHERPA’s ample bollard pull of 205 tons has already been amply demonstrated. On towage to El Salvador, towing a semi submersible barge laden with 18,000 tons of cargo, the tug proved to be capable of 12.5 knots on all four engines at 85 percent MCR and completed the voyage at a more sedate 9.5 knots on two engines running at seventy percent MCR. Also the FAIRMOUNT SUMMIT has proven to be Fairmount-worthy, with her first tow being the jack up drilling rig SEADRILL V already completed.

At the moment of writing both tugs are towing the Dalca FPSO from Okpo, Korea to the Dalca field, offshore Angola.