Chartering Trends & Technical Advantages of Different OSV

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Contents - Overview

Offshore Logistics - Overview

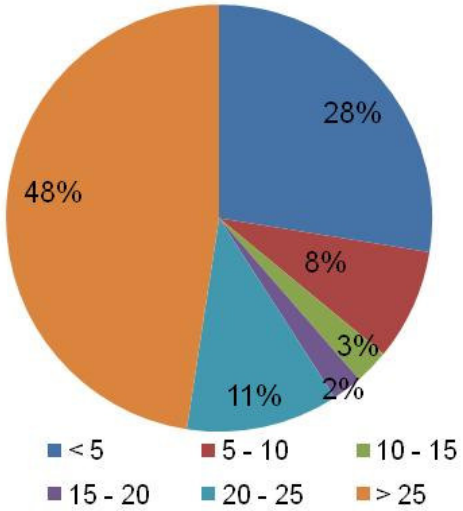
Type	Age (Years) < 5	5- 10	10 - 15	15 - 20	20 - 25	25 to 30	> 30	Total
AHTS	483	148	46	40	202	384	450	1753
OSV	105	109	68	32	81	335	363	1093
PSV	292	142	51	16	10	41	37	589
AHT	98	54	47	14	26	52	216	507
MSV	55	32	10	7	11	11	20	146
Major Category	**1,033**	**485**	**222**	**109**	**330**	**823**	**1,086**	**4,088**
Others	341	248	160	182	256	463	619	2269
Total	**1,374**	**733**	**382**	**291**	**586**	**1,286**	**1,705**	**6,357**

- **More than 60% fleet is dominated by AHTS, OSV, PSV, AHT**
- **MSV – Demand is increasing for specific projects**
- **Others constitute vessels such as construction barges, pipe laying barges, crew boats, Accommodation barges, etc**

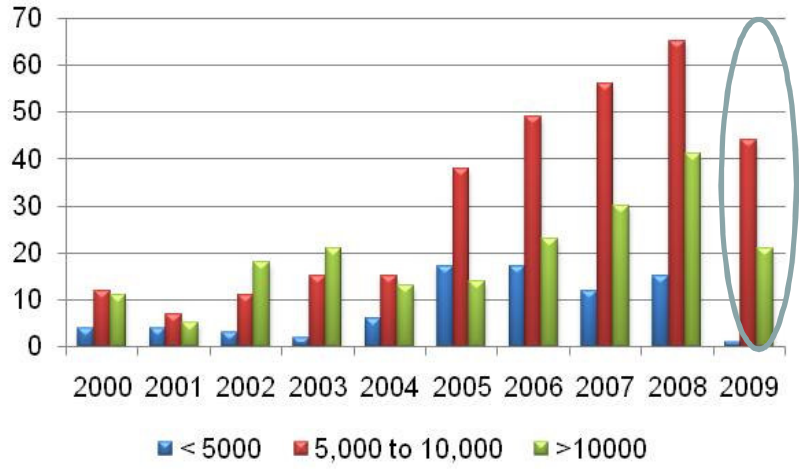
Data Sources: Clarksons

AHTSV – Trends, Growth & Future

Age Profile of 1750 AHTS - Global

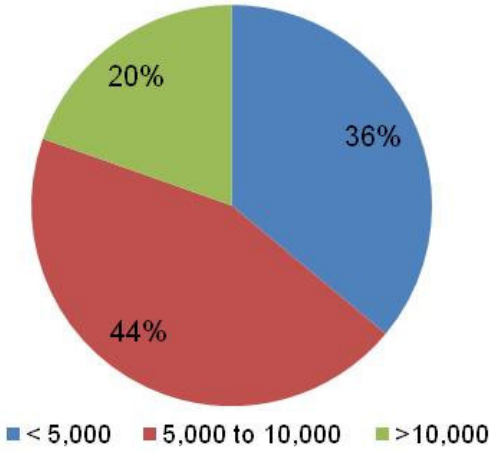


Fleet Growth of AHTS by Engine Power



June, 09

Orderbook 400+, Delivery before 2012



- Close to 50% above 20 years
  - Predominantly less than 5,000 HP
- Close to 600 AHTS added in last 10 years
  - More than 50% between 5,000 HP to 10,000 HP
  - 33% above 10,000 HP
- 64% scheduled delivery, above 5,000 HP

Chartering - shift towards higher capacity vessels. Why?

Data Sources: Clarksons

Shift to Higher Capacity Assets

1. Exploration is Moving to Deeper waters
2. High Engine Power AHTS in current scenario is required
    - To handle Heavier Anchors
    - Require more power to two rigs
    - Requires higher speed
3. Current generation AHTS also requires
    - High Carrying Capacity (2000 DWT to 4000 DWT)
    - Multiple functions – Fire fighting,

MOST Important – Charterers Prefer it, Demand it.

Why SO?

Economics works in favour of High powered AHTS

Chartering Oil & Gas Companies perspective – A Case Study

Two Smaller AHTS

One Large AHTS

For Same Task (Jackup Rig Towing)

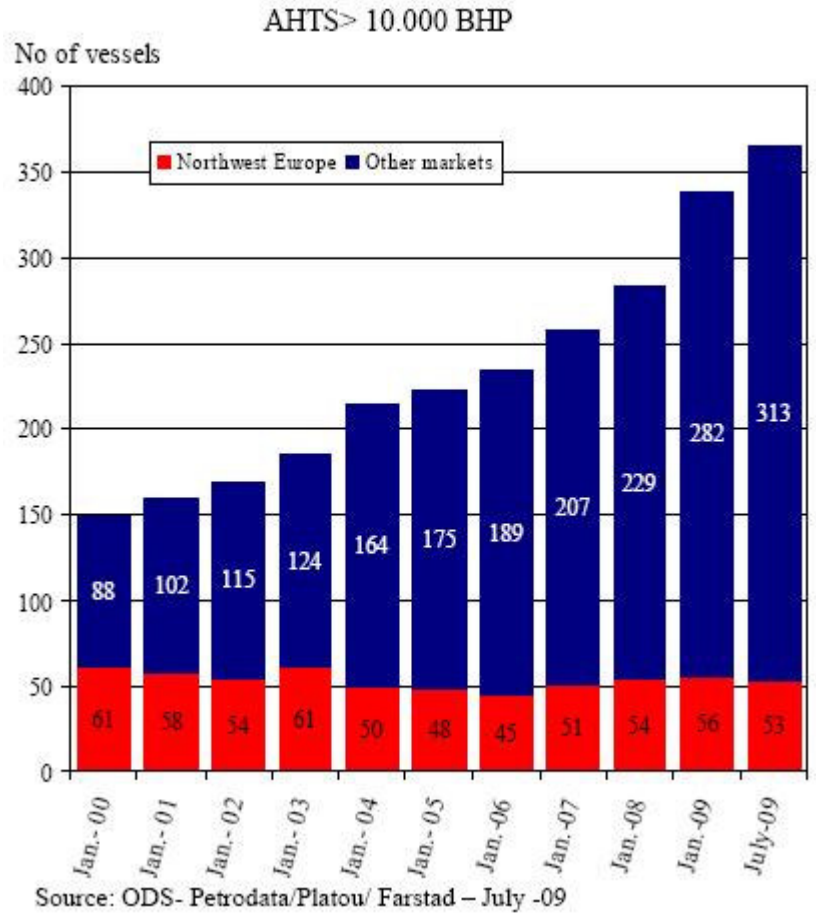
Net Cost to Charter one large AHTSV is lower than two smaller AHTSV

Chartering - Oil & Gas Companies perspective – A Case Study

(For Rig Towing)

- **Multiple vessels of smaller capacity requires more power**
- **Higher Power require higher fuel consumption by Engines**
- **Auxiliaries – Diesel Consumption high**
- **Multiple Vessels have equipments & machinery of their own**
- **Crew Expense - Double**
- **Net GRT of multiple vessel is higher compared to Single Vessel, more outflow as port dues, taxes, etc**

AHTS – Chartering Trends Across Geography

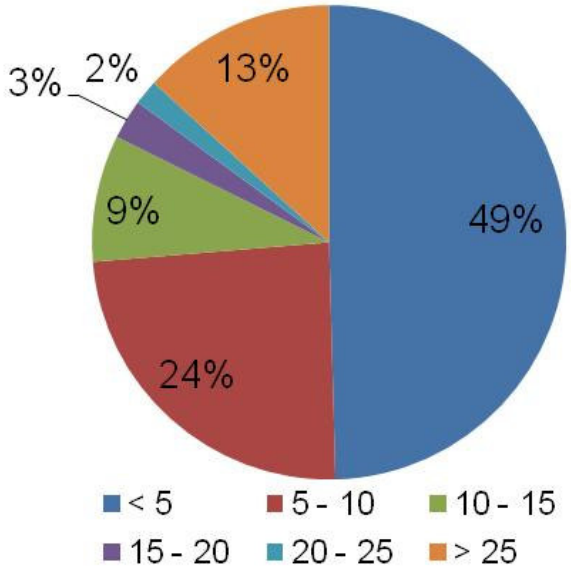


Source: ODS- Petrodata/Platou/ Farstad – July -09

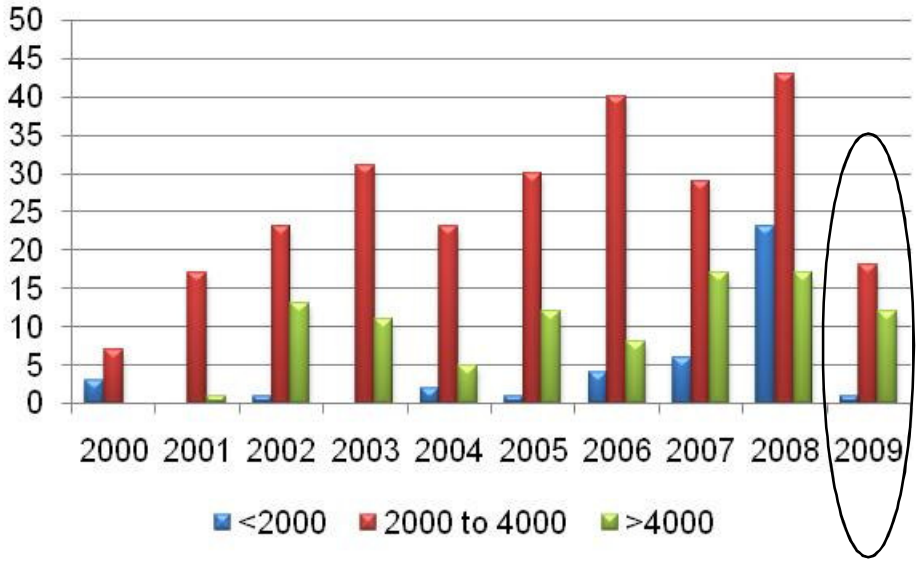
- High Power AHTS were mostly used in North Sea
- Growing acceptance across geography due to increase in deepwater activity
- Major Deployment
  - Gulf of Mexico
  - Indian Ocean
  - Pacific Ocean
  - Brazil
- High power AHTS trend likely to remain intact
- In addition to High engine power, they have large deck space, Dynamic Positioning, Firefighting, etc

PSV – Trends & Growth

AGE profile of PSV - Global



Fleet Growth of PSV by Carry Capacity



June, 2009

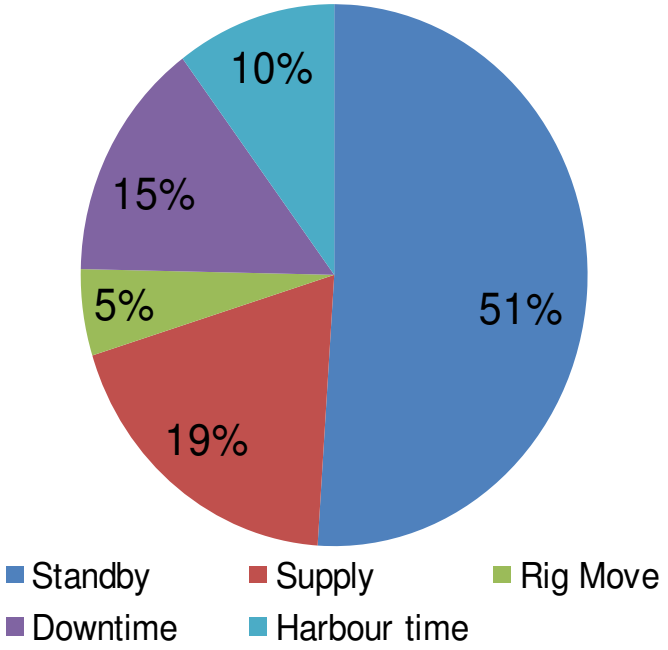
- **PSV has become predominant since 2000**
- **Total Fleet about 600**
- **Three Fourth fleet less than 10 yrs**
- **Used to Support Deepwater Drilling**
- **Supports Production Platforms**
- **More than 60% of fleet between 2,000 DWT to 4,000**

Demand for PSV increasing.
Why Should the need for PSV be there at all?

Data Sources: Clarksons

Case Study India – Need for PSV

AHTS in Mumbai offshore in late 90's



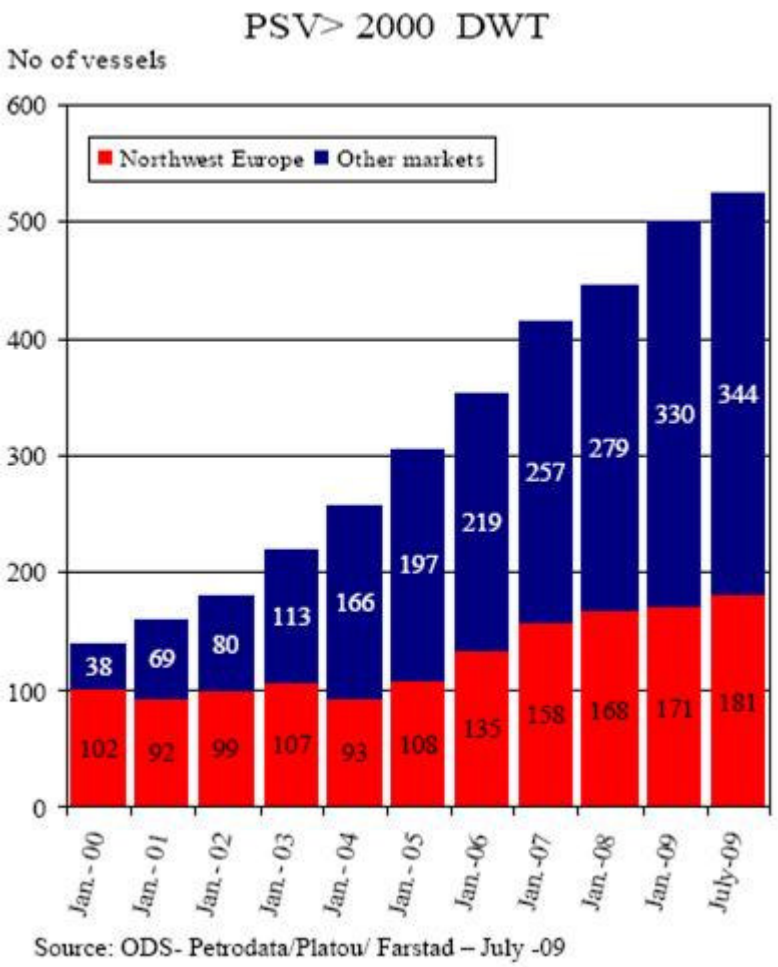
Source: CAG

Average of Deployment Statistics for AHTS in Mumbai Offshore

- 51% was standby time
- 34% time deployment was specific to the purpose an AHTS is designed for
  - Rig Move
  - Supply
  - Harbour Time – Cargo Loading & Discharge

PSV – Trends & Growth

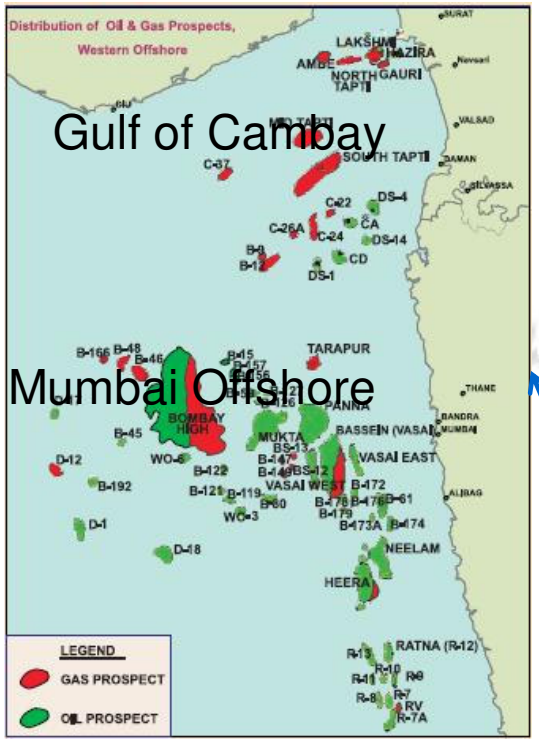
Fleet Growth o PSV by Carry Capacity



Source: ODS- Petrodata/Platou/ Farstad – July -09

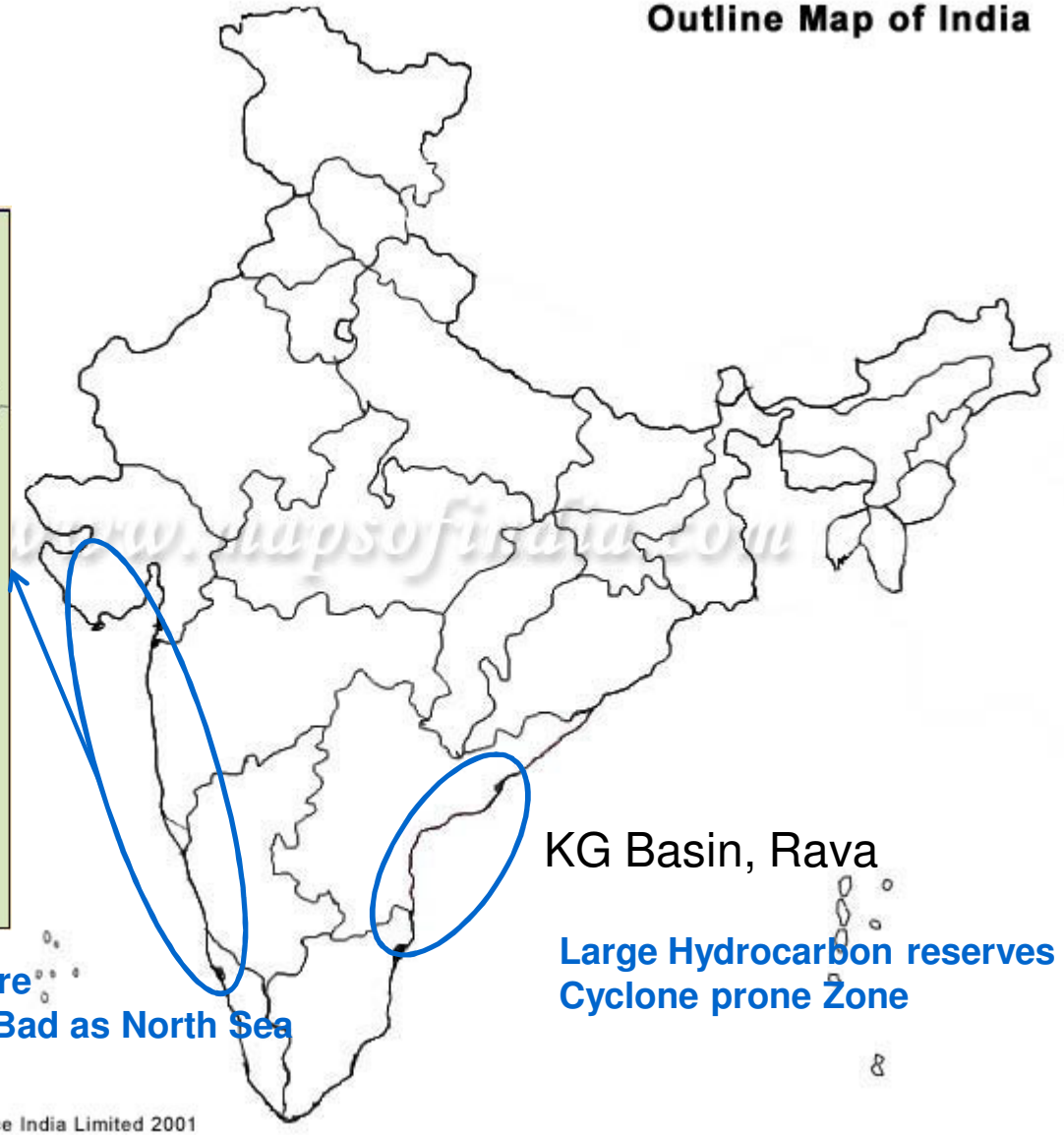
- Large DWT were mostly used in North Sea
- Growing acceptance across geography due to increase in deepwater activity
- Major Deployment
  - Gulf of Mexico
  - Indian Ocean
  - Pacific Ocean
  - Brazil
- These vessels have large deck area, undertake pressure tanks for storage for Cement, Mud, etc

Vessels Requirement - India



Gulf of Cambay

Mumbai Offshore



KG Basin, Rava

Mumbai Offshore
Monsoon – As Bad as North Sea

Large Hydrocarbon reserves
Cyclone prone Zone

Offshore Logistics – What Next????

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How is Demand Supply Outlook going to be for these vessels? Do We really need more than 6,000 Offshore vessels to keep 85 mn barrels a day oil flowing & enough to maintain future flow.

Data Sources: Clarksons

Multipurpose Vessels – MSV, Anchor Handling,

MSV MOST expensing of the offshore Supply lot

- Used During Field Development and skills where multiple tasks are required

Multi-purpose support vessels are designed to operate in a more specific role whether

- pipe-laying
- Diving
- well intervention
- ROV
- Towage
- Underwater Construction
- Anchor Handling, Towing
- Supply
- Fire fighting


Malaviya Thirty Six, Great Offshore

Capital Investment for acquisition could vary between US$ 60 mn to US$ 100
Charter Rates – vary between US$ 65,000 to US$80,000 a day

Large E&P Companies like ONGC, charters them for long term. Readily gets short term employment with high utilization rates

Anchor Handling Towage & Supply - AHTS

AHTS fall next to MSV in supply logistics and other multi-utility capabilities

Capital investment could vary between US$ 20 mn to US$40 mn

AHTSV – Fall next to MSV, in utility, capital investment and Charter rates

- **Anchor Handling**
- **Towage**
- **Supply**
- **Fire fighting**

They are in great Demand

Anchor Handling Tug (AHT)

- Has very high horsepower
- Can be used only for Anchor Handling & Towing
- In demand where, spot chartering is easier
- India has a few old ones
- Nobody builds them in India
- Future of these vessels are bleak in India

Thank you for your Attention