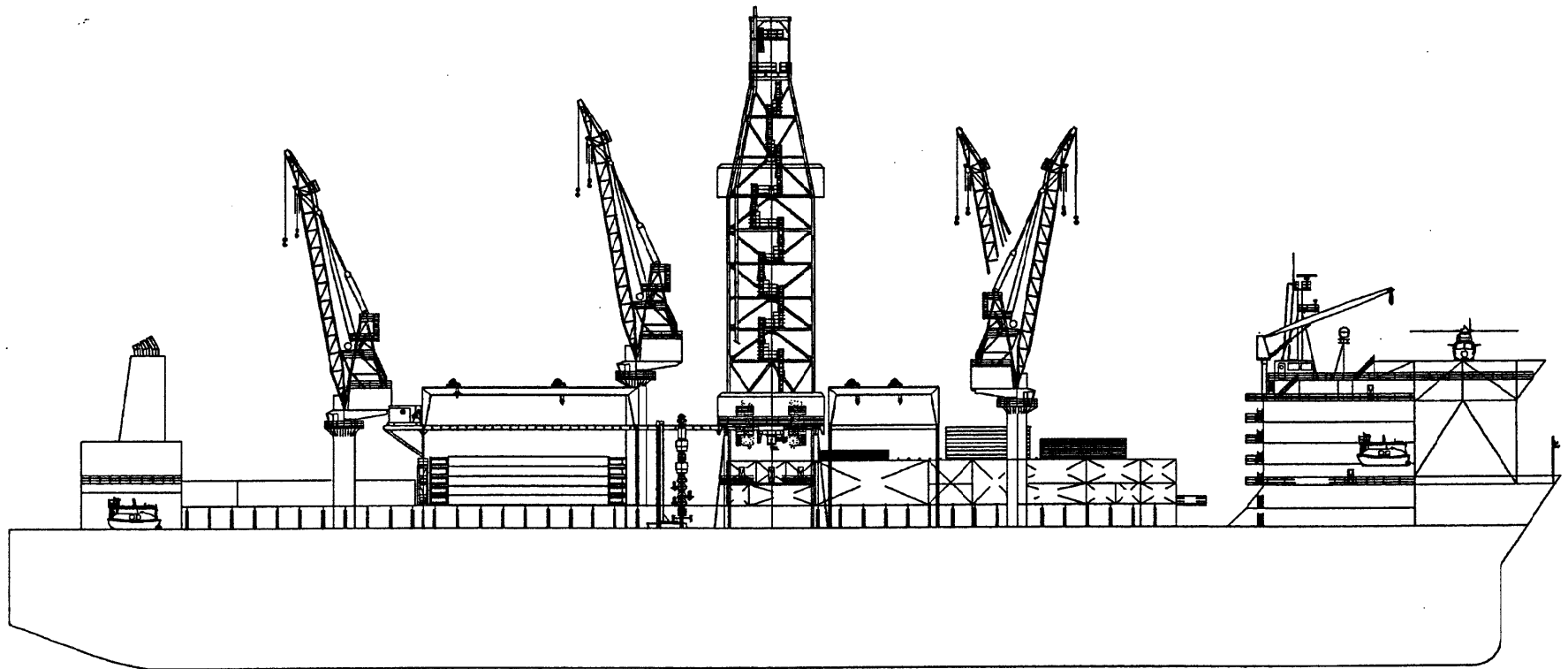




Conoco/Reading & Bates Drill Ship





Main Particulars

Length overall 221.50 m

Breadth mld 42.00 m

Draft (transit) 13.00 m
(operating) 18.00 m

Displacement, molded scantling 103,000 mt



Main Power/Propulsion System

Powered by: Wartsila

3 - 18V32 and 3 - 12V32 engines

Total generator capacity of 35,100 kw. (46,800 hp)

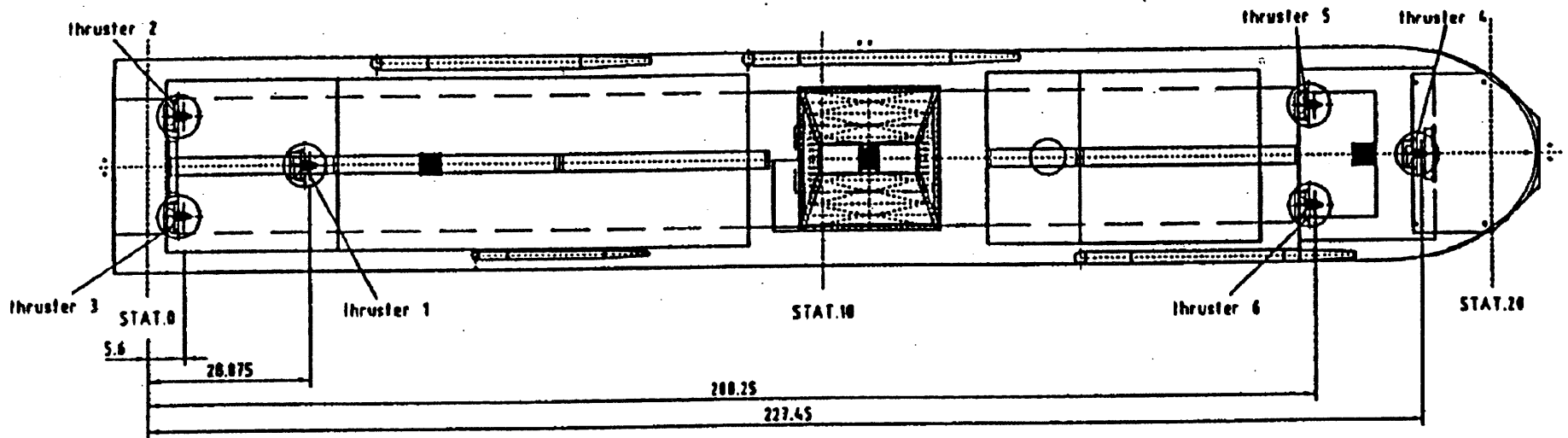
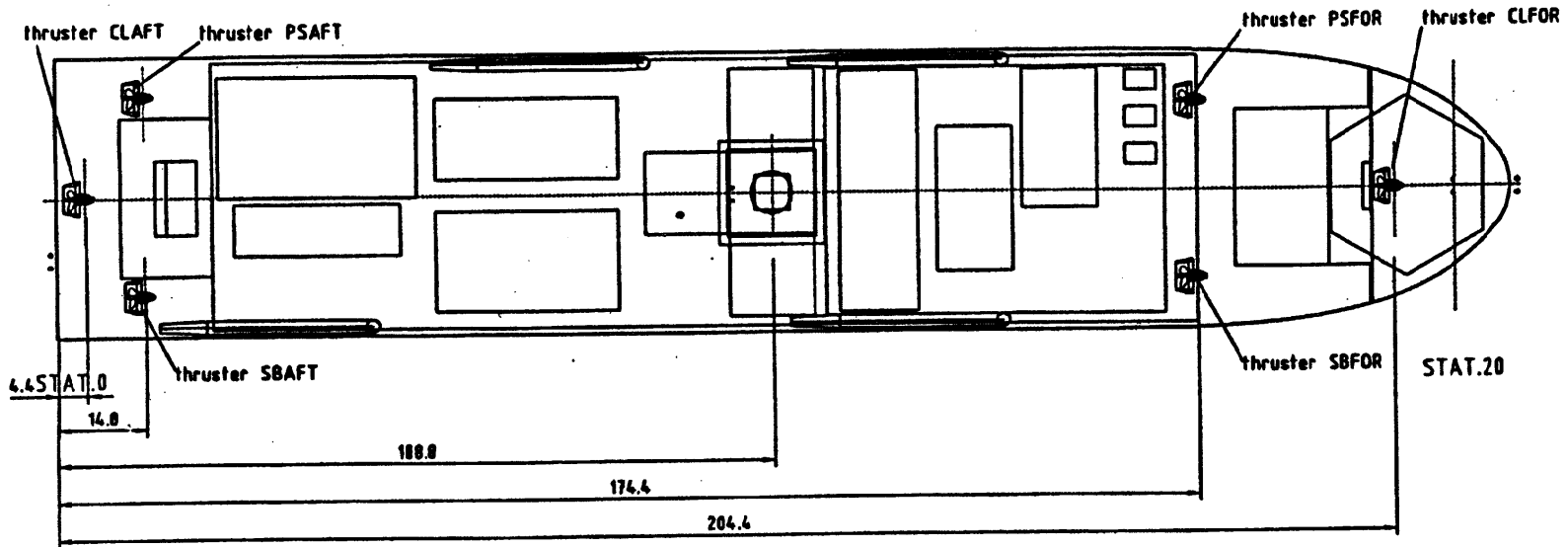
3 - Bow, azimuthing thrusters - 4,000 kw each.

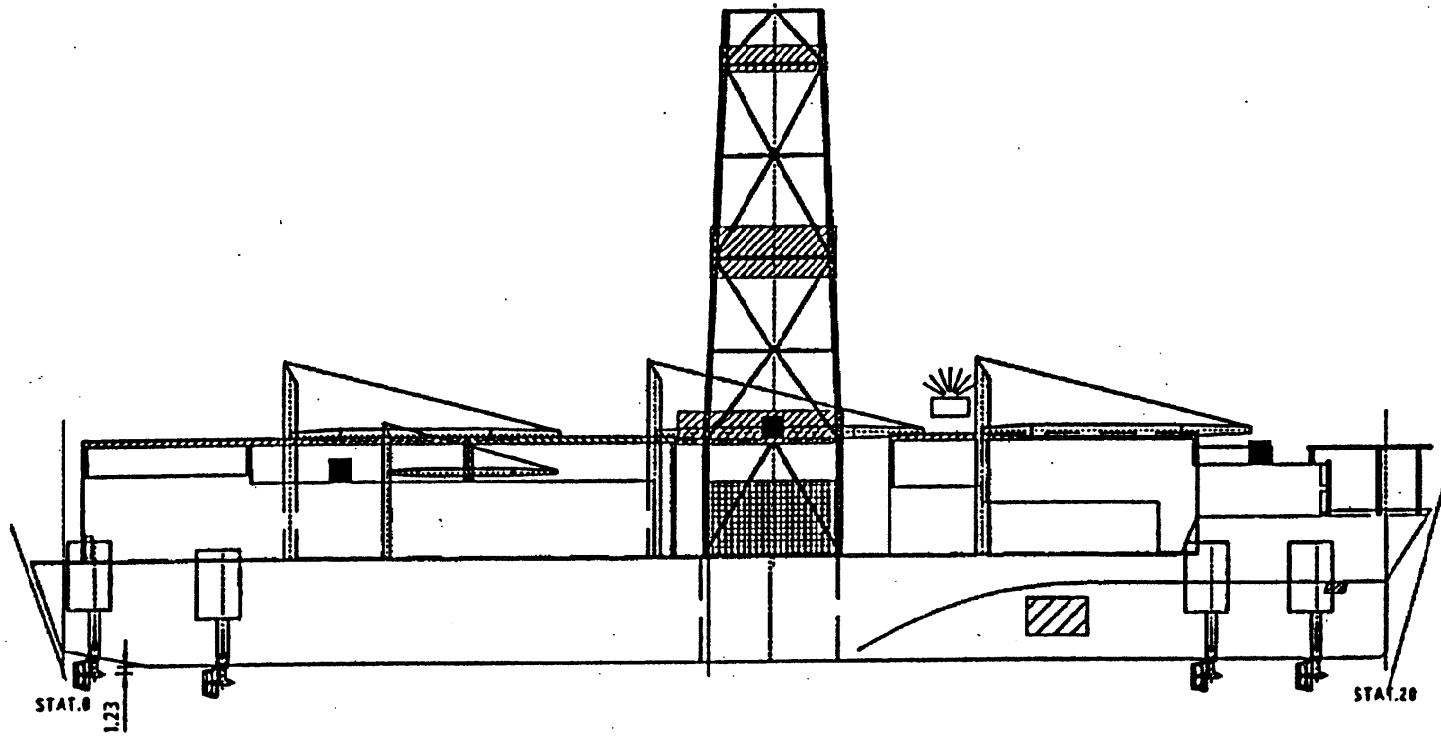
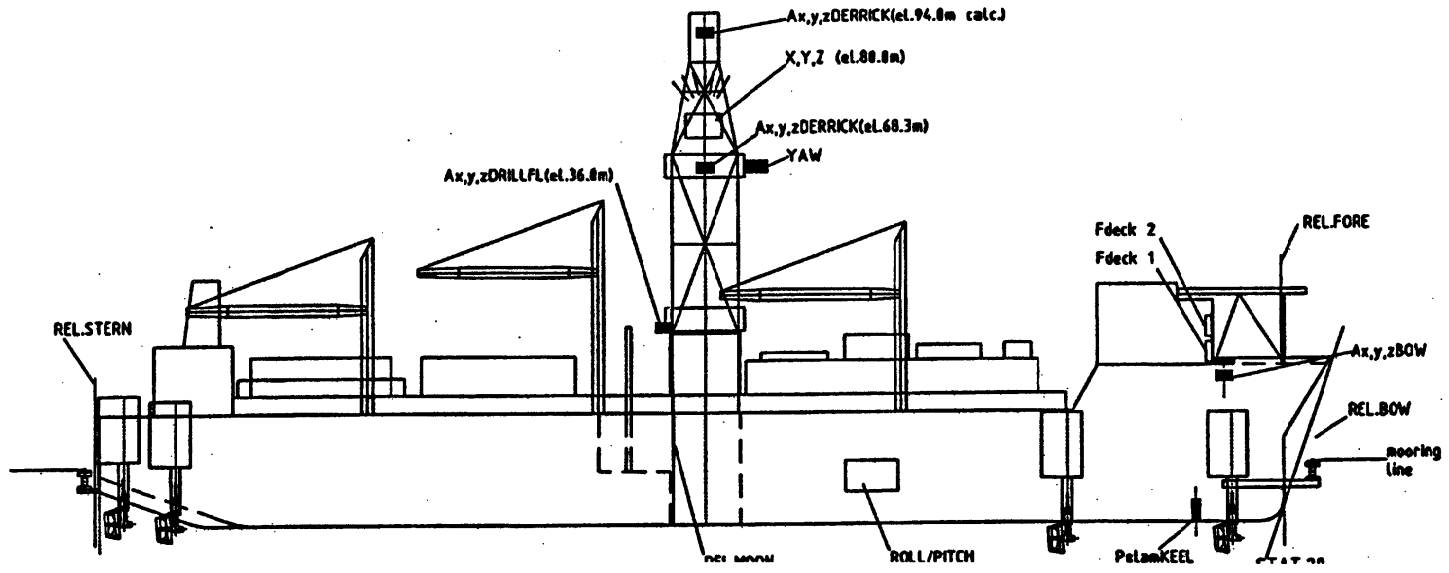
3 - Stern, azimuthing thrusters - 4,000 kw each.

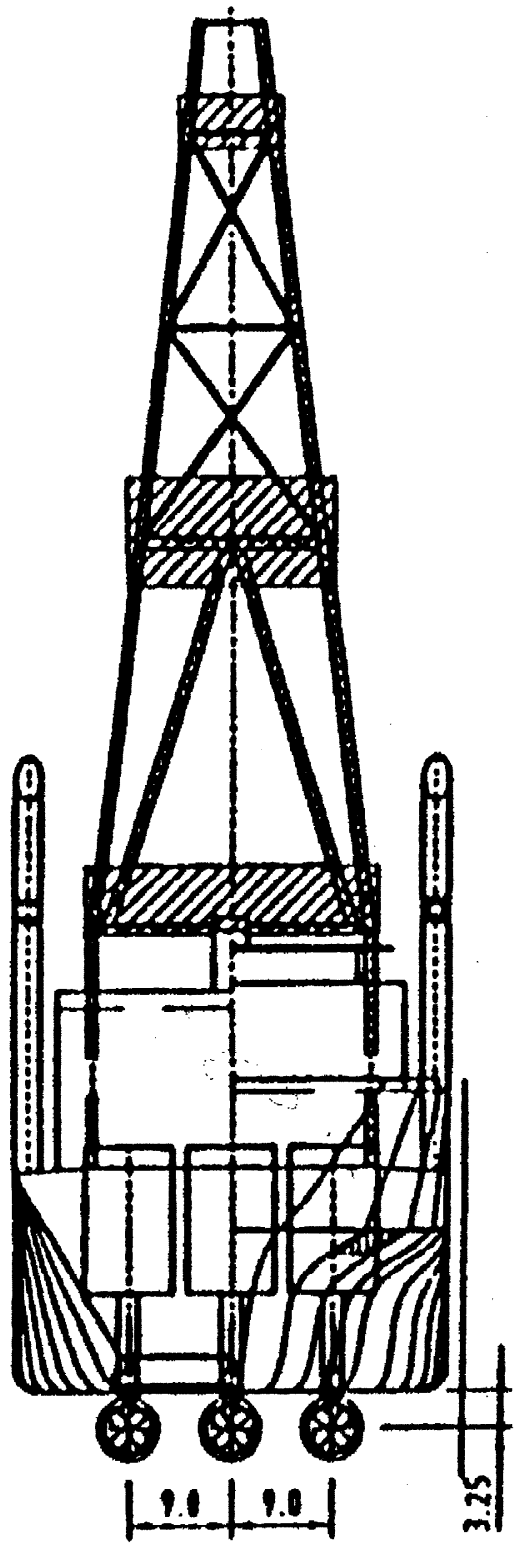
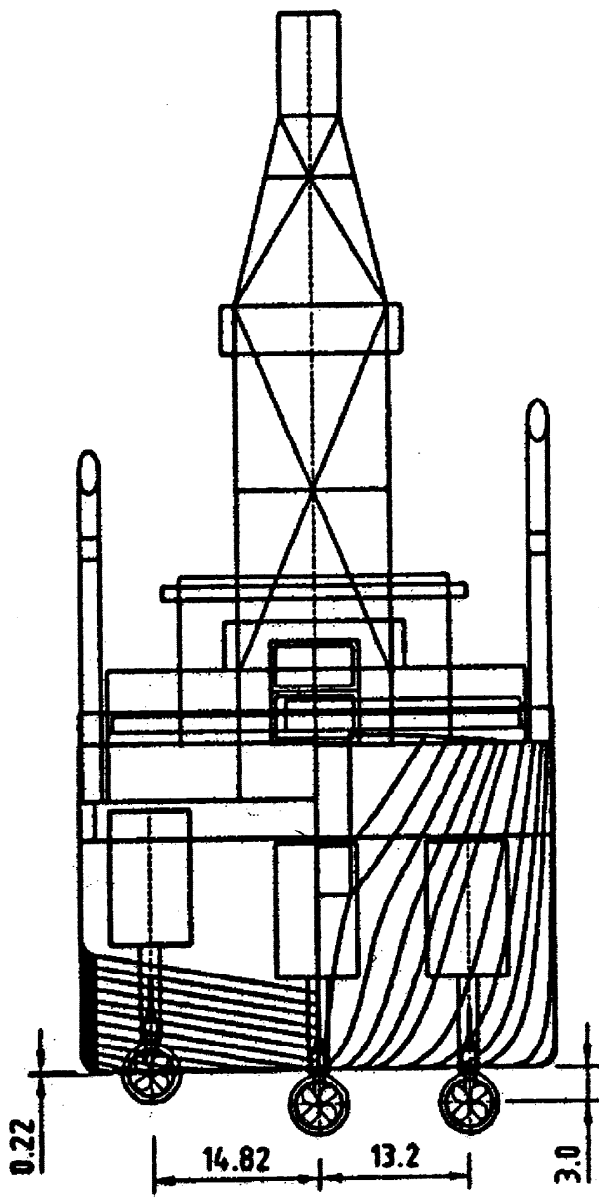


Tank Capacity

Crude Oil tanks	15,500 m ³	(97,400 bbl)
Water ballast tanks	78,000 m ³	(490,560 bbl)
Fuel (diesel/HFO)	4,500 m ³	(28,300 bbl)
Diesel oil tank	750 m ³	(4,710 bbl)
Drill water tank	2,800 m ³	(17,610 bbl)
Potable water tank	1,000 m ³	(6,290 bbl)









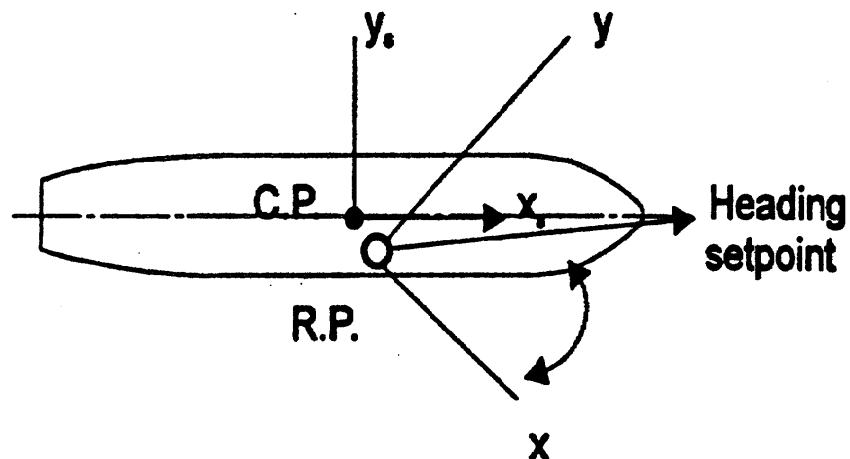
DP Motion and Seakeeping

● DP Concepts and Methods

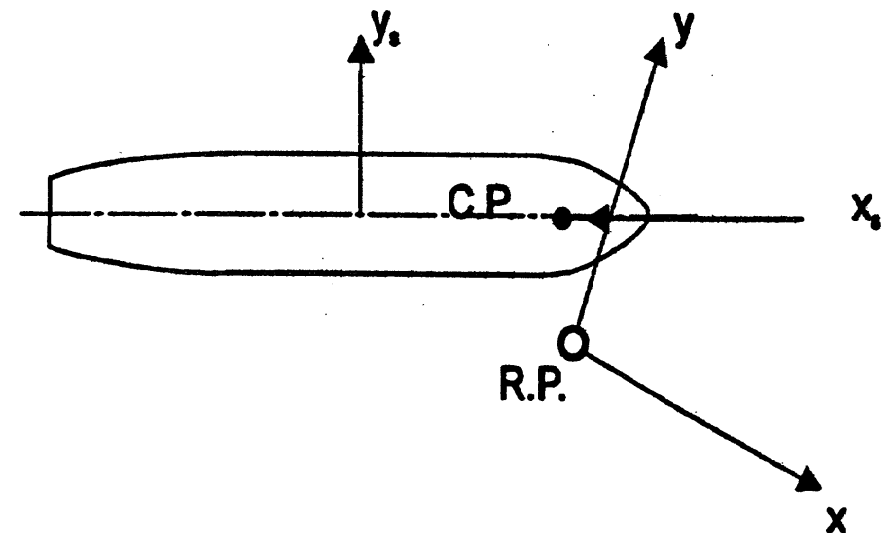
■ 3-Axis Control

2-Axis Control

3-axis (conventional DP)

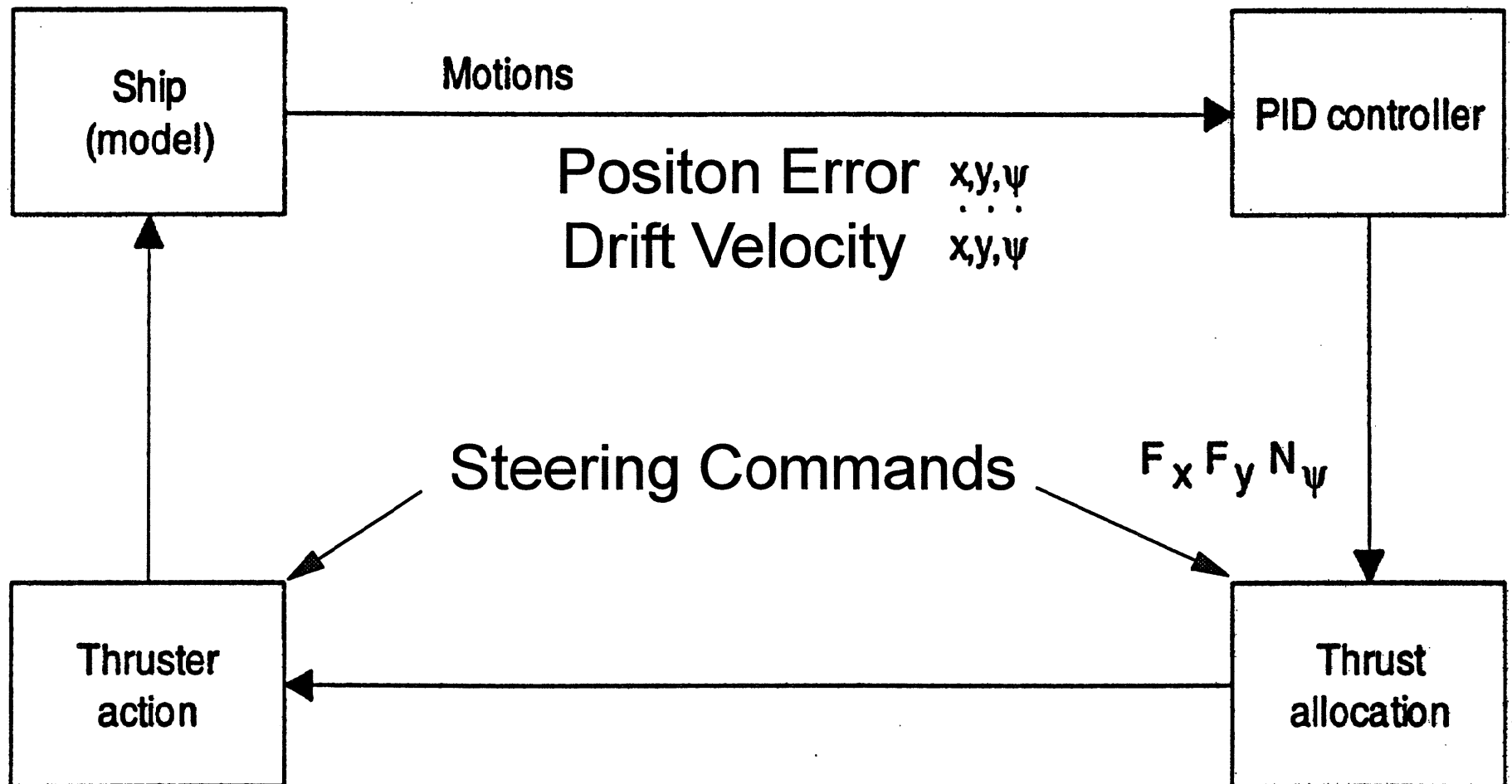


2-axis DP





DP Feedback Control Loop





PID Controller

- Restoring (P) - Position
- Mean Offset Compensation (I) - Integral
- Damping (D) - Derivative

$$F_x^{req} = -P_x \cdot \Delta \hat{x} - D_x \cdot \frac{d}{dt} (\hat{x}) - I_x \cdot \int \hat{x} \cdot dt$$

ditto for y and ψ



DP Motion and Seakeeping

- Wind Tunnel Tests
- DP Seakeeping Computer Simulations
- Calm Water Tests
- DP Seakeeping Tests



Calm Water Tests

- Propeller Open Water Characteristics
- Resistance
- Propulsion
- Hull Current Forces
- Thruster-Hull Interaction
- Thruster-Thruster Interaction



DP Motion and Seakeeping Tests

- Calibration Runs
- 10 Year Winter Storm
- Loop Current + Storm
- Sudden Squall
- Survival



Seillean DP Power (1992, all records)

