



Anchor Handling Tug Supply Vessels - Pacific Dilligence

Built to Clean Class Design, Dynamic Positioning (DP AUTR), SPS 2008, Ice C notation and equipped with a 500/400-tonne anchor handling, towing and secondary RRM Brattvaag winches, Anchor Recovery Frame (ARF), Safe Working Deck AH Cranes and enhanced station-keeping with an independent drop-down Azimuth Thruster, the D Class vessels are powered to safely support the latest generation semi-submersible rigs operating in harsh deep water environments. These vessels have sufficient cargo capacity and clear deck space for a wide range of offshore applications including but not limited to ROV mezzanine installations for ROV work, and oversize offshore equipment. The large chain carrying capabilities and winch configuration allows for a range of wire configurations to complement their ability to conduct complex composite mooring system installations that may be found on subsea mooring and pre-lay systems in the offshore sector.

The D Class vessels are:

- |                   |                 |
|-------------------|-----------------|
| Pacific Defiance  | Pacific Dolphin |
| Pacific Diligence | Pacific Dove    |
| Pacific Discovery | Pacific Dragon  |
| Pacific Dispatch  | Pacific Duchess |

Top Features	Key Specifications
<ol style="list-style-type: none"> <li>1. Ready for installation of ROV in dedicated hangar</li> <li>2. 300-tonne anchor recovery frame for torpedo anchors</li> <li>3. Low fuel consumption on field standby</li> <li>4. High speed &amp; capacity winch system</li> </ol>	<ul style="list-style-type: none"> <li>• Bollard Pull - 229 t</li> <li>• Free Deck Area - 648 m<sup>2</sup></li> <li>• Brake Horsepower - 17614 bHP</li> <li>• Winch Line Pull - 500 t</li> </ul>

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General Information	
Vessel Name	Pacific Diligence
Built	ST Marine, Singapore, April 2013
Flag	Singapore
Call Sign	9V9505
IMO No.	9631395
Classification	
Class Notation	DNV-GL +1A Fire fighter(I) Offshore service vessel(Anchor handling, Towing) Clean DYNPOS(AUTR) E0 Ice(C) SPS
Dimensions	
Length (LOA)	92.0 m
Beam	22.0 m
Summer Draft	7.5 m
Deadweight @ SummerDraft	4511.5 t
GT	6641
Deck Capacities	
Deck Load Capacity	1500 t
Deck Strength	10 t/m <sup>2</sup>
Free Deck Area	648 m <sup>2</sup>
Length x Width	36 x 18 m
Tank Capacities	
Base Oil	454 m <sup>3</sup>
Brine / Mud	860 m <sup>3</sup> (reflects 90% filling level of the tanks)
Drill / Ballast Water	2965 m <sup>3</sup>
Dry Bulk	236 m <sup>3</sup> (8334 cubic feet) (in 4 tanks)
Fresh Water	1355 m <sup>3</sup>
Fuel Dedicated	1172 m <sup>3</sup>

Fuel Total	1940 m <sup>3</sup> (including combination BO, Mud tanks)
Tank Capacities Details	Refer to Tank Capacities Table
Propulsion / Bollard Pull	
Main Engines	4 x MAN 9L-27/38 each 3285 kW = 13140 kW (17614 bHP)  2 x MAN CPP propellers in KORT nozzles, with Hi-lift flap rudders
Thrusters	2 x bow tunnel 883 kW / 1184 bHP 2 x stern tunnel 883 kW / 1184 bHP 1 x azimuth 883 kW / 1184 bHP
Bollard Pull	229 t at 100% MCR
Deck Equipment	
AH / Towing Winch	2 x 400 t RRM Brattvaag waterfall type - 20 m/min 1st layer Wire capacity of: 1 x 3200 m 76 mm dia 1 x 4100 m 76 mm dia
Special Handling Winch	1 x 500 t RRM Brattvaag waterfall type - 15 m/min 1st layer Capacity of: 1 x 13600 m 76 mm dia wire or 1 x 1900 m 203 mm (8") dia rope
Secondary Winch	2 x 170 t RRM Brattvaag - 24 m/min 1st layer Rope capacity of: 2 x 2500 m 160 mm (6") dia rope or 2 x 1600 m 203 mm (8") dia rope
Chain Lockers	4 x 156 m <sup>3</sup> Chain capacity of: 4 x 2000 m 76 mm chain or 4 x 1600 m 84 mm chain
Anchor Recovery Frame	1 x RRM 200 t Max Wire Tension

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Rev 5.0 10/06/2020

Towing Pins	4 x RRM 400 t MWL
Shark Jaws	2 x RRM 800 t SWL
Centering Device	2 x RRM 45 t SWL
Stop Pins	2 x Karmoy 100 t SWL
Stern Roller	2 x RRM 3.0 x 4.5 m @ 750 t MWL @ 90 deg wire angle
Capstans	2 x RRM 15 t
Tugger Winches	2 x RRM 24 t fwd main deck + 1 x 17 t fwd main deck center
Tugger Winches FWD	Capacity of 600 m of 26 mm wire each for the 24 t; Locally, remote, portable-wireless control. Capacity of 200 m of 25 mm wire for the 17 t; Locally, remote, portable-wireless control.
AH Crane	2 x RRM 5 t @ 10 m with tool for AH operations
Provision Crane	1 x knuckle type, capacity 5 t @ 15 m radius. Winch hook travel of up to 1000 m
Chain Gypsies	2 x 76 mm + 2 x 84 mm
<b>Performance &amp; Economy</b>	
Economical Speed	24 m <sup>3</sup> /day @ 10 kts 32 m <sup>3</sup> /day @ 13 kts
DP<20%	13.9 m <sup>3</sup> /day on 2 Mes
DP>35%	27.5 m <sup>3</sup> /day on 4 Mes
Standby in Field	4.6-6.9 m <sup>3</sup> /day @ 1-4 kts
Standby in Port	1.8 m <sup>3</sup> /day
Note	Performance & Economy figures are given at mean vessel draft of 6.5 m (2800 t deadweight) & Beaufort Scale 2.
<b>Dynamic Positioning System</b>	
Type	GE C-Series DPS-21 Duplex DP
Reference Systems	2 x Sonardyne HPR prepared 2 x Veripos DGPS 1 x RadaScan Guidance
Motion Reference Units	3 x Gyro Tokimec TG8000 3 x Wind Sensor Gill Wind Observer Ultrasonic 3 x VRU, 2 x TTS DMS-10 / 1 x SMC IMU 107
<b>Rescue Boat</b>	
1. 1 x Maritime Partner MP660 Springer, 10 person, SOLAS approved FRB with inboard diesel waterjet.	
<b>Accommodation</b>	
Person Capacity	Total 37 29 in 1man cabin & 8 in 2man cabins

**Tank Capacities Table**

D Class Tank Capacities @ 100%								
Tank	Volume	WB/DW	FW	FO	Brine	Mud	Base Oil	Glycol
1 WB/DW	285.228	285.228						
2 WB/DW	291.642	291.642						
3 WB/DW	291.819	291.819						
4 FO	206.075			206.075				
5 FO	206.075			206.075				
8 FW	169.905		169.905					
9 FW	104.412		104.412					
14 FW	196.033		196.033					
15 FW	203.793		203.793					
17 WB/DW	154.786	154.786						
18 WB/DW	154.965	154.965						
20 WB/DW	210.968	210.968						
21 WB/DW	210.968	210.968						
22 WB/DW	62.765	62.765						
23 FW	183.262		183.262					
24 FW	183.262		183.262					
29 FW	59.175		59.175					
30 FW	59.175		59.175					
33 FO	133.275			133.275				
34 FO	133.275			133.275				
35 WB/DW	96.707	96.707						
40 WB/DW	82.451	82.451						
41 WB/DW	82.451	82.451						
57 FO Service	31.752			31.752				
58 FO Service	31.752			31.752				
59 FO Settling	26.074			26.074				
60 FO Settling	26.074			26.074				
61 FO/BO	112.467			112.467			112.467	
62 FO/BO	112.467			112.467			112.467	
63 FO/BO	114.921			114.921			114.921	
64 FO/BO	114.921			114.921			114.921	
66 MUD/BRINE/GLY	83.547				75.192	75.192		75.192
67 MUD/BRINE/GLY	83.547				75.192	75.192		75.192
68 MUD/BRINE/GLY	82.595				74.336	74.336		74.336
69 MUD/BRINE/GLY	82.595				74.336	74.336		74.336
72 RCL/WB/DW	156.33	156.33						
73 RCL/WB/DW	156.33	156.33						
74 MU/BR/GLY/RCL	156.33				140.697	140.697		140.697
75 MU/BR/GLY/RCL	156.33				140.697	140.697		140.697
76 FO/MU/BR/GLY	156.33			156.33	140.697	140.697		140.697
77 FO/MU/BR/GLY	156.33			156.33	140.697	140.697		140.697
81 WB/DW	96.666	96.666						
82 WB/DW	96.666	96.666						
86 FO	98.698			98.698				
87 FO	114.762			114.762				
104 WB/DW	96.707	96.707						
155 FW	98.098		98.098					
156 FW	98.098		98.098					
157 WB/DW	149.743	149.743						
158 WB/DW	149.743	149.743						
159 FO	82.114			82.114				
169 FO	82.114			82.114				
161 WB/DW	69.121	69.121						
162 WB/DW	69.121	69.121						
Dedicated Tanks:	@ 100%	2965.177	1355.213	1172.04				
With Multiuse Tanks:	@ 100%			1939.476			454.8	
With Multiuse Tanks:	@ 90%				861.844	861.844		861.844
		WB/DW	FW	FO	Brine	Mud	BO	Glycol
Bulk Capacity of 235.9 m <sup>3</sup> in four dedicated tanks								
NB: RCLs 72, 73, 74 & 75 cannot be used for chain & product at the same time								
NB: Filling in the NLS Tanks (TK. 66-69 & TK. 74-77) is to be limited to not exceeding 90% filling level, for compliance with 1.1.4 of the IMO RES. A 673(16) as accepted by Singapore MPA for the limited aggregate quantity not greater than 890 m <sup>3</sup> . Volumes in these columns reflects 90% filling level of the tanks.								

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