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# Deepwater Horizon



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Coordinates: 28.736667°N 88.386944°W﻿ / ﻿28.736667°N 88.386944°W﻿ / ﻿28.736667; -88.386944

*This article is about the drilling rig. For the explosion, see [Deepwater Horizon explosion](#). For the oil spill, see [Deepwater Horizon oil spill](#). For the 2016 film, see [Deepwater Horizon \(film\)](#). For other related articles, see [Deepwater Horizon \(disambiguation\)](#).*

**Deepwater Horizon** was an ultra-deepwater, dynamically positioned, semi-submersible offshore drilling rig<sup>[8]</sup> owned by Transocean. Built in 2001 in South Korea by Hyundai Heavy Industries,<sup>[9]</sup> the rig was commissioned by R&B Falcon (a later asset of Transocean),<sup>[10]</sup> registered in Majuro, and leased to BP from 2001 until September 2013.<sup>[11]</sup> In September 2009, the rig drilled the deepest oil well in history at a vertical depth of 35,050 ft (10,683 m) and measured depth of 35,055 ft (10,685 m)<sup>[12]</sup> in the Tiber Oil Field at Keathley Canyon block 102, approximately 250 miles (400 km) southeast of Houston, in 4,132 feet (1,259 m) of water.<sup>[13]</sup>

On 20 April 2010, while drilling at the Macondo Prospect, an uncontrollable blowout caused an explosion on the rig that killed 11 crewmen and ignited a fireball visible from 40 miles (64 km) away.<sup>[14]</sup> The fire was inextinguishable and, two days later, on 22 April, the *Horizon* sank, leaving the well gushing at the seabed and causing the largest oil spill in U.S. waters.<sup>[15]</sup>

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## Design

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The *Deepwater Nautilus*, sister rig to the *Deepwater Horizon* being transported aboard a heavy-lift ship

*Deepwater Horizon* was a fifth-generation, RBS-8D design (i.e. model type), deepwater, dynamically positioned, column-stabilized,<sup>[3]</sup> semi-submersible mobile offshore drilling unit, designed to drill subsea wells for oil exploration and production using an 18.75 in (476 mm), 15,000 psi (100,000 kPa) blowout preventer, and a 21 in (530 mm) outside diameter marine riser.<sup>[6]</sup>

*Deepwater Horizon* was the second semi-submersible rig constructed of a class of two, although *Deepwater Nautilus*, its predecessor, is not dynamically positioned. The rig was 396 by 256 ft (121 by 78 m) and capable of operating in waters up to 8,000 feet (2,400 m) deep, to a maximum drill depth of 30,000 ft (9,100 m).<sup>[6]</sup> In 2010 it was one of approximately 200 deepwater offshore rigs capable of drilling in waters deeper than 5,000 ft (1,500 m).<sup>[16]</sup> Its American Bureau of Shipping (ABS) class notations were "A1, Column Stabilized Drilling Unit, AMS, ACCU, DPS-3".<sup>[3]</sup>

In 2002, the rig was upgraded with "e-drill", a drill monitoring system whereby technical personnel based in Houston, Texas, received real-time drilling data from the rig and transmitted maintenance and troubleshooting information.<sup>[17]</sup>

Advanced systems played a key role in the rig's operation, from pressure and drill monitoring technology, to automated shutoff systems<sup>[18]</sup> and modelling systems for cementing. The OptiCem cement modelling system, used by Halliburton in April 2010, played a crucial part in cement slurry mix and support decisions. These decisions became a focus for investigations into the explosion



*Deepwater Horizon* semi-submersible drilling rig.

## History

Name:	<i>Deepwater Horizon</i>
Owner:	Transocean's Triton Asset Leasing GmbH <sup>[1]</sup>
Operator:	Transocean
Port of registry:	<span><span><span></span></span><span> </span></span> Panama (23 February 2001 – 28 December 2004) <div><span><span><span></span></span><span> </span></span>Marshall Islands, Majuro (29 December 2004 – 20 April 2010)<sup>[2]</sup></div>
Route:	Gulf of Mexico
Ordered:	December 1998
Builder:	Hyundai Heavy Industries <sup>[3]</sup>
Cost:	US\$560 million <sup>[4][5]</sup>
Way number:	89
Laid down:	21 March 2000
Completed:	2001
Acquired:	23 February 2001
Maiden voyage:	Ulsan, South Korea – Freeport, Texas
Out of service:	20 April 2010
Identification:	ABS class no.: 0139290 Call sign: V7HC9 IMO number: 8764597 MMSI no.: 538002213
Fate:	Sank on 22 April 2010 after an explosion and fire
Notes:	Located in the Gulf of Mexico at a depth of 5,000 <span> </span> ft (1,500 <span> </span> m) at <span><span><span><span><span>28.736667°N</span> <span>88.386944°W</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span><span>28.736667°N 88.386944°W</span><span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>28.736667; -88.386944</span></span></span></span></span>

## General characteristics

Class and type:	ABS +A1 DPS-3 Column Stabilized MODU
Tonnage:	32,588 <span>GT</span> <div>9,776 <span>NT</span></div>
Displacement:	52,587 t (51,756 long tons; 57,967 short tons)
Length:	112 <span> </span> m (367 <span> </span> ft)
Beam:	78 <span> </span> m (256 <span> </span> ft)
Height:	97.4 <span> </span> m (320 <span> </span> ft)
Draught:	23 <span> </span> m (75 <span> </span> ft)
Depth:	41.5 <span> </span> m (136 <span> </span> ft)
Deck clearance:	34.010 <span> </span> m (111.58 <span> </span> ft)
Installed power:	7,000 <span> </span> kW 11,000 <span> </span> volts <div>6 × Wärtsilä 18V32 9775 hp diesel</div>





Deepwater Horizon in flames after the explosion

marine riser onto the rig, shooting 240 ft (73 m) into the air. This was soon followed by the eruption of a slushy combination of **drilling mud**, **methane gas**, and water. The gas component of the slushy material quickly transitioned into a fully gaseous state and then ignited into a series of explosions and then a firestorm. An attempt was made to activate the **blowout preventer**, but it



Location of the *Deepwater Horizon* on 20 April 2010

failed.<sup>[51]</sup> The final defense to prevent an oil spill, a device known as a **blind shear ram**, was activated but failed to plug the well.<sup>[52]</sup>

At the time of the explosion, there were 126 crew on board; seven were employees of BP, 79 of Transocean, there were also employees of various other companies involved in the operation of the rig, including **Anadarko**, **Halliburton** and **M-I SWACO**.<sup>[53]</sup> Eleven workers were presumed killed in the initial explosion. The rig was evacuated, with injured workers airlifted to medical facilities. After approximately 36 hours, *Deepwater Horizon* sank on 22 April 2010. The remains of the rig were located resting on the **seafloor** approximately 5,000 ft (1,500 m) deep at that location, and about 1,300 ft (400 m) (quarter of a mile) northwest of the well.<sup>[45][54][55]</sup>

The **resultant oil spill** continued until 15 July when it was closed by a cap.<sup>[56]</sup> **Relief wells** were used to permanently seal the well, which was declared "effectively dead" on 19 September 2010.<sup>[57]</sup>

## Aftermath [ edit ]

*Further information:* *Deepwater Horizon litigation*

Transocean received an early partial insurance settlement for total loss of the *Deepwater Horizon* of US \$401 million around 5 May 2010.<sup>[58]</sup> **Financial analysts** noted that the insurance recovery was likely to outweigh the value of the rig (although not necessarily its replacement value) and any liabilities – the latter estimated at up to US\$200 million.<sup>[59]</sup>

Litigation, ultimate roll call of damage, and the scope of final insurance recovery were all unknown as of June 2010, with analysts reporting that the aftermath was of unprecedented scale and complexity compared to previous disasters which themselves took many years to unfold and resolve.<sup>[60][61]</sup> A July 2010 analysis by the *Financial Times* on the aftermath cited legal sources as saying that "at some point the scale of **the litigation** becomes so large that it really is novel", that "the situation is likely to be complicated further because the variety of probable cases means it will be hard to aggregate them into so-called **class actions**" and that there was "no way to put this in historical context because we have never faced anything like this before".<sup>[62]</sup> As with the **Exxon Valdez disaster**, litigation was being discussed in terms of a 20-year timescale.<sup>[60]</sup>

In January 2013, Transocean agreed to pay US\$1.4 billion for violations of the US Clean Water Act. BP had earlier agreed to pay \$2.4 billion but faced additional penalties that could range from \$5 billion to \$20 billion.<sup>[63]</sup> In September 2014, Halliburton agreed to settle a large percentage of legal claims against them by paying \$1.1 billion into a trust by way of three installments over two years.<sup>[64]</sup> On 4 September 2014, U.S. District Judge **Carl Barbier** ruled BP was guilty of gross negligence and willful misconduct under the Clean Water Act (CWA). He described BP's actions as "reckless," while he said Transocean's and Halliburton's actions were "negligent." He apportioned 67% of the blame for the spill to BP, 30% to Transocean, and 3% to Halliburton. BP issued a statement strongly disagreeing with the finding, and saying the court's decision would be appealed.<sup>[65]</sup>

On 8 December 2014, The US Supreme Court rejected BP's legal challenge to a compensation deal over the 2010 Gulf of Mexico oil spill. The settlement agreement had no cap, but BP initially estimated that it would pay roughly \$7.8bn (£6.1bn) to compensate victims.<sup>[66]</sup>

## In popular culture [ edit ]

An **eponymously named film** which was released in the US on 30 September 2016 (directed by **Peter Berg** and starring **Mark Wahlberg**), showcased the events of the explosion.

## See also [ edit ]

- Ixtoc I oil spill
- Ocean Ranger*
- Piper Alpha*



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