

## Turbinia

*Turbinia* was the first steam turbine powered boat. Built as an experimental vessel in 1894, and easily the fastest ship in the world at that time, *Turbinia* was demonstrated dramatically at the Spithead Navy Review in 1897 and set the standard for the next generation of steamships, the majority of which were turbine powered. The vessel can still be seen at The Discovery Museum in Newcastle upon Tyne, England, while its original powerplant can be found at the London Science Museum.

### Development

Charles Algernon Parsons invented the steam turbine in 1884, and having foreseen its potential to power ships he set up the Parsons Marine Steam Turbine Company with five associates in 1893. To develop this he had the experimental vessel *Turbinia* built in a light design of steel by the firm of Brown and Hood, based at Wallsend on Tyne.

The Admiralty was kept informed of developments, and *Turbinia* was launched on 2 August 1894. Despite the success of the turbine engine, initial trials with one propeller were disappointing. After discovering the problem of cavitation and constructing the first cavitation tunnel, Parsons' research led to him fitting three axial-flow turbines to three shafts, each shaft in turn driving three propellers. In trials this achieved a top speed of over 34 knots (63 km/h), so that "the passengers aboard would be convinced beyond all doubt *Turbinia* was Charles Parsons' winning North Sea greyhound".

### Demonstration

Parsons' ship turned up unannounced at the Navy Review for Queen Victoria's Diamond Jubilee at Spithead, on 26 June 1897, in front of the Prince of Wales, Lords of the Admiralty and foreign dignitaries. As an audacious publicity stunt, the *Turbinia*, which was much faster than all other ships of the time, raced between the two lines of large ships and steamed up and down in front of the crowd and princes with impunity, while easily evading a Navy picket boat that tried to stop it, indeed, almost swamping it with its wake.

From this clear demonstration of its speed and power and after further high speed trials attended by the Admiralty, Parsons set up the *Turbinia Works* at Wallsend, which then constructed two turbine powered destroyers for the Navy, *HMS Viper* and *HMS Cobra* which were launched in 1899. Although both these vessels came to grief, the Admiralty was convinced. In 1900 the *Turbinia* steamed to Paris and was shown to French officials then displayed at the Paris Exhibition.

The first turbine powered merchant vessel, the Clyde steamer *TS King Edward*, followed in 1901. The Admiralty confirmed in 1905 that all future Royal Navy

vessels were to be turbine powered, and in 1906 the first turbine-powered battleship, the revolutionary *HMS Dreadnought*, was launched.



*Turbinia* was cut into two pieces when she was accidentally rammed by a ship being launched across-river from the south bank of the Tyne in 1927, but was restored in the 1960s, when she was put on display at Newcastle's Museum of Science and Engineering

Listed as part of the National Historic Fleet, Core Collection, in 2000, the vessel was the focal point of a year-long £10.7m redevelopment programme at Newcastle's Discovery Museum. The gallery around *Turbinia* was the first area to be refurbished, with the main part of the work involving raising the roof by one storey to create viewing galleries on three levels.



Photo: Mo Stephen

Seen just after leaving Eastham Lock.  
I hope the rainbow shows up in the final print(Ed.)