

= Meteor @-@ class aviso =

The Meteor class was a pair of two avisos built by the Imperial German Navy in the late @-@ 1880s ; the class comprised two ships , Meteor and Comet . They were an improvement over the preceding Wacht class , being slightly faster and armed with quick @-@ firing guns rather than the slower , old @-@ pattern guns used on the earlier ships . Meteor and Comet nevertheless proved to be disappointments , primarily a result of extreme vibration caused by their propulsion system , particularly at higher speeds . As a result , their service careers were limited . They served less than two years on active duty , from 1893 to 1895 . They returned to limited duty in 1904 as guard ships , but by 1911 they had been stricken from the naval register and used in subsidiary roles . Both were scrapped in 1919 ? 21 .

= = Design = =

The Imperial Navy began building small avisos in the 1880s to serve in the main fleet in German waters . These vessels were intended to support the battle line , and so unlike the contemporary German unprotected cruisers , their designs emphasized offensive capability and high speed rather than a long cruising radius . The design for Meteor and Comet was based on the earlier Wacht class ; they were slightly smaller vessels and displaced around 25 % less than the earlier vessels . The savings in weight were used for a more powerful propulsion system , a new gun armament of quick @-@ firing guns , and slightly thicker armor plating . The Meteor class was the last aviso design produced by the Imperial Navy ; by the 1890s , German naval designers had taken the best characteristics of the avisos and the contemporary unprotected cruisers and combined them in the Gazelle class of light cruisers , the first vessels of that type of warship .

= = = General characteristics = = =

Meteor and Comet were 79 @. @ 86 meters ( 262 @. @ 0 ft ) long at the waterline and 79 @. @ 86 m ( 262 @. @ 0 ft ) long overall . They had a beam of 9 @. @ 56 m ( 31 @. @ 4 ft ) and a maximum draft of 3 @. @ 68 m ( 12 @. @ 1 ft ) forward . Meteor displaced 961 metric tons ( 946 long tons ; 1 @, @ 059 short tons ) as designed and up to 1 @, @ 078 metric tons ( 1 @, @ 061 long tons ; 1 @, @ 188 short tons ) at full combat load , while Comet was slightly heavier , at 992 t ( 976 long tons ; 1 @, @ 093 short tons ) and 1 @, @ 117 t ( 1 @, @ 099 long tons ; 1 @, @ 231 short tons ) , respectively . Their hulls were constructed from transverse steel frames . Meteor was initially fitted with a single pole mainmast , while Comet had the pole mainmast along with a smaller mast further aft for wireless telegraphy . In 1901 ? 02 , Meteor was fitted with the second mast as well .

The Meteor @-@ class ships had a crew of 7 officers and 108 enlisted men . The ships carried several smaller boats , including one yawl , one dinghy , and one cutter . They were poor sea boats ; they were very unstable in anything but calm weather . They also vibrated excessively due to severe cavitation , particularly at high speeds . Both ships were , however , very maneuverable vessels . Their metacentric height was .41 m ( 1 ft 4 in ) .

= = = Machinery = = =

Their propulsion system consisted of two vertical 3 @-@ cylinder triple expansion engines that drove a pair of 2 @. @ 8 m ( 9 ft 2 in ) wide , three @-@ bladed screw propellers . Steam for the engines was provided by four coal @-@ fired locomotive boilers that were trunked into two funnels on the centerline . The ships were equipped with a pair of electric generators with a combined output of 20 to 24 kilowatts ( 27 to 32 hp ) at 67 volts . Steering was controlled by a single rudder .

The ships ' propulsion system varied slightly in performance . Meteor 's engines were rated at 4 @, @ 500 indicated horsepower ( 3 @, @ 400 kW ) for a top speed of 19 knots ( 35 km / h ; 22 mph ) , though she exceeded both figures on sea trials , reaching a speed of 20 knots ( 37 km / h ; 23 mph ) . Comet 's engines were rated for 5 @, @ 000 ihp ( 3 @, @ 700 kW ) and 19 @. @ 5 kn ( 36 @. @ 1

km / h ; 22 @. @ 4 mph ) , which she did not exceed on her trials . Both ships had a range of approximately 960 nautical miles ( 1 @, @ 780 km ; 1 @, @ 100 mi ) at 9 kn ( 17 km / h ; 10 mph ) .

= = = Armament and armor = = =

The ships were armed with four 8 @. @ 8 cm SK L / 30 guns placed in single pivot mounts , two side @- @ by @- @ side forward , and two side @- @ by @- @ side aft . The guns were supplied with between 462 and 680 rounds of ammunition , and they had a range of 6 @, @ 900 m ( 22 @, @ 600 ft ) . They also carried three 35 cm ( 14 in ) torpedo tubes , one mounted submerged in the bow and the other two in deck @- @ mounted launchers on the broadside . They were supplied with eight torpedoes . Both ships were protected with steel armor . They had a 15 mm ( 0 @. @ 59 in ) thick deck with 25 mm ( 0 @. @ 98 in ) thick sloped sides . The conning tower had 30 mm ( 1 @. @ 2 in ) thick plating on the sides , with a 15 mm thick roof .

= = Service history = =

Meteor was laid down at the Germaniawerft shipyard in Kiel in 1888 , and launched on 20 January 1890 . Fitting @- @ out work then commenced , and was completed by 19 May 1891 , when she was commissioned into the German fleet . Comet was built by the AG Vulcan shipyard in Stettin . She was laid down in 1890 and launched on 15 January 1892 . After fitting @- @ out was completed she was transferred to Kiel , where she was commissioned for sea trials . Comet was commissioned into the fleet on 29 April 1893 .

Neither ship remained on active service long , primarily due to their excessive vibration . Meteor was assigned as the dispatch vessel for the I Division of the Maneuver Squadron in 1893 , but was reduced to reserve status by 1895 . Comet served in the III Division for the annual maneuvers in August and September 1893 but she too was quickly placed in reserve . In 1904 , both ships were reactivated as guard ships , but this service did not last long either . By 1911 , both ships had again been withdrawn and stricken from the naval register ; Meteor became a barracks ship in Kiel while Comet was used as a mine hulk in Danzig . Meteor and Comet were sold for scrapping in 1919 and 1921 , respectively .