

REPORT ON MACHINERY.

No. 15599

Received at London Office

Date of writing Report Oct. 18-19-19 19 19 Port of New York N.Y.

No. in Survey held at Schenectady N.Y. Date, First Survey 23 July/18 Last Survey 28 Feb 19 19 19

Reg. Book. Single Screw Steamship "Duquesne" (Number of Vessels 1) Tons { Gross 6861 Net 4921

Master J. A. Weyland Built at Kearny, N.J. By whom built Federal S. B. Co. When built 1919

Engines made at Schenectady N.Y. By whom made General Electric Company when made 1918

Boilers made at Kearny, N.J. By whom made Federal S. B. Co. when made 1919

Registered Horse Power 619.2 NHP Owners U. S. Shipping Board Port belonging to Kearny N.J.

Shaft Horse Power at Full Power 2500 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

TURBINE ENGINES, &c.—Description of Engines Grand Turbine (Schenectady 12419) Year 1917 No. of Turbines One

Diameter of Rotor Shaft Journals, H.P. 8" L.P. 7" Diameter of Pinion Shaft 7"

Diameter of Journals GEAR 10" Distance between Centres of Bearings GEAR 27.5" Diameter of Pitch Circle GEAR 57.66"

Diameter of Wheel Shaft 14" Distance between Centres of Bearings L.S. PINION 52" Diameter of Pitch Circle of Wheel 4.3.10 75"

Width of Face 14.35" Diameter of Thrust Shaft under Collars 12 3/4" Diameter of Tunnel Shaft as per rule 12.45"

No. of Screw Shafts One Diameter of same as per rule 12.57" 13.98. Diameter of Propeller 17'0" Pitch of Propeller 15 1/2"

No. of Blades 4 State whether Moveable No Total Surface 17.1700 Diameter of Rotor Drum, H.P. ✓ L.P. ✓ Astern ✓

Thickness at Bottom of Groove, H.P. ✓ L.P. ✓ Astern ✓ Revs. per Minute at Full Power, Turbine 32 1/4 Propeller 90

ARTICULARS OF BLADING.

	ACTIVE	H. P.		L. P.		ACTIVE	ASTERN.
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	HEIGHT OF BLADES.	DIAMETER AT TIP.
1ST EXPANSION	75-1.25	2'-11 1/2"	2			51.25-1.5	3'-3"
2ND	4.25	3'-9"	1			3.375	3'-3"
3RD	1.25	3'-10 1/2"	1				
4TH	2.5	4'-0"	1				
5TH	6.0	4'-2"	1				
6TH							
7TH							
8TH							

No. and size of Feed pumps Two 10"x12"x24" Davidson type

No. and size of Bilge pumps Three 6"x8"x10" 12"x15"x12" 12"x10"x12"

No. and size of Bilge suction in Engine Room Three 3" Tunnel well, main

In Holds, &c. Barne 3" No. one 3" No. two 3" No. three 3" No. four 3"

No. of Bilge Injections One sizes 10" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine Room & size Yes 3 1/2"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Below

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers None How are they protected Yes

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

OILERS, &c.—(Letter for record S.) Manufacturers of Steel Carnegie & Union Steel Co.

Total Heating Surface of Boilers 8934 Is Forced Draft fitted Yes No. and Description of Boilers 2, 4.6 Scotch Marine. 3SB

Working Pressure 210 lbs Tested by hydraulic pressure to 315 lbs Date of test 27-1-19 No. of Certificate 125-129-130

Can each boiler be worked separately Yes Area of fire grate in each boiler 41.42 No. and Description of Safety Valves to ✓

Each boiler Two 3 1/2" brace Area of each valve 9.62 Pressure to which they are adjusted 210 lbs per sq in Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 55.6" Length 11.6" Material of shell plates Steel

Thickness 1 1/4" Range of tensile strength 60-71650 lbs Are the shell plates welded or flanged ✓ Descrip. of riveting: cir. seams D. R. Lap

Long. seams L. R. D. B. S. Diameter of rivet holes in long. seams 15/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 23 1/2"

Per centages of strength of longitudinal joint plates 82.6 Working pressure of shell by rules 227 1/2 lbs per sq in Size of manhole in shell 23"x19"

No. and Description of Furnaces in each Boiler 3, Morrison Material Steel Outside diameter 49 1/2"

Size of compensating ring 35"x34"x1 1/4" Description of longitudinal joint Welded No. of strengthening rings None

Length of plain part top 10' 1/2" bottom 10' 1/2" Thickness of plates 1 1/4" Working pressure of furnace by the rules 214 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 9/8" Top 9/8" Bottom 1"

Working pressure of furnace by the rules 214 lbs Sides 6 1/2"x7" Back 6 1/2"x7" Top 8"x7" If stays are fitted with nuts or riveted heads Riveted heads Working pressure by rules 240 lbs

Pitch of stays to ditto: Sides 6 1/2"x7" Back 6 1/2"x7" Top 8"x7" Area supported by each stay 7'x10 1/2" Working pressure by rules 221 lbs End plates in steam space ✓

Material of stays Steel Diameter at smallest part 1.26" How are stays secured 20.1 Nuts Working pressure by rules 225 lbs Material of stays Steel

Material Steel Thickness 1 1/4" Pitch of stays 10 1/2"x16" Working pressure by rules 227 lbs Material of Front plates at bottom Steel

Diameter at smallest part 3" Area supported by each stay 17 1/2"x16" Working pressure of plate by rules 235 lbs

Thickness 25/32" Material of Lower back plate Steel Thickness 1 1/4"x4 1/2" Greatest pitch of stays 13"x7" Working pressure of plate by rules 235 lbs

Diameter of tubes 2 3/4" Pitch of tubes 8 1/4"x4" Material of tube plates Steel Thickness: Front 25/32" Back 29/32" Mean pitch of stays 10"x1 1/2"

Pitch across wide water spaces 13" Working pressures by rules 230 lbs Girders to Chamber tops: Material Steel Depth and 20"

Thickness of girder at centre 10"x13 1/4" Length as per rule 2'10" Distance apart 8" Number and pitch of stays in each 20"

Working pressure by rules 263 lbs Steam dome: description of joint to shell ✓ Diameter of rivet holes ✓ Pitch of rivets ✓

Thickness of shell plates Material Description of longitudinal joint ✓ How stayed ✓

Working pressure of shell by rules ✓ Crown plates: Thickness ✓

SUPERHEATER. Type *Milne* Date of Approval of Plan *26-12-17* Tested by Hydraulic Pressure to *630 lbs. per sq. in.*
Date of Test *From 29-1-19* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *Yes*
Diameter of Safety Valve *1"* Pressure to which each is adjusted *225 lbs. per sq. in.* Is Easing Gear fitted *No*

IS A DONKEY BOILER FITTED? *No* If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *2 Studs & Nuts for each Rotor bearing, 2 Bolts & Nuts Main gear wheel bearing, 2 Bolts & nuts Pinion bearings, 1 complete set of coupling bolts, 1/2 number of bolts & nuts, Gear & Turbine casing joint, 2 Thermometers for oil, bio. system, 1 set of bearing bushes, each, Gear wheel, Rotor & Pinion shafts, 1/2 set of Labrynth Rings, 1 complete set of Pads for Kingsbury Thrust, 1 set of Liners, 1 set of valves, etc, Bilge & Lubri. oil pumps, 1 Bht. & red Lub. oil pump, Escape valve springs for each size used, Spare propeller, Number of Boiler tubes & Superheater coils, Quantity of assorted bolts, nuts, & plates of Iron & Steel.*

The foregoing is a correct description,

General Electric Co. Manufacturer.
per S. A. Berg

A. W. Smith, Chief Engineer,
Federal Shipbuilding Co.

Dates of Survey while building { During progress of work in shops -- *1918. Aug. 9. 19. 26. 27. 30 SEPT. 6.*
During erection on board vessel -- *1918. Sept. 11. 16. 18. 21. 22. 25. 28. 30 Nov. 15. 19. 26 Dec. 3. 4. 9. 14. 16. 17. 18. 19. 20. 21. 23. 27. 1919. Jan. 2. 3. 4. 7. 9. 10. 15. 16. 17. 20. 22. 31 Feb. 7. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 1919.*
Total No. of visits *1918. 1919. 1920. 1921. 1922. 1923. 1924. 1925. 1926. 1927. 1928. 1929. 1930. 1931. 1932. 1933. 1934. 1935. 1936. 1937. 1938. 1939. 1940. 1941. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025. 2026. 2027. 2028. 2029. 2030. 2031. 2032. 2033. 2034. 2035. 2036. 2037. 2038. 2039. 2040. 2041. 2042. 2043. 2044. 2045. 2046. 2047. 2048. 2049. 2050. 2051. 2052. 2053. 2054. 2055. 2056. 2057. 2058. 2059. 2060. 2061. 2062. 2063. 2064. 2065. 2066. 2067. 2068. 2069. 2070. 2071. 2072. 2073. 2074. 2075. 2076. 2077. 2078. 2079. 2080. 2081. 2082. 2083. 2084. 2085. 2086. 2087. 2088. 2089. 2090. 2091. 2092. 2093. 2094. 2095. 2096. 2097. 2098. 2099. 2100. 2101. 2102. 2103. 2104. 2105. 2106. 2107. 2108. 2109. 2110. 2111. 2112. 2113. 2114. 2115. 2116. 2117. 2118. 2119. 2120. 2121. 2122. 2123. 2124. 2125. 2126. 2127. 2128. 2129. 2130. 2131. 2132. 2133. 2134. 2135. 2136. 2137. 2138. 2139. 2140. 2141. 2142. 2143. 2144. 2145. 2146. 2147. 2148. 2149. 2150. 2151. 2152. 2153. 2154. 2155. 2156. 2157. 2158. 2159. 2160. 2161. 2162. 2163. 2164. 2165. 2166. 2167. 2168. 2169. 2170. 2171. 2172. 2173. 2174. 2175. 2176. 2177. 2178. 2179. 2180. 2181. 2182. 2183. 2184. 2185. 2186. 2187. 2188. 2189. 2190. 2191. 2192. 2193. 2194. 2195. 2196. 2197. 2198. 2199. 2200. 2201. 2202. 2203. 2204. 2205. 2206. 2207. 2208. 2209. 2210. 2211. 2212. 2213. 2214. 2215. 2216. 2217. 2218. 2219. 2220. 2221. 2222. 2223. 2224. 2225. 2226. 2227. 2228. 2229. 2230. 2231. 2232. 2233. 2234. 2235. 2236. 2237. 2238. 2239. 2240. 2241. 2242. 2243. 2244. 2245. 2246. 2247. 2248. 2249. 2250. 2251. 2252. 2253. 2254. 2255. 2256. 2257. 2258. 2259. 2260. 2261. 2262. 2263. 2264. 2265. 2266. 2267. 2268. 2269. 2270. 2271. 2272. 2273. 2274. 2275. 2276. 2277. 2278. 2279. 2280. 2281. 2282. 2283. 2284. 2285. 2286. 2287. 2288. 2289. 2290. 2291. 2292. 2293. 2294. 2295. 2296. 2297. 2298. 2299. 2300. 2301. 2302. 2303. 2304. 2305. 2306. 2307. 2308. 2309. 2310. 2311. 2312. 2313. 2314. 2315. 2316. 2317. 2318. 2319. 2320. 2321. 2322. 2323. 2324. 2325. 2326. 2327. 2328. 2329. 2330. 2331. 2332. 2333. 2334. 2335. 2336. 2337. 2338. 2339. 2340. 2341. 2342. 2343. 2344. 2345. 2346. 2347. 2348. 2349. 2350. 2351. 2352. 2353. 2354. 2355. 2356. 2357. 2358. 2359. 2360. 2361. 2362. 2363. 2364. 2365. 2366. 2367. 2368. 2369. 2370. 2371. 2372. 2373. 2374. 2375. 2376. 2377. 2378. 2379. 2380. 2381. 2382. 2383. 2384. 2385. 2386. 2387. 2388. 2389. 2390. 2391. 2392. 2393. 2394. 2395. 2396. 2397. 2398. 2399. 2400. 2401. 2402. 2403. 2404. 2405. 2406. 2407. 2408. 2409. 2410. 2411. 2412. 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3575. 3576. 3577. 3578. 3579. 3580. 3581. 3582. 3583. 3584. 3585. 3586. 3587. 3588. 3589. 3590. 3591. 3592. 3593. 3594. 3595. 3596. 3597. 3598. 3599. 3600. 3601. 3602. 3603. 3604. 3605. 3606. 3607. 3608. 3609. 3610. 3611. 3612. 3613. 3614. 3615. 3616. 3617. 3618. 3619. 3620. 3621. 3622. 3623. 3624. 3625. 3626. 3627. 3628. 3629. 3630. 3631. 3632. 3633. 3634. 3635. 3636. 3637. 3638. 3639. 3640. 3641. 3642. 3643. 3644. 3645. 3646. 3647. 3648. 3649. 3650. 3651. 3652. 3653. 3654. 3655. 3656. 3657. 3658. 3659. 3660. 3661. 3662. 3663. 3664. 3665. 3666. 3667. 3668. 3669. 3670. 3671. 3672. 3673. 3674. 3675. 3676. 3677. 3678. 3679. 3680. 3681. 3682. 3683. 3684. 3685. 3686. 3687. 3688. 3689. 3690. 3691. 3692. 3693. 3694. 3695. 3696. 3697. 3698. 3699. 3700. 3701. 3702. 3703. 3704. 3705. 3706. 3707. 3708. 3709. 3710. 3711. 3712. 3713. 3714. 3715. 3716. 3717. 3718. 3719. 3720. 3721. 3722. 3723. 3724. 3725. 3726. 3727. 3728. 3729. 3730. 3731. 3732. 3733. 3734. 3735. 3736. 3737. 3738. 3739. 3740. 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