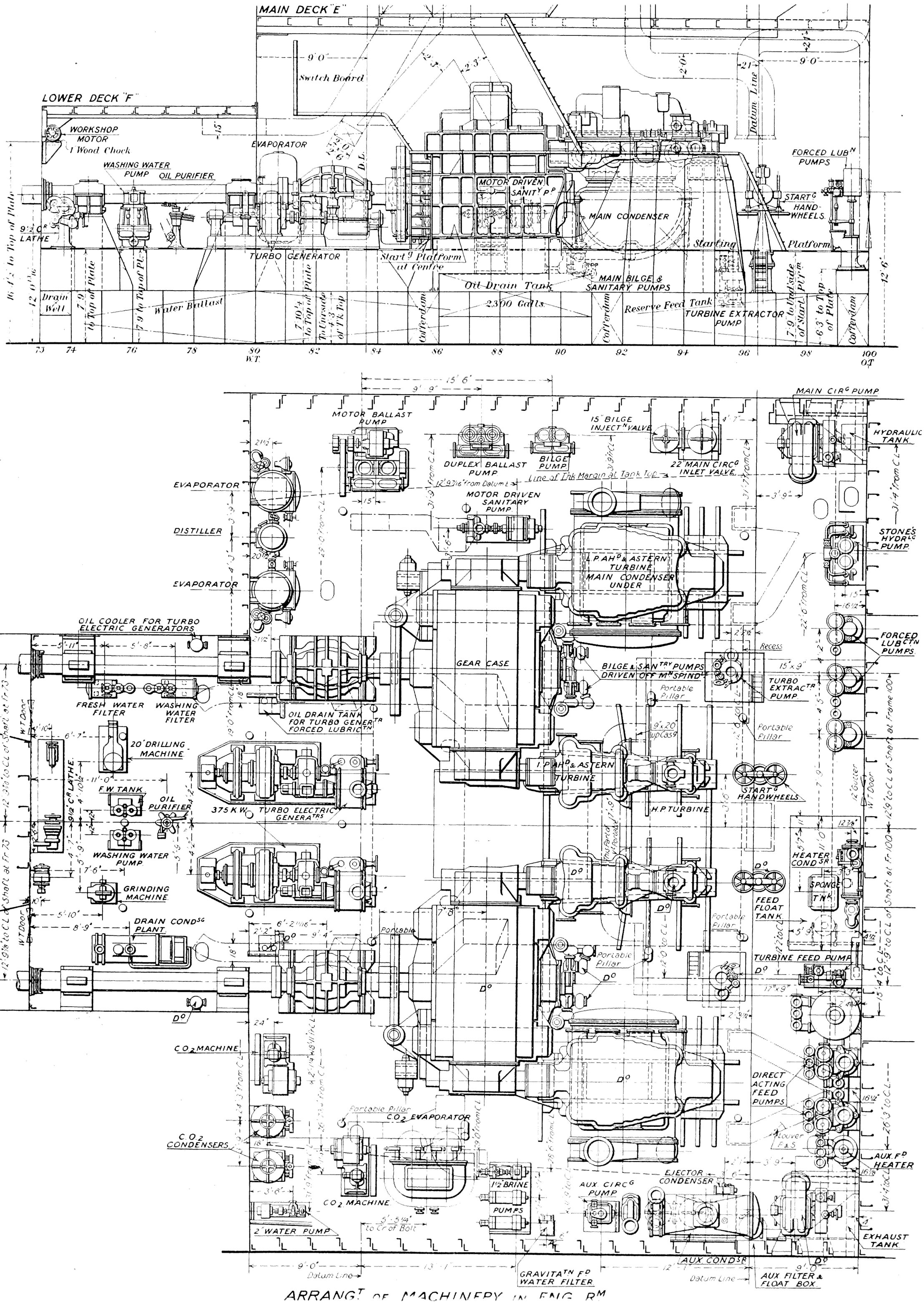
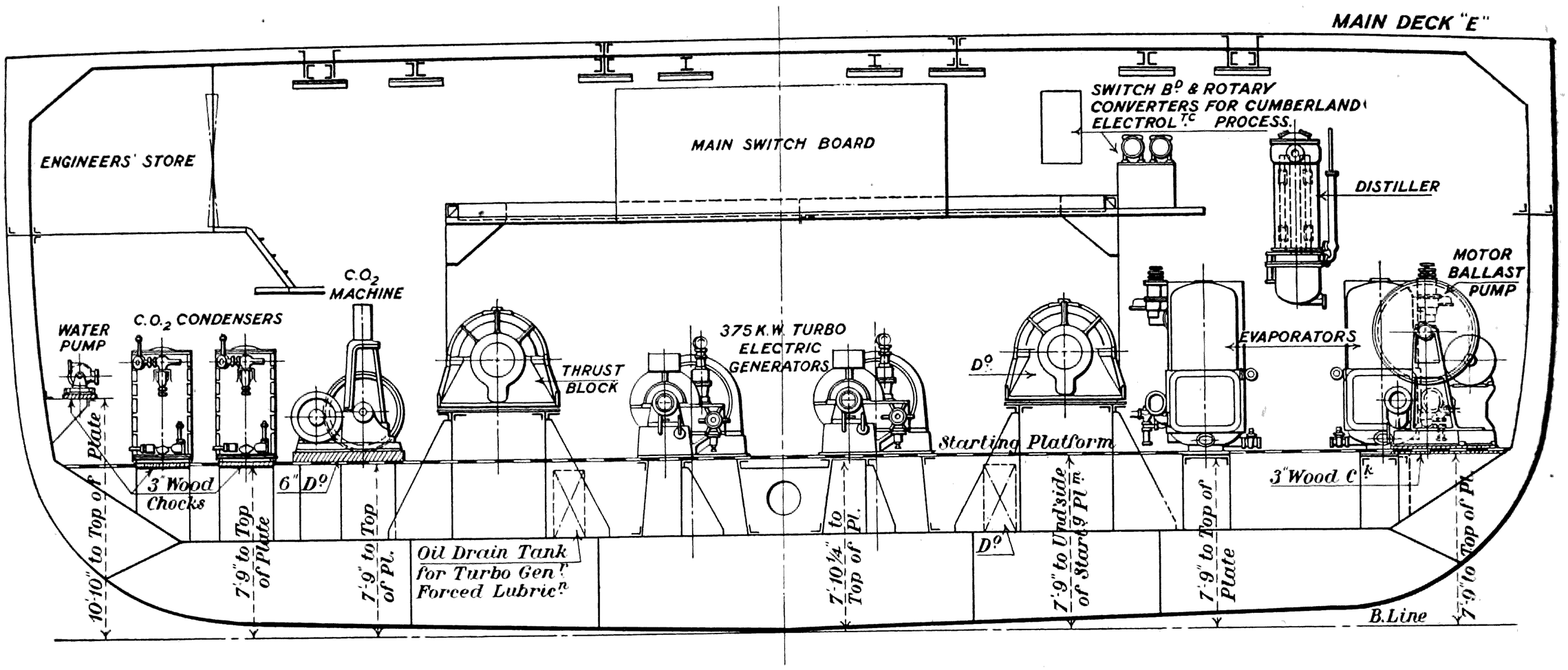


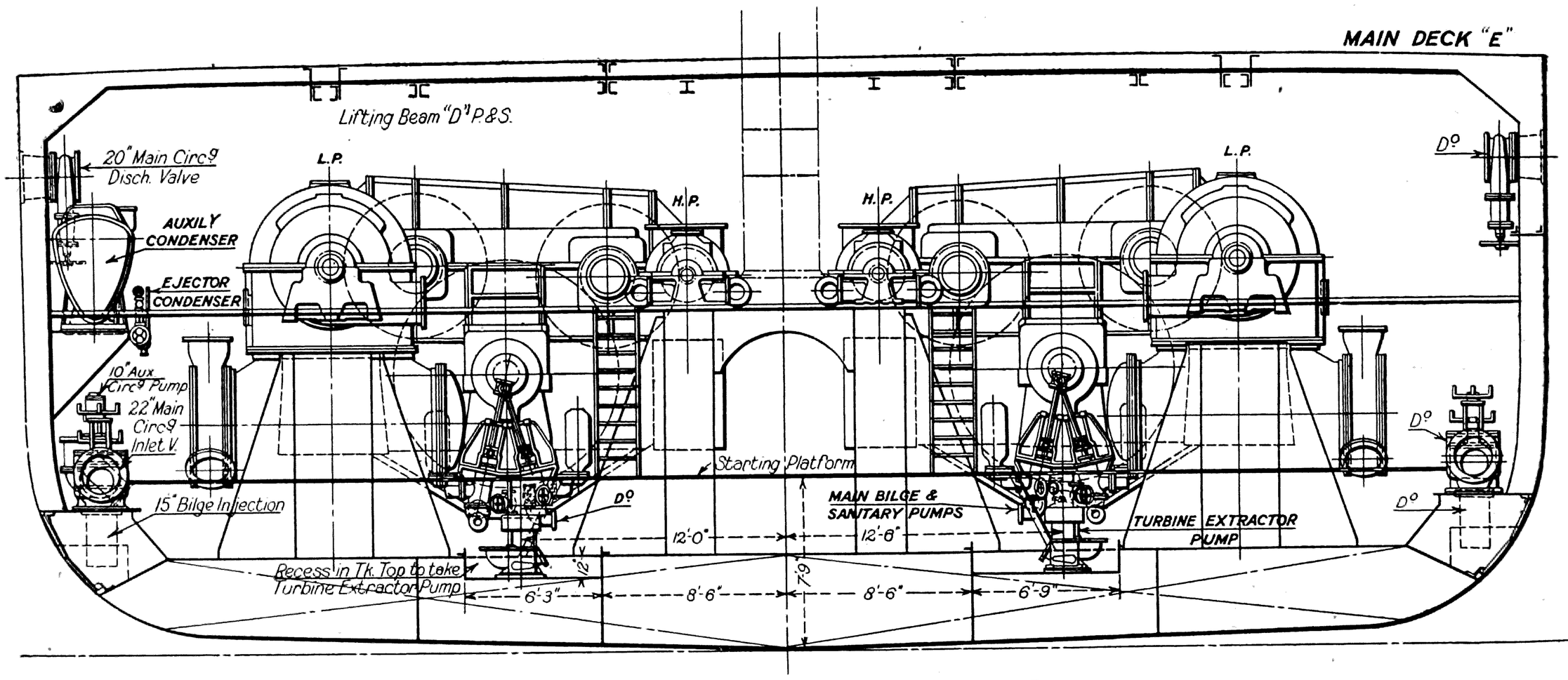
ARRANG.T OF MACHINERY IN ENG.RM

General Arrangement of Main and Auxiliary Machinery, in Elevation and Plan, on the "Tuscania."

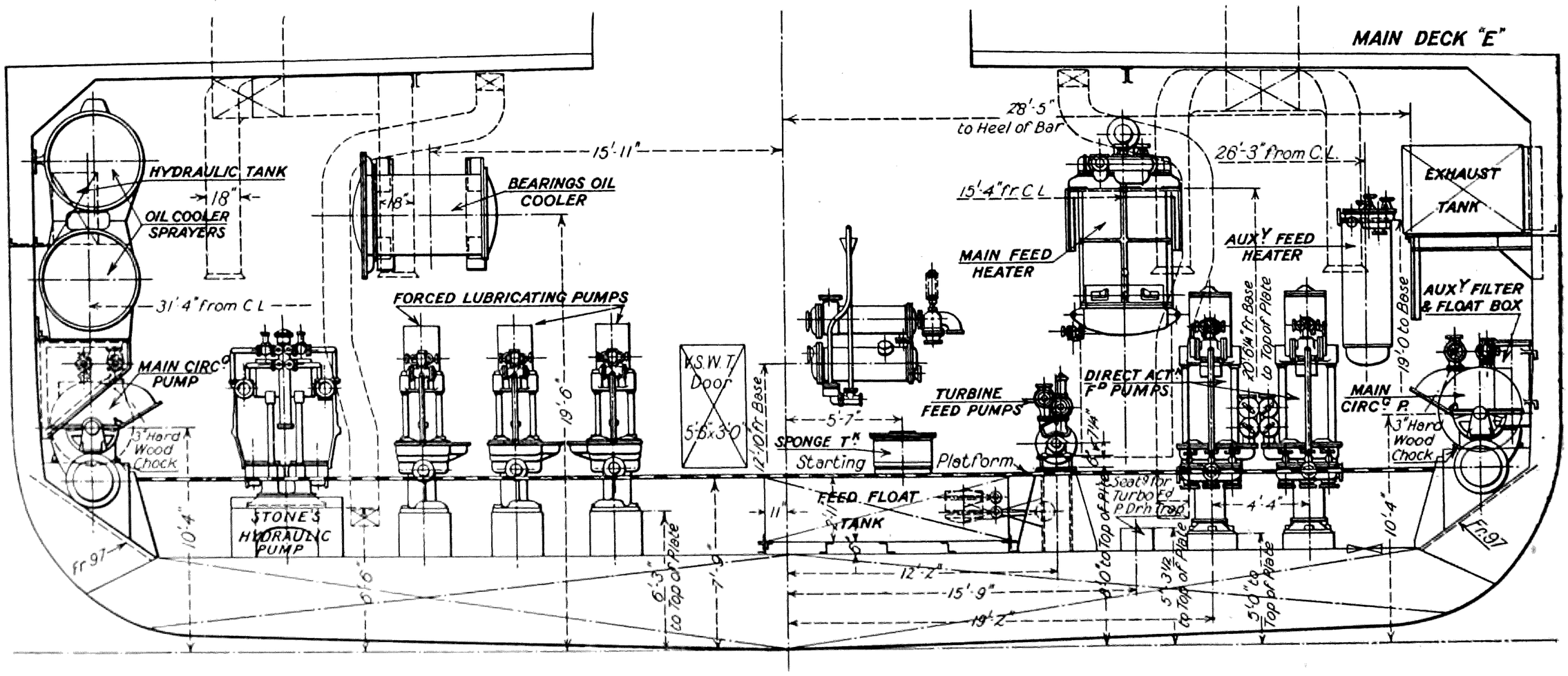
THE NEW ANCHOR LINER "TUSCANIA."



Section at Frame 86, looking Aft.



Section at Frame 96, looking Aft.]



Section at Frame 96, looking Forward.

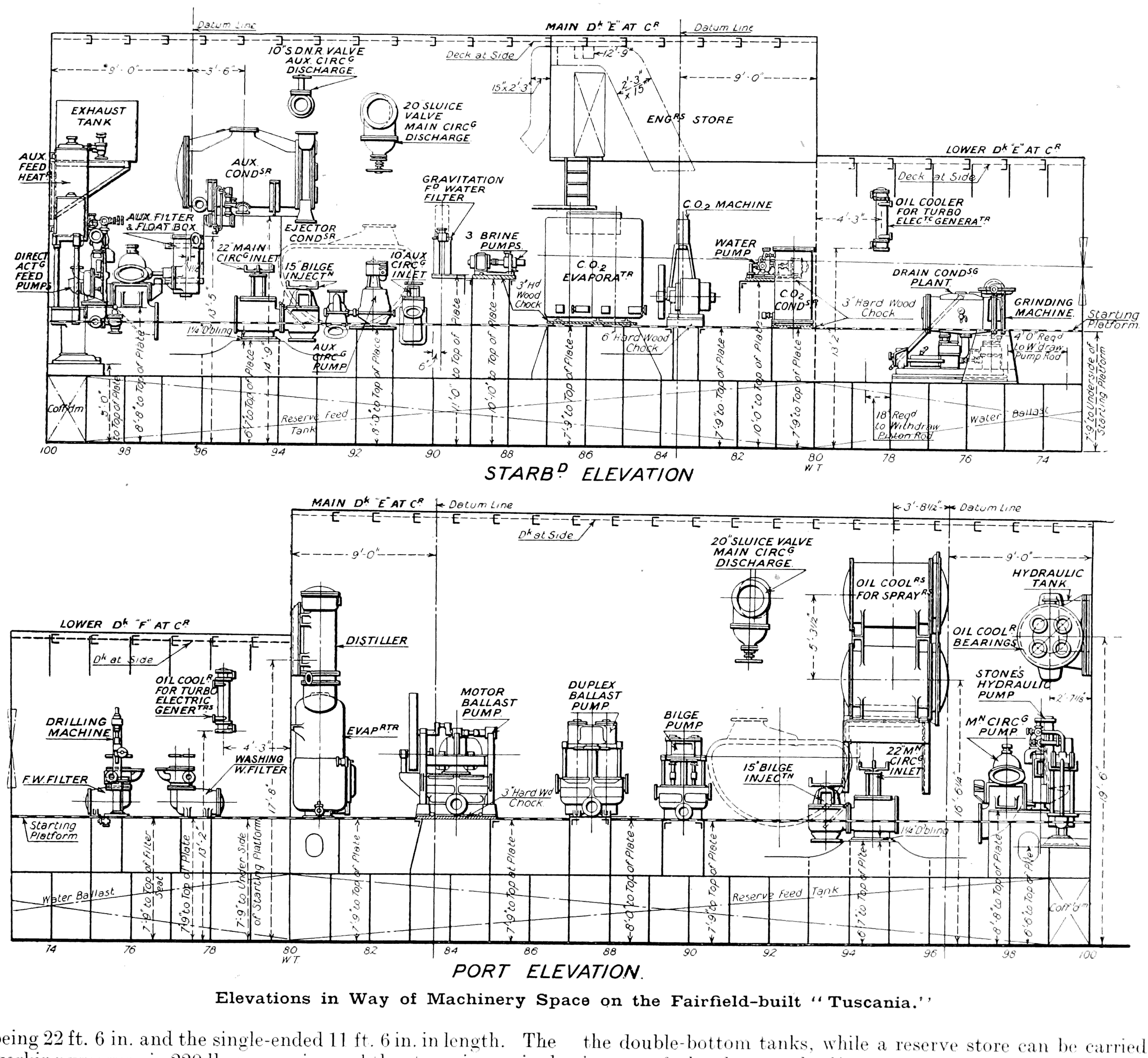
it is pumped through the filters and coolers, returning finally to the forced lubrication supply mains. Bilge and sanitary pumps are driven by a crank from the forward end of each main gear-wheel spindle. For turning the shafting, a large worm wheel is mounted on the aft coupling of the gear wheel, power being supplied through a train of wheels by an electric motor. Lifting blocks and tackle have been arranged so that the turbines and gearing can be overhauled and examined with the minimum of labour.

All six boilers are of 17 ft. 6 in. mean diam, the double-ended being 22 ft. 6 in. and the single-ended 11 ft. 6 in. in length. The working pressure is 220 lb. per sq. in. and the steam is required to be superheated 200° Fahr. at the turbines. The "North Eastern" type of superheater, installed by the North Eastern Marine Engineering Company, Wallsend, is fitted to all boilers. Each boiler end is fitted with four Morison furnaces 44¼ in. internal diameter, *i.e.*, 36 in all. The furnaces, as already explained, are arranged for oil burning but can be readily converted to coal. Under oil-burning conditions the total heating surface is about 32,500 sq. ft., and when fitted for coal 746 sq. ft. of grate area is available. Air is drawn from the firing spaces and supplied to the furnaces by four forced draught fans 75 in. diam., driven by two motors placed at the aft end of the boiler room. The usual Howden air heating tube boxes are arranged in the uptakes at the boiler fronts.

The oil fuel is burned on the Wallsend-Howden system, and for this purpose there are installed at the aft end of the boiler room four independent sets of pumps, heaters and strainers. Two of these sets are each capable of supplying the double-ended boilers, and each of the other two sets of smaller size, the single-ended boilers. An auxiliary heater and a motor-driven pump are also installed for lighting-up purposes. Between the engine and boiler rooms are situated the fuel oil settling and storage tanks, having a total capacity of about 350 tons. The main supply of the bunker oil is carried in the double-bottom tanks, while a reserve store can be carried in one of the deep tanks if necessary. For transferring oil from the bunker tanks to the settling tanks two Weir's pumps are fitted. These pumps have also a connection to the oil bilge. A "W. R." CO_2 recorder is fitted in the stokehold with a connection to each of the nine uptakes so that the engineer may ascertain the nature of the combustion taking place at any time. Stokehold ventilation is very efficiently accomplished by four large vent trunks which extend down to the centre line of the boilers. Screens are so arranged that the warm air finding its way to the fan suction trunks creates a continuous current throughout the firing spaces.

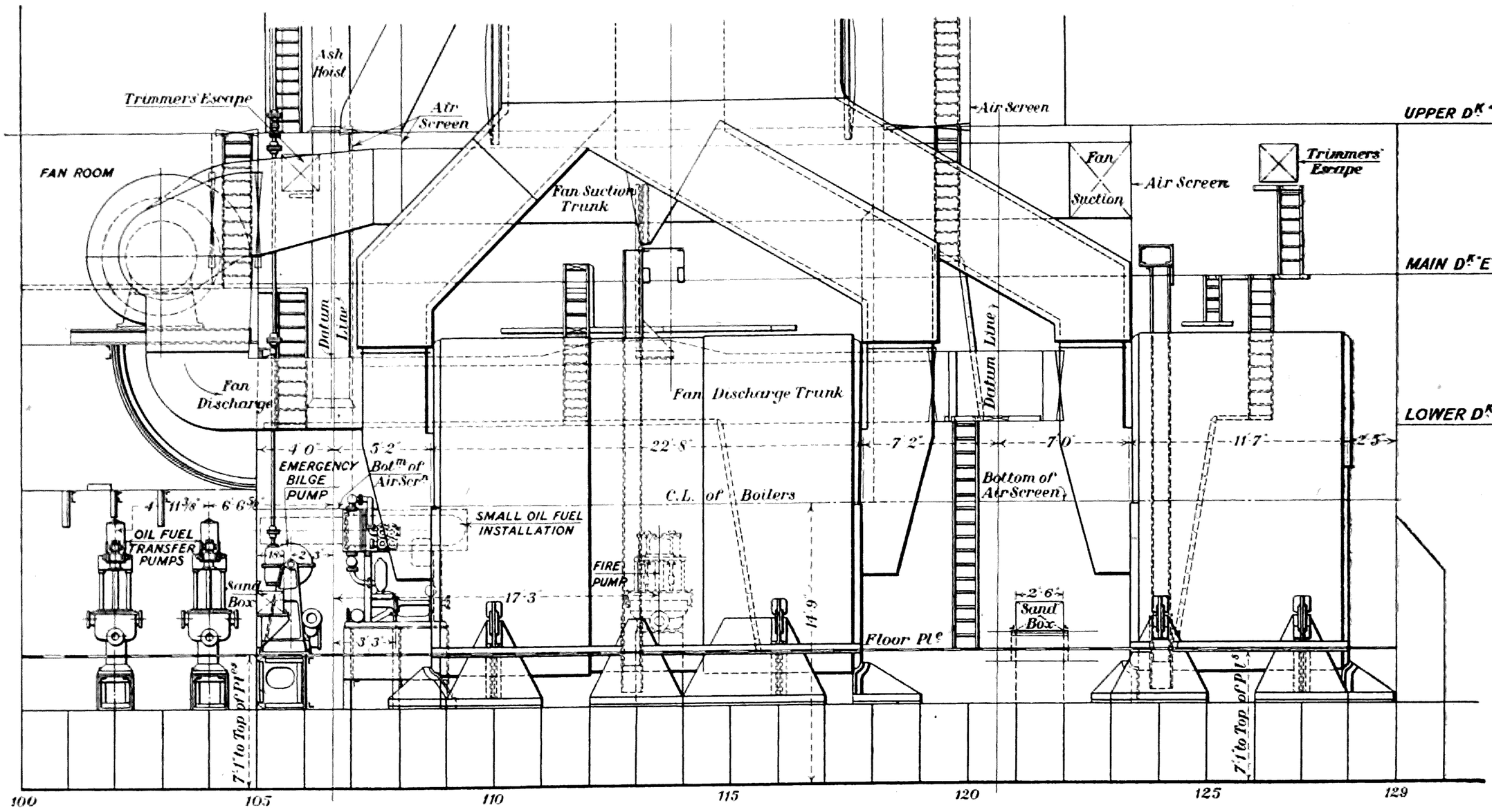
A thrust block of the Michell type is fitted immediately aft

(*Continued on page* 438.)

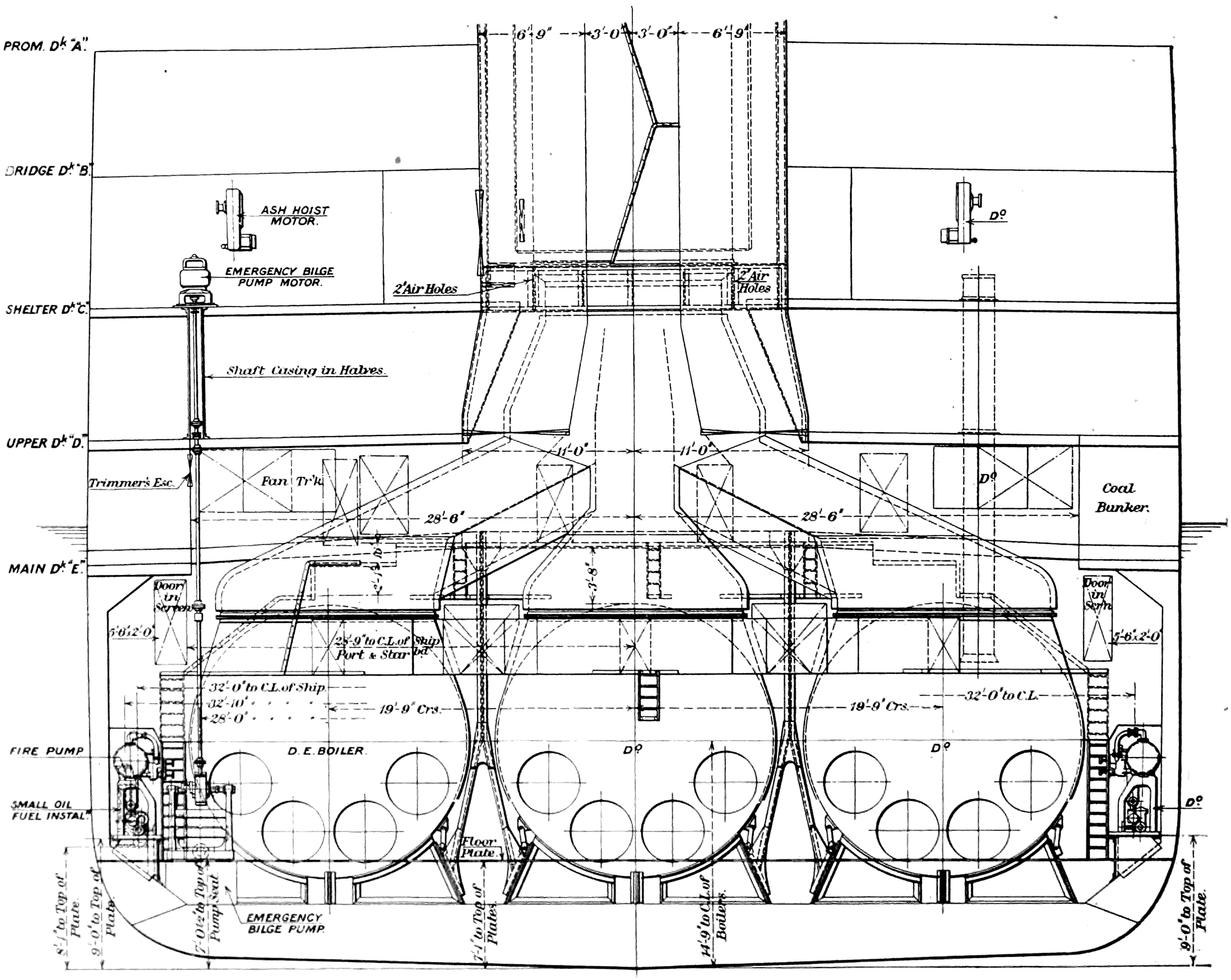


Elevations in Way of Machinery Space on the Fairfield-built "Tuscania."

THE NEW ANCHOR LINER "TUSCANIA." (See page 427.)



Elevation, looking to Port, showing Single and Double-Ended Boilers.



Cross Section at Frame 100, looking Forward, showing three Double-Ended Scotch Boilers.