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Information in regard to High Speed  
Torpedo Boat (Aluminum)

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DEPARTMENT OF THE NAVY  
OFFICE OF THE SECRETARY  
WASHINGTON

5 January 1938.

Date- 4-7-59

Signature- Carl L. Spicer

~~CONFIDENTIAL.~~

SUBJECT: High Speed Destroyer (Aluminum)

1. In December 1936, Mr. Starling Burgess, in association with the Aluminum Company of America, submitted to the Navy Department, a proposal for a "small destroyer" about 250' long, 745 tons displacement, speed about 58 knots to be constructed of aluminum alloy. Later the Bath Iron Works also became interested in this proposition.

2. The General Board examined this proposal, which was very sketchy at that time, and requested Mr. Burgess to submit further necessary data sufficient to form an estimate as to the value of the proposal. This further data was never supplied along the lines requested by the General Board. In view of the non-supply of this design data it became necessary for the Bureau of Construction and Repair to prepare data itself along the lines of the proposal, in order that the General Board might render report on this matter. In order thoroughly to examine the proposal, the Bureau of Construction and Repair prepared preliminary designs, in both steel and aluminum, of vessels of almost the proposed displacement, thus obtaining comparative weight data for aluminum construction. Model tests were run and all angles of the proposal were examined. This investigation is contained in Bureau Construction and Repair Pamphlet entitled "Design History, High Speed Destroyer".

3. On 14 May 1937, the General Board, after discussion with the Bureau of Construction and Repair and examination of its report, together with consideration of such data as was submitted by Mr. Burgess, expressed the opinion that the study made by the Bureau of Construction and Repair was sufficiently exhaustive to indicate that the construction of an aluminum hull, high speed destroyer would not be warranted at this time, due to the lack of corrosion resisting properties of aluminum and also the inherent risk of strength reduction due to temperature about 100° F. This opinion was concurred in by the Chief of Naval Operations and approved by the Secretary of the Navy on 27 May 1937.

4. In connection with this matter however, the General Board considered that, due to the military advantages obtained by the use of aluminum for hull structures, the study of its use be

continued, particularly in connection with the experimental development of motor torpedo boats. Such study is being made, and in addition, final design work is completed on two coastal motor boats of aluminum for the Philippine Government. These Philippine boats and the other motor torpedo boats are much smaller vessels than those proposed by Mr. Burgess. The motor boats range from 50' to 70' in length as compared with 250' proposed by Mr. Burgess.

5. Subsequent to the action taken by the Department as stated above, the Bath Iron Works, represented by Mr. Newell, submitted to the Department in November 1937, a fairly complete set of general plans and a model of a high speed destroyer of about 940 tons trial displacement, 285' long. These plans were prepared for Bath by Gibbs and Cox of New York. They are still under consideration by the material Bureaus and the General Board, and with the model are at present in the General Board Room.