From: Admiral E. J. King, U.S. Navy.
To: Chairman, General Board.
Subject: Priorities in 2-Ocean Navy Building Program.

1. In conformity with your oral request, this memorandum is furnished, comprising an outline study of the priorities that should obtain in the current 2-ocean Navy building program. It will be noted that certain assumptions and factors are somewhat "arbitrary as was found necessary in a study of this kind, which may be said to be more qualitative than quantitative.

2. Assumptions regarding 2-ocean Navy for U.S. are, for purposes of this memorandum:

(a) U.S. rate of building will suffice at least to maintain relative strength of U.S. vs Axis Navies;
(b) (1) either the British Navy is primarily occupied with the defense of the British Isles or, 
   (2) if defeat comes to the British, in the British Isles, the British Navy does not become available to the Axis powers;
(c) maximum opposition in the Atlantic area is that of German-Italian-French Navies; and the determining theater of operations is the Natal area off Brazil;
(d) maximum opposition in the Pacific-Asiatic area is that of Japan's Navy; and the determining theater of operations is that of the South China Sea;
(e) consequent on (c) -
   (1) the U.S. lines of communication are some 2200 miles long - to Eastern Caribbean area - and are readily flanked along the Eastern part of the north coast of Brazil - from Para Eastward;
   (2) the Axis lines of communications are some 3100 miles long - to Gibraltar - and are nowhere readily to be flanked until the vicinity of the St. Paul Islands is reached;
(f) consequent on (d) -
   (1) the U.S. lines of communication are some 5000 miles long - to Hawaii - and are, on the one hand,
at least initially, flanked by the Japanese Mandatory Islands and, on the other hand, have friendly termini in the Philippines, Dutch East Indies, Malaya, etc.;

(2) the Japanese lines of communication are some 3000 miles long - to Japan - and are, on the one hand, at least initially, flanked by the Philippines and, on the other hand, have available intermediate bases in Formosa, South China, French Indo-China.

3. The determining factors in the Atlantic area -

(a) one homogeneous Navy (U.S.) vs three fractional Navies (Axis) is estimated to be a ratio of 4:3 in favor of the U.S.;

(b) 2200 miles lines of communications (U.S.) vs 3100 miles (Axis), indicative of the relative difficulties of overseas operations in the approximate ratio 3:2 in favor of U.S.;

(c) U.S. lines of communication are sensibly but not decisively more vulnerable than those of the Axis in the estimated ratio of 3:4;

(d) the combination of (a), (b), (c) is accordingly estimated to be - giving all three factors equal weight - 4×3×3(36) vs 3×2×4(24) or 3:2 in favor of U.S.

Consequently, it is considered advisable that U.S. Naval forces in the Atlantic area, in order to be at least as strong in the determining theater of operations - the Natal area of Brazil - should be about 2:3 vs Axis Naval forces for "parity".

4. The determining factors in the Pacific-Asiatic area:

(a) one homogeneous Navy (U.S.) vs one homogeneous Navy (Japan) is a ratio of 1:1;

(b) 5000 miles lines of communication (U.S.) vs 3000 miles (Japanese), indicative of the relative difficulties of overseas operations in the approximate ratio 5:3 in favor of Japan;

(c) U.S. lines of communication rather more vulnerable than those of Japan in the estimated ratio of 4:3 in favor of Japan;

(d) the combination of (b), (c) is accordingly estimated - giving both factors equal weight - to be in the ratio 5×4(20) vs 3×3(9) or 5:2.25. Consequently, it is considered advisable that U.S. Naval forces in the Pacific-Asiatic area, in order to be at least as strong in the determining theater of operations - the South China Sea area - should be 5:2.25 vs
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Japanese Naval forces, or, in round numbers, about 2:1 for "parity".

5. The current figures (1 July 1941) regarding Naval strengths - U.S., Japanese, Axis (Germany plus Italy plus France) are:

<table>
<thead>
<tr>
<th>(1) U.S.</th>
<th>(2) Axis</th>
<th>(3)</th>
<th>(4) Japan</th>
<th>(5)</th>
</tr>
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<tbody>
<tr>
<td>BB's</td>
<td>14</td>
<td>9</td>
<td>8</td>
<td>6</td>
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<tr>
<td>OBB's</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>CV's</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>CA's</td>
<td>18</td>
<td>13</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>CL's</td>
<td>9</td>
<td>24</td>
<td>-7</td>
<td>12</td>
</tr>
<tr>
<td>OCL's</td>
<td>10</td>
<td>19</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>DD's</td>
<td>93</td>
<td>145</td>
<td>-9</td>
<td>77</td>
</tr>
<tr>
<td>ODD's</td>
<td>74</td>
<td>167</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td>SS's</td>
<td>41</td>
<td>109</td>
<td>270</td>
<td>-139</td>
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<tr>
<td>OSS's</td>
<td>68</td>
<td>109</td>
<td>19</td>
<td>55</td>
</tr>
</tbody>
</table>

Col. (3) = (1) - 2/3 of (2) = Subtract 2/3 Axis strength from U.S. strength;

Col. (5) = 2x(4)-(3) = after subtracting 2/3 Axis strength from U.S. strength = (3), subtract (3) from twice Japan strength, (4), to indicate U.S. deficiencies in types.

6. Column (5) of paragraph 5 thus indicates the critical deficiencies of U.S. Naval strength and affords one premise for consideration of the current U.S. building program.

7. Examination of the latest available information - BuShips Report of Progress as of July 1, 1941 - shows that:

(a) 3 BB's (35,000 tons) are due for completion by about end of calendar 1942 and 1 in 1943; 2 of 45,000 tons by about the end of calendar 1943; then 2 in 1944 with more early in calendar 1945;
(b) 1 CV (Hornet) is due for completion by end of calendar 1941; then none until early in calendar 1944;
(c) no CR's (27,000 tons, 12 inch guns) are due for completion until early in calendar 1945;
(d) 4 CA's are due for completion by about the end of calendar 1943; then none until during calendar 1945;
(e) 4 CL's (6,000 tons) are due for completion in early calendar 1942; then 2 in calendar 1943; more later;
(f) 4 CL's (10,000 tons) are due for completion in calendar 1942; 12 more in calendar 1943; more later;
(g) 9 DD's are due for completion in calendar 1941; 55 more in calendar 1942; and 92 in calendar 1943;
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(h) 2 SS's are due for completion in calendar 1941; 26 in calendar 1942; and 25 in calendar 1943.

8. Consideration of the information set forth in paragraph 7 as compared with the deficiencies shown in column (5) of paragraph 5 sums up:

<table>
<thead>
<tr>
<th></th>
<th>Col.(6)</th>
<th>Col.(7)</th>
<th>Col.(8)</th>
<th>Col.(9)</th>
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<tbody>
<tr>
<td></td>
<td>Built by</td>
<td>1943</td>
<td>Col.(7)</td>
<td>Col.(6) in Col.(5)</td>
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<tr>
<td>BB's</td>
<td>11</td>
<td>6</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>CV's</td>
<td>11</td>
<td>1</td>
<td>10</td>
<td>167</td>
</tr>
<tr>
<td>CA's</td>
<td>27</td>
<td>4</td>
<td>23</td>
<td>128</td>
</tr>
<tr>
<td>CL's</td>
<td>42</td>
<td>22</td>
<td>20</td>
<td>105</td>
</tr>
<tr>
<td>DD's</td>
<td>208</td>
<td>156</td>
<td>52</td>
<td>31</td>
</tr>
<tr>
<td>SS's</td>
<td>226</td>
<td>53</td>
<td>173</td>
<td>159</td>
</tr>
</tbody>
</table>

9. Note that all columns (1) - (9) omit from consideration the factor that Japan and Axis building programs are producing ships which has the effect of enhancing the deficiencies.

10. Assuming that the current 2-ocean Navy building program continues at present scheduled rate up to the end of calendar 1943, it appears:

(a) from column (8) of paragraph 8, that the building rate of all types is inadequate in the order (1) CV's, (2) SS's, (3) cruisers, (4) BB's, (5) DD's;

(b) from column (9) of paragraph 8, that the rate of makeup of current deficiencies (column (5) of paragraphs 5 and 8) is inadequate in the order (1) CV's, (2) CA's, (3) SS's, (4) CL's, (5) BB's, (6) DD's;

(c) since "months to build" are in the relative ratio of BB's - 48, CV's - 36, CA's - 36, CL's - 30, DD's - 18, SS's - 18, these times are important factors in the practical consideration of priorities.

11. Other factors affecting priorities in the current building program are the needs for certain types in accordance with the following general strategic and tactical considerations:

(a) submarine attacks on Japanese communications would prove very effective;

(b) large numbers of destroyers are needed to protect U.S. and British shipping;

(c) the number of destroyers in the Fleet bears a certain relation to the number of major ships (BB's and CV's).
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12. Taking into account the matters set forth in paragraph 10, it further appears:

(a) as to BB's, that the current scheduled rate of building is not adequate; and requires to be expedited as practicable;

(b) as to CV's, that the current scheduled rate is wholly inadequate and requires to be expedited. In fact, considering the accelerating importance of air power, the conversion of suitable and available ships to XCV's should be undertaken at once;

(c) as to CA's and CL's and CB's, that the current building rates require to be expedited as practicable;

(d) as to DD's, while they show the highest rate of replacement, the need for them is great, so that the current rate of building should be expedited, which fits in with their relatively short time for construction;

(e) as to SS's, the rate of replacement is low and the need is great, so that the current rate of building requires to be sharply accelerated.

13. To sum up, the entire current U.S. building program requires to be accelerated in the following order of priority and practicability:

(1) SS's, (2) DD's, (3) CV's, (plus XCV's), (4) CA's, (5) CL's, (6) BB's.

14. Transmission of this memorandum by registered mail within the continental limits of the United States is authorized.

E. J. KINg