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OPERATIONS EVALUATION GROUP  
STUDY NO. 390

COMPARISON OF GERMAN AND U. S. RECORDS  
OF ATTACKS BY GERMAN SUBMARINES ON  
ALLIED MERCHANT AND ESCORT SHIPS

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Prepared by  
OPERATIONS EVALUATION GROUP (formerly Operations Research Group)  
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ATTACKS BY GERMAN SUBMARINES ON  
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I. SUMMARY

A comparison has been made of the German records of attacks by their submarines with the U. S. records of attacks supposedly made by German submarines in the Atlantic during the period 7 December 1941 to 1 November 1944. There were 1072 incidents which matched with some degree of likelihood, 1354 attacks reported by the Germans and not recorded in U. S. records, and 175 ships attacked by submarine but with no similar attacks reported by the Germans.

It is found that the records of the German submarine command understated the results of the actual submarine attacks but there is also evidence that a sizable number of fictitious attacks were carried on the books.

The German submariner was about as likely to underestimate the tonnage of his target as he was to overestimate it. However, the error when he overestimated was greater than when he underestimated.

II. INTRODUCTION

The accuracy of the reports of sinkings of ships reported by submarine commanders is a matter of considerable interest. Inasmuch as the Japanese records of ship sinkings that became available after the war were too sketchy to permit detailed comparison with U. S. submariners' claims, the only source of information on this subject is the German records of their submarine operations.

At the end of the European war the German submarine command had nearly finished coding onto IBM cards the attacks which had been reported by their U/Boats. These cards were taken by the British and a duplicate set was forwarded to the OEG.

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A comparison of these reported attacks with the joint British - U. S. records of Allied ships attacked by U/Boats has been made on the basis of date, position and time. Three degrees of agreement were established on a more or less qualitative basis.

III. INCIDENTS WHERE ALLIED SHIPS REPORTED AN  
ATTACK BUT NO COMPARABLE INCIDENTS ARE  
REPORTED IN THE GERMAN RECORDS

Of the 175 incidents not reported by the Germans, 129 were independent ships and 46 were in or near convoys; 104 were sunk, 56 were damaged, and 15 were not damaged. It is reasonable to suppose that some of these attacks were made by submarines that were sunk after the attack but before they had time to transmit the results by radio to Commander U/Boats.

IV. INCIDENTS WHERE THE GERMAN RECORDS INDICATE  
AN ATTACK ON ALLIED SHIPPING BUT WHERE NO  
COMPARABLE ATTACK IS LISTED IN THE ALLIED  
RECORDS

The 1354 unverified attacks claimed by the Germans are summarized in the following table:

Convoy status of target	CLAIMED DAMAGE				
	No damage	Damaged	Probably Sunk	Sunk	Total
Independent	681	150	204	137	1172
Convoyed	76	21	41	16	154
Not stated	23	1	3	1	28
Total	780	172	248	154	1354

It is reasonable to assume that a large part of the 780 "No damage" attacks went unnoticed by the target, leaving about 500 unexplained attacks where torpedo hits were claimed by the submarines.

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A similar table for the verified cases is as follows:

Convoy status of target	ACTUAL DAMAGE				
	No damage	Damaged	Probably Sunk	Sunk	Total
Independent	158	244	131	402	935
Convoyed	17	34	34	47	132
Not stated	3		2		5
Total	178	278	167	449	1072

In comparing the two preceding tables one observes that although the ratio of independent to convoyed targets is about the same, about one-half of the ships claimed to be hit in the verified attacks were thought to be sunk; the corresponding figure for the unverified incidents is about one-fifth. Thus, although one is prone to suspect that a portion of the unverified damage claimed is attributable to falsification of reports by overly ambitious or otherwise unproductive skippers, it appears quite possible that some, at least, of this group of unverified incidents represents the best estimate of attacks made by commanders who were themselves under fire or for some other reason not able to make a better appraisal of the results of their own fire.

#### V. RESULTS OF ACTUAL ATTACKS

The correlation between damage claimed and damage actually inflicted is indicated in the following tables:

##### A. Match considered "certain"

CLAIMED	ACTUAL			
	No Damage	Damaged	Sunk	Total
No damage	8	24	95	127
Damaged	2	31	176	209
Prob. sunk	1	11	115	127
Sunk	6	22	310	338
Total	17	88	696	801

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B. Match considered "probable"

<u>CLAIMED</u>	<u>ACTUAL</u>			
	<u>No damage</u>	<u>Damaged</u>	<u>Sunk</u>	<u>Total</u>
No damage	4	7	26	37
Damaged	1	3	51	55
Prob. sunk	3	4	28	35
Sunk	<u>1</u>	<u>5</u>	<u>36</u>	<u>92</u>
Total	9	19	191	219

C. Match considered "possible"

<u>CLAIMED</u>	<u>ACTUAL</u>			
	<u>No damage</u>	<u>Damaged</u>	<u>Sunk</u>	<u>Total</u>
No damage	2	4	8	14
Damaged	-	2	12	14
Prob. sunk	-	-	5	5
Sunk	-	<u>1</u>	<u>18</u>	<u>19</u>
Total	2	7	43	52

It appears from these figures that the submarines were not prone to overstate the results of their real attacks. Here again is evidence that the submarine commanders did not, in general, wait to observe the results of their attacks. Not only were a large fraction of the targets which they claimed as "damaged" actually sunk, but a number of targets reported undamaged were also sunk.

VI. ESTIMATE OF TARGET TONNAGE

It is interesting to compare the estimated target tonnage with the actual tonnage. This is done in the table on the following page.

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Assessment of Match	Item	* Group of Ships	Tanker	Cargo	Passenger	Small M/V	A/S
Certain	<u>Over-estimated</u>						
	#	6	79	270	9	2	3
	Avg. tons	4930	6750	4990	6280	300	1030
	Avg. error	1170	1740	1480	1750	200	470
	<u>Under-estimated</u>	(including correct estimates)					
	#	8	78	258	5	1	4
Probable	Avg. tons	6300	8360	6190	14430	800	3050
	Avg. error	1425	790	650	970	0	1050
	<u>Over-estimated</u>						
	#	1	17	67	4	0	0
	Avg. tons	1600	6100	4440	4100	0	0
	Avg. error	3400	370	0	1750	0	0
Possible	<u>Under-estimated</u>	(including correct estimates)					
	#	1	8	69	0	0	3
	Avg. tons	7100	9150	6210	0	0	3900
	Avg. error	100	2200	1080	0	0	2070
	<u>Over-estimated</u>						
	#	1	6	12	0	0	1
	Avg. tons	2600	6780	6910	0	0	1500
	Avg. error	2400	4200	2840	0	0	200
	<u>Under-estimated</u>	(including correct estimates)					
	#	1	6	11	1	0	1
	Avg. tons	8900	7050	7970	7100	0	6700
	Avg. error	2900	1480	2780	3100	0	5900

\* No further identification given in the German records.

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In fifty-one percent of the incidents the target tonnage was overestimated, the average over-estimation being about 1500 tons. The net average error was an over-estimation of 400 tons. An error of this magnitude could quite reasonably be due to chance.

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