

SRH-019

BLOCKADE-RUNNING BETWEEN
EUROPE AND THE FAR EAST
BY SUBMARINES,
1942-1944

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Blockade-running between Europe and the Far East
by Submarines, 1942-44

1. Blockade-running by submarines:

a. Blockade-running between German Europe and the Far East, which began in 1941, at first was carried on exclusively by merchant vessels operated by the Germans. The venture enjoyed considerable initial success, but in the 1942-43 season (September 1942-March 1943) the losses to the blockade-running fleet were so severe that by January of this year the Germans decided to discontinue the use of surface vessels. A summary of the record of the surface blockade-runners is annexed as TAB A.

b. So far as is known, the first submarine to run the blockade made the voyage in the middle of 1942. However, it was not until well into 1943 that the Axis attempted to use submarines regularly as blockade-runners. In the spring of 1943 the German Navy converted seven large Italian submarines to cargo-carriers for the purpose of running the blockade. In addition to the converted Italian craft, at least three Japanese and a considerable number of German operational submarines have been used to carry cargo and passengers to and from the Far East.

c. It is believed that up to November of this year, 35 submarines departed from Europe for the Far

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East (see TAB B). During the same period at least 11 submarines are believed to have left Far Eastern ports for Europe (see TAB C). A summary of the record of blockade-running by submarine in both directions is as follows:

<u>Direction of voyage</u>	<u>1942</u> <u>Voyages</u>	<u>Losses</u>	<u>Successful voyages</u>	<u>En route 11 Nov 44</u>
Far East to Europe	1	0	1	
Europe to Far East	$\frac{1}{2}$	$\frac{1}{1}$	$\frac{0}{1}$	
	<u>2</u>	<u>1</u>	<u>1</u>	
	<u>1943</u>			
Far East to Europe	5	1	4	
Europe to Far East	$\frac{16}{21}$	$\frac{3}{4}$	$\frac{13}{17}$	
	<u>21</u>	<u>4</u>	<u>17</u>	
	<u>1944</u> (To 11 Nov)			
Far East to Europe	5	2	3	2
Europe to Far East	$\frac{18}{23}$	$\frac{10}{12}$	$\frac{17}{5}^{**}$	$\frac{1}{3}$
	<u>23</u>	<u>12</u>	<u>17</u>	<u>3</u>

d. To date, the submarines employed as blockade-runners have ranged from German operational craft of 740 tons to cargo-carriers of approximately 2,200 tons. The cargoes have varied in size from approximately 80 tons to a maximum of about 300 tons. The total volume of goods carried in both directions in 28 successful voyages has been less than

*Includes the Italian CAGNI which surrendered at Durban in September 1943.

**Includes the I-29, which arrived safely in July at Singapore, where her passengers disembarked, but was later sunk with the loss of her cargo while en route to Japan.

the cargo which could be carried on one of the surface blockade-runners formerly used.

G. Although the sailings of surface blockade-runners occurred principally in the autumn and winter months, so as to enable the vessels to negotiate the Bay of Biscay area when short days and weather conditions hamper observation, submarines are used at all seasons of the year. Surface blockade-runners used French ports exclusively; although most of the blockade-running submarines have departed from, or arrived at, Biscay ports, at least seven of them have used German and Norwegian ports.

H. Submarine voyages between Europe and the Far East require a minimum of from two to three months. Frequently, however, more time is consumed, since certain of the German submarines, carrying small cargoes, engage in operations in the Atlantic and Indian Oceans while en route.*

I. At least 10 German submarines are believed to be east of Capetown (as of 11 Nov 44), either engaged in operations or making preparation for the return trip. A list of those German submarines follows:

*Some of the German submarines have also engaged in operation in the Far East between voyages.

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UIT-24 (ex-Cappellini)

UIT-26 (ex-Torelli)

U-183

U-196

U-510

U-532

U-537

U-343

U-361

U-582

2. Cargoes From Europe to the Far East:

a. After the Germans suspended blockade-running by surface vessels in January 1944, the Japanese decided to sell, lease or otherwise return to the Germans and Italians such items as rolling mill equipment, presses, machine tools, prototypes of large guns, samples of aircraft, etc., which they wanted but which could not be shipped by submarine. The principal goods retained for shipment for the Far East included the following:

German radar units and other electronic
equipment
Bombsights
Vacuum tubes
Optical glass
Steel balls
Mercury
Machine gun ammunition

Prototypes of communications equipment
High grade aluminum
Special alloy steel for aircraft motors
Chemicals and drugs
Platinum
Industrial diamonds
Plans and drawings for weapons, aircraft,
etc.

b. TAB D lists the items known to have been shipped by submarine from Europe to the Far East in the period 1942-44. Other goods wanted by the Japanese, but known to have been destroyed at Lorient by the Germans last summer because of the speed of the Allied advance, are listed in TAB E. TAB F contains a list of products not known to have been shipped, but believed to have been available somewhere in Europe for shipment to the Far East before the last known departure.

c. In addition to the cargoes carried to the Far East, a number of German and Japanese engineers, technical experts and diplomatic officials have traveled on blockade-running submarines as passengers. The names of such passengers are listed in TAB G.

5. Cargoes from the Far East to Europe:

a. As indicated above, so far as is known there have been but six successful voyages of blockade-running submarines from the Far East in the period from 1942 to November 1944. Little information is available concerning

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the cargoes those vessels actually carried. However, it is known that from the inauguration of Axis blockade-running in 1941 the Germans have made great efforts to get such Far Eastern products as rubber, tungsten, tin, molybdenum, quinine and opium, and that the cargoes carried by submarines have actually included those items. During the past year the Germans have been particularly anxious to get tungsten, molybdenum and tin, and have used operational submarines returning to Europe to carry those commodities. Since the Germans need large quantities of the products they have tried to get from the Far East, the small amounts of such products that they could have received by submarine have probably been of little assistance to them. Further information about items transported from the Far East is to be found in TAB H.

b. The Japanese have taken advantage of submarine transportation to send personnel to Europe, principally (i) diplomatic officials and (ii) technicians to study the latest German developments in scientific fields. TAB I gives a list of persons known to have been carried as passengers on submarines from the Far East.

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TAB A

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TAB A

Blockade-running by merchant ships between German Europe and the Far East 1941-44

1941-42 Season (July 1941-Mar 1942)

<u>Direction of Voyage</u>	<u>Voyages Attempted</u>	<u>Losses (Sunk, Scuttled or Captured)</u>	<u>Damaged and returned to port</u>	<u>Successful</u>
Far East to Europe	14	2		12
Europe to Far East	5	0		5
	<u>19</u>	<u>2</u>		<u>17</u>

1942-43 Season (Sept 1942-Mar 1943)

Far East to Europe	11	7	0	4
Europe to Far East	17	1	1	10*
	<u>28</u>	<u>11</u>	<u>1</u>	<u>14</u>

1943-44 Season (Sept or Oct 1943-Jan 1944)

Far East to Europe	5	4		1**
Europe to Far East	0	0		0
	<u>5</u>	<u>4</u>		<u>1</u>

*One of the vessels which reached the Far East, a tanker, was destroyed by explosion after its arrival.

**This vessel was damaged by a mine near the Gironde estuary and part of its cargo was destroyed.

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TAB B

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Departures of Submarines from European Ports
for the Far East. 1942-44

<u>Vessel</u>	<u>Left Europe</u>	<u>Remarks</u>
<u>1942</u>		
1. I-30	Aug/Sept, Bay of Biscay	Sunk Singapore, mid-Oct.
<u>1943</u>		
2. U-180	9 Feb, Kiel	Rendezvoused with Japanese submarine in Indian Ocean in Apr.
3. U-178	28 Mar	Arrived Sabang or Penang Aug.
4. U-511 (Satsuki #1)	Apr/May, Lorient	Arrived Penang July/Aug.
5. Tazzoli	May, Bordeaux	Sunk in Bay of Biscay.
6. Giuliani (UIT-25)	May, Bordeaux	Arrived Sabang late July, Singapore, Aug.
7. Cappellini (UIT-24)	May, Bordeaux	Arrived Sabang 9 July, Singapore, Aug or Sept.
8. Torelli (UIT-25)	June	Arrived Sabang Aug, Singapore, late Aug.
9. Barbarigo	16 June	Sunk en route.
10. Cagni	30 June	Surrendered, Durban 20 Sept.
11. U-188	June/July	Arrived Penang late Oct.
12. U-532	June/July	Arrived Penang late Oct.

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<u>Vessel</u>	<u>Left Europe</u>	<u>Remarks</u>
13. U-183	June/July	Arrived Penang late Oct.
14. U-168	June/July	Arrived Penang 10 Nov, sunk in Java Sea, 6 Oct 44.
15. I-8	6 Oct	Arrived Penang early Dec.
16. U-510	3 Nov, Lorient	Arrived Penang 5 Apr after operations in Indian Ocean.
17. U-1062	Dec, Kiel	Arrived Penang 18/19 Apr.

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18. Attilio Bagnolini (UIT-22)	24 Jan	Sunk 11 Mar.
19. U-843	Feb, from a French port	Arrived Batavia before 13 June after opera- tions in Indian Ocean.
20. U-537	Early Mar, from a French port	Arrived Batavia 2 Aug after operations in Indian Ocean.
21. U-181	10-15 Mar, from a French port	Arrived Penang 8 Aug after operations in Indian Ocean.
22. U-196	10-15 Mar, from a French port	Arrived Penang 10 Aug after operations in Indian Ocean.
23. U-1224 (Satsuki #2)	30 Mar, Kiel	Presumed sunk some time after 11 May.

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<u>Vessel</u>	<u>Left Europe</u>	<u>Remarks</u>
24. U-859	7-10 Apr, from a Norwegian port	Sunk 23 Sept off Penang before unloading her cargo, after operations in Indian Ocean.
25. U-860	About 15 Apr	Sunk en route.
26. I-29	16 Apr, Lorient	Arrived Singapore 14 July, sunk 26 July en route to Japan
27. U-198	20 Apr, from a French port	Believed sunk after operations in Indian Ocean.
28. U-861	23-26 Apr, from a Norwegian port	Arrived Penang Sept after operations.
29. U-490	About 7 May	Sunk en route.
30. U-862	1 June, from a Norwegian port	Arrived Penang about 9 Sept.
31. U-863	Loaded Kiel July, left 1 Aug from Norway	Sunk en route.
32. U-180	22 Aug, Bordeaux	Believed sunk en route.
33. U-195	22 Aug, Bordeaux	En route.
34. U-212	24 Aug, Bordeaux	Believed sunk en route.
35. U-871	Late Aug	Possibly sunk.

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Departures of Submarines from Far Eastern Ports
for Europe, 1942-44

	<u>Vessel</u>	<u>Left Far East</u>	<u>Remarks</u>
	<u>1942</u>		
1.	I-30	May/June	Arrived Europe Aug.
	<u>1943</u>		
2.	U-180	Apr from Indian Ocean, after rendezvous with Japanese submarine.	Arrived Bordeaux July 1943.
3.	I-8	27 June, Penang	Arrived Brest late Aug or early Sept.
4.	U-178	Nov/Dec, Penang	Arrived Bordeaux 24-25 May 44.
5.	"Momi"	Nov	Sunk near Penang 13 Nov.
6.	I-29	15 Dec, Penang	Arrived Lorient 11 Mar 44.
	<u>1944</u>		
7.	U-188	Jan, Penang	Blown up at Bordeaux 25 Aug.
8.	UIT-23 (ex Giuliani)	Feb, Penang	Sunk 15 Feb near Penang.
9.	I-62	Apr, Singapore	Believed sunk in June, 800 m. W of Cape Verde.

*This was the first vessel referred to as the "Momi". After it was lost, the name "Momi" was assigned to the I-62.

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	<u>Vessel</u>	<u>Left Far East</u>	<u>Remarks</u>
10.	U-1062	16 July, Penang	Now en route or sunk.
11.	U-181	Oct/Nov	En route

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TAB D

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Products known to have been shipped on
submarines from Europe to the Far East. 42-44

<u>Commodity</u>	<u>Amount Shipped</u>	<u>Amount Known Sunk</u>
1. Metals and minerals:		
Lead	525 tons*	129.96 tons
Aluminum, high grade	25.5 tons plus 3,740 boxes	
Platinum	12,396.94 grams	12,396.94 grams
Mercury	106.34 tons	95.34 tons
Industrial diamonds	1,117.76 carats plus an unknown amount	1,117.76 carats
2. Steel products:		
Special alloy steel for aircraft motors	471 boxes plus 121.8 tons	121.8 tons
Steel balls	About 3,700,000	About 3,700,000
Ball bearings	5 boxes plus 308 packages	308 packages
3. Glass:		
Optical glass	72 kgs. plus 4 tons plus an unknown amount	72 kgs. plus an unknown amount
"Neophane glass," 50 and 75 per cent	Unknown amount	Unknown amount
4. Electronic equipment:		
Wuerzburg FuSe 62 \angle ground radar	8 sets	4 sets
AEG Company's welder	1 set	1 set
Vacuum tubes	Unknown amount	10 tubes
Parts	Unknown number	
Wuerzburg blueprints, type 1	4 rolls plus an unknown number of rolls	4 rolls

*All tons are metric.

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<u>Commodity</u>	<u>Amount Shipped</u>	<u>Amount Known Sunk</u>
Hohentwiel Anlage [air-borne anti-surface vessel radar, Fug 200] with converter and antenna	1 set	1 set
FUMO-61 [submarine-borne radar]	1 set	1 set
FUMG Seetakt [coastal radar] with converter and drawings	1 set	1 set
Wanz Anlage [radar warning device]	3 sets	3 sets
Naxos Borkum [German radar to detect Allied radar transmission]	2 sets	2 sets
Night vision apparatus	5 sets	5 sets
Abwurfsender FUG-302 [D/F buoy]	2 sets	2 sets
"KDB apparatus"	1 set	1 set
FuG 102 [obsolete electrical altimeter]	3	3
FuG 113 [possibly error for FuG 103, electrical altimeter now in use]	1	1
Oscillograph (Askania)	1	1
Captured "Rotterdam" apparatus [British "H2S" blind-bombing device] and explanatory documents	1 set	1 set
Captured Rosendahl apparatus and explanatory documents [British rearward airborne radar]	1 set	1 set

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<u>Commodity</u>	<u>Amount Shipped</u>	<u>Amount Known Sunk</u>
"Bold" tubes	4	4
Vacuum tubes	9 cases	9 cases

5. Weapons and ammunition:

75 mm anti-tank gun, together with ammunition and drawings	1	
13 mm machine gun mount	3 sets	3 sets
Barrels and mountings for 20 mm machine gun	1 set each	1 set each
105 mm gun barrel	1	1
20 mm incendiary ammunition	20 cases	
20 mm armor-piercing and armor-piercing tracer ammunition	130 cases	
20 mm armor-piercing incendiary ammunition	20 cases	
30 mm armor-piercing and armor-piercing tracer ammunition	10 cases	
30 mm tracer ammunition	10 cases	
Unspecified ammunition	165 boxes	
Torpedoes	22	
"Special equipment" / possibly 210 mm WC-21 rocket bombs together with firing tubes /	2 sets	2 sets
"Special equipment" / possibly type BV-246 glider bomb together with plans and an "experimental report" /	1 set	1 set

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<u>Commodity</u>	<u>Amount Shipped</u>	<u>Amount Known Sunk</u>
"LMA-3" magnetic mines to be dropped by aircraft	5 cases	
"LMB-3" acoustic detonators to be dropped by aircraft	5 cases	
Accessories for above 10 mines	1 case	
Simple magnetic mine for submarines	1 set (of 2)	1 set (of 2)
Magnetic detonator for electric acoustic torpedo	1	1
"Special equipment" /possibly magnetic detonators for acoustic torpedoes/	2	2
6. Precision optical goods:		
"Sight reflector"	1	1
Optical /circumferential graduator/	1	1
Bombsight parts /possibly for Lotfe 7D high alti- tude bombsight/	1 set	1 set
Microscope	1	1
7. Precision instruments:		
Unspecified precision instruments	1 box	
Johansson gauges	5,214	5,214
"Bild Company transits"	3 sets	3 sets
Screw pitch measuring device	1	
Ball bearing polishing machine	1	

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<u>Commodity</u>	<u>Amount Shipped</u>	<u>Amount Known Sur</u>
Drawings for ball bearing polishing machine	1 set	1 set
Galvanometer	1	1
8. Communications equipment:		
Code machines and accessories	26 machines	20 machines
Field transmitters	3 sets	3 sets
"Main parts" of loud speak- ing telephone sets	2 sets	2 sets
9. Motor parts:		
Exhaust turbine supercharger	2 sets	2 sets
"Special gas cut-offs"	2 sets	2 sets
Machine parts ?	66 kgs.	66 kgs.
Fuel jet pumps	35	
10. Chemicals and drugs:		
Eserine salicylate	200 grams	125 grams
Emetine cholate	Unknown amount	Unknown amount
Yellow fever virus	Unknown amount	Some lost
Atabrine for injection	7,950 ampoules	7,950 ampoules
Atabrine tablets	600,000	600,000
11. Miscellaneous:		
Respirators	103 kgs.	103 kgs.
Pressure cabin parts and drawings /possibly for the German high alti- tude plane HS 130/	4 sets	1 set
Propulsion equipment of rocket launching device	2	2
Most of the parts of a British Mosquito plane	15 pieces	15 pieces
Condensers	"About" 4,400	"About" 4,400

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<u>Commodity</u>	<u>Amount Shipped</u>	<u>Amount Known Sun</u>
Electric thermometers	3	
Carbon rods	30	30
Sample minesweeping cable, with "KKG" tubes and sample fuses	40 meters 4 1 set	40 meters 4 1 set
Acoustic minesweeping buoys	2	2
Aerial cameras with parts	2	2
Miscellaneous supplies for German submarine bases in the Far East	Unknown amount	Some
Miscellaneous luggage and trunks	520 pieces	520 pieces

12. Drawings and plans:

'40 type machine pistol and
'08 type ammunition
'43 type machine pistol and
'43 type ammunition
'42 type machine gun mount,
accessories and ball ammu-
nition
'41 type heavy anti-tank
rifle and armor-piercing
and explosive ammunition
'40 type 75 mm anti-tank
gun, and '39 and '40 type
armor-piercing ammunition
'40 type 75 mm recoilless
gun and '38 type hollow-
charge "B" armor-piercing
ammunition
'41 type 150 mm rocket gun
and '41 type ammunition
'40 type revolving telescopic
sight, 4 points
Drawings for Isotta Co. X-type
engine /for high speed motor
boats/
Partial blueprints for Lorenz Co.
and Telefunken Co. radio sets*

All drawings

*Certain of the Telefunken plans are believed to have reached Japan. The remaining Telefunken blueprints and the Lorenz Co. blueprints were lost on the I-29.

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<u>Commodity</u>	<u>Amount Shipped</u>	<u>Amount Known Sunk</u>
Drawings of crankshaft grinding jig		All drawings
Drawings of Rheinmetall 13 mm machine gun		All drawings
Report on demagnetizing technique used by the German Navy at Kiel Degaussing Department		
Plans and drawings of British and Russian wooden aircraft		
Report on nature and use of Sinter iron		
"Secret military documents" [Russian code and other cryptographic materials]		
Report on performance of motors used by the GAF early in 1944		
Plans and diagrams of latest type German Navy high speed underwater submarine		
Newsreels for Japanese Navy	2 sets	2 sets
Drawings of "S equipment" [presumably for "S-Geract" sound-ranging gear]*		
Drawings of Dets "107" [submarine borne radar]*		
Drawings of Gema vacuum tubes*		

*Carried on the I-30 which was sunk, but with the salvage of part of the cargo.

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TABLE

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Goods stored at Lorient awaiting shipment to the Far East which were destroyed by the Germans during summer of 1944

<u>Commodity</u>	<u>Amount Destroyed</u>
1. Metals and minerals:	
Aluminum	1,257 [Bars?]
Mercury	20 tons
2. Steel products:	
Steel balls	2 boxes
Ball bearings	114
3. Glass:	
"Neophane glass"	17,000 pieces
"Neophane glass 93"	11,000 pieces
Photographic lens	1
4. Electronic equipment:	
"KDB" fittings	3 sets
"Ausfahr head for S set"	
Oscillator for S-Gerast, Ger-	1
man sound-ranging gear	
Aircraft D/F receiver sets	18
5. Weapons and ammunition:	
20 mm single-mount machine gun	
and set of accessories	1
"H.A." [105 mm] gun (less the	
barrel, which had been loaded	
on the I-29)	1
Ammunition for 13 mm machine gun	5,000 rounds
Ammunition for 20 mm machine gun	5,200 rounds
Samples of various kinds of am-	
munition	680 samples

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<u>Commodity</u>	<u>Amount Destroyed</u>
Set of parts for torpedo fire control gear and cork /word missing/ drawings	1,000 kgs.
Magnetic mine	1
Samples of fuses	60
6. Precision instruments:	
Gauges:	
Micrometers	917
Screw taps	6,249
Gauge-blocks	57
/Word missing/ engravers	100
Attachments	5
Frames	15
7. Communications equipment:	
Field teleprinters	6 1/2 pairs
Teleprinter and parts	1
Code machines	70
Parts of control telephone	
Ultra-short wave transmitter	1
8. Motor parts:	
Superchargers /possibly for DB-627/	3
Sample parts of feed and con- densate pumps	1 set
9. Miscellaneous:	
Rocket take-off accelerators and accessories /possibly the type used by the JU-88/	1 set
Parts for "G.H.G." sets	
Carbon rods	66

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<u>Commodity</u>	<u>Amount Destroyed</u>
Minesweeping [gear] not loaded on the I-29	
Oerlikon machine gun tools and accessories	90 sets
Magazines [for machine guns?]	30
Non-ferrous metal searchlight gear	1
Aerial cameras	3
Camshaft testing machine	1
"Kalte Haerter" [an adhesive used in the manufacture of aircraft]	1 ton
"Kauritlein" [an adhesive used in the manufacture of aircraft]	1 ton

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TAB F

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Products not known to have been shipped, but believed to have been available somewhere in Europe for shipment to the Far East before the last known submarine departure*

<u>Commodity</u>	<u>Amount Available</u>
1. Aluminum	Unknown amount
2. Steel products:	
Special alloy steel for aircraft motors	500 tons plus an unknown amount
Steel balls	470 kgs.
3. Glass:	
Optical glass	26 tons
Lenses for Zeiss Contax cameras	250
4. Electronic equipment:	
FuG 25, IFF ("Identification Friend or Foe") equipment	5 sets
FuG 101 /Airborne altimeter/	10
FuG 213, Lichtenstein anti-surface vessel equipment	2 sets
Electric transformers for Wuerzburg units	10 sets
"1651 A and 1651 M vacuum tubes" for French Indo-China	5 cases
Vacuum tubes, unspecified	620 kgs.
Dete "500" /submarine-borne radar and drawings/	

*All known duplications have been eliminated from this TAB, but the possibility remains that certain of the items included were shipped to the Far East or were destroyed at Lorient.

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<u>Commodity</u>	<u>Amount Available</u>
5. Weapons and ammunition:	
20 mm electric firing machine gun, model 151	
30 mm machine guns, model 103 and plans	3
30 mm machine guns, model 108 and plans	3
"Panzerfaust" [anti-tank weapon] and blueprints	100
"Panzerschreck" [anti-tank weapon] and blueprints	2
Flame throwers	2
20 mm ammunition for model 151 machine gun	3,000 rounds
20 mm high explosive shells for Mauser MG 151	700,000 rounds
30 mm ammunition for model 103 and 108 machine guns	61,500 rounds
Boxes of ammunition	Unknown amount
Electric percussion caps	1,000
Parts for electric fuses for aircraft machine guns	Unknown amount
Mines for anti-tank use	15
6. Precision optical goods:	
Lotfe 7D bombsights	4
Spare gyros	3
Testing machines	3
Spare parts	5
Italian photometers	3
Precision measuring instruments	Unknown amount
7. Communications equipment:	
Siemens Hellschreiber equipment	3 boxes
All wave receivers	2 sets
Wireless condensers	530 kgs.
Wireless equipment--ground-air	Unknown amount
Multiple hydrophone installation, cable hook-up diagram	
"Sonore" underwater telephone installation	

<u>Commodity</u>	<u>Amount Available</u>
8. Motor parts:	
Extractor pumps for battleships	Unknown amount
Parts and plans for feed pumps for torpedo boats and cruisers	Unknown amount
Bosch jet nozzle and pipe for use in motors	3,400 kgs.
Engine testing apparatus	Unknown amount
9. Chemicals and drugs:	
Atabrine	1,000 kgs.
Hemoglobin and coloring matter	60 kgs.
Balsam	120 kgs.
Trolitul	Unknown amount
Penicillin mold	Unknown amount
Lithium chloride	6 tons
Benzyl cellulose	15 tons
Sodium formate	570 tons
Formic acid	51 tons
Influenza virus	Unknown amount
Salicylate of eserine	Unknown amount
200-unit bottles of insulin for French Indo-China	[250?]
Tubes containing twenty 0.5 gram tablets of "urotrophine" for French Indo-China	30,000 tubes
Methylene blue for French Indo-China	20 kgs.
One-kilogram bottles of chloroform for French Indo-China	500 bottles
One-kilogram bottles of chloral for French Indo-China	20 bottles
Emetine chloral hydrate for French Indo-China	50 grams
One-gram tin cans of salicylate of bismuth for French Indo-China	100 cans
10. Miscellaneous:	
The "combustion chamber" and other parts of the propulsion equipment used by the German planes ME-163 and ME-262	Unknown amount
Rocket take-off accelerators for JU-88	4 sets

<u>Commodity</u>	<u>Amount Available</u>
10. Miscellaneous (cont'd):	
Aerial photographic cameras:	
20 cm.	50
75 cm.	50
"HS-19"	150
Luminous paint	200 kgs. plus an unknown amount
Luminous paint for dials and samples of finished panels	Unknown amount
Machines for making rifle ammunition	3
Machines for making steel cartridge cases	Unknown amount
Surface polishing lathe	1
Tools for use in making machine guns	20 kgs.
Spring apparatus for "G7A," description, drawings, etc.	
Spring apparatus for "G7E" Pat Roman 2" drawings	
11. Documents and drawings:	
Drawings of "special 'D' type, main storage batteries and hydrogen absorbers for S56 type" high submerged speed submarine	
Report on cylinder for Daimler motor torpedo boat engine and for manufacture of cylinder	
Drawings of turbines from Deschimag Co. and suction and condenser pumps from Bruchans Co.	
Drawings for pistons for Daimler motor torpedo boat engine	
Diagrams and explanation of FW 190A military instruments and equipment	
Explanatory diagrams of electric firing pom-pom gun	
Summarized list of German machinery production together with catalogue	
Catalogue of precision measuring instruments	
Production drawings for Rheinmetall electric percussion caps	
Drawings for drilling machines	
Drawings and plans for the manufacture of acoustic torpedoes	
Miscellaneous documents	25 boxes
Documents explaining use of "Bold"	

TAB G

~~TOP SECRET ULTRA~~

Persons known to have been passengers
on submarines going from Europe
to the Far East, 1942-44

		<u>Left Europe</u>
Azumi	Expert on purchases of medical supplies	16 Apr 44
Barth	To be attached to the German Military Attache's office in Japan	16 Apr 44
Berner	To be attached to the German Military Attache's office in Japan	16 Apr 44
Bose, Subhas Chandra and his secretary	President, Provisional Indian Government	9, Feb 43
Brinker	Radar expert from Gema Company	10 May 43
Fodera, Heinrich	Engineer from the Telefunken Company	June 43
Gondo*	Japan's former Assistant Military Attache in Italy	16 June 43
Hammitzsch, Prof.	To be attached to the German Military Attache's office in Japan	16 Apr 44
Hanaoka, Lt. Col.	Submarine fuel and percussion cap expert	16 Apr 44
Kihara, Col.*	Japan's former Assistant Military Attache in Germany	14 May 43
Lange	German engineer	June 43
Matsui, Capt.	Radar expert	16 Apr 44

*Lost en route.

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~~TOP SECRET ULTRA~~

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Left Europe

Meguchi	Aircraft expert	16 Apr 44
Minami	Anti-submarine ordnance expert	16 Apr 44
Miura*	Army surgeon	18 June 43
Nakatani	Internal combustion engine expert	16 Apr 44
Nomura, Vice Adm.	Former member of Japanese-German-Italian Joint Specialist Commission under the Tripartite Pact in Berlin	10 May 43
Onishi	Anti-aircraft ordnance expert	16 Apr 44
Onoda		16 Apr 44
Rheinholdt, Lt. Comdr.	To be adviser to the German Naval Attache in Japan	6 Oct 43
Sakai	Technician from Sumitomo Co. and expert on motor torpedo boat engines	16 Apr 44
Sakato	Expert on medical supplies	16 Apr 44
Satake	Radar expert	June 43
Schuffner	To be attached to the German Military Attache's office in Japan	16 Apr 44
Shiba, Lt. Col.	Anti-aircraft ordnance and precision optical goods expert	16 Apr 44
Spahn	Head of Nazi Party in Japan	10 May 43

*Lost en route.

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~~TOP SECRET ULTRA~~

~~TOP SECRET ULTRA~~

		<u>Left Europe</u>
Sugita, Med. Capt.		10 May 45
Tanno	Aircraft expert	16 Apr 44
[Uris]	Anti-aircraft ordnance expert	16 Apr 44
Yokoi, Rear Adm.	Former Naval Attache in Berlin	6 Oct 43
Yoshida, Lt. Col.	Submarine fuel expert	16 Apr 44
Woermann, Ernst	German Ambassador to Nanking	10 May 43
	A German Diesel engine expert	June 43
	Ten other German technicians	10 May 45

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~~TOP SECRET ULTRA~~

TAB H

~~TOP SECRET ULTRA~~

Commodities believed to have been shipped
from the Far East to Europe by submarines, 1942-1944

<u>Commodity</u>	<u>Quantity believed to have been available for shipment</u>	<u>Amount believed to have been shipped</u>	<u>Amount known amount</u>
1. Tungsten	250 tons	50 tons plus an unknown amount	50 tons
2. Molybdenum	40 tons	Unknown amount	See tin
3. Tin	Large quantities	178 tons (in- cluding some molybdenum) plus an unknown amount	178 tons (in- cluding some molybdenum)
4. Gold Bullion		3 tons	3 tons
5. Rubber	Large quantities	79 tons plus an unknown amount	54 tons plus an unknown amount
6. Quinine	27 tons	3 tons	3 tons
7. Opium	17 tons	2.98 tons	2.98 tons
8. Japanese electronic equipment and drawings		Unknown amount	
9. Aerial Torpedoes No. 2-53.5 cm.		3	
10. Miscellaneous documents, in- cluding weather maps of the Indian Ocean, code books, etc.			All the documents

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~~TOP SECRET ULTRA~~

TAB. I

~~TOP SECRET ULTRA~~

Persons known to have been passengers of
submarines going from the Far East
to Europe, 1942-44

		<u>Left Far East</u>
Emi, Tetsujiro, Comdr.	To study German submarine con- struction	Apr 43
Gamo*	Ordnance engineer and expert of the Tokyo Mitsubishi In- strument Co.	Apr 44
Magino, Ichitaro*	A director of the Tokyo Gauge Co. and a gyro expert	Apr 44
Iheda		15 Dec 43
Inasato	To study Italian submarine construction	15 Dec 43
Kawakita, Jiro	To study German jet-propelled planes	15 Dec 43
Kiyota, 1st Class Petty Officer*		Apr 44
Kojima Rear Adm.	To be Japan's Naval Attache in Germany and Vichy France	15 Dec 43
Kumanoto, Masa- toshi, 1st Class Petty Officer*		Apr 44
Maeda, Toshi*	Ordnance engineer to study Ger- man motor torpedo boat	Apr 44
Minakawa		15 Dec 43
Mizuno, Ichiro*	Engineer of the Japan Optical Works	Apr 44

*Lost en route

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~~TOP SECRET ULTRA~~

Left Far East

Moriwaki, Fujio*	German language typist and translator	Apr 44
Murakami		15 Dec 43
Nagamori		15 Dec 43
Nagao*	Radar expert	Apr 44
Nakayama		15 Dec 43
Okada, Hidetaka, 1st Class Petty Officer*		Apr 44
Okada, Seichi*	Communications machine expert	Apr 44
Okuyama, Ryoitsu, 1st Class Petty Officer*		Apr 44
Samejima		15 Dec 43
Satori, Jihei		15 Dec 43
Sunagawa, Eamasa*		Apr 44
Tamai	Appointed Japan's Assistant Naval Attache in Portugal, October 1944	15 Dec 43
Tamaru, Lt Comdr.		15 Dec 43
Tomonaga, Hideo, Lt Comdr.	To study German submarine con- struction	Apr 43
Ukai, Yasuji*	Business machine expert of the Aichi Clock Co.	Apr 44
Umezaki, Kanae, Tech. Comdr.	Appointed Japan's Assistant Naval Attache in Spain, October 1944	15 Dec 43

*Lost en route.

~~TOP SECRET ULTRA~~

Left Far East

Waraya, Takeshi*

Ordnance engineer and expert of the Tokyo Mitsubishi Instrument Co.

Apr 44

50 crew members to man the U-1224 on voyage to the Far East

27 June 45

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~~TOP SECRET ULTRA~~