3. A-16 JAPAN AND JAPANESE ISLANDS: including a report ". . . On the Role of the Air Forces in the Defeat of Japan:" April 21, 1942 -February 5, 1945.

Regraded Unclassified

Melvyn H. McCoy, USN, from a Japanese Prison Camp in the

A16/Japan

TOP SECRET 5 February 1945.

MEMORANDUM FOR MARSHAL STALIN:

The following are two basic military questions to which the United States Chiefs of Staff would appreciate an early answer at this conference:

(a) Once war breaks out between Russia and Japan, is it essential to you that a supply line be kept open across the Pacific to Eastern Siberia?

(b) Will you assure us that the United States air forces will be permitted to base in the KOMSOMOLSK-NIKOLAEVSK or some more suitable area providing developments show that these air forces can be operated and supplied without jeopardizing Russian operations?

F. D. R.

Regraded Unclassified

A16/Japan

THE JOINT CHIEFS OF STAFF
WASHINGTON

TOP SECRET

23 January 1945

MEMORANDUM FOR THE PRESIDENT:

The Joint Chiefs of Staff have been guided by the following basic principles in working toward U.S.S.R. entry into the war against Japan:

Russia's entry at as early a date as possible consistent with her ability to engage in offensive operations is necessary to provide maximum assistance to our Pacific operations. The U.S. will provide maximum support possible without interfering with our main effort against Japan.

The objective of Russia's military effort against Japan in the Far East should be the defeat of the Japanese forces in Manchuria, air operations against Japan proper in collaboration with U.S. air forces based in eastern Siberia, and maximum interference with Japanese sea traffic between Japan and the mainland of Asia.

The following paragraphs set forth the status to date of negotiations with the Russians and indicate the objectives which we believe should be achieved at the coming conference.

a. Assistance prior to hostilities. The project to stockpile supplies in eastern Siberia in preparation for Russian entry into the war against Japan is making excellent progress. Of the 3/4 of a million tons of dry cargo required in this initial project, it is estimated 1/4 of a million tons will be available in U.S. ports by 1 March. The date of the Russian entry is of great importance to the U.S. both in planning the delivery of supplies and also in planning our operations. The Russians have recently made intensive staff studies which should enable them to give us at the coming conference a better estimate than we have received to date of the timing and planning of their operations.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

Copy to accompany original.

TOP SECRET

Regraded Unclassified

b. Opening of a sea route to eastern Siberia. The required capacity of any sea route across the North Pacific to eastern Siberia has not yet been determined. Such a route must be through one of the northern Kuriles straits, across the Sea of Okhotsk, and around northern Sakhalin to eastern Siberian ports, although it is possible that by moving supplies overland between Petropavlovsk and Ust Bolsheretsk a route of limited capacity could be established without having to pass convoys through the Kuriles. Because of ice, either route would only be navigable from June through October. The requirements of the war in Europe and our shortage of resources in the Pacific make remote any possibility of conducting amphibious operations in the Kuriles during 1945. The Russians have indicated a willingness to allow us to establish our forces in southern Kamchatka at the proper time. This measure alone may permit sufficient neutralization of Jap forces in the northern Kuriles to allow convoys to pass through the chain. It appears now that the bulk of supplies for any U.S. strategic air forces in eastern Siberia would have to come across the North Pacific rather than over the trans-Sib. Lacking definite information from the Russians as to their requirements for supply across the Pacific and firm commitment for the operation of U.S. strategic air forces from eastern Siberia, the necessity for opening a sea route to eastern Siberia has not yet been demonstrated.

In view of the fact that the route to Vladivostok will be closed by the Japanese at the beginning of war and in order to make plans and preparations, we should at this conference determine from the Russians the extent to which their operations against the Japanese will depend on supplies continuing to be brought across the North Pacific. However, no commitment to undertake an operation in the North Pacific should be made at this time. Also, all possible information should be obtained concerning the distribution facilities for these supplies.

c. Operations of U.S. strategic air forces from Russian bases. Entry of Russia into the war against Japan will provide additional areas from which our seasoned European strategic air forces can be utilized. Shortage of suitable heavy bomber bases elsewhere and the desirability of increasing the number of directions from which we strike Japan indicate we should make every effort to exploit the potential of Russian bases. At the Churchill-Stalin





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meetings in October, Stalin gave assurance that he would provide Maritime bases for U.S. strategic air forces. Recently, however, this agreement has, on a staff level, been withdrawn on the ground that Russian operations from the area in question would preclude the establishment therein of American air and naval forces. The United States Chiefs of Staff feel, however, that the availability, after victory in Europe, of large numbers of trained heavy bomber units; the scarcity of bases elsewhere, and the potential of the Russian bases, indicate we should press for agreement in principle to the establishment of U.S. air forces in eastern Siberia.

d. Russian strategic air forces. The United States Chiefs of Staff do not propose to raise the question of Russian strategic air forces at the forthcoming conference. The Commanding General, Army Air Forces, has offered to the Russians some 200 heavy bomber type aircraft, implying that these should be used as a Russian strategic air force employed jointly with a U.S. strategic air force of equal size; has offered to provide a nucleus establishment for the organization and training of a Russian strategic air force; and has further indicated that additional aircraft might be forthcoming if desired. To date the Russians have not accepted these proposals and we have not pressed the matter. It should not be raised on our part, but, if brought up, we should say that the matter will be further examined by the two military staffs.

e. U.S. assistance in Kamchatka. At the Churchill-Stalin meetings in Moscow in October, Stalin stated his willingness to give the U.S. air bases, including B-29 bases, on Kamchatka and to allow the U.S. to use Petropavlovsk as a naval base. He also agreed to a U.S. survey party entering Kamchatka. This party is now formed and will depart as soon as Russian visas are received. In planning, it is necessary to consider what, if any, U.S. assistance the Russians may require to defend Kamchatka against the Japs as well as what can be done in developing it as a base for U.S. operations. It may be desirable to use Kamchatka as a base for an air transport route to eastern Siberia and for transshipment to shallow draft vessels of supplies destined for Amur River ports.

At the conference, we should determine the Russian ideas on any U.S. assistance that they might need to defend Kamchatka, particularly as regards ground forces. In this connection any assistance that Russia could render in



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regards to developing housing, airfields and communications in Kamchatka before her entry in the war and without arousing Japanese suspicions would make our task much easier.

f. Use of Aleutian naval bases by the Russians. At the Churchill-Stalin meetings, the U.S. offered the Russians use of our Aleutian naval bases for their submarines and light naval craft. To date, the Russians have not indicated their desire in this matter. If the Russians raise this question at the conference, we should ask for their estimate as to what their requirements might be, but make no commitments.

g. Installation of USAAF Weather Reporting Stations in the U.S.S.R. The Joint Chiefs of Staff consider it highly important that additional weather reports be made available from Far Eastern U.S.S.R. to support our approved operations and future planned operations against the Japanese. Weather pertinent to our operations against Japan is formed in Eastern Siberia and the Mongolian Plateau. Marshal Stalin should be asked to agree to the provision of adequate weather stations in these areas to furnish us with the necessary weather information upon which we could base weather forecasts. The Russians should be told that the U.S. are prepared to furnish the necessary equipment and personnel or to assist in the training of Russian personnel to equip and operate these stations.

h. Improvement of U.S.-U.S.S.R. collaboration. The working efficiency of U.S. and U.S.S.R. collaboration to date has been low, even though there appears to have been quick agreement on general principles pertaining to military problems on the highest level. This inefficiency is largely attributable to administrative delays on the part of the Russians and a reluctance on staff levels to exchange with the U.S. the information essential to the carrying out of broad decisions. Any specific example is a detail but the cumulative effect of the failure of the Russians to act on reasonable requests - space for couriers on airlines, movement of mail and dispatches, securing of visas for military personnel, replies in a reasonable time to requests from the Joint Chiefs of Staff addressed to the Soviet General Staff, and many others - all these make progress difficult. The Chiefs of Staff suggest that Marshal Stalin be asked that necessary administrative steps be taken to make collaboration between the U.S. and U.S.S.R. work more efficiently and more rapidly, and that he also be asked to state what inefficiencies and delays his own people have experienced in working with the U.S. in order that we may make necessary corrections on our side.



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A special planning mission headed by Brigadier General Frank N. Roberts is now in Moscow and arrangements have been made for them to meet with a corresponding special planning group from the Red General Staff. No meeting has yet been scheduled by the Russians. It is felt that the combined efforts of these planning groups can be of great benefit to both General Staffs in expediting exchange of planning information and they should be given every assistance in their work.

The Chiefs of Staff feel that all the above points, if raised at the tripartite conference, should be discussed on the broadest basis; the details should be worked out separately between the staff representatives of the U.S. and U.S.S.R.

For the Joint Chiefs of Staff:

(SIGNED)

Chief of Staff, U.S. Army



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A16/8FP

THE WHITE HOUSE

WASHINGTON

SECRET

SECRET

December 11, 1944.

MEMORANDUM FOR THE PRESIDENT:

I enclose two TOP SECRET despatches, one from Ambassador Harriman and the other from Lieutenant Commander Earle.

Admiral Leahy encloses a suggested reply to Harriman. His thought is that to give Stalin confidential information about Japanese losses may harden his attitude toward the Jap.

Unless otherwise instructed, I shall not answer Earle's message.

Very respectfully,

WILSON BROWN.

Enclosures:

1. Harriman's 101910 (Dec.) to the President.
2. Lt-Comdr. Earle's 051601 (Dec.) to the President.
3. Proposed Message from the President to Ambassador Harriman.

Regraded Unclassified

A16

CONFIDENTIAL

CONFIDENTIAL

November 27, 1944.

MEMORANDUM FOR:

The Commander in Chief, U.S. Fleet.

The President has followed with interest the continuing suicide attacks against our carriers. He has raised the question why we can not improvise masts and wires on flight decks that can be hoisted and lowered quickly to fend off the suicide plane in the same way that the barrage balloons deter the dive bomber.

This idea is forwarded in case you feel that it should be passed along to the forces afloat.

WILSON BROWN,
Rear Admiral, U.S.N.,
Naval Aide to the President.

Copy to:
Vice Chief of Naval Operations
Deputy Chief of Naval Operations (for Air).

CONFIDENTIAL

Regraded Unclassified

A16/Japan

Mr. Rigdon

IMMEDIATE RELEASE

NOVEMBER 24, 1944

TEXT OF REPORT TO THE PRESIDENT BY GENERAL ARNOLD ON THE RETURN OF THE AAF TO TOKYO

Our Air Force returned to Tokyo today. A task force of B-29 Superfortresses attacked the Japanese capital from bases in the Marianas.

This operation is in no sense a hit-and-run raid. It is a calculated extension of our air power. Combined operations of the Navy and the Army in the Pacific have won these island bases from which our B-29s now may strike at will into the enemy homeland. No part of the Japanese empire is now out of our range, no war factory too remote to feel our bombs. The battle for Japan has been joined.

The systematic demolition of Japan's war production, begun six months ago from China bases, henceforth will be carried out with decisive vigor, softening up the Japanese heart for the ultimate invasion by combined United Nations land, sea and air forces. This will not be accomplished in a short time. The battle is just beginning. But today we opened against Tokyo an attack which will be carried on relentlessly from the air until the day of land-sea invasion.

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Regraded Unclassified

A16/Japan

file map Room

THE WHITE HOUSE

WASHINGTON

July 10, 1944.

MEMORANDUM FOR

THE JOINT CHIEFS OF STAFF

I have your memorandum of July Fourth in regard to policy regarding the Japanese Mandated Islands.

The Joint Chiefs of Staff are right in stating that no other nation should be left even to the partial control of another nation, but they must also realize that we have agreed that we are seeking no additional territory as a result of this war.

I am working on the idea that the United Nations will ask the United States to act as Trustee for the Japanese Mandated Islands. With this will go the civil authority to handle the economic and educational affairs of their many inhabitants, and also the military authority to protect them, i.e., fortifications, etc. It does not necessarily involve a decision on permanent sovereignty.

F. D. R.

Regraded Unclassified

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

THE JOINT CHIEFS OF STAFF
WASHINGTON 25, D. C.

SECRET

4 July 1944.

MEMORANDUM FOR THE PRESIDENT:

Subject: Policy regarding the Japanese Mandated Islands.

The Joint Chiefs of Staff recommend that you approve the policy regarding the Japanese Mandated Islands as set out below and send it to the Department of State as the policy of the United States Government.

"As evidenced in the present war, the Japanese Mandated Islands bear a vital relation to the defense of the United States. Their assured possession and control by the United States are essential to our security. Together they constitute a single military entity, no element of which can be left to even the partial control of another nation without hazard to our control of that entity.

"The Japanese Mandated Islands should be placed under the sole sovereignty of the United States. Their conquest is being effected by the forces of the United States and there appears to be no valid reason why their future status should be the subject of discussion with any other nation."

For the Joint Chiefs of Staff:

William D. Leahy

WILLIAM D. LEAHY,
Admiral, U.S. Navy,
Chief of Staff to the
Commander in Chief of the Army and Navy.

SECRET

Regraded Unclassified

A16/Japan

TOP-SECRET

admiral Brown to file

11.30

15 June 1944

B-29's from Calcutta, staging at Cheng Tu bombed Yawata, Japan at 11:55 EWT today.

TOP-SECRET

Regraded Unclassified

A16/Japan

Admiral Brown
To read & file
F. D. R.

THE WHITE HOUSE

WASHINGTON

March 6, 1944.

MEMORANDUM FOR THE PRESIDENT:

You may be interested in the attached summary of conclusions of certain blockade studies in FEA.

Lauchlin Currie

Lauchlin Currie

Regraded Unclassified

March 4, 1944

MEMORANDUM FOR THE PRESIDENT

FEA has prepared studies on Japan's staying power in the event of a total blockade, excepting in the Sea of Japan.

The establishment of the blockade is of course a military problem dependent upon naval and air action in the Pacific and increased air action from China bases.

Assuming the establishment of such a blockade, the FEA studies show that the shipment of raw materials to the Japanese islands from the mainland and the Outer Zone can be reduced from their present estimated level of about 45 million tons to about 20 million tons. It is estimated that this reduction would cause a drop of about one-third in Japan's basic heavy industries. Food supply, which is already marginal, would be heavily hit.

A blockade of this description would deprive Japan of its oil from the southern regions, forcing Japan almost immediately to curtail naval and air operations.

The denial of essential materials from the Outer Zone and the mainland would force a radical reallocation of available materials in Japan. This would effectively disrupt not only production but also transportation.

The studies conservatively assume that Japanese port facilities and factories will remain intact. It is obvious, however, that carrier and China-based aircraft will in the event of an effective blockade be able to bomb Japanese ports and industry. This will produce an even greater disintegration of communications and production than has been calculated.

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SECRET SECURITY

A16 Japan

Admiral Brown
to file

File with

WAR DEPARTMENT
HEADQUARTERS OF THE ARMY AIR FORCES
WASHINGTON

February 22, 1944

MEMORANDUM FOR THE PRESIDENT:

Subject: Presentation on role of Air Forces in Defeat of Japan

Herewith is a presentation on the role of Air Forces in the defeat of Japan, which I believe will be of interest to you. You will note that it is built primarily around the B-29.

H. H. Arnold
H. H. ARNOLD
General, U.S. Army
Commanding General, Army Air Forces

Incl: Outline of presentation of views of CG/AAF on role of A.F. in defeat of Japan

SECRET SECURITY

Regraded Unclassified

SECRET

PROPOSED STATEMENT ON THE DESTRUCTION OF JAPANESE BARGES

- - - - - - - -

We are all beginning to realize under what serious disadvantages the Japanese are now laboring because of the continuing heavy losses in their merchant marine. These losses have been imposed mostly by our submarines, but in addition the air forces of both the Army and the Navy have also taken an extremely heavy toll.

It has become evident for some time that the Japanese are attempting to fill their acute shortage in shipping by building a large number of motor barges which are used to distribute supplies and men in the more advanced battle fronts, particularly in the South Pacific. The battle against these barges has become one of the most spectacular and exciting phases of the war. It is impossible to state exact figures as to Japanese casualties because of the nature of the operations. However, it does appear that well over a thousand barges have been destroyed since the beginning of the war and several hundred more have been probably destroyed and damaged. The personnel losses have been severe, even by Japanese standards.

In these operations our aircraft and PT boats have played the major role on our side. The PT boats are becoming more and more effective as their daring and ingenious tactics are developed.

As we go further and further into Japanese territory, and the hurried transportation of Japanese troops and supplies behind and close to our lines becomes more and more necessary, this phase of the war will become more and more important from our angle and more damaging to the enemy.

Regraded Unclassified

THE WHITE HOUSE
WASHINGTON

February 17, 1944.

The President proposes to make the following statement at his Press Conference on Friday, February 18, 1944:

"Lately the PT Boats through rigorous daring action and through the development of new techniques have been extremely successful. Although no definite figures can be compiled due to the nature of the operations, figures available do indicate that over a thousand Japanese Barges have been destroyed to date and several hundred more probably have been destroyed or damaged."

Cleared by
Adm Edwards.

Per Lowndes Campbell
Public Relations

Feb 17, '44

Regraded Unclassified

Japanese Barge Losses and Damages

| Date | Destroyed | Probably Destroyed | Destroyed or Damaged | Damaged | Probably Damaged | Attacked |
|---|---|---|---|---|---|---|
| To Dec. 1942 | 49 | 13 | 23 2x | 4 1x | | 19 11x |
| 1943 Jan. | 5 | | | 1 1x | | 1 4x |
| " Feb. | 7 | 1 | | 16 1x | | 8 2x |
| " Mar. | 23 | | | 4 | | 3 6x |
| " Apr. | 1 | | | | | 3x |
| " May | 15 | | | | | 34 3x |
| " Jun. | 3 | 6 | 11 | 5 | | 1 2x |
| " Jul. | 46 1x | 3 | | 53 | | |
| " Aug. | 166 3x | 5 | 1x | 97 6x | 22 6x | 1x |
| " Sep. | 97 2x | 35 | 40 | 85 8x | 11 | 16 2x |
| " Oct. | 137 | 13 | 22 1x | 50 2x | 7 | 104 11x |
| " Nov. | 218 | 13-15 | 1 | 65 2x | | 89-94 8x |
| " Dec. | 127 1x | 9 2x | 23 | 93 1x | 4 | 111-113 22x |
| 1944 Jan. | 110 3x | 13 | 6 1x | 70 5x | | 81 10x |
| To 11 Feb. | 55 | | 54-56 1x | | | 40 3x |
| Total | 1059 10x | 111-113 2x | 180-182 6x | 543 27x | 44 6x | 507-514 88x |

An x represents an aggregation of barges of which an undetermined number were destroyed or damaged. Some of these aggregations were very large, others only convoy groups. On 30 January photos showed 385 barges in Simpson Harbor before an attack. An attack that day damaged an estimated 30% of the vessels in harbor, or about 115, which is represented by one x on the chart. Therefore, an x represents a range of 2 to 115 vessels.



Regraded Unclassified

Japanese Barge Losses and Damages

| Attack Made By: | Destroyed | | Probably Destroyed | | Damaged or Destroyed | | Damaged | | Probably Damaged | |
|---|---|---|---|---|---|---|---|---|---|---|
| Planes | 820 | 1x | 91-93 | 1x | 180-182 | 6x | 507 | 25x | 32 | 6x |
| PT's | 200 | 3x | 16 | | | | 26 | 2x | 12 | |
| DD's | 31 | 3x | 4 | | | | 10 | | | |
| Artillery | 8 | 3x | | 1x | | | | | | |
| Total | 1059 | 10x | 111-113 | 2x | 180-182 | 6x | 543 | 27x | 44 | 6x |



Regraded Unclassified

Japanese Barges Destroyed or Damaged by PT's

| Date | Sunk or Destroyed | Probably Destroyed | Damaged | Probably Damaged |
|---|---|---|---|---|
| 1943 Jan. | 2 | | 1 | |
| " Feb. | 3 | | | 5 |
| " Mar. | 6 | | | |
| " Apr. | | | | |
| " May | | | | |
| " Jun. | | | | |
| " Jul. | 3 | | | |
| " Aug. | 39 1x | 2 | 8 2x | |
| " Sep. | 17 2x | 2 | 4 | 3 |
| " Oct. | 2 | | | |
| " Nov. | 36 | | 2 | |
| " Dec. | 41 | 1 | 5 | 4 |
| 1944 Jan. | 46 | 11 | 5 | |
| " Feb. | 5 | | 1 | |
| Total | 200 3x | 16 | 26 2x | 12 |



Regraded Unclassified

A16 [illegible]

SUGGESTED STATEMENT ON THE MARSHALLS OPERATIONS.

- - - - - - - - - - - - - - -

As the official reports of the recent Marshall Islands operations come in, several pertinent conclusions become obvious to us and I trust, painful to the Japanese.

First, the Army, the Navy and the Marine Corps have learned to work in the closest harmony and with the greatest cooperation, not only in the higher command but in all echelons.

Second, the same spirit of harmony prevails as regards the various types of weapons used. The operations of the shore based aircraft mesh closely with those of the carrier planes; bombardment by surface craft is coordinated closely with that of aircraft; the destroyers fulfill their task in screening the larger surface forces and yet contribute their part to shore bombardment; the transports, the amphibious craft and the troops they carry move forward as the final and devastating spearhead of the attack.

Third, the nation's output of aircraft appears to be such that in at least certain sections of the enemy's territory we may be able to expect not only superiority but complete mastery of the air.

Fourth, that by careful planning and sound execution we were able to move the largest armada of all history into the very heart of the Marshall Islands group and capture our objectives without the loss of a single ship.

This operation is but one of a line that stretches far into the future and across many miles of enemy-held territory. The going will not always be as easy or as cheap in lives, ships and planes, but the going will eventually take us to Tokyo itself.

Regraded Unclassified

A16/Japan

F. D. R.

THE WHITE HOUSE

WASHINGTON

Chu

February 5, 1944.

11:45 a.m.

Admiral King just phoned to report that the Seventh Division today (Saturday) completed the capture of PORCELAIN (KWAJALEIN), BURTON, BURNET and BLANKENSHIP Islands. The latter three islands are immediately to the northward of KWAJALEIN and have important enemy installations on them.

Respectfully,

W. M. Rigdon.

Regraded Unclassified

THE WHITE HOUSE
WASHINGTON

SECRET
SECRET

February 3, 1944.

MEMORANDUM FOR:

THE PRESIDENT.

The early and unexpected success in the Marshall Islands has made it possible to speed up the tempo of the whole Central Pacific campaign.

Numerous exchanges of messages and formulation of plans are at present in progress with the highlights as follows:

(a) It is proposed to carry out a carrier strike on TRUK as soon as possible. Three of the four Carrier Groups as organized for the MARSHALLS will approach TRUK from the Northeastward with the fourth group covering from the Westward of ENIWETOK. Admiral Halsey is furnishing photo reconnaissance as soon as possible. Fuel and ammunition are apparently available at KWAJOLEIN.

(b) It is further proposed to proceed immediately with the capture and occupation of ENIWETOK utilizing the forces which have been allocated for the capture of MAJURO plus the Corps reserve which was not used at all. Rear Admiral Hill would be in command of this Attack Group.

(c) It may be necessary to interchange the order in which the two operations mentioned above will be undertaken but the strike on TRUK is desired prior to the capture of ENIWETOK in the fear that the latter operation may cause surface units to evacuate from TRUK.

(d) It appears that carrying out these two operations at the present time may delay the scheduled operations in the NEW GUINEA-NEW IRELAND AREA, the target date for which is April 1st. The Joint Chiefs of Staff have granted permission for this slight delay if it proves necessary.

It appears more than ever that the MARSHALLS operation is most gratifying to all concerned.

Very respectfully,

CHESTER W. WOOD.

SECRET

Regraded Unclassified

A16-3/Japan

THE WHITE HOUSE
WASHINGTON

File WSB

January 14, 1944.

MEMORANDUM FOR

ADMIRAL BROWN

As you attended the last Pacific War Council meeting, you will see that there is no danger of our giving away any Japanese Mandated Islands in the Pacific, except that the question of civil administration is still open. You might tell this to Admiral Leahy. The question of the military control of them will be decided in favor of the United States.

F. D. R.

Admiral Leahy has discussed with the President 1-17-44
File W.B.

Regraded Unclassified

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

THE JOINT CHIEFS OF STAFF
WASHINGTON 25, D. C.

File WHL

11 January 1944

SECRET

MEMORANDUM FOR THE PRESIDENT:

Subject: Policy Regarding Japanese Mandated Islands

With regard to Japanese Mandated Islands, the Joint Chiefs of Staff have approved as their policy that no statements, agreements or plans be made by them, and no action be taken by forces under their control, which directly or indirectly might be construed as a basis for any nation other than the United States obtaining sovereignty or any other territorial rights in the Japanese Mandated Islands, during or after the present war.

The Joint Chiefs of Staff submit this policy for your approval and recommend that it be transmitted to the Department of State as the policy of the United States Government.

For the Joint Chiefs of Staff:

William D. Leahy

WILLIAM D. LEAHY,
Admiral, U.S. Navy,
Chief of Staff to the
Commander in Chief of the Army and Navy.

SECRET

Regraded Unclassified

SECRET

By authority A. C. of S., G-2
Date NOV 16 1942 (RO)

A16/80pm

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
MILITARY INTELLIGENCE DIVISION G-2
WASHINGTON

MID 907

November 16, 1942.

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Japanese Air Force.

1. It is estimated that the Japanese current rate of production of combat types of aircraft for assignment to both Army and Navy air units is 500 planes per month.

2. The Japanese air strength as of October 31, 1942 totals 3,554 combat airplanes.

3. a. The average rate of known plane losses per month since December 7, 1941 to November 1, 1942 has been 260 planes per month.
b. It is estimated that there is an additional operational loss of 350 planes per month.

4. The estimates as given in paragraphs 1, 2, and 3, are figures from joint estimates prepared by the Military Intelligence Service and the Office of Naval Intelligence.

Geo. V. Strong
GEO. V. STRONG,
Major General,
A. C. of S., G-2.

SECRET

Regraded Unclassified

A8-21

Capt. McCrea to file

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

November 16, 1942.

MEMORANDUM FOR GENERAL WATSON:

The President stated yesterday at Hyde Park that he would like to see some brief figures on the size of the Japanese Air Force and the rate at which the Japanese are producing aircraft.

The attached memorandum, based on G-2 and ONI figures and prepared this morning, will be of interest to him.

Frank McCarthy

FRANK McCARTHY,
Major, General Staff,
Asst. Secretary, General Staff.

Regraded Unclassified

File NB.

COMINCH FILE

FF1/A8

Serial: 002907

UNITED STATES FLEET
HEADQUARTERS OF THE COMMANDER IN CHIEF
NAVY DEPARTMENT, WASHINGTON, D. C.

**SECRET**
SECRET

30 DEC 1943

MEMORANDUM TO THE NAVAL AIDE TO THE PRESIDENT.

Subject: Japanese Merchant Shipping Losses - Sunk by U. S. Submarines in China-Indo-China-Malaya Area.

Reference: (a) Your Secret Memorandum dated 28 December, 1943.

1. This estimate of Japanese Merchant Shipping losses as the result of U.S. submarine attacks for the months of October, November, and December applies to the shipping lanes from the Empire to the West and Southwest Areas, including China, Indo-China, Siam and Malaya. It is impossible in most cases to distinguish between final destination and ports of call enroute. Furthermore, considerable overland transportation is carried out from Malaya, Siam and Indo-China to Japanese forces deployed against the Chinese.

2. The figures for October and November are incomplete and may be revised upward as later information becomes available. The figures for December are extremely incomplete and tentative. Sinkings caused by aircraft are not included.

Sinkings by U.S. Submarines: China, Indo-China, Siam and Malaya.

| Month, 1943 | Number of Ships | Tonnage |
|---|---|---|
| October | 10 | 61,718 |
| November | 17 | 103,069 |
| December | 5 | 19,489. |

R. S. Edwards

R. S. EDWARDS,
Chief of Staff.

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Regraded Unclassified

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NAVY DEPARTMENT
OFFICE OF NAVAL INTELLIGENCE
WASHINGTON, D. C.

Statistical
Section

February 5, 1943

MEMORANDUM FOR Director

16—12936 GPO

The attached summary, requested by Admiral Brown, was prepared by Op-16-F-2 and is merely a compilation of sinkings and attacks which were reported by dispatch during the two month period.

The Statistical Section does not receive all operational dispatches from the Pacific areas and is, therefore, unable to confirm or deny the accuracy of the compilation.

If the summary is made available to Admiral Brown, the Admiral should be advised that

1. The figures given are probably exaggerated due to inadvertent inclusion of attacks reported by more than one source which are duplications,
2. The figures are unconfirmed by intelligence sources or by action reports, and
3. Final figures for the two months will undoubtedly prove to be considerably lower than those here shown.

Respy

C.G.Moore, Cdr., USN

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Summary of U.S. Submarine attacks on Enemy Shipping in the SW Pacific as reported in U.S. and ALLIED WAR SUMMARY from December 1, 1942, to February 4, 1943, inclusive.

February 4, 1943

| Enemy Ships Sunk | Enemy Ships Probably or Possibly Sunk | Enemy Ships Damaged or Possibly Damaged | Total Ships Sunk or Damaged |
|---|---|---|---|
| | | 1 CA | 1 CA |
| | | 2 CL | 2 CL |
| 11 DD | | 2 DD | 13 DD |
| 5 SS | | | 5 SS |
| | 1 AV | 1 AV | 2 AV |
| 6AP | 3 AP | | 9 AP |
| 17 AK | 8 AK | 9 AK | 34 AK |
| 9 AP/AK | | | 9 AP/AK |
| 4 AO | | 3 AO | 7 AO |
| 1 Escort | | | 1 Escort |
| | 1 Auxiliary | 1 Auxiliary | 2 Auxiliary |
| 1 Schooner | | | 1 Schooner |
| 4 Barges | | | 4 Barges |
| 14,000 tons unclas. | | | 14,000 tons unclassified |

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BOARD OF ECONOMIC WARFARE
Enemy Branch

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# JAPAN'S SHIPPING POSITION

August 17, 1942

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## CONCLUSIONS AND RECOMMENDATIONS

Shipping is the basic vulnerability in the Japanese war economy, and successful attack thereon will greatly reduce Japan's war effort and perhaps make its position in the conquered areas untenable.

Japan must move by water almost all of its raw materials for munitions output, 90% of its petroleum and at least 70% of the coal used for power production. Important quantities of foodstuffs are also waterborne and munitions produced must move by ship to the fighting fronts. Japan is thus doubly vulnerable since it is dependent upon ocean transportation for basic raw materials as well as for the movement of troops and their supplies. In short, shipping is a bottleneck which limits the extent to which the conquered areas can be developed both now and in the future; this in turn limits the industrial power of Japan, and Japan's industrial power and shipping supply limit the effectiveness of its army and navy.

Japanese ship tonnage, although large, is already inadequate to meet all the various demands placed upon it, but the position is as yet restrictive rather than dangerous. If vigorous attacks are made upon Japanese shipping, however, a serious insufficiency may be soon brought about, since replacement of lost tonnage is now impaired by shortages of labor and necessary materials. Attacks on ships carrying coking coal and iron ore would greatly reduce the Japanese steel output and this would make permanent the materials shortage. In effect, the sinking of a vessel laden with ore will thus deprive Japan not only of the ship in question but also of other ships which might have been made from the ore that went down.

Immediate action is desirable because the Japanese are now expanding shipbuilding facilities and output, and also planning rail routes to Malaya to supplement and replace shipping. The period of acute vulnerability for Japanese transportation may therefore be short. In the meantime Japanese shipping is believed susceptible to submarine attack and also to attack by planes based in Free China or possibly in Siberia.

It is recommended that tankers be given first preference as targets and that ore and coal carrying vessels be given second preference. Loading facilities in Malayan and Philippine iron ore ports should be destroyed. The coal trade from North China should also be a major objective, and if Siberian bases are open, the loading facilities at the coal loading ports of Northern Japan should also be bombed. Shipping concentrations off Formosa and Southern Korea and in the Yangtze might be attacked, not alone to sink vessels, but also to force abandonment of short routes or cause dispersion of effort in convoying. These measures, and others recommended in the text, will probably cause maximum disorganization of Japanese ocean transportation and greatly impede the enemy war effort.

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THE JAPANESE SHIPPING POSITION IN 1942

Summary

A. Japanese Tonnage Position, July 1, 1942

On July 1, 1942, it is estimated, the total tonnage available for military and commercial transport was 5,485,000 gross tons:

| | |
|---|---|
| Tonnage available December 1, 1941 (vessels of 100 gross or over, including those under Chinese and Manchurian flags but excluding fishing craft, barges, etc.) | 6,700,000 Gross Tons |
| New Construction to July 1, 1942 | 155,000 Gross Tons |
| Axis and French tonnage available | 300,000 Gross Tons |
| Allied tonnage captured (including sunken vessels raised and repaired) | 290,000 Gross Tons |
| TOTAL merchant marine before subtracting losses | 7,445,000 Gross Tons |
| Vessels sunk by Allied action | 1,000,000 Gross Tons |
| Ordinary marine losses | 30,000 Gross Tons |
| Vessels seriously damaged in the war | 330,000 Gross Tons |
| Vessels laid up for ordinary repairs | 380,000 Gross Tons |
| Vessels captured which do not add to Japanese shipping potential (i.e. in essential local trade, etc.) | 120,000 Gross Tons |
| Ferries, floating canneries, etc., not suitable for ordinary commercial use | 100,000 Gross Tons |
| TOTAL losses including vessels unavailable for use | 1,960,000 Gross Tons |
| Tonnage available July 1, 1942 for military and essential commercial use | 5,485,000 Gross Tons |

B. Probable New Construction in 1942

The maximum merchant and naval construction capacity of Japan for steel vessels is 800,000 tons per annum but shortages of workers and materials and preoccupation with ship repairs and naval construction make it unlikely that completions of merchant tonnage will be large. It is estimated that in 1942, 200,000 gross tons of steel vessels (ships of 100 gross tons or more) may be built in Japan and one-fourth as much will be constructed at Hong Kong--a total of 250,000 gross tons. In addition, about 50,000 gross tons of wooden ships may be completed. The Japanese Government is now stressing the importance of replacing lost tonnage, but little result can be expected from the planned program before 1943.

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The raising of sunken vessels may add 100,000 gross tons to the 1942 totals, making a probable maximum expectation of 400,000 tons this year.

C. Japan's Shipping Needs in 1942

Japan's shipping requirements for 1942 are estimated as follows:

| | |
|---|---|
| Tonnage estimated as required on the average in coasting and China trades..... | 3,600,000 Gross Tons |
| Tonnage available for permanent military and commercial use in Malaya, Burma, etc., (including 400,000 gross tons of tankers)..... | 1,885,000 Gross Tons |

A breakdown of this latter tonnage might perhaps be as follows:

| | |
|---|---|
| Probable requirement for naval auxiliary use (including 150,000 gross tons of tankers)..... | 400,000 Gross Tons |
| Probable requirement for supplying troops in the conquered areas of Southern Asia..... | 750,000 Gross Tons |
| Probable requirement to maintain essential services in the Philippines, East Indies, etc..... | 35,000 Gross Tons |
| Remainder theoretically available for further military or commercial use..... | 700,000 Gross Tons |

This would seem to indicate that Japan still has a surplus of tonnage, but some further subtractions may be made from the above figures. First, it is to be noted that part of the available tonnage consists of around 200,000 tons of tankers. Oil production in the East Indies would hardly call for more than partial use of this tonnage until the last few months of the year because of damage inflicted upon the fields in accordance with the "scorched earth" policy. As a rough estimate about 100,000 tons of tankers might be considered as unemployable by the Japanese at this time. This reduces the apparent surplus to 600,000 gross tons.

Second, it is likely that there was considerable tonnage shifted from the Japanese local and China services to reinforce the invasion fleets during this last winter. This tonnage must be repaid as otherwise movements of essential materials will suffer. Probably the amount borrowed was of the order of 500,000 or 600,000 gross tons and it is likely that repayment of this loan practically wipes out the Japanese tonnage surplus, during the summer and autumn. It follows that the Japanese shipping position should become increasingly stringent in the next few months, but with some measure of relief possible this winter when cargo arrears in China and local trade are cleared up and when sailing craft are brought into auxiliary use, as planned. Tonnages will still be available, however, during the rest of 1942, to move the minimum of commodities necessary for Japanese industry unless greater losses are inflicted or loss of shipping efficiency is caused by forced resort to convoys or by other means.

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D. Probable Japanese Transport Schedule

1. As set forth more fully in table B, it is believed that Japan will, in the absence of direct military interference, try to move a minimum of about 83,000,000 tons of raw materials essential for the war effort during 1942 in the coasting trade and trades with the Asiatic mainland and the Malayan region. Munitions movements and non-essential trade are not included in the figure.

2. Over 29,000,000 tons of this total represents possible movement from the north of Japan, the Asiatic mainland of Malaya to the Shimonoseki Strait or to Wakamatsu which is just outside the entrance, and another 19,000,000 tons consists of coal from Wakamatsu to destinations principally in the Inland Sea--Osaka area. The Shimonoseki Strait has by far the largest concentration of Japanese shipping, due to its coal export trade and to the location of the major Japanese steel works at Yawata and in the Inland Sea region, these steel plants being dependent on imports for coking coal, iron ore and scrap.

3. Second only to the Wakamatsu-Shimonoseki shipping concentration is that in the Osaka-Kobe region, but a large part of the cargo consists of coal moved from Wakamatsu, while the major part of the remainder passes through the Shimonoseki Strait and is thus available for attack in that area. Extremely large concentrations of anchored vessels will, however, be found at Osaka and Kobe and as a bombing objective this region would rank high.

4. As much as 12,000,000 tons of coal may be moved from the north of Japan to the Tokyo and nearby regions by water for power production, and there will be important movements of rice, sugar, phosphate and other commodities into Tokyo Bay from the south and west, making this another major point of concentration for Japanese shipping.

E. Weaknesses of the Japanese Shipping Position

It is estimated on the basis of fairly complete statistics that Japan now has under its control less than 2,400,000 gross tons of modern vessels of medium to large size and with speeds of twelve knots and over. The remaining tonnage is composed of small ships or of vessels of the older tramp type, usually more than twenty years old, slow, and in considerable need of repairs. This tonnage has the advantage under present conditions of being coal burning, however, while most of the modern ships are oil burners or Diesel craft. It is believed that the small, slow tonnage, is being kept mainly for the services between Japan and the Asiatic mainland and for Japanese coasting trade, while the more modern tonnage is largely employed in transport services. This implies that up to now the loss in efficiency of the Japanese merchant marine has been greater for each vessel sunk than might otherwise be reckoned. Sailing craft are now being pressed into service in Japanese and Chinese coasting trade, and also in Malaya--an excellent indication of shortage of steam vessels.

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Recent speeches by Japanese officials bear out this conclusion, which can also be supported by known transport difficulties in 1940 and 1941 as reported by American officials. It is therefore believed that the Japanese merchant marine, although large, is now barely adequate for essential transport use and the movement of commodities necessary to the Japanese war effort. If ships can be sunk during the remainder of 1942 at the rate maintained during the first part of the war, the merchant marine will become inadequate for its double task, as new construction will be small. The Japanese war and productive effort should, therefore, suffer progressive deterioration during 1942 if the attack on Japanese shipping can be successfully pressed home.

Maximum damage to the Japanese economic and shipping position can probably be effected through:

1. Destruction of harbor facilities and lighters in the Philippine and Malayan ports from which iron ore, bauxite and nickel ore might otherwise move. This will force transports to proceed back to Japan empty and cause a need for additional tonnages in the Korean and Chinese iron ore trades.

2. Attack upon ships off Shimonoseki Strait and along the routes from China, Manchuria and Korea to this region.

3. Action against the shipping routes off Tokyo Bay and against some of the coal ports of Northern Japan.

4. Action against oil loading ports, particularly the exposed loading pipe and buoy at Miri.

5. Action against Japanese traffic on the Yangtze.

6. Action against Chinwangtao and Tientsin in North China to reduce the movement of the best coking coal to Japan, thus forcing larger movements of lower grade coking coals from Karafuto, Indo-China and Manchuria and at least temporarily cutting Japanese steel production.

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# THE JAPANESE SHIPPING POSITION FOR 1942

## Scope of Study.

This study is an attempt to forecast the probable movement of cargoes in Japanese essential trades during the year 1942 if no military interference is made therewith, with a view to determining the types, sizes and numbers of vessels likely to be employed, the routes over which shipment will be made, the trades whose interruption would be most damaging to the Japanese productive effort and the factors which are likely to affect the Japanese shipping position. The tonnages listed as likely to move have been confined to items believed essential to Japan and are thought to be the minimum amounts required to maintain Japan's war industry at a maximum productive level. This does not mean that these full tonnages will actually move in 1942, however, as military considerations may dictate other uses for tonnage, even at a sacrifice in Japanese war production.

## Principal Commodities Discussed.

The main tonnages listed herein are coal, iron ore, and pig iron. On the basis of the best evidence available it is believed that Japan is planning to produce a maximum of about 8,500,000 tons of steel in the plants of Japan Proper in 1942. It is unlikely that domestic stockpiles of ore, scrap and pig iron or the rather small domestic production of the two former materials will suffice for more than 4,000,000 tons of this total, and the maximum imports of pig iron from Manchuria and Korea will probably amount to 1,500,000 tons. Accordingly, this will still require the import of at least 7,000,000 tons of iron ore in order that Japanese steel works may produce to capacity. Similar calculations can also be made for coking coal, in which Japan is seriously deficient, and it is found that in their essentials, British Ministry of Economic Warfare estimates and ours agree on the necessity for Japan to import very large tonnages of ore, pig, coal and other items in order to maintain the flow of steel to her factories. Interruption of this trade would strangle Japanese munitions production at the source.

The trade in coking coal, pig iron and iron ore is given first priority in carriage by Japan, and in 1940 and 1941, these items were carried in full, even when transport of other strategic items had to be rationed, due to shipping shortage.

Even more important in cargo tonnage is the movement of ordinary coal for power and industrial production. Japanese coal is produced mainly in the northern islands or in Kyushu, but consumed in large part in the industrial region of Honshu. Nearly three-fourths of the tonnage shipped from the regions of production goes normally by water, and it is believed that any large scale shift to all-rail movement is unlikely,

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due to limited rail facilities and the probable over-burdening of the lines with other commodities. Some increase in rail movement may take place, however, judging by recent Japanese reports which indicate that plans are being made to shift to rail movement some traffic which formerly went by water - this being forced by the shipping shortage already encountered.

It is believed that if the Japanese shipping position becomes increasingly unfavorable so that a choice will have to be made as to what essential commodities must be moved in reduced volume, coal for ordinary industrial and household use may suffer a severe cut. The figures given in the annexed table and map therefore do not necessarily represent the actual movement which will take place in 1942 but only the maximum. As a rough estimate based on present developments, it might be assumed that the total water-borne movement of industrial coal will be 15% to 20% under the maximum figure shown.

A number of other commodities are likely to move in large volume unless the shipping position becomes critical. Imports of salt are required to maintain the Japanese chemical industry, and there should be movements of such fertilizers as ammonium sulphate, bean cake, and phosphates for Japanese agriculture, and movements of rice and soy beans for food. Any attempt to cut down the direct importation of food (in the absence of a bumper harvest in Japan) would affect to some degree the working efficiency of the people, as Japan is a net importer of food even in peace times, and will probably produce less in time of war due to the calling of additional men to the colors. It is in fact likely that Japan will deliberately import more food than normal during the war, and will use the labor otherwise employed on the farms in direct war work. Japan can, however, decrease food imports at will, if shipping considerations make this absolutely imperative, as the Japanese standard of living is high for an oriental land, and can be reduced to a point of internal self-sufficiency without actual starvation. Recent radio intercepts show Japan planning to move very large rice tonnages from Indo-China, thus validating the reasoning given above.

The sum total of the commodities considered as likely to move by water in 1942, in the absence of United Nations interference or of shipping shortage induced thereby, is 82,800,000 tons. Most of this moves relatively short distances in coastwise or nearby foreign trade and is in essentials similar in volume, type, distances involved and ship tonnage requirements to movement on the Great Lakes. Vessel types used are, however, quite different, for Japan has large tonnages of barges, sailing craft and small steamers which find employment in the coastal services.

Items Omitted From Consideration.

This study omits commodities moving in export trade, since in general the volume of these is so much less than that of the imports as to be easily accommodated on ships otherwise having to move in ballast.

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They therefore offer only a minor shipping problem. There is likewise omitted the shipping employed primarily in passenger traffic and of course no attempt has been made to estimate the tonnage used for transport purposes and the direct movement of manufactured munitions of war.

Probable Shipping Tonnage Required to Move the Essential Commodities.

An attempt has been made to determine the probable minimum amount of shipping tonnage which the Japanese would find it necessary to employ on the various routes shown, to handle the essential commodities listed herein. It has been found that in order to move these tonnages, a minimum of well over half the Japanese merchant fleet will probably be continuously employed throughout 1942. It is likely, however, that employment of tonnage in these essential trades will not be uniformly distributed over each month of the year. There are loading difficulties which affect the movement of many products from northern Japan, China and British Malaya during the winter months--for example ice conditions may hamper coal exports from Sakhalin and even Hokkaido, while low water in the Yangtze may prevent shipment of iron ore from the Hankow region, and lighterage of iron ore in Malaya may be impracticable because of the exposed position of certain roadsteads in the period from December to March. A further consideration tending to indicate that shipments might have been comparatively low up to now but with prospects of being much higher later in the year is the fact that tremendous numbers of ships must have been needed for the Japanese transport effort up to this time. It would seem likely that all tonnage which could have been spared would have been used to move troops and supplies to the war zone with the idea of obtaining maximum control of the battle area, with subsequent return of this tonnage to the carriage of essential commodities as soon as a military decision or stalemate was reached. The Japanese industries would be expected to live on their stock piles for at least a few months, and it is probable that the Japanese Government has calculated upon replenishing these later on.

According to a special study by the Japan Economic Federation, there were in the services covered by the annexed map a total of 640 Japanese vessels of 2,694,157 gross tons or 3,543,294 deadweight tons, in November, 1939, reckoning in this total only ships of over 2,000 deadweight tons carrying capacity. It is estimated that a further 500 vessels of about 300,000 gross tons should be added to the above figure for ships below 2,000 deadweight tons capacity, carrying in the coasting trade, making a figure of 3,000,000 gross tons in nearseas employment at that time. That is, at a period when the Japanese steel industry was importing scrap and pig iron from the United States and India and moving comparatively small tonnages of coal and iron ore from the nearby areas, the Japanese found it necessary to keep one-half the entire merchant marine in the local and nearseas services, and in addition chartered British and other tramp steamers not listed in the tonnage tables. Shipping authorities reported that this tonnage was finding full employment and that little space was wasted on non-essential commodities. It follows that under present conditions and with a substantially larger

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commodity movement envisioned, especially in coal, it is unlikely that Japan will be able to place less tonnage than this in these trades. In fact, the evidence is that the tonnages would have to be increased. As bearing on this, it was reported by THE ORIENTAL ECONOMIST that in January 1941, there were in service in Japanese coasting trade and in trade with the adjacent mainland, in steam and motor vessels of over 2,000 deadweight tons, a total of 438 tramp type cargo vessels of 2,172,909 deadweight tons while 97 others of 823,059 deadweight tons were in service to the Philippines, Malaya and nearby regions. This total omits the vessels belonging to the Nippon Yusen Kaisha and Osaka Shosen Kaisha which in November 1939, had amounted to 156 ships of 671,671 deadweight tons. If it is assumed that these combination passenger and cargo vessels were at least as numerous in 1941 as they had been thirteen months previously, and that there was as much small tonnage engaged as before, then it must be reckoned that about 3,100,000 gross tons of Japanese shipping was employed in the nearseas trades at that time. The actual total must have been larger, as there were more small vessels and cargo liners in existence in January 1941, and far fewer ships in European or American trade. There is also evidence that the tonnage supply was thought insufficient to cope with the rapidly increasing demand.

In both cases the movement of vessels under Japanese military control has been omitted although it is known that large amounts of cargo have also been carried from China to Japan by these vessels. Apparently the tonnage of merchant vessels assigned to military use in China trades has averaged around one million deadweight tons throughout the larger part of the "China Incident." It is unlikely to average much less in 1942 as hostilities are still in progress there. Sailing tonnage with auxiliary motors, engaged in the Japanese domestic coal trade, must also be added in the total. This would indicate that as a first rough approximation we might reckon on the employment of a minimum of 4,000,000 gross tons of Japanese shipping in essential trades throughout 1942 with, of course, appropriate modification for employment of smaller tonnages in the China and nearby services up to June and larger tonnages later in the summer.

Vessel Tonnages Now Available to Japan for Nearseas and Malayan Use.

It is estimated that 1,000,000 gross tons of Japanese vessels have been sunk to July 1, 1942. In compensation, Japan acquired actually or potentially, about 745,000 gross tons, composed of approximately 300,000 tons of Axis and French tonnage laid up in Far Eastern ports, 290,000 tons of Allied vessels captured, and perhaps 155,000 tons of new construction since the war began, including some seized on the ways at Hongkong.

The figures as given above would indicate a practical balance between gains and losses, but the real position is not so favorable for Japan as these first approximations tend to show. Acquisition of much foreign tonnage cannot be hoped for in future, while sinkings will

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continue. Furthermore, the figures take no account of tonnage immobilized by war damage, and a conservative estimate as to this would be 330,000 gross tons. In addition, part of the tonnage gain through acquisition of Allied and French tonnage is illusory. This follows from the fact that this tonnage was in large part already operating in essential Far Eastern local services which Japan will find it necessary to maintain, and hence the tonnage acquisition represents in most cases only a change in flag and not a change in service performed.

The net resultant of all the calculable gain and loss factors to date, therefore, ignoring future losses and replacements, would be a reduction in the effective Japanese merchant marine, as of July 1, 1942, of about 740,000 gross tons. This would imply a net loss of about twelve percent to date. The loss in carrying capacity is, of course, greater, as larger tonnages are now used for auxiliary and transport purposes than before.

The tonnage available on July 1, 1942 for military and essential commercial use is estimated at 5,485,000 gross tons. Subtracting from this total 4,000,000 gross tons estimated as needed in the coasting and nearby China-East Indies essential trades, we arrive at a remainder of 1,485,000 gross tons as now available for permanent employment in direct military operations, without interfering with the movement of essential commodities. To some degree, however, Japanese transports used in the Malayan region can bring back essential raw materials which otherwise would have to come from China or Manchuria. A rough approximation of the tonnage which might be diverted from the China services through this combination between transport and commercial use in Malaya would be 400,000 gross tons, making a final division as follows:

(a) 3,600,000 gross tons in Chinese, Manchurian, Korean and Japanese coasting trade in essential commodities, but including the supplying of Japanese troops in China.

(b) 1,885,000 gross tons available for services to the Philippines, Malaya, East Indies, etc., primarily for military use, but also supplying the Japanese economy with large tonnages of iron ore, rice, bauxite, rubber, etc. In this total will be found approximately 400,000 tons of tankers, available to only a limited degree at present for the carriage of return cargo to Japan, and of somewhat limited use as transports.

(c) Unavailable for direct war or commercial uses: at least 100,000 gross tons of special ship types; 710,000 gross tons awaiting repairs.

(d) Not considered in the above, as not affected by change of flag is about 120,000 tons of foreign shipping in Chinese, Philippine, and Malayan local trade.

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The present total of 1,885,000 gross tons (including tankers) is a figure none too large for permanent military operations far distant from Japan, and would indicate that a shortage of shipping might be readily induced, by action against the existing vessels. Actually the tonnage available this summer must be less than this figure, for vessels were undoubtedly borrowed from the essential nearseas services this last winter, and these must be repaid if the total 1942 movement of goods is not to suffer. Possibly 500,000 gross tons could be subtracted because of this. A further consideration would be whether all German and Italian vessels have actually been placed in Japanese local trades. At least some ships must be held out as possible blockade runners; thus reducing the Japanese local tonnage supply still further. The only possibility for Japan to acquire permanently more tonnage for direct military operations (outside very minor building of new vessels in Shanghai and Hongkong, and temporary gains from seized shipping) rests in a more efficient use of the ships employed in the import trades. This is unlikely.

Repairs to tonnage are likely to be delayed rather than expedited under war conditions, and in fact vessels laid up for repairs showed a steady increase in Japan in 1941, in spite of official instructions that only urgent work was to be undertaken at all. The calling up for military service of stevedores is also likely to increase port congestion, and shortages of fuel may force lower speeds. Undoubtedly, there are abundant theoretic possibilities for expediting ship loading and unloading, but as Japan has been on a war basis for several years, and has complained for many months regarding the shortage of shipping space, adding proof of this shortage by chartering Norwegian, Greek and British tramps in 1938 and 1939, it seems reasonable that most possibilities for increasing tonnage efficiency must have already been explored. Nevertheless, in order to set a minimum figure for the tonnage required to move the essential war commodities, calculations have been made as to the number of ships theoretically required for each service, assuming efficient tonnage, no delays en route, the quickest possible loading and unloading, and no interruption through hostile action. This calculation (which is appended) shows that even under conditions of impossible perfection, a total of about 2,500,000 gross tons would still be required for cargo movement. The ships engaged in the coasting and nearseas trades would consist in the main of the older, smaller and slower tonnage, however, and hence the effect of the remaining tonnage as transports would be somewhat greater than might otherwise be reckoned.

As a check on this, an actual tabulation of a number of Japanese sailings in the coal, timber and ore trades in 1938, 1939, 1940 and part of 1941 has been made from monthly lists of charterings issued by the Nippon Shipping Exchange. These lists give for each vessel the date of sailing, from and to what ports, amount of cargo carried, etc., and by checking a number of these, and finding repeat voyages, the average time for actual voyages, including loading and unloading time, can be found. Roughly, this check agrees with the published statistics rather

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than the theoretical calculation, and indicates that to move the cargo listed in the appended tables and charts, about 3,600,000 gross tons of self propelled vessels will be required in the coasting and nearby mainland trades in 1942, in addition to full employment of the Japanese barge fleets in the Inland Sea coal traffic. As of possible value in this connection, there is appended a table (from the Nippon Shipping Exchange publication "Kai-un"), showing the actual number and tonnage of the larger tramp vessels employed in various nearseas trades in each month between December 1940 and May 1941.

The Most Important Japanese Trades.

(a) North China, Manchuria and Korea to Wakamatsu, Osaka, etc.

From the standpoint of doing the maximum damage to the Japanese production effort, attention is invited to the coal and iron ore trade from North China, Korea and Manchuria. Japan is very dependent on imports for its steel production and the larger part of the ore and coal moves through the ports of Chinwangtao, Tientsin, Dairen, Tsingtao and Seishin in comparatively short hauls to Yawata near the Shimonoseki Straits or to other steel centers in the Inland Sea area. As this is a short haul, vessels find it possible to make numerous round trips per annum, thus making very efficient use of tonnage. Large tonnages of foodstuffs, coal, and industrial materials for Osaka also use this route. Attack on vessels engaged in these trades would accomplish very desirable ends as follows:

(1) Direct destruction or damage of vessels essential to the Japanese war effort.

(2) Direct destruction of raw materials used in steel production and hence in shipbuilding, and even more important, the destruction of military supplies sent as return cargo for the Japanese forces on the mainland.

(3) Overloading of repair yards, so that new construction would be hampered.

(4) Interruption of the sailing of Japanese tonnage until convoys could be organized.

(5) Enforcement of convoying which would reduce the carrying power of the Japanese tonnage very greatly and would require a dispersal of Japanese naval forces or planes for protection against future attacks.

(6) Possible diversion of Japanese shipping to circuitous routes and possible prevention of normal use of nearby sources of raw material supply.

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(7) Great loss of Japanese prestige in India, China and Korea with favorable results on cooperation with us.

(8) Probable forcing of the Japanese into an attempt to occupy every little inlet on the China coast and every interior district from which planes could operate. This would be ruinous dispersion of effort for Japan and yet would have to be done.

(9) Demoralization of the Japanese population.

Continuous attack by means of bombers or submarines based in the unoccupied parts of China might force the Japanese to withdraw merchant tonnage from the principal short sea route around the south of the Korean Peninsula, forcing vessels to go into longer trades for the same commodities and also over-burdening the Korean railways and the railway ferries to Japan with the more valuable materials, such as pig iron, which could not be obtained in other areas under Japanese control. Every extra mile which Japanese ships are forced to travel means a proportionate reduction in their annual carrying capacity.

The larger part of the Japanese shipping which is employed in the coast and nearseas trades consists of very old and slow tonnage of rather small size. In these short voyage trades a larger amount of time is spent in loading and unloading cargo than in going between ports and slow tonnage is relatively efficient for this movement. This old tonnage is less likely to mount defensive armament than is tonnage specially built in the last few years and its slowness would seem to make it an easy prey for submarines. The destruction of any considerable proportion of this old tonnage would necessitate the withdrawal from transport use of some of the better tonnage now being employed. This, of course, would be a direct advantage militarily and an indirect advantage economically in that the superior speed of the replacement tonnage would be practically wasted in trades where the total saving in time might be only a few hours per voyage for a fast vessel as compared with a slow one. Every vessel sunk in the Manchurian trade or kept out of the run is worth two South Seas cargo vessels destroyed as the former will carry twice as much tonnage in the year.

(b) <u>The Sakhalin and Hokkaido Coal Trade to Tokyo.</u>

From the economic standpoint, second choice might go to the interruption of the large coal trade from Sakhalin and Hokkaido to the Tokyo region. Many slow sailing ships and small steam vessels are employed in this trade, and these are very likely to be unprotected. Interruption of traffic will reduce by 33% the power output in the Tokyo district which is a major armament center. A rail movement of the coal to Tokyo is believed impracticable and there are no substitute sources of supply, except for the relatively small output of the Joban fields in Northeast Honshu, going in large part to Tokyo in any event. Attack on this route might also affect the fishing industry and the lumber and paper trades.

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(c) Yangtze River Trade

Closure of the Yangtze River to Japanese traffic would cut off a major source of high quality iron ore, (an item not obtainable in Japan and scarce in other nearby areas) and of course would have a disastrous effect on the munitions supply for Japanese troops in the Hankow region. Attacks here by planes would be easy, relatively safe and would give great encouragement to the Chinese, even apart from the direct material aid itself.

(d) Malayan and Philippine Iron Ore and Petroleum Trades

Returning transports are believed to be taking much high quality iron ore, bauxite and other minerals and raw materials from the Malayan and Philippine regions, loading usually by barge in open roadsteads. The barges and port facilities are vulnerable and if destroyed would force ballast voyages back to Japan. Special action against the petroleum loading ports of the East Indies is also an obvious desirability. Their loading facilities are easily destroyed.

Points of Particular Vulnerability by Ports or Shipping Routes.

(a) The port of Tientsin would seem to be particularly vulnerable to attack. It is 36 miles up a narrow river which at the most favorable stage will admit vessels of only about 18 ft. draft. Larger vessels anchor at Tangku or even off shore in the open gulf, and from this point lighters must take all or part of the cargo. As a consequence, there are normally several good sized merchant vessels at anchor at Taku bar at all times and a submarine or bomber would probably find very good hunting with only a limited possibility of military interference. If the sinking of any vessels at anchor were accompanied by the destruction of lighters the efficiency of the port of Tientsin would be very greatly lessened, and if it were possible to time attacks so that lighters or ships were sunk just in the river mouth, then Tientsin and Tangku would be absolutely closed for a long period as the channel is narrow. Closure of these ports would hinder shipment of large tonnages of iron ore, coal, salt, cotton, wool and hides.

In addition to direct attack on any ship found off Tientsin it would also be possible to lay mines as the water is very shallow and so muddy that detection of mines would be improbable.

(b) The closure of Tientsin would force supplies for the North China Army of Japan to move through Chinwangtao or through Tsingtao with considerable increase in the railway stock requirements involved. Chinwangtao harbor entrance cannot be easily blocked by sunken ships but the port is extremely susceptible to shelling from submarines or to attack by bombers as the harbor is simply a mole built in the open sea without known defenses. The sinking of a few ships alongside this mole, which acts as the loading pier, would greatly reduce the exports of coal to Japan. This is extremely desirable as the port is now working to capacity shipping coking coal to Japan and is the main source of

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Japanese supply. The real weakness in Japanese production seems to be coal for coke and power, and Japan already finds it necessary to import several million tons of coal from the Asiatic mainland and Formosa. The water off Chinwangtao is shallow and can be easily mined.

(c) Traffic from Tientsin, Chinwangtao, Newchwang and minor ports passes through a bottle-neck near Dairen and it is suggested that submarine mine layers pay particular attention to mining the open sea nearby, as this will endanger the receipt of much essential cargo including most of the exports from Manchukuo. An estimated total of cargo passing the Shantung cape would be 11,000,000 tons per year under present conditions.

(d) All this tonnage and additional amounts from other Chinese and Korean ports rounds the peninsula of Korea normally in a rather restricted area north of Quelpart Island. The area is probably not as susceptible to mining as are the waters near Dairen but should be very suitable for submarine or bomber attacks.

(e) The obvious shipping bottle-neck near the Strait of Shimonoseki and at Yawata hardly calls for comment beyond mentioning that Japan's war effort will be disastrously weakened if this route is blocked. It might be suggested that as an individual effort, the torpedoing of the railway ferries plying to Korea would be quite damaging to the Japanese economy.

(f) The Yangtze River might also be given particular attention. The Yangtze seems to be the only means by which the Japanese troops in Central China are now supplied with essential munitions and oil, and any interruption of the supplies would be of enormous advantage to the Chinese Armies. The Tayeh iron mines near Hankow are also a major source of high quality ore for Japan.

It is possible that air attack from bases south of the river in unoccupied China, combined with submarine attacks off the Yangtze mouth might prove so effective as to stop Japanese traffic in short order. In this connection, attention is called to the shipping bottle-neck at Shanghai because of the narrow width of the Whangpoo River. A large ship sunk at the right place could block the channel and further damage the Japanese supply position.

(g) The port of Keelung in Formosa is the center for very large exports to Japan of sugar, rice and coal, the total considerably exceeding 2 million tons per annum. This port would make a very desirable submarine objective either for direct torpedo attacks or for mine laying and like Shanghai and Tientsin it is also a center for Japanese military movements so that transports and supply ships might be intercepted. The port has no apparent shipping vulnerabilities beyond undue nearness to areas in China where bombers or submarines might be based.

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(h) Japan is dependent on imported iron ore for at least half of its steel production under present conditions and this dependence will increase as stocks of scrap and pig iron are used up. Under normal conditions about three-fourths of Japanese iron ore imports have come from the Malay states and the Philippine Islands due to the superior quality of the product. Shipments have now been resumed. The movement should be stopped, not alone because this will force Japan to use lower grade Korean and Manchurian ore with consequent waste of shipping space, coking coal and blast furnace capacity, but also because this will keep Japan from utilizing the cargo capacities of returning transports, so that additional tonnage will have to be placed in the Manchurian and Korean ore trades to make up the deficit. This, of course, will reduce the ships available for transport and supply purposes in the Malay region. Very conspicuous shipping bottle-necks exist in this iron ore movement, for the Malay production and most of the Philippine output is exported from areas where there are no harbor facilities for anything other than lighters. These lighters should be sunk and attention should be given to these loading areas periodically hereafter to see that any new lighters which are brought in are disposed of. If this is done it will, as mentioned, force the Japanese to fall back upon intensified ore shipments from China, Manchuria and Korea and if shipments from the Asiatic mainland areas increase, then this will furnish additional targets along the vulnerable shipping routes previously mentioned.

There are reports from Japanese sources that large iron ore deposits are now in process of exploitation on the Island of Hainan. This, if true, might necessitate a special submarine campaign against these ships near the ports of shipment but a concentration of submarines here would not be a waste of force due to the fact that Hainan is a main Japanese troop concentration base. Submarines operating off Hainan could also expect to sink a number of vessels carrying coal, rice and minerals from Indo-China.

(i) Malayan iron ore production comes from mines in the Northeastern part of the peninsula, principally in the states of Kelantan and Trengganu. The shipments are handled by lighters to vessels anchored several miles off shore, and shipments are confined to the period from April to November.

The mines of the Philippine Iron Mines, Inc., and the neighboring iron ore properties of the Agusan Gold Mines in the Paracale District of Luzon produced a total of 733,000 tons of ore in 1940, all of this going to Japan and forming the great bulk of the Philippine production. Shipment from this district is apparently by lighter and hence destruction of lighters would probably hamper the movement very greatly. There do not seem to be any vulnerabilities as regards the mines themselves as they are open cut properties.

The second largest producer, the Samar Mining Company, shipped 377,000 tons of ore to Japan in 1940 from Hernani on the Southeast coast of Samar. A loading wharf is used and this should be destroyed,

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The Marinduque Island mines of the Gold Star Mining Company produced 118,000 tons of iron ore in 1940 and again the only significant vulnerabilities relate to transportation. The special loading pier should be destroyed, and there are bridges on the truck road to the mines which ought to be dynamited.

(j) Returning to Japan itself, attention is called to the port of Miike on the West coast of Kyushu. The largest coal mines in Japan ship through this harbor and although its blocking would merely result in rail movement to other ports, this would increase the strain on the Japanese railway system. The channel into Miike harbor appears to be only 150 feet wide and there are lock gates to the inner harbor which might be destroyed.

(k) A large part of the coal movement to the Osaka-Kobe area goes by small vessel from the west coast ports of Kyushu. It is assumed that attack on this trade in the Inland Sea is impracticable except to bombers but the principal ports of loading might be susceptible to mine laying activities by submarines and any mines placed in this Shimonoseki Strait area would also be in the paths of ships bringing coal, iron ore, rice, glycerine and other essential commodities from the Asiatic mainland.

(l) The coal ports on the west coast of Japanese Sakhalin are numerous and individually small. These ports seem to handle cargo by lighters and destruction of these would be advantageous. Similar lighter services are found at other Sakhalin ports handling lumber and paper. Sakhalin shipments are concentrated in the period from April through November.

(m) A minor but welcome addition to the Japanese petroleum supply normally comes from several small ports in the Eastern part of Russian Sakhalin. It is not known definitely whether this trade is now interrupted although there have been reports to that effect, but in the absence of direct hostilities with Russia it seems likely that the Japanese might be allowed to ship from their oil properties. The shore installations and pipe lines out to the tanker anchorages are exceedingly vulnerable, but could hardly be attacked by us in the absence of agreement with Russia, but during the summer loading season tankers might be torpedoed off the various ports.

(n) It has been estimated that as much as 600,000 tons of petroleum will be produced by the Japanese from the Seria field in British Borneo in 1942, principally in the last 4 months of the year. There are three very obvious weaknesses in the Japanese position here, namely: storage tanks, the pipe line from the field to the seacoast, and the special line from the coast out to the tanker anchorage in the open sea. It is believed that it might be possible for a submarine to destroy this special line at periodic intervals. This might block shipments for considerable periods.

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(o) A particular weakness of the Japanese coal transport system is the dependence upon coal loading machinery at such ports as Muroran, Otaru and Wakamatsu. This machinery consists of large belt conveyors or of extensive trestles with facilities for dumping cars into loading chutes. This machinery is conspicuous, easily damaged and difficult to replace if destroyed. These and other coal ports would be very susceptible to bombing from Siberia and also in certain cases to shelling by submarines. Destruction of the loading machinery would have a disastrous effect upon the efficient operation of Japanese ship tonnage and also upon the volume of coal moved. It would necessitate the use of stevedore gangs to load each vessel and this would result in extreme delay to each ship. The present stevedore shortage would not allow the Japanese to compensate for damage to equipment by any large increase in hand labor and there is no unused margin of excess mechanical capacity. In fact the loading machines are even now supplemented by hand labor because the increase in the coal tonnages requiring waterborne movement has outpaced the expansion of loading facilities.

Shipment by rail is impracticable, especially from Hokkaido.

Principal Ports of Call for Japanese Vessels.

The attached table gives the estimated number of vessels which should be found anchored in various Japanese controlled ports at any one time in 1943 and also the total number of vessels which would be seen entering and clearing each port per day. These figures relate only to vessels engaged in carrying essential cargo and exclude transports, passenger ships, war ships, etc. Due to the somewhat theoretical nature of the calculations, it is believed that the figures given for vessels to be found in the various ports will, in most cases, be underestimates. Nevertheless, it can be seen that such places as Osaka and the Shimonoseki Strait ports furnish very large concentrations of shipping which might make excellent targets in future air-raids.

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TABLE A

## ESTIMATED MINIMUM NUMBER OF COMBINED ENTRIES AND CLEARANCES OF MERCHANT SHIPS PER DAY, AND SHIPS IN PORT IN 1942

This table is based upon a study of the minimum tonnage of vessels required to move the cargo estimated as likely to be handled by Japanese shipping in 1942. Since this study assumed that there were no delays to vessels either in ports or enroute it undoubtedly results in too small a figure of Japanese tonnage requirements. The error is fundamentally in the number of ships in port as delays to vessels more frequently occur there. The number of entrances and clearances is unlikely to vary notably from the figures given here unless the shortage of Japanese tonnage requires a reduction in total cargo moved.

No attempt has been made to estimate what modifications these figures would require to allow for tonnage employed for military purposes although it is obvious that the ignoring of this factor will cause an underestimation of the number of ships in port in such places as Singapore, Hongkong, Nagasaki, and the ports of the Netherlands Indies.

| Name | Entries and Clearances per day | Ships in Port at any one Time | Name | Entries and Clearances | Ships in Port |
|---|---|---|---|---|---|
| Chinwangtao | 6 | 10 | Paracale | 1 | 3 |
| Tientsin | 4 | 5 | Busuanga | 1/9 | ½ |
| Dairen | 8 | 14 | Celebes (G. of Boni | 1/9 | ½ |
| Chinnampo | 5 | 9 | Angaur | .6 | 1½ |
| Jinsen | 1 | 3 | Saipan | 1/7 | .4 |
| Tsingtao | 4 | 7 | Singapore & Bintan | ½ | 3 |
| Shanghai | 6 | 13 | R. Sakhalin oil | | |
| Tayeh | 1- | 2 | Ports | ¼ | ¼ |
| Hongkong | ½ | 2 | Muroran | 20 | 22.5 |
| Seishin | 4 | 8 | Kushiro | 4 | 4 |
| Rashin | 2.5 | 4 | Otaru | 8 | 8 |
| Konan/Gensan, etc. | 1- | 2 | Rumoyo | 1.5 | 1.5 |
| Fusan | 5 | 6 | W. Coast Karafuto | 12 | 24 |
| Keelung | 3.5 | 10 | Otomari | 1 | 2 |
| Takao | 1.5 | 4 | xOnahama (Joban) | 7 | 7 |
| * Karenko | 1/7 | ¼ | Kamaishi | 5 | 11 |
| Gulf of Tongking | | | Tokyo/Yokohama | 33 | 75 |
| Ports | 2 | 4 | Shimizu | 2.5 | 5 |
| Saigon | 2 | 5 | Nagoya | 10.5 | 21 |
| Bangkok | 1 | 4 | Osaka/Kobe | 87 | 140 |
| Malayan Ore Anchor- | | | Himeji | 9 | 19 |
| ages | 2 | 9 | Kure | 4 | 12 |
| Miri | 1/3 | 1/3 | Moji/Wakamatsu | 95 | 150 |
| Tarakan | 1/7 | 1/7 | Niigata | 2 | 4 |
| Palembang | 1/8 | 1/8 | Fushiki | 2 | 4 |
| Pooloo Brandan | 1/3 | 1/3 | Tsuruga | 1 | 2 |
| Surabaya | 1 | 3 | Nagasaki | 3 | 6 |
| Batavia | 1/3 | 1 | Miike | 4 | 6 |
| Rangoon | 3/4 | 2 | | | |

* There may be an underestimation for Karenko. It is possible that some phosphate cargo may move here from Angaur instead of a direct movement from Angaur to Yokohama as shown on the cargo flow map.

x Conditions of acute shipping shortage may completely eliminate all movement through this coal port as a rail movement is possible, and Joban coal was sent by rail before this port was built.

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TABLE B.

THE JAPANESE SHIPPING POSITION FOR 1942

ESTIMATED CARGO MOVEMENTS BY ROUTES AND COMMODITIES, OF RAW MATERIALS NECESSARY TO A FULL JAPANESE PRODUCTIVE EFFORT

This is an attempt to determine where concentrations of Japanese shipping may be expected, the amount of tonnage likely to be found on such routes, and the trades whose interruption would be most damaging to the Japanese war effort. For this, it has been necessary to estimate the minimum requirements of Japanese industry for available waterborne raw materials and foodstuffs if the national war effort is to be maintained at capacity production and to determine the likely sources of supply, taking into account productive capacity, shipping facilities, distance, location and number of returning Japanese transports, other tonnage available, previous Japanese trade, announced Japanese plans for cargo movement, physical capacity of Japanese tonnage to handle the materials, and other factors. In this table, only cargo movements which actually control the placement of ship tonnage on a particular route are given, but in substance this is in almost every case a movement to Western and Southern Japan. Export cargo will of course move, but it is on most routes so much smaller in tonnage than the import material, that it will have little effect on the ship numbers required. It is hence omitted. This table likewise excludes the movement of military supplies, but for the most part the predicted vessel movements will also take care of the normal shipment of war materials to China, Manchuria, Malaya, Thailand, and Java.

It will be noted that the tonnages shown hereunder are so large as to strain Japan's shipping capacity to the utmost, especially during the summer season when northern coal and lumber, and Malayan iron ore have to be moved, and in the fact it is believed certain that the full tonnages listed herein will never be carried unless Japanese shipping gains virtual immunity from attack. The almost complete dependence of the Japanese steel and aluminum industries on imported raw materials, plus 50% dependence for domestic power production on waterborne coal movement, gives peculiar importance to the Japanese merchant marine. It follows that the extent to which Japanese shipping can be destroyed or immobilized will determine in large part the size and striking power of her overseas armies, directly through limitation of transport capacity, and indirectly through reduction in the output of war materials at home.

The movements listed hereunder have little seasonal change, except in the items marked.

1. Cargo Movements By Shipping Routes (Ports of Origin and Destination)

| | Tons | Commodity |
|---|---|---|
| Chinwangtao to Yokohama, etc. | 500,000 | coking coal |
| Chinwangtao to Wakamatsu, Himeji & Osaka | 3,000,000 | coking coal |
| Tientsin to Wakamatsu, etc. | 350,000 | coal* |
| Tientsin to Wakamatsu | 300,000 | iron ore* |
| Tientsin to Wakamatsu | 300,000 | salt* |
| Tientsin to Osaka | 200,000 | salt* |
| Tientsin to Osaka | 100,000 | cotton, wool, hides* |
| Tientsin to Osaka | 100,000 | miscellaneous* |
| Dairen to Wakamatsu, etc. | 1,000,000 | iron ore |
| Dairen to Wakamatsu | 200,000 | magnesite, dolomite, & clay |
| Dairen to Wakamatsu, etc. | 1,100,000 | pig iron |
| Dairen to Wakamatsu, etc. | 1,000,000 | coal |
| Dairen to Osaka | 200,000 | coal |
| Dairen to Moji, Wakamatsu, Tokuyama | 600,000 | salt |
| Dairen to Osaka & Kobe | 100,000 | salt |
| Dairen to Osaka & Kobe | 500,000 | soybeans, beancake, & grains* |
| Dairen to Yokohama, etc. | 500,000 | soybeans, beancake, & grains* |
| Dairen to Osaka, etc. | 250,000 | ammonium sulphate |
| Dairen to Osaka | 150,000 | miscellaneous |
| Total passing Shantung Cape for Japan | 10,450,000 | |

| | Tons | Commodity |
|---|---|---|
| Jinsen, Moppo, Fusan, etc. to Osaka | 700,000 | rice |
| Jinsen, etc. to Japan | 150,000 | magnesite |
| Chinnampo to Wakamatsu & Himeji | 800,000 | iron ore (about half Manchurian) |
| Chinnampo to Wakamatsu | 200,000 | pig iron |
| Chinnampo, Fusan, etc. to Japan (Inland Sea Osaka range) | 1,500,000 | coal, mainly anthracite |
| Chinnampo, Fusan, etc. to Tokyo, etc. | 500,000 | coal, mainly anthracite |
| Korean West Coast Ports to Moji | 250,000 | miscellaneous |
| Total West Coast of Korea to Japan | 4,100,000 | |

| | Tons | Commodity |
|---|---|---|
| Shantung to Osaka & Kobe | 500,000 | coal, salt, peanuts, etc. |
| Shantung to Wakamatsu & Moji | 1,000,000 | coal |
| Shantung to Wakamatsu & Moji | 300,000 | salt |
| Total Shantung to Japan | 1,800,000 | |

| | Tons | Commodity |
|---|---|---|
| Seishin to Wakamatsu & Himeji | 1,800,000 | iron ore |
| Seishin to Muroran | 300,000 | iron ore |
| Seishin to Kamaishi | 200,000 | iron ore |
| Seishin to Japan | 300,000 | pig iron |
| Seishin and Rashin to Kobe & Osaka | 700,000 | soybeans, beancake, & grains* |
| Seishin and Rashin to Yokohama, Nagoya, etc. | 800,000 | soybeans, beancake, & grains* |
| Miscellaneous Korean East Coast ports to Japan (mainly Osaka) | 150,000 | fish oil |
| Miscellaneous Korean East Coast ports to Moji and Osaka | 150,000 | chemicals |
| Miscellaneous Korean East Coast ports to Japan (Osaka & Niigata) | 250,000 | ammonium sulphate |
| Miscellaneous Korean East Coast ports to Japan | 250,000 | miscellaneous |
| Total Korean East Coast ports to Japan | 4,900,000 | |

| | Tons | Commodity |
|---|---|---|
| Chinwangtao to Chinnampo | 350,000 | coking coal |
| Chinwangtao to Dairen | 650,000 | coking coal |
| Chinwangtao to Dairen | 100,000 | iron ore |
| Chinwangtao to Shanghai | 300,000 | coal |
| Dairen and Tientsin to Shanghai | 600,000 | beans, grain, steel, etc.* |
| Dairen to Formosa | 300,000 | fertiliser and miscellaneous |
| Korean East Coast ports to Formosa | 250,000 | ammonium sulphate |
| Korean East Coast ports to Formosa | 150,000 | miscellaneous |
| Tsingtao to Korean West Coast ports | 250,000 | coal |
| Tsingtao to Shanghai | 300,000 | coal |
| Tsingtao to Shanghai | 200,000 | peanuts, salt, etc. |
| Total miscellaneous Northern cross Services | 3,450,000 | |

| | Tons | Commodity |
|---|---|---|
| Keelung and Takao to Japan | 1,200,000 | sugar |
| Keelung and Takao to Japan | 500,000 | rice |
| Keelung to Japan | 500,000 | coal |
| Keelung to Japan | 100,000 | salt |
| Keelung to Japan | 70,000 | alcohol |
| Karenko to Japan | 30,000 | aluminum, etc. |
| Total Formosa to Japan | 2,400,000 | |

| | Tons | Commodity |
|---|---|---|
| North Indo-China ports to Japan | 800,000 | anthracite |
| North Indo-China ports to Japan | 200,000 | phosphate and minerals |
| Indo-China to Japan | 100,000 | salt |
| Saigon and Bangkok to Osaka, Yokohama, etc. | 1,750,000 | rice and corn |
| Saigon and Singapore to Osaka, Yokohama, etc. | 100,000 | rubber and tin |
| East Coast Malaya to Wakamatsu, Himeji, etc. | 1,500,000 | iron ore** |
| Hinten Island and Malaya to Japan and Formosa | 300,000 | bauxite |
| British Borneo to Japan | 600,000 | petroleum* |
| N. Sumatra to Japan | 500,000 | petroleum* |
| S. Sumatra to Japan | 200,000 | petroleum* |
| Dutch Borneo to Japan | 100,000 | petroleum* |
| Celebes to Japan | 100,000 | nickel ore |
| Malaya to Japan | 250,000 | scrap iron |
| Paracale, Luzon to Wakamatsu | 500,000 | iron ore |
| Paracale, Luzon to Kobe area | 200,000 | iron ore |
| Paracale, Luzon to Yokohama & Kamaishi | 200,000 | iron ore |
| Samar to Japan | 150,000 | iron ore |
| Philippines to Japan | 200,000 | chrome and manganese ores |
| Philippines to Japan | Possible future movement of coconut oil, abaca, lumber, and sugar -- no tonnage listed. | |
| Java to Japan | 300,000 | rice, corn and salt |
| Java to Japan | 400,000 | scrap iron |
| Total Indo-China & Malayan Region to Japan | 8,450,000 | |

| | Tons | Commodity |
|---|---|---|
| Japanese Mandated Islands to Yokohama, etc. | 400,000 | phosphate and bauxite (mainly Angaur to Yokohama) |
| Japanese Mandated Islands to Yokohama | 100,000 | sugar |

| | Tons | Commodity |
|---|---|---|
| Bangkok, Rangoon or Saigon to Singapore | 500,000 | rice |
| Dutch Borneo (Tarakan) to various Malayan ports | 250,000 | crude petroleum for direct ship bunker use. |
| S. Sumatra to Java, Singapore, etc. | 150,000 | coal |
| Rangoon to Japan | 150,000 | lead, zinc, scrap iron, and miscellaneous |

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| | Tons | Commodity |
|---|---|---|
| Tayeh to Wakamatsu & Kobe region | 600,000 | iron ore# |
| Shanghai, Wuhu, etc. to Japan | 500,000 | iron ore, scrap, foodstuffs, fluorite, and miscellaneous |
| Total Yangtse River to Japan | 1,100,000 | |
| Indo-China to Shanghai | 500,000 | rice |
| Indo-China to Shanghai and Hongkong | 500,000 | coal |
| Russian Sakhalin to Tokyo region (assuming that Russia allows normal exports) | 500,000 | petroleum** |
| Muroran to Tokyo region | 4,500,000 | coal# |
| Kushiro to Tokyo region | 1,000,000 | coal# |
| Otaru to Tokyo region | 1,000,000 | coal# |
| Karafuto ports to Tokyo region | 1,500,000 | coal** |
| Karafuto ports to Tokyo region | 400,000 | lumber, paper and pulp** |
| Joban coal ports to Tokyo region | 1,000,000 | coal@ |
| Total North Japan to Tokyo region | 9,400,000 | coal |
| Hokkaido to Wakamatsu/Osaka range | 2,000,000 | coal# |
| Karafuto ports to Wakamatsu/Osaka range | 2,500,000 | coal** |
| Karafuto ports to Wakamatsu/Osaka range | 600,000 | lumber, paper and pulp** |
| Total North Japan to West Japan | 5,100,000 | |
| Joban coal field to N. E. Japan, etc. | 1,200,000 | coal@ |
| Hokkaido and Karafuto to N. Japan, etc. | 1,500,000 | coal# |
| Total North Japan local coal trade | 2,700,000 | |
| Joban coal field to Shimizu | 300,000 | coal@ |
| Hokkaido to Shimizu | 500,000 | coal# |
| Hokkaido to Nagoya, etc. | 1,800,000 | coal# |
| Karafuto to Nagoya | 700,000 | coal** |
| Total N. & N. E. Japan to S. E. Ports | 3,300,000 | |
| Kyushu and Yamaguchi coal fields to Inland Sea areas | 6,000,000 | coal |
| Kyushu and Yamaguchi coal fields to Osaka-Kobe area | 10,000,000 | coal |
| Kyushu and Yamaguchi coal fields to Nagoya & Shimizu | 1,200,000 | coal |
| Kyushu and Yamaguchi coal fields to Tokyo area | 500,000 | coal |
| Kyushu and Yamaguchi coal fields to N. Japan, etc. | 1,400,000 | coal |
| Total W. Japan (mainly Wakamatsu area) to other areas | 19,100,000 | coal |
| Inland Sea Local Traffic | 3,500,000 | copper ore, foodstuff, cement, and miscellaneous |

* Shipment sometimes reduced in volume in January and February on account of exceptional ice conditions, but otherwise not markedly seasonal.
▲ Maximum tonnage demand normally Oct.-January, but commodities somewhat irregular in movement.
\# Trade has a winter minimum but is not usually completely suspended.
** No winter shipments of any consequence.
@ Rail movement possible, but waterborne movement normally preferred. This is a borderline case in which movement will go by rail or vessel in accordance with the relative demands made upon these means of transport by other commodities.
\# Due to the scorched earth policy, shipments will be small in 1942 and concentrated almost entirely in the last four months of the year.

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2. Summary of Commodity Tonnages to be moved in 1942

| | |
|---|---|
| Coal | 50,650,000 tons |
| Iron ore | 7,750,000 tons |
| Rice | 3,850,000 tons |
| Beans, corn, kaoliang, etc. | 3,200,000 tons |
| Petroleum | 2,150,000 tons |
| Salt | 2,000,000 tons |
| Pig iron, etc. | 1,600,000 tons |
| Sugar | 1,300,000 tons |
| Lumber, paper and pulp | 1,000,000 tons |
| Ammonium Sulphate | 950,000 tons |
| Scrap iron | 800,000 tons |
| Phosphate | 450,000 tons |
| Magnesite, dolomite & clay | 350,000 tons |
| Bauxite | 350,000 tons |
| Chrome and Manganese ores | 250,000 tons |
| Peanuts | 200,000 tons |
| Fish oil | 150,000 tons |
| Chemicals | 150,000 tons |
| Nickel ore | 100,000 tons |
| Zinc, antimony, etc. | 100,000 tons |
| Rubber | 70,000 tons |
| Alcohol | 70,000 tons |
| Fluorite | 60,000 tons |
| Tin | 30,000 tons |
| Aluminum | 30,000 tons |
| Miscellaneous (*) | 5,190,000 tons |
| TOTAL | 82,800,000 tons |

(*) Ores and manufactures, cotton, wool, hides, foodstuffs, fish products, etc.

Source: Special calculations based upon Japanese Foreign and Domestic Trade Statistics and confidential data, August 8, 1942.

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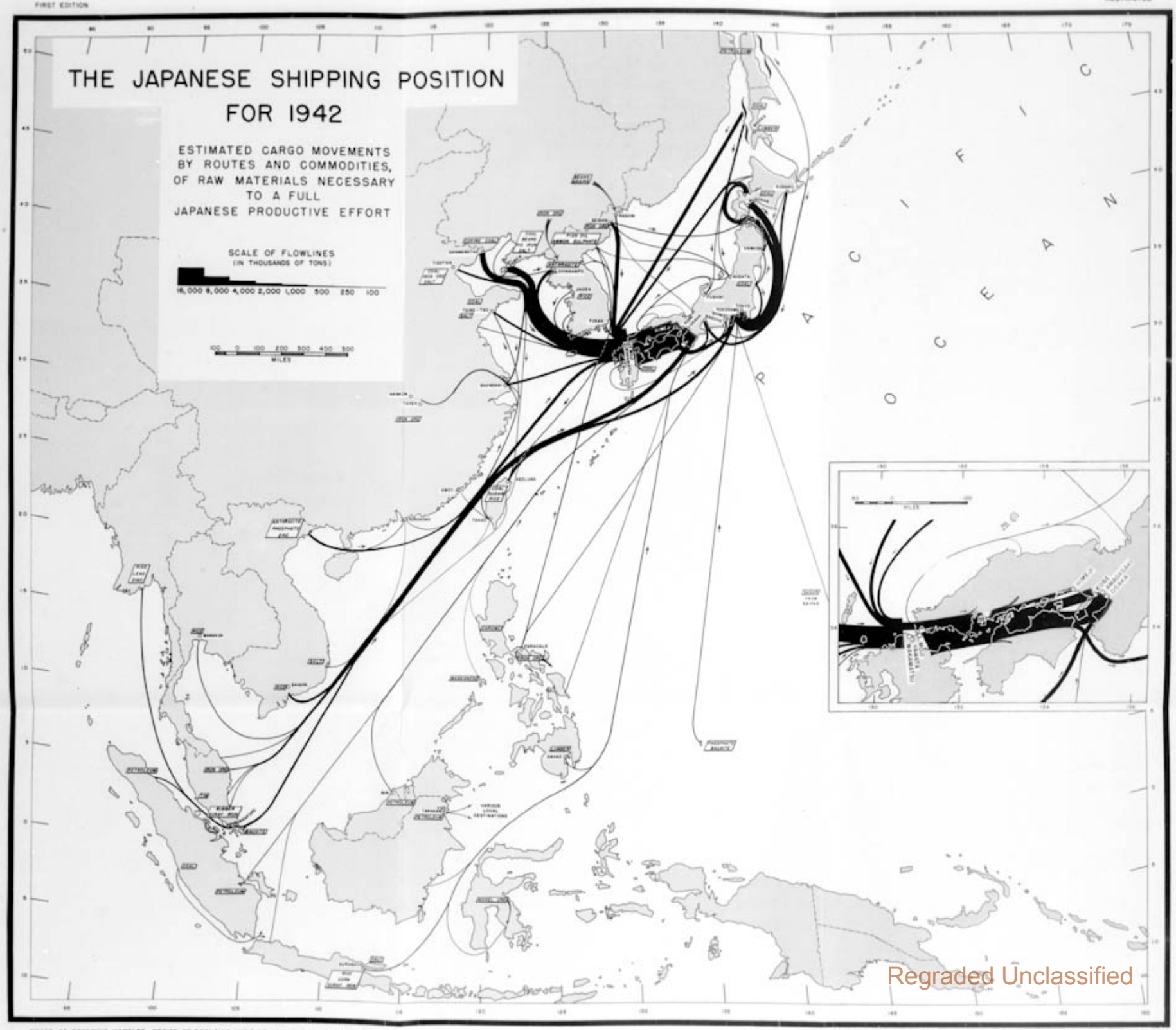
THE JAPANESE SHIPPING POSITION
FOR 1942
ESTIMATED CARGO MOVEMENTS
BY ROUTES AND COMMODITIES,
OF RAW MATERIALS NECESSARY
TO A FULL
JAPANESE PRODUCTIVE EFFORT
SCALE OF FLOWLINES
(IN THOUSANDS OF TONS)
16,000 8,000 4,000 2,000 1,000 500 250 100
100 0 100 200 300 400 500
MILES
P A C I F I C
O C E A N
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TABLE C.

## ESTIMATED MINIMUM VESSEL EMPLOYMENT IN JAPANESE TRADE-1942

| From | Destination | Tons of Cargo | Average Tons per Ship | Total Required: No. of Voyages | Approx. No. of Voyages per day (Average) | Miles Round Trip | Average Miles Per Day | Time in Transit No. of Days for Round Trip | No. Days in Port: Load | No. Days in Port: Disch. | Total days 1 Round Voyage | (1 ship) Number Voyages Per annum | Total Number of vessels required | Total Tonnage of vessels required (Dead-weight) | Approx. Gross Tonnage Required | Approx. No. of Ships on Water between ports at any one time | Approximate no. of Ships in Port at Any One Time: Origin | Approximate no. of Ships in Port at Any One Time: Destination |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chinwangtao | Wakamatsu | 2,000,000 | 5,000 | 400 | 1.1 | 1,460 | 220 | 7- | 3 | 6 | 16 | 23- | 17½ | 95,000 | 65,000 | 8- | 3 | 7 |
| Chinwangtao | Himeji, etc. | 1,000,000 | 5,000 | 200 | .55 | 1,850 | 220 | 8. | 3 | 6 | 17½ | 21- | 9½ | 52,500 | 35,000 | 4+ | 2 | 3 |
| Chinwangtao | Yokohama | 500,000 | 5,000 | 100 | .28 | 2,548 | 220 | 12. | 3 | 7 | 22 | 16½ | 6 | 30,000 | 20,000 | 3+ | 1 | 2 |
| Chinwangtao | Chinnampo | 350,000 | 4,000 | 88 | .24 | 614 | 220 | 3- | 3 | 6 | 12 | 30½ | 3 | 12,000 | 8,000 | .7 | 1- | 1½ |
| Chinwangtao | Dairen | 750,000 | 4,000 | 190 | .53 | 282 | 220 | 1½ | 3 | 6 | 11- | 33 | 6 | 24,000 | 16,000 | 1- | 2- | 3+ |
| Chinwangtao | Shanghai | 300,000 | 4,000 | 75 | .21 | 1,318 | 220 | 6 | 3 | 9 | 18 | 20+ | 4- | 16,000 | 11,000 | 1½ | ½ | 2 |
| Tientsin | Wakamatsu | 950,000 | 3,000 | 320 | .9 | 1,600 | 200 | 8 | 2 | 5 | 15 | 24 | 13+ | 40,000 | 26,000 | 7 | 2 | 4 |
| Tientsin | Osaka | 400,000 | 3,000 | 133 | .37 | 2,180 | 220 | 10 | 3 | 7 | 20 | 18+ | 7 | 21,000 | 14,000 | 4.- | 1 | 2½ |
| Dairen | Wakamatsu, etc. | 3,900,000 | 5,000 | 780 | 2.14 | 1,266 | 220 | 6 | 3 | 6 | 15 | 24 | 32.5 | 172,500 | 115,000 | 13. | 6.5 | 13 |
| Dairen | Osaka, etc. | 1,200,000 | 5,000 | 240 | .7 | 1,760 | 288 | 6 | 4 | 6 | 16 | 23 | 10+ | 50,000 | 34,000 | 4+ | 2 | 4 |
| Dairen | Yokohama | 500,000 | 5,000 | 100 | .3 | 2,360 | 240 | 10 | 3 | 7 | 20 | 18 | 6- | 30,000 | 20,000 | 3 | 1 | 2 |
| Jinsen, etc. | Osaka | 700,000 | 4,000 | 175 | .5 | 1,466 | 200 | 7+ | 3 | 7 | 17 | 22 | 8 | 32,000 | 21,000 | 3½ | 1½ | 3 |
| Jinsen, etc. | Japan | 150,000 | 4,000 | 38 | .1 | 1,000 | 200 | 5 | 3 | 7 | 15 | 24 | 1½ | 6,000 | 4,000 | ½ | - | ½ |
| Chinnampo, Fusan, etc | Wakamatsu/Kure/ Osaka | 2,750,000 | 5,000 | 550 | 1.5 | @ 1,500 | 200 | 7½ | 4 | 8 | 20- | 18 | 30 | 150,000 | 100,000 | 11½ | 6½ | 12 |
| Chinnampo, Fusan, etc | Yokohama | 500,000 | 5,000 | 100 | .28 | 2,220 | 200 | 10 | 4 | 8 | 22 | 16½ | 6 | 30,000 | 20,000 | 2 3/4 | 1 | 2½ |
| Tsingtao | Osaka | 500,000 | 4,000 | 125 | .34 | @ 1,600 | 288 | 5½ | 4 | 6 | 15½ | 23½ | 5 1/3 | 21,000 | 14,000 | 2- | 1 | 2½ |
| Tsingtao | Moji & Inland Sea | 1,300,000 | 4,000 | 325 | .9 | @ 1,200 | 220 | 5½ | 4 | 6 | 15½ | 23½ | 14- | 56,000 | 37,000 | 5 | 3 | 6 |
| Seishin | Wakamatsu/Himeji | 1,800,000 | 5,000 | 360 | 1. | 1,200 | 220 | 5½ | 3 | 7 | 15½ | 23½ | 15 1/3 | 77,000 | 51,000 | 5½ | 3 | 7 |
| Seishin | Muroran/Kamaishi | 700,000 | 4,000 | 175 | .5 | 1,200 | 220 | 5½ | 3 | 7 | 15½ | 23½ | 7½ | 30,000 | 20,000 | 2.8 | 1½ | 3+ |
| Seishin/Rashin | Osaka | 1,100,000 | 4,000 | 275 | .77 | 1,540 | 220 | 7 | 3 | 7 | 17 | 22 | 12.5 | 50,000 | 33,000 | 5.2 | 2.4 | 4.9 |
| Seishin/Rashin | Niigata/Tsuruga | 400,000 | 3,000 | 133 | .37 | @ 1,000 | 240 | 4 | 3 | 4 | 11 | 33 | 4 | 12,000 | 8,000 | 1½ | 1 | 1½ |
| Seishin/Rashin | Yokohama | 900,000 | 4,000 | 225 | .6 | 2,260 | 220 | 10 | 3 | 7 | 20 | 18 | 12½ | 50,000 | 34,000 | 6 | 2 | 4½ |
| Dairen/Tientsin | Shanghai | 600,000 | 3,000 | 200 | .55 | @ 1,200 | 220 | 5½ | 4 | 5 | 14½ | 25 | 8 | 24,000 | 16,000 | 3+ | 2 | 3 |
| Dairen/Tientsin | Formosa | 300,000 | 3,000 | 100 | .28 | 1,720 | 220 | 8 | 4 | 6 | 18 | 20+ | 5 | 15,000 | 10,000 | 2½ | 1 | 1 3/4 |
| Korea East Coast | Formosa | 400,000 | 3,000 | 133 | .37 | 2,000 | 220 | 9 | 4 | 6 | 19 | 19 | 7 | 21,000 | 14,000 | 3½ | 1½ | 2 |
| Tsingtao | Korea West Coast | 250,000 | 3,000 | 83 | .23 | 618 | 220 | 3 | 2 | 5 | 10 | 36½ | 2½ | 7,000 | 5,000 | .7 | ½ | 1 |
| Tsingtao | Shanghai | 500,000 | 3,000 | 167 | .46 | 794 | 220 | 4 | 3 | 5 | 12 | 30½ | 5½ | 17,000 | 12,000 | 2- | 1½ | 2 |
| Tayeh, etc. | West Japan | 600,000 | 4,000 | 150 | .4 | @ 2,200 | 200 | 11 | 4 | 6 | 21 | 17 | 8.8 | 36,000 | 24,000 | 4.5 | 1.8 | 2.5 |
| Shanghai | West Japan | 500,000 | 4,000 | 125 | .34 | 1,100 | 288 | 4 | 3 | 3 | 10 | 36½ | 3½ | 14,000 | 10,000 | 1.5 | 1 | 1 |
| Keelung | Japan | 1,700,000 | 4,000 | 425 | 1.17 | @ 2,200 | 240 | 9 | 6 | 6 | 21 | 17 | 25 | 100,000 | 67,000 | 11.0- | 7 | 7 |
| Takao | Japan | 600,000 | 4,000 | 150 | .42 | @ 2,600 | 240 | 11 | 6 | 6 | 23 | 16 | 9½ | 38,000 | 25,000 | 4.5 | 2½ | 2½ |
| Karenko | Japan | 100,000 | 4,000 | 25 | .07 | @ 2,400 | 240 | 10 | 4 | 4 | 18 | 20+ | 1½ | 5,000 | 3,000 | .7 | ½ | ½ |
| Indo-China | Japan | 1,000,000 | 5,000 | 200 | .55 | @ 3,600 | 220 | 17 | 4 | 8 | 29 | 12½ | 16 | 80,000 | 53,000 | 9.1/3 | 2 2/3 | 4 |
| Saigon | Osaka/Yokohama | 1,150,000 | 5,000 | 230 | .65 | @ 4,400 | 220 | 20 | 5 | 6 | 31 | 12- | 20 | 100,000 | 67,000 | 13 | 3.5 | 3.5 |
| Bangkok | Osaka/Yokohama | 700,000 | 5,000 | 140 | .4 | @ 5,400 | 220 | 25 | 8 | 7 | 40 | 9+ | 19½ | 76,000 | 50,000 | 9.7 | 3. | 2.8 |
| Malaya | Wakamatsu, etc. | 2,150,000 | 5,000 | 430 | 1.2 | @ 5,200 | 220 | 24 | 8 | 6 | 38 | 9.6 | 44.8 | 224,000 | 150,000 | 28.3 | 9.5 | 7. |
| British Borneo | Japan | 600,000 | 10,000 | 60 | .17 | @ 5,000 | 300 | 17 | 2 | 2 | 21 | 17. | 3.6 | 36,000 | 24,000 | 3.- | 1/3 | 1/3 |
| N. Sumatra | Japan | 500,000 | 10,000 | 50 | .14 | 6,600 | 300 | 22 | 2 | 2 | 26 | 14 | 3.6 | 36,000 | 24,000 | 3 | 1/3 | 1/3 |
| S. Sumatra | Japan | 200,000 | 10,000 | 20 | .06 | @ 5,600 | 300 | 19 | 2 | 2 | 23 | 16. | 1½ | 12,000 | 8,000 | 1+ | - | - |
| Dutch Borneo | Japan | 100,000 | 10,000 | 10 | .03- | @ 5,000 | 300 | 17 | 2 | 2 | 21 | 17 | .6 | 6,000 | 4,000 | .5 | - | - |
| Celebes and Java | Japan | 800,000 | 5,000 | 160 | .44 | @ 5,600 | 240 | 24 | 8 | 7 | 39 | 9.4 | 17 | 85,000 | 57,000 | 10.5 | 3.5 | 3 |
| Paracale | Wakamatsu/Kobe | 700,000 | 5,000 | 140 | .4 | @ 3,000 | 220 | 14 | 6 | 6 | 26 | 14. | 10 | 50,000 | 34,000 | 5.6 | 2+ | 2+ |
| Paracale | Yokohama/Kamaishi | 200,000 | 5,000 | 40 | .11 | @ 3,600 | 220 | 17- | 6 | 6 | 29 | 12½ | 3.+ | 16,000 | 10,000 | 2- | ½ | ½ |
| Samar | Japan | 150,000 | 5,000 | 30 | .09 | @ 3,400 | 220 | 15½ | 2 | 6 | 23½ | 15 | 2 | 10,000 | 7,000 | 1.3 | 1/5 | ½ |
| Philippine Islands | Japan | 200,000 | 5,000 | 40 | .11 | @ 3,000 | 220 | 14 | 9 | 6 | 29 | 12½ | 3+ | 16,000 | 10,000 | 1.5 | 1 | ½ |
| Angaur | Yokohama | 400,000 | 4,000 | 100 | .28 | 3,500 | 220 | 16 | 5 | 7 | 28 | 13 | 7 2/3 | 31,000 | 20,000 | 4.5 | 1½ | 2- |
| Saipan, etc. | Yokohama | 100,000 | 4,000 | 25 | .07 | 2,600 | 220 | 12- | 6 | 6 | 24 | 15½ | 1.6 | 6,500 | 4,000 | .8 | .4 | .4 |
| Rangoon | Singapore | 500,000 | 5,000 | 100 | .28 | 2,220 | 240 | 9+ | 5 | 5 | 19+ | 19- | 5½ | 26,000 | 17,000 | 2.5 | 1½ | 1½ |
| Rangoon | Japan | 150,000 | 5,000 | 30 | .09 | 7,600 | 240 | 31½ | 6 | 6 | 42½ | 8.5 | 3.5 | 18,000 | 12,000 | 2.5 | ½ | ½ |
| Tarakan | Various local | 250,000 | 10,000 | 25 | .07 | @ 2,000 | 300 | 7- | 2 | 2 | 11- | 33 | .75 | 7,500 | 5,000 | .5 | 1/8 | 1/8 |
| Saigon | Shanghai | 580,000 | 4,000 | 125 | .34 | 3,360 | 220 | 15 | 5 | 5 | 25 | 14 3/5 | 8.6 | 34,000 | 22,000 | 5. | 2- | 2- |
| Hongay | Shanghai | 300,000 | 4,000 | 75 | .21 | 2,570 | 220 | 12 | 4 | 9 | 25 | 14 3/5 | 5+ | 21,000 | 14,000 | 2½ | 1 | 1½ |
| Hongay | Hongkong | 200,000 | 4,000 | 50 | .14 | 920 | 220 | 4+ | 4 | 7 | 15 | 24 | 2 | 8,000 | 5,000 | ½ | ½ | 1 |
| S. Sumatra | Java & Singapore | 150,000 | 5,000 | 30 | .09 | @ 1,000 | 220 | 4½ | 5 | 8 | 17½ | 21 | 1.5 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

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| From | Destination | Tons of Cargo | Average tons per Ship | Total Required No. of Voyages | Approx. No. of Voyages Per Day (Average) | Miles Round Trip | Average Miles Per Day | Time in Transit No. of Days for Round Trip | No. Days in port: Load | No. Days in port: Disch. | Total days 1 Round Voyage | (1 ship) Number Voyages Per annum | Total Number of vessels required | Total Tonnage of vessels required (Dead-weight) | Approx. Gross Tonnage Required | Approx. No. of ships on Water between Ports at any one time. | Approximate no. of Ships in Port at Any One Time. Origin | Approximate no. of Ships in Port at Any One Time. Destination |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sakhalin | Yokohama | 500,000 | 10,000 | 50 | .14 | @ 2,200 | 300 | 7½ | 2 | 2 | 11½ | 31.7 | 1.6 | 16,000 | 11,000 | 1 | .3 | .3 |
| Muroran | Tokyo | 4,500,000 | 2,000 | 2,250 | 6.2- | 1,100 | 200 | 5½ | 2 | 4 | 11½ | 31.7 | 71. | 142,000 | 95,000 | 34+ | 12 | 25 |
| Kushiro | Tokyo | 1,000,000 | 2,000 | 500 | 1.4- | 1,200 | 200 | 6 | 2 | 4 | 12 | 30½ | 16.4 | 33,000 | 22,000 | 9 | 2½ | 5 |
| Otaru | Tokyo | 1,000,000 | 2,000 | 500 | 1.4- | 1,400 | 200 | 7 | 2 | 4 | 13 | 28 | 18- | 36,000 | 24,000 | 10 | 3 | 5 |
| Karafuto | Tokyo | 1,500,000 | 2,500 | 600 | 1.65 | 1,900 | 200 | 9½ | 4 | 4 | 17½ | 21 | 28.6 | 72,000 | 48,000 | 15 2/3 | 7 | 6 |
| Karafuto | Tokyo | 400,000 | 2,500 | 160 | .44 | 1,700 | 200 | 8½ | 4 | 4 | 16½ | 21½ | 7.5 | 19,000 | 12,000 | 4- | 2 | 1.5 |
| Joban | Tokyo | 1,000,000 | 2,000 | 500 | 1.4- | 360 | 200 | 2 | 2 | 4 | 8 | 44 1/3 | 11.3 | 23,000 | 15,000 | 3- | 3 | 5.5 |
| Hokkaido | Wakamatsu | 1,000,000 | 2,000 | 500 | 1.4- | @ 1,600 | 200 | 8 | 2 | 4 | 14 | 26 | 19.+ | 39,000 | 26,000 | 11.+ | 3 | 5 |
| Hokkaido | Osaka | 1,000,000 | 2,000 | 500 | 1.4- | @ 2,000 | 200 | 10 | 2 | 4 | 16 | 23- | 22 | 44,000 | 30,000 | 14 | 3 | 5 |
| Karafuto | Wakamatsu | 1,500,000 | 2,500 | 600 | 1.65 | @ 2,000 | 200 | 10 | 4 | 4 | 18 | 20+ | 30 | 75,000 | 50,000 | 16½ | 7 | 6½ |
| Karafuto | Osaka | 1,600,000 | 2,500 | 640 | 1.76 | @ 2,400 | 200 | 12 | 4 | 4 | 20 | 18+ | 35 | 88,000 | 59,000 | 21+ | 7 | 7 |
| Joban | N. Japan | 1,200,000 | 2,000 | 600 | 1.65 | @ 300 | 200 | 1½ | 2 | 4 | 7½ | 48½ | 12.4 | 25,000 | 16,000 | 2.5 | 3 | 7. |
| Hokkaido & Karafuto | N. Japan | 1,500,000 | 2,000 | 750 | 2.1 | @ 600 | 200 | 3 | 2 | 4 | 9 | 40½ | 18½ | 37,000 | 25,000 | 6 1/3 | 4 | 8 |
| Joban | Shimizu | 300,000 | 2,000 | 150 | .42 | 400 | 200 | 2 | 2 | 4 | 8 | 44 1/3 | 3.4 | 7,000 | 5,000 | 1- | 1 | 1½ |
| Hokkaido | Shimizu/Nagoya | 2,300,000 | 2,000 | 1,150 | 3.1+ | 1,300 | 200 | 6½ | 3 | 4 | 13½ | 27 | 42.6 | 85,000 | 57,000 | 20+ | 9 | 13½ |
| Karafuto | Nagoya | 700,000 | 2,500 | 280 | .75- | 2,100 | 200 | 10½ | 4 | 4 | 18½ | 19½ | 14.9 | 37,000 | 25,000 | 8- | 4 | 3 |
| Kyushu/Ube | Inland Sea | 6,000,000 | 1,000 | 6,000 | 16.4 | 300 | 150 | 2 | 2 | 3 | 7 | 52- | 116 | 116,000 | 77,000 | 33 | 33 | 50 |
| Kyushu/Ube | Osaka, etc. | 10,000,000 | 1,000 | 10,000 | 28. | 500 | 150 | 3 1/3 | 2 | 3 | 8 1/3 | 44- | 228 | 228,000 | 152,000 | 93 | 54 | 81 |
| Kyushu | Nagoya | 1,200,000 | 2,000 | 600 | 1.65 | 900 | 200 | 4½ | 2 | 4 | 10½ | 35 | 17 | 34,000 | 22,000 | 7½ | 3½ | 6 |
| Kyushu | Tokyo/Yokohama | 500,000 | 2,000 | 250 | .7 | 1,160 | 200 | 6 | 2 | 4 | 12 | 30½ | 8.2 | 16,000 | 11,000 | 4+ | 1½ | 2½ |
| Kyushu | North Japan, etc. | 1,400,000 | 2,000 | 700 | 1.9 | 700 | 200 | 3½ | 2 | 4 | 9½ | 38½ | 18.2 | 36,000 | 24,000 | 6.7 | 4 | 7½ |
| Inland Sea | Inland Sea/Osaka | 3,500,000 | 1,000 | 3,500 | 9.6 | 200 | 200 | 1 | 1 | 2 | 4 | 91 | 38.5 | 38,500 | 26,000 | 9.6 | 9.6 | 19.3 |
| TOTALS | | 82,800,000 | | | | | | | | | | | 1,261+ | 3,479,500 | 2,343,000 | 560- | 275 | 419 |

The figures given above would indicate, at first glance, the employment of only 3,479,500 deadweight tons, equivalent to about 2,343,000 gross tons, in the movement of the essential commodities listed in this study in 1942, but these rough calculations ignore the fact that each ship must carry fuel and supplies in addition to cargo. It may be assumed that each ship in overseas trade would have to be 10% larger than here shown to allow for the difference between cargo deadweight and real deadweight, and that 5% might be added to vessel sizes in the Japanese coasting service where fuel weight might be less because of shorter voyages. Making such allowances would raise the total vessel requirement to 2,535,000 gross tons.

As a further addition, allowance must be made for the carriage of return non-military cargo. The loading of this and its discharge consumes time, thus decreasing the number of voyages that can be made per annum and increasing the number of ships required in each service. Precise calculations are impossible, but it is likely that this factor would increase the total vessel requirement to a minimum of at least 2,800,000 to 3,000,000 gross tons, and this is probably an underestimate. Delays caused by carriage of military cargo would raise the vessel total much more, of course. In addition, there will certainly be movements of minor commodities not considered in this study, and probably trade to minor ports which have been left out of these necessarily rough calculations.

Other major factors which would tend to modify thecalculations given, also exist. Convoy delays must now be important, but cannot be approximated with the meager data now on hand. Also, the assumption has been made in this table of a direct voyage between the port of origin and a single port of destination with direct return to the port of origin again. This is in essentials true for most routes, but in individual cases and on certain routes is incorrect. It is likely, for example, that the vessels shown as carrying iron ore from the East Coast of Malaya will proceed to Singapore or even Rangoon with military supplies and small amounts of non-military cargo and then take ore at Malayan anchorages on the way back. Such triangular voyages would modify the routes assumed and the number of ships found on them, and would call for larger vessel tonnages than are here shown. Another factor which might greatly increase the number of ships required, is the practice of loading cargoes at several ports and unloading at several others. Each port called at creates delay.

The calculations in the above table are therefore to be taken as nothing more than an attempt to determine the absolute minimum numbers of Japanese cargo vessels required for major movements of essential raw materials under conditions of theoretically perfect operation, without interference from the enemy, from weather, stevedore shortages, port delays, circuitous routings imposed by military or business considerations, breakdowns, or any other factors which, in actual practice, would be experienced, and without taking into account military or other employment on the outward voyages. Actual vessel employment is likely to be at least 50% above the figures shown here and this is borne out by the statistics of Japanese vessel employment in 1939-41 given elsewhere in this study. The figure arrived at of over 2,500,000 gross tons has, therefore, no other validity than to show the absolute minimum tonnage which Japan would require under the most favorable conditions possible.

Source: Special calculations based on Nippon Shipping Exchange data and confidential material, August 8, 1942.



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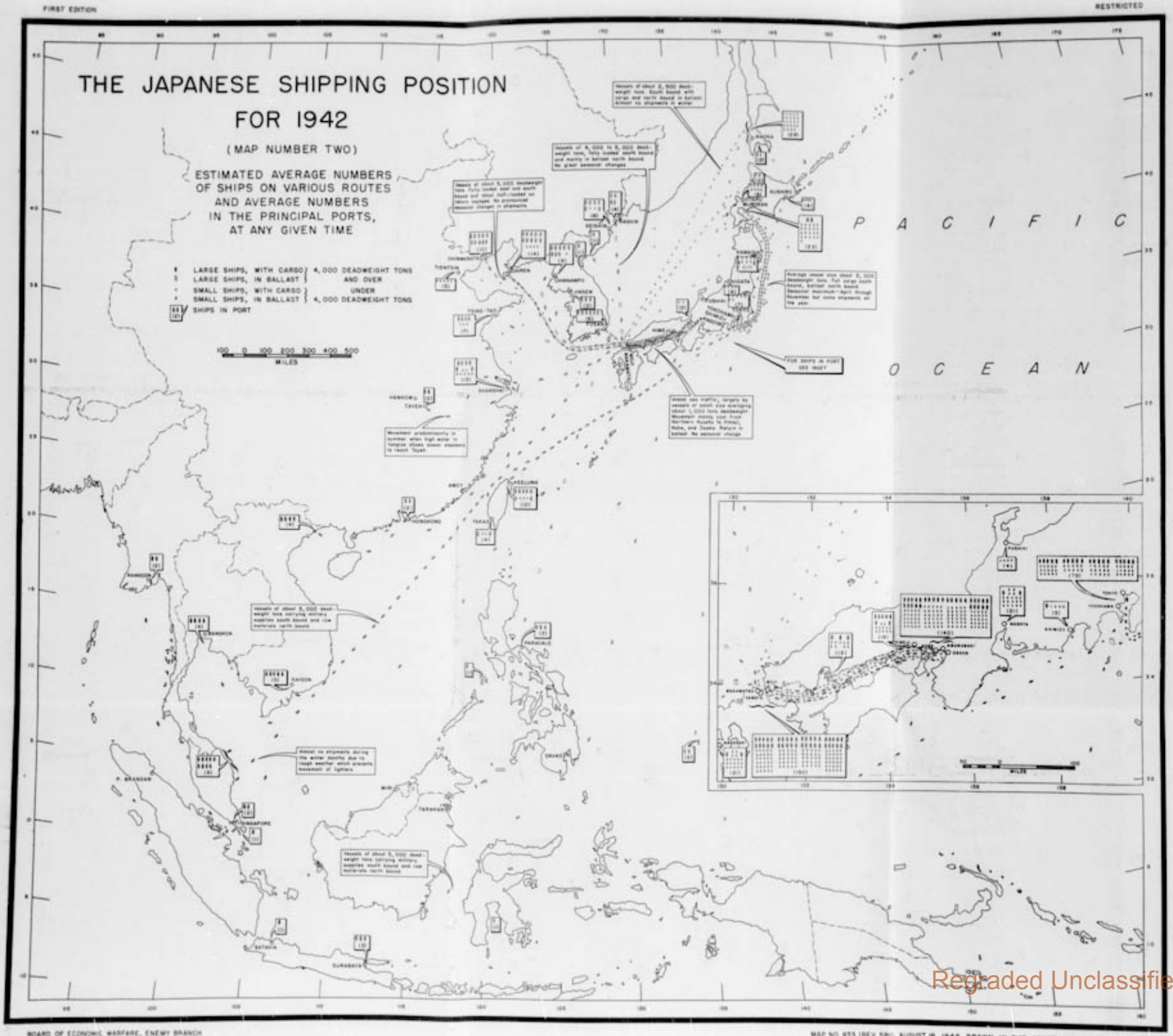


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TABLE D.

## REGIONAL EMPLOYMENT OF JAPANESE VESSELS

As bearing on the amount of Japanese tonnage normally required for use in the nearseas area, including employment as military transports, the following summary extracts from the monthly reports of the Nippon Shipping Exchange are given. These figures show the total tonnages employed on particular routes during each month and are believed reasonably accurate as far as they go. However, they do not include vessels belonging to the two principal liner shipping companies (The Nippon Yusen Kaisha and Osaka Shosen Kaisha), and also omit an important tonnage in very small coastal ships. No statistics are available as yet on these omitted classes beyond such fragmentary reports as have been used in the main body of the study. From incomplete information on hand, it is estimated that the liner tonnage not included in the table would have amounted to 1,600,000 gross tons as of January 1, 1941. The vessels under 2,000 deadweight tons capacity which are omitted from the Nippon Shipping Exchange statistics but which actually are employed in the Japanese carrying trade are estimated as amounting to 650,000 gross tons as of the same date.

The whole of the small tonnage, which as a rough approximation might amount to 900,000 deadweight tons, is employed in the coastal and nearby services. Normally the liners find their principal employment outside the nearseas areas, but in November, 1939, 540,440 gross tons out of a total of 1,426,240 gross tons belonging to the two liner companies were in nearseas services and the proportion in the nearby trades undoubtedly increased in later months.

If use is made of these figures, it should be noted that the large increase in the Japanese tramp fleet following the outbreak of the China Incident is only in part a real expansion, and this table is inaccurate in its statistics on tonnages employed in the nearseas trades in the periods preceding 1939. Prior to this there were several hundred thousand tons of old Japanese vessels operated under Chinese registry and these ships, although in nearseas service, were not listed in the table until gradually brought under Japanese flag in the months following the opening of hostilities. The rapid growth of the Japanese merchant marine in 1938 and 1939 as shown in this table is, therefore, in part fictitious. There was, however, a substantial increase in Japanese flag tonnage through new construction and through purchase from abroad during this period.

Reliable statistics on vessel employment are not available beyond the early part of 1941, but reports from the American Consul in Kobe indicate that there was relatively little change in the routing of ships in September, 1941, as compared with those listed at the beginning of the year, practically all Japanese tramp tonnage still remaining at that time in the nearseas services.

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### Shipping Activity, by Areas of Operation

(Vessels of 2,000 Deadweight tons or over) (In deadweight tons)

| Beginning of Month | South Seas & Malay Waters | Coastal and China | In Dock under Repairs | Government Charter | Total including ships in European, American, Australian & Indian Services. |
|---|---|---|---|---|---|
| 1933 Sept. | 564,107 | 1,487,512 | 125,664 | 30,658 | 3,330,716 |
| 1934 Sept. | 605,394 | 1,480,133 | 120,368 | 29,671 | 3,247,231 |
| 1935 Sept. | 367,038 | 1,745,327 | 173,506 | 24,299 | 3,230,584 |
| 1936 Sept. | 412,241 | 1,708,706 | 92,010 | 27,315 | 3,341,463 |
| 1937 July. | 456,060 | 1,580,859 | 128,795 | 72,077 | 3,545,109 |
| Aug. | 366,433 | 1,166,255 | 154,491 | 717,257 | 3,565,745 |
| Sept. | 379,036 | 1,137,288 | 93,619 | 940,728 | 3,616,133 |
| Oct. | 388,547 | 1,062,912 | 146,649 | 1,091,778 | 3,633,140 |
| Nov. | 390,064 | 976,255 | 122,542 | 1,208,283 | 3,694,693 |
| Dec. | 358,742 | 1,015,654 | 115,910 | 1,318,719 | 3,789,455 |
| 1938 Jan. | 345,811 | 1,074,853 | 112,557 | 1,310,270 | 3,841,373 |
| Feb. | 362,431 | 1,259,127 | 149,801 | 1,133,028 | 3,930,628 |
| Mar. | 402,642 | 1,315,726 | 150,573 | 1,146,478 | 4,054,828 |
| Apr. | 495,335 | 1,441,006 | 174,399 | 987,031 | 4,109,015 |
| May | 473,051 | 1,746,313 | 143,321 | 936,994 | 4,224,948 |
| June | 465,532 | 1,810,239 | 152,354 | 935,017 | 4,290,946 |
| July | 474,808 | 1,852,505 | 145,500 | 1,153,974 | 4,428,872 |
| Aug. | 454,337 | 1,806,471 | 159,971 | 1,225,710 | 4,459,458 |
| Sept. | 393,652 | 1,701,929 | 101,745 | 1,523,429 | 4,490,331 |
| Oct. | 464,980 | 1,506,220 | 88,259 | 1,600,857 | 4,506,105 |
| Nov. | 413,432 | 1,448,309 | 100,349 | 1,711,369 | 4,532,803 |
| Dec. | 394,240 | 1,427,892 | 67,975 | 1,762,592 | 4,574,775 |
| 1939 Jan. | 317,361 | 1,493,229 | 77,330 | 1,732,265 | 4,611,776 |
| Feb. | 451,271 | 1,739,621 | 166,634 | 1,322,788 | 4,666,824 |
| Mar. | 477,150 | 1,757,898 | 179,815 | 1,205,847 | 4,684,252 |
| Apr. | 532,245 | 1,783,022 | 233,364 | 1,154,138 | 4,729,323 |
| May | 664,813 | 1,707,188 | 273,556 | 1,115,742 | 4,793,772 |
| June | 685,192 | 1,880,163 | 249,933 | 1,013,357 | 4,841,070 |
| July | 653,697 | 2,087,390 | 182,574 | 942,422 | 4,845,505 |
| Aug. | 691,488 | 2,062,683 | 201,926 | 928,016 | 4,876,014 |
| Sept. | 674,944 | 2,114,059 | 189,999 | 913,794 | 4,888,324 |
| Oct. | 681,832 | 2,166,958 | 130,696 | 1,240,117 | 5,153,799 |
| Nov. | 782,998 | 2,088,625 | 189,998 | 1,208,422 | 5,250,477 |
| Dec. | 727,503 | 2,074,249 | 263,896 | 1,082,587 | 5,271,943 |
| 1940 Jan. | 689,139 | 2,152,101 | 186,587 | 1,043,761 | 5,272,963 |
| Feb. | 684,632 | 2,035,567 | 217,268 | 1,024,132 | 5,289,208 |
| Mar. | 669,613 | 2,116,958 | 260,137 | 1,000,701 | 5,323,691 |
| Apr. | 732,710 | 2,111,880 | 317,960 | 940,187 | 5,356,379 |
| May | 692,360 | 2,126,432 | 405,020 | 916,186 | 5,381,034 |
| June | 677,655 | 2,153,106 | 414,645 | 948,988 | 5,415,001 |
| July | 706,658 | 2,310,686 | 270,616 | 924,499 | 5,429,135 |
| Aug. | 669,146 | 2,446,513 | 187,156 | 906,913 | 5,416,109 |
| Sept. | 601,437 | 2,519,529 | 243,182 | 1,016,677 | 5,462,546 |
| Oct. | 623,534 | 2,439,561 | 334,228 | 1,027,771 | 5,454,526 |
| Nov. | 762,302 | 2,320,361 | 337,055 | 1,078,264 | 5,511,930 |
| Dec. | 849,598 | 2,184,389 | 294,361 | 1,152,741 | 5,539,177 |
| 1941 Jan. | 899,229 | 2,078,430 | 366,240 | 1,612,568 | 5,583,930 |

The above figures do not include N.Y.K. and O.S.K. vessels.

Source: The Oriental Economist quoting Nippon Shipping Exchange. August 8, 1942.

BOARD OF ECONOMIC WARFARE ES FE-100
Enemy Branch

Regraded Unclassified

TABLE E.

NUMBER AND TONNAGE OF JAPANESE TRAMP VESSELS EMPLOYED IN THE COASTING TRADE OF JAPAN AND IN TRADE WITH CHINA, MANCHURIA, KOREA AND SIBERIA

This table compiled by the Nippon Shipping Exchange* shows the number and dead weight tons of the vessels assigned to the various routes listed as of the particular census day in each month. The figures do not give the total number of round voyages in the individual month, but instead the number of ships assigned to the route. Vessels with capacities less than 2,000 dead weight tons are omitted and passenger vessels likewise do not appear. From other tables it seems probable that "passenger vessels" include all tonnage owned by the Nippon Yusen Kaisha and Osaka Shosen Kaisha. Accordingly, these figures do not give a complete picture of the total sailings. They are, however, a sufficiently large proportion of the total to be of value as an indicator of the relative magnitude of traffic on various routes at various times of the year.

| | Dec. 1940 | | Jan. 1941 | | Feb. 1941 | | Mar. 1941 | | Apr. 1941 | | May 1941 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number of Vessels | Dead Weight Tons | Number of Vessels | Dead Weight Tons | Number of Vessels | Dead Weight Tons | Number of Vessels | Dead Weight Tons | Number of Vessels | Dead Weight Tons | Number of Vessels | Dead Weight Tons |
| Hokkaido/Pacific Coast of Japan | 70 | 398,809 | 76 | 407,588 | 70 | 370,870 | 71 | 393,365 | 57 | 306,582 | 52 | 272,796 |
| (From Muroran) | (31) | (181,591) | (30) | (173,693) | (32) | (182,416) | (36) | (200,607) | (32) | (180,958) | (30) | (157,968) |
| Karafuto/Pacific Coast of Japan | 25 | 145,384 | 19 | 102,194 | 16 | 92,476 | 19 | 103,599 | 32 | 204,414 | 63 | 449,915 |
| Karafuto & Hokkaido/Japan Sea Ports | 7 | 24,359 | 9 | 32,550 | 11 | 36,331 | 16 | 51,655 | 17 | 53,363 | 16 | 49,276 |
| Kyushu/Pacific Coast Ports | 46 | 184,444 | 52 | 202,970 | 53 | 214,148 | 42 | 143,430 | 31 | 107,168 | 34 | 116,957 |
| (From Wakamatsu) | (22) | (106,231) | (26) | (116,466) | (27) | (113,856) | (19) | (71,933) | (14) | (48,500) | (16) | (58,239) |
| Kyushu/Japan Sea Ports | 5 | 16,851 | 2 | 7,788 | 2 | 5,400 | 2 | 5,400 | 5 | 14,515 | 3 | 9,913 |
| Taiwan/Japan Proper | 27 | 181,708 | 32 | 218,017 | 38 | 255,184 | 30 | 209,847 | 19 | 130,413 | 18 | 114,978 |
| Taiwan/Korea & Dairen | 5 | 38,470 | 7 | 52,244 | 6 | 37,625 | 2 | 8,250 | 4 | 17,011 | 3 | 12,401 |
| Taiwan/China | 3 | 13,913 | 1 | 2,885 | 3 | 14,215 | 2 | 9,135 | 2 | 6,481 | 3 | 9,971 |
| Dairen/Pacific Ports of Japan | 37 | 211,690 | 33 | 181,633 | 33 | 171,318 | 38 | 214,995 | 42 | 228,438 | 31 | 166,485 |
| Dairen/Hokkaido & Japan Sea Ports | 3 | 15,311 | 4 | 18,493 | 4 | 20,747 | 7 | 35,974 | 4 | 22,333 | 3 | 15,761 |
| Dairen/North China & Shanghai | 4 | 23,653 | - | — | 1 | 2,816 | - | — | 1 | 5,091 | 1 | 5,091 |
| Korea/Pacific Ports of Japan | 57 | 222,326 | 46 | 172,905 | 46 | 173,074 | 42 | 153,788 | 55 | 218,253 | 50 | 190,880 |
| Korea/Hokkaido & Japan Sea Ports | 12 | 38,205 | 13 | 45,932 | 14 | 51,391 | 15 | 50,926 | 16 | 61,024 | 13 | 46,577 |
| Korea/Karafuto | - | — | - | — | - | — | 1 | 2,187 | 7 | 39,063 | 8 | 47,349 |
| Korea/Dairen | 1 | 2,816 | - | — | - | — | 1 | 2,730 | 1 | 3,430 | - | — |
| Manchuria & Dairen/Japan Proper | 6 | 22,925 | 1 | 4,213 | 3 | 12,274 | 1 | 3,600 | 6 | 27,771 | 7 | 34,001 |
| North China/Japan Proper | 37 | 182,418 | 39 | 176,782 | 35 | 162,172 | 34 | 166,249 | 44 | 225,312 | 44 | 227,673 |
| Central China | 10 | 43,293 | 11 | 46,959 | 5 | 21,802 | 6 | 24,845 | 6 | 27,050 | 9 | 29,795 |
| North China/Korea | 2 | 4,225 | 3 | 6,774 | 2 | 4,225 | 3 | 9,315 | 6 | 23,872 | 7 | 29,322 |
| North China/Dairen | 3 | 6,664 | 3 | 13,464 | 4 | 18,861 | 3 | 10,133 | 1 | 2,024 | 1 | 2,046 |
| South China | 10 | 58,081 | 9 | 45,612 | 10 | 41,976 | 11 | 42,404 | 11 | 48,435 | 11 | 49,665 |
| Shanghai & Tsingtao/Japan Proper | 21 | 104,169 | 20 | 118,625 | 16 | 88,361 | 38 | 195,518 | 27 | 127,234 | 19 | 103,967 |
| Kamchatka/Kuriles | 4 | 13,225 | 1 | 3,375 | 2 | 15,940 | - | — | 2 | 7,140 | 13 | 61,432 |
| Yangtze Ports/Japan | 17 | 110,267 | 18 | 109,906 | 12 | 69,248 | 15 | 92,663 | 13 | 89,271 | 17 | 109,975 |
| Others | 28 | 121,183 | 24 | 107,521 | 22 | 91,619 | 18 | 63,204 | 15 | 56,031 | 20 | 94,353 |
| TOTAL | 439 | 2,184,389 | 423 | 2,078,430 | 408 | 1,972,073 | 417 | 1,993,212 | 424 | 2,051,719 | 452 | 2,250,549 |

Regraded Unclassified

A16/8 [illegible]

Capt. McCrea file please

SECRET

WAR DEPARTMENT
THE CHIEF OF STAFF
WASHINGTON

August 5, 1942.

MEMORANDUM FOR THE PRESIDENT:

You are familiar with the "Magic" reports on the decision of the Japanese Government not to undertake military operations against Russia at this time. Yesterday's "Magic", in the opinion of our G-2, confirms the authenticity of this information.

I suggest the advisability of transmitting this information to Premier Stalin, if it has not already been done, as at least some encouragement in the present desperate Russian situation.

G. C. Marshall
Chief of Staff.

SECRET

Regraded Unclassified

A16 (Japan)

SECRET

THE WHITE HOUSE
WASHINGTON

Paraphrase

The following message was sent on July 14, 1942, ~~by a Japanese~~ from Tokyo to Kuibyshev and an information copy went to Buenos Aires:

Japan's war objective at present is to prevent Germany's defeat rather than to share with the Reich the fruits of victory. However, even though Germany is defeated, Japan feels that it would not be impossible for her to carry on the war in spite of resultant increased difficulty.

Japan holds the Dutch East Indies and Singapore it is true, but we nevertheless must expect a long defensive war before these possessions are completely under our control. Even in the event of Germany's defeat, Japan would be able to maintain sea supremacy from Manila to the Bay of Bengal, but she should not take for granted that her present superiority will bring her ultimate victory. Because of war operations her potential resources must of necessity remain latent.

Even though Japan should not be strong enough to attack the American mainland, she is in a favorable position to threaten the Pacific Coast. On the other hand, the United States should find it impossible to attack Japan proper unless Russia comes in the war against Japan.

Japan is skilled in strategy but her weakness lies in her failure to understand American psychology. She does not realize how strong is the desire for revenge among the American people. She believes, rather, that people of the democratic countries are indolent and fond of luxury; that the promotion of their welfare is weak; that boredom is prevalent; that they have no forthright purpose in war; that England and America are fed up with abnormal living and want an end to fighting; and finally the Japanese feel that accompanying the democratic peoples' desire for peace is the abandonment of hope of recovering the southern islands.

The reader of Tokyo newspapers is apt to believe that once Japan's position of supremacy is firmly established and the isolation theory has again become strong in America, such figures as Lindbergh and Wheeler will once more be returned to powerful positions.

It would take many years to overthrow Japan and this could be brought about only by the use of psychological warfare. Viewed from a military standpoint as is demonstrated by - - - and the China incident - - - - the threat of military science will no longer exist. Although the U. S. might not anticipate victory for a long time, it might be possible in the end to place unbearable pressure on Japan.

* * * *

To be held for future use by the President

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WB12
Filed 1516/6
ah
A16-3 (Japan)

SECRET

WAR DEPARTMENT
CLASSIFIED MESSAGE CENTER

CSWD
May 6, 1942
1:16 PM

# INCOMING MESSAGE

From: Chungking
To: AGWAR FOR AMMISCA

No. 652 AMMISCA May 6, 1942

Additional report 1st special project. See AMMISCA 648. 16B-25 airplanes launched between 0815 and 0915 April 18th minus 10 zone time at point approximately 800 statute miles due east of Tokyo. Despite fact carrier was occasionally taking water over bow in heavy seas all planes got off easily with plenty of room. No crews expected to reach Asiatic mainland with existing head winds. Passed Japanese Patrol planes several hours before reaching Tokyo. Found clear weather over Tokyo. Made very low altitude attack. 3 types enemy pursuit planes encountered, none of which performed as well as B-25. Japanese pursuit pilots neither very agressive nor very skilful. 13 airplanes attacked Tokyo area and other points previously reported. After leaving Japan flight picked up 20 to 30 mile tail wind which held until near China coast. 200 miles from China airplanes encountered low clouds and fog. All 41 crewmen who have reached Chungking jumped in parachutes. Every airplane found in China-held or occupied territory crashed. Orders have issued for their complete destruction to prevent valuable information reaching enemy hands.

Antiaircraft was active but inaccurate due to low flying and high speed of airplanes. Some barrage ballons were up and Japanese antiaircraft destroyed some of these.

Few crews saw effect of their bombing due to high speed and low altitude. Norden bomb sights were not carried. Improvised bomb sights were accurate. No bomb failures nor duds were reported.

33

SECRET COPY No.

12

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WAR DEPARTMENT
CLASSIFIED MESSAGE CENTER
INCOMING MESSAGE

Following targets hit by bombardiers briefed to date from 7 airplanes: Yokosuka Naval Station -3Dem and 1 inciendiary bomb; Nagoya barracks, oil and storage warehouse, Military arsenal and Mitsuibishi aircraft factory -1 inciendiary each; steel plants in Shiba Ward of Tokyo -2 Dem bombs; T okyo industrial area -1 Dem bomb and 1 inciendiary; warehouse, railroad siding, refinery and tank farm in Yokohoma area -1 bomb each; industrial area, oil refinery and storage Yokohoma area -4 inciendiaries; densely populated district 2 or 3 miles north of Royal Palace 4 inciendiarie started many fires; steel works, gas plant and chemical works all in southeast Tokyo 3 direct hits with Dem bombs and 1 inciendiary. All Dem bombs were 500 pound demolition and all inciendiaries were clusters of 138 4 pound inciendiaries each.

B- 25 airplrnes functioned extremely well. Crews enthusiastic about airplanes. There was universal dissatisfaction with gunsight. It is not dust or moisture proof. Limited angle or cone of sight is reported to have reduced effectiveness of fire at least 60 percent. Preference expressed for post or ring sight. Turret was unsatisfactory with difficulty due principally to Asimigh motor. Very difficult to move 30 caliber nose gun from one position to another. There were numerous less important technical difficulties which will be furnished by radio if desired. Otherwise complete and detailed reports of every phase of operation after take off which have been prepared by this Hdqrs will be forwarded later by safe hands. Doolittle has been furnished quite complete reports of briefing of 1st 20 crewmen and all information available when he departed on May 5th. Bissell.

Stilwell

ACTION: OPD

INFO COPIES: TAG, FILE, SGS, CG AAF, G-2, A-2

CM-IN-1592 (5/6/42) PM 7:52

M.I.S. JOURNAL NO. 33
168
MAY 8 1942

SECRET COPY No.
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A16-3 (Japan)

COPY

SECRET

From: Chungking

To: AGWAR for AMMISCA

#616 Ammisca, April 30, 1942.

Chinese Air Force advises as follows:

A total of 63 special project crewmen now accounted for. Corporal L.D.Factor dead. One 2nd Lieutenant, name and location unknown, is badly hurt. A total of 42 crewmen have arrived at Chuchow. 15 crewmen now enroute Chuchow. 8 additional at other places. Discrepancy in this report will be verified. 20 crewmen arrived Chungking April 29th. Another 20 crewmen including Doolittle departed Chuchow for Hengyand on April 28th. No additional names of newly found crewmen verified.

Following report from Doolittle to Arnold filed on April 27th with Chinese Army received here April 30th:

"On April 18th about noontime 13 B-23-B bombers effectively bombed Tokyo's oil refineries, oil reservoirs, steel and munitions plants, naval docks and other military objectives with a large quantity of explosive and incendiary bombs. 1 bomber attacked the Mitsubishi airplane factory and other military objectives at Nagoya with incendiary bombs. 2 other bombers also attacked Osaka and Kobe with incendiaries. We all took care to avoid bombing schools, hospitals, churches and other nonmilitary objectives.

"We had to take off when we were still about 800 miles from Tokyo because of early encounter with Japanese Naval and Aerial craft. The sky over Tokyo was clear. From west Japan to China, however, the mountains along the coast were hidden by thick clouds and fog with the result that we had no way to locate the Chinese airfields at night. Enemy pursuits took off to attack us and there was intense antiaircraft fire. There were also many barrage balloons. Their fire was ineffective and our planes suffered no loss. At least 2 enemy planes were shot down.

SECRET

Regraded Unclassified

SECRET

"15 of our planes have been located in East China with crews totalling 75. It is reported that 1 bomber was forced to land in Siberia. 53 of our pilots are safe and are enroute to Chungking. 6 have been taken prisoner. 7 are missing. Sergeant Factor is dead."

Your 564 acknowledged. Brereton informed Bissell.

Stilwell.

SECRET

Regraded Unclassified

May 2,1942.

FOR THE PRESIDENT:

The attached radiogram was received from General Stilwell this morning.

J. T. McNARNEY,
Major General,
Deputy Chief of Staff.

Regraded Unclassified

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A16-3 (Japan)

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

April 26, 1942.

MEMORANDUM FOR GENERAL WATSON:

The following message from General Stilwell is transmitted to you as of possible interest to the President:

"Chinese Air Force reported April 25 one additional airplane located submerged repeat submerged at Nentientao on China coast about 140 statute miles south of Shanghi. Another airplane not previously reported was located near Ningpo about 75 statute miles south of Shanghi. Crews of both planes reported safe and being escorted by Chinese Gurrilla. No other information on above airplanes or personnel is available.

"Chinese Air Force now report a total of 54 repeat 54 crewmen have been located. 28 uninjured are reported at Chuchow where Chinese are making new clothing repeat clothing for them.

"Chinese 3rd War Zone Commander reports a total of 49 crewmen located. Meticulous check indicates these all included in the 54 reported by Chinese Air Force.

"American Embassy here received message April 25 signed Lieutenant White, United States Army Medical Corps, from Linhai repeat Linhai longitude 121 degrees 6 minutes latitude 28 degrees 53 minutes. Message requested transfusion set, surgical dressings and sulphur drugs be dropped by parachute. These supplies probably required for injured crewmen reported in AMMISCA 576. Chinese Army, Air Force and National Health Bureau are all acting to meet this situation. Required supplies are reported to be within 60 miles of Linhai.

"Following received for transmission to Arnold from Doolittle 'Bombing mission to Tokyo carried out as planned. Owing to bad weather conditions in China, it is suspected all planes have probably been destroyed or damaged. So far 5 pilots are definitely known to be safe' above filed April 20 with office of Chekiang provincial government. Received by AMMISCA April 25. Bissell."

JOHN R. DEANE,
Colonel, General Staff,
Secretary, General Staff.

SECRET

Regraded Unclassified

SECRET

A16-3 (Japan)

WAR DEPARTMENT

HEADQUARTERS OF THE ARMY AIR FORCES

WASHINGTON

April 26, 1942

MEMORANDUM FOR THE PRESIDENT:

Subject: Tokyo Raid.

The latest information received indicates the following location of crewmen from the Tokyo raid:

| | |
|---|---|
| Took off carrier | 80 |
| Accounted for in China, | 54 |
| In Siberia, | 5 |
| In Japan, | 5 |
| In plane crashed off coast south of Shanghai | 5 |
| Total | 69 |
| Balance unaccounted for | 11 |

Of the 54 in China, we know that 28 are uninjured and as these men are in many out of the way places there may be more.

H. H. Arnold

H. H. ARNOLD
Lieutenant General, U.S.A.
Commanding General, Army Air Forces

SECRET

Regraded Unclassified

A16-3 (Japan)

SECRET

WAR DEPARTMENT
OFFICE OF THE CHIEF OF STAFF
WASHINGTON

April 23, 1942.

MEMORANDUM FOR THE PRESIDENT:

Subject: Interning of American Plane in Vladivostok. (Raid on Tokio)

The attached message from the American Ambassador at Moscow states that one of the planes engaged in the recent bombing raid was forced to land on Soviet territory where it was interned. The crew was apparently uninjured and is being well cared for.

I am attaching also a copy of an immediate reply made to our Military Attache, Moscow. While I believe that this answer represents all we should say at this moment, I have in mind, later, to offer this plane to the Soviet Government for its own use.

Chief of Staff.

2 Incls.

SECRET

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SECRET

WAR DEPARTMENT
CLASSIFIED MESSAGE CENTER

# INCOMING MESSAGE

SECRET PARAPHRASE APRIL 22, 1942

Telegram No. 121 Dated April 22, 1942
1 p.m.

From: Moscow Rec'd April 22, 1942
2:20 p.m.

The following information was reported by Ward, Consul General at Vladivostok.

On April 21 Ward was informed that a two-motored North American type bomber of the United States Army made a forced landing on April 18 at an air field in Primorskkrai. This information was given by the diplomatic agent in Vladivostok. The bomber carried a crew of five officers and men. According to the crew they had been forced to land because they did not have fuel enough to reach their objective in central China after their raid on Japan. Soviet military authorities are conducting an investigation for the purpose of verifying the foregoing information and in the meantime they have siezed the plane and interned the crew at Khaborovsk.

The Soviet military authorities would like to have this information kept secret and especially do not wish that the press should know that a United States Army plane had landed in the Soviet Union. The crew of the plane consists of Pilot Captain York, Assistant Pilot Emans, Bombardier Powell, Navigator Handon and Mechanic Lobin and they are understood to be in good health and spirits.

It would be appreciated if the Department will instruct us whether a member of the staff of the Consulate at Vladivostok should visit the crew or whether a member of the staff of this Embassy should make the trip.

Standley
American Ambassador

APR 23 A.M.

ACTION: OPD

INFO. COPIES: TAG, FILE, SGS, CG AAF, G-2, Maj. Raymond

OUT
WPD MESSAGE CENTER

CM-IN-6048 (4-23-42) AM 1:55

SECRET

COPY No. 1

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OPERATIONS DIVISION DISTRIBUTION

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| Strategy | |
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| Current | |
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SECRET

A16-3 (Japan)

COPY

WAR DEPARTMENT

WAR DEPARTMENT GENERAL STAFF

OPERATIONS DIVISION

WASHINGTON

April 23, 1942

MEMORANDUM TO THE WAR DEPARTMENT CLASSIFIED MESSAGE CENTER:

Subject: Far Eastern Situation. (Tokio Raid)

The Chief of Staff directs that the following message be sent by the most expeditious means possible consistent with secrecy to the United States Army Military Attache, Moscow: WDWPD:

PLEASE ADVISE AMBASSADOR STANDLEY THAT COMMA AS REQUESTED IN HIS TELEGRAM COMMA NO PUBLICITY OF ANY KIND WILL BE RELEASED HERE CONCERNING THE AIRPLANE THAT WAS FORCED TO LAND ON SOVIET TERRITORY STOP WE REGRET THIS OCCURRENCE AND YOU WILL INFORM THE AMBASSADOR THAT IT WAS COMPLETELY UNINTENTIONAL STOP PARA I APPRECIATE THE AMBASSADOR'S COURTESY IN TRANSMITTING TO US THE NAMES OF THE CREW STOP SO FAR AS THE WAR DEPARTMENT IS CONCERNED IT WILL BE ENTIRELY SATISFACTORY IF A MEMBER OF THE CONSULATE AT VLADIVOSTOK WILL KEEP INFORMED CONCERNING THIS CREW

MARSHALL

DWIGHT D. EISENHOWER,
Major General,
Assistant Chief of Staff.

SECRET

Regraded Unclassified

SECRET

A16-3 (Japan)

WAR DEPARTMENT

HEADQUARTERS OF THE ARMY AIR FORCES

WASHINGTON

April 22, 1942

MEMORANDUM FOR THE PRESIDENT:

Subject: Recent Attack on Japan.

Additional information concerning the Tokyo special bombing project has been received as follows:

Following message received from Colonel Jimmie Doolittle, Commander:

> "Mission to bomb Tokyo has been accomplished. Upon entering China we ran into bad weather and it is feared that all planes crashed to the present. Five planes are safe." Signed Colonel Doolittle.

Further additional information was this date received from Bissell at Chungking: The carrier met Jap Navy seaplanes so the planes had to take off twelve hours earlier than planned. Sixteen planes started. Japanese air warning service plotted the movement of ten aircraft from the seacoast of occupied China which indicated excellent navigation to the vicinity of airdromes. Thereafter, the navigation was erratic due to the entire airdrome area being covered with low clouds, mist, rain and fog. Visibility at some of the airdromes was under five hundred yards.

Eight airplanes and about forty crewmen have been located in China. Three of the forty were dead.

Piecing together all the information available, if the Chinese information of ten airplanes is reliable, then eleven have been accounted for. Five apparently then are the maximum that the Japs could have shot down.

Everything points to Doolittle having accomplished a most remarkable flight. He knowingly and willingly took off twelve hours ahead of time, which put him over Japan at the worst possible time of day. He also knew that this would put him over China at night where, if the weather broke against him the chances of getting in safely were very very poor. Thus, he had the breaks against him on the take off, at the time he did his bombing, and also at the time of landing in China.

H. H. Arnold

H. H. ARNOLD
Lieutenant General, U.S.A.
Commanding General, Army Air Forces

SECRET

Regraded Unclassified

A16-3 (Japan)

WAR DEPARTMENT

HEADQUARTERS OF THE ARMY AIR FORCES

WASHINGTON

SECRET April 21, 1942

MEMORANDUM FOR THE PRESIDENT:

Subject: Recent Attack on Japan.

For the past few days we have had very little positive information as to what happened to Colonel Doolittle's Squadron after it took off for its attack on Japan. Information now being received is slowly but surely clearing up the whole operation. It is quite evident that his Squadron attacked with a considerable amount of success the targets located in the Tokyo - Osaka area. It is also quite evident that the attack came as a distinct surprise. Sixteen B-25's left the carrier for this purpose.

The number of airplanes forced down or shot down over Japan are not definitely known. First Japanese report said nine. Later Japanese report talked about only one. After completing their attack the airplanes headed for airports in the vicinity of Hangchow, China.

Apparently foul weather gave this Squadron a bad break over China, for the airplanes had to separate, and as information later received indicates, the crews took to their parachutes. We have received reports of nineteen crew members landing safe and uninjured in the area south of Hangchow. It is of course possible that we will receive additional reports from other crew members as time goes on, as quite obviously these men came down in very widely separated localities. Strange to say, in no case have any reports been received that the wrecks of any of the airplanes have been found.

The Japanese, in retaliation, bombed Yushan yesterday morning.

From the viewpoint of damage to enemy installations and property, and the tremendous effect it had upon our Allies, as well as the demoralizing effect upon our enemies, the raid was undoubtedly highly successful. However, from the viewpoint of an Air Force operation the raid was not a success, for no raid is a success in which losses exceed ten per cent and it now appears that probably all of the airplanes were lost.

H. H. Arnold

H. H. ARNOLD
Lieutenant General, U. S. A.
Commanding General, Army Air Forces

SECRET

Regraded Unclassified

OUTLINE OF PRESENTATION OF VIEWS OF THE COMMANDING GENERAL, ARMY AIR FORCES, ON THE ROLE OF THE AIR FORCES IN THE DEFEAT OF JAPAN

We should like to present for your consideration the views of the Commanding General, Army Air Forces, on the role of the Air Forces in the war against Japan.

We should like to start with the broad concept of Pacific strategy which has been agreed upon by all the Chiefs of Staff and which is set forth in COS 417/2.

*Over-all objective*

"To obtain objectives from which we can conduct intensive air bombardment and establish a sea and air blockade against Japan, and from which to invade Japan proper if this should prove to be necessary."

This over-all objective sets forth three general strategic phases in chronological sequence.

The *First* phase is, the *securing of objectives* from which we can conduct. . . . . .

in the *Second* phase, *air bombardment* and *sea and air blockade* against Japan to undermine her war making capacity to the point where her resistance is fatally weakened and from which. . . . . .

in the *Third* phase, to *invade Japan proper* by land, sea and air forces, should that prove to be necessary.

The third phase is so far in the future that we question whether it can or should be defined at this time. So much will depend upon the strategic situation resulting from operations in the first and second phases, that all that we should like to say of the third phase now, is that there will come a time when our land, sea and air forces must strike in concert to complete the defeat of Japan.

The second phase we feel can be more definitely analyzed at this time, at least from the air point of view.



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COMMITTEE OF OPERATIONS ANALYSTS

REPORT ON

# VULNERABILITY OF JAPANESE ECONOMIC OBJECTIVES TO STRATEGIC AIR BOMBARDMENT

## *PRIMARY TARGET SYSTEMS*

COKE OVENS-STEEL
MERCHANT SHIPPING
*(INCLUDING TANKERS & PALEMBANG REFINERY)*
URBAN INDUSTRIAL AREAS
AIRCRAFT INDUSTRY
ANTI-FRICTION BEARING INDUSTRY
ELECTRONICS INDUSTRY

*WITHOUT PRIORITY*

## *SECONDARY TARGET SYSTEMS*

NITROGEN
ALUMINA
PETROLEUM REFINERIES
AUTOMOTIVE INDUSTRY
SHIPBUILDING
RAILWAYS

*WITHOUT PRIORITY*

*6 FEB. 1944*

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We propose *first* to analyze the operations of the *second* phase, involving intensive air bombardment and sea and air blockade, and *then* to discuss the *first* phase, involving the acquisition of the necessary bases.

A great deal of research has gone into the determination of targets for air bombardment whose destruction will undermine the capacity of the Japanese war machine until it is fatally weakened. All the information available to this Government and Great Britain has been carefully sifted and collated. The Committee of Operations Analysts, comprising representatives of ONI, G-2, A-2, OSS, our Bureau of Economic Warfare, the British Ministry of Economic Warfare, and numerous civilian specialists have all collaborated to produce this data (Exhibit - bound volumes of data). This intelligence has, in turn, been carefully analyzed to determine which systems of targets were vulnerable to air attack, within the capacity of the air forces which it seemed likely we would have. Subcommittees of military and civilian experts, have devoted months of research to each of 19 favorable industries evidenced by separate reports such as this, (Exhibit - Coke Study) all of which is summarized in this report (Exhibit - Final Report). The findings of this committee are kept up to date and current summaries are as follows:

These are the selected six elements of Japanese industry which are recommended as primary targets and the six other systems as secondary targets. The target systems in each category are listed without priority among themselves.

One of the most important elements in modern war economy is steel. Japan's steel production has grown at a phenomenal rate in an effort to meet the demands of war. In the last eight years the pig iron production, from which most of the steel is derived, has risen from 2,200,000 tons annually to 10,450,000 tons. An examination of the steel industry indicates that the key bottleneck is coke which is necessary for the production of pig iron. The coke industry of Japan affords an ideal air target.

The committee's studies indicate that the Jap coke industry is





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# JAP COKE INDUSTRY

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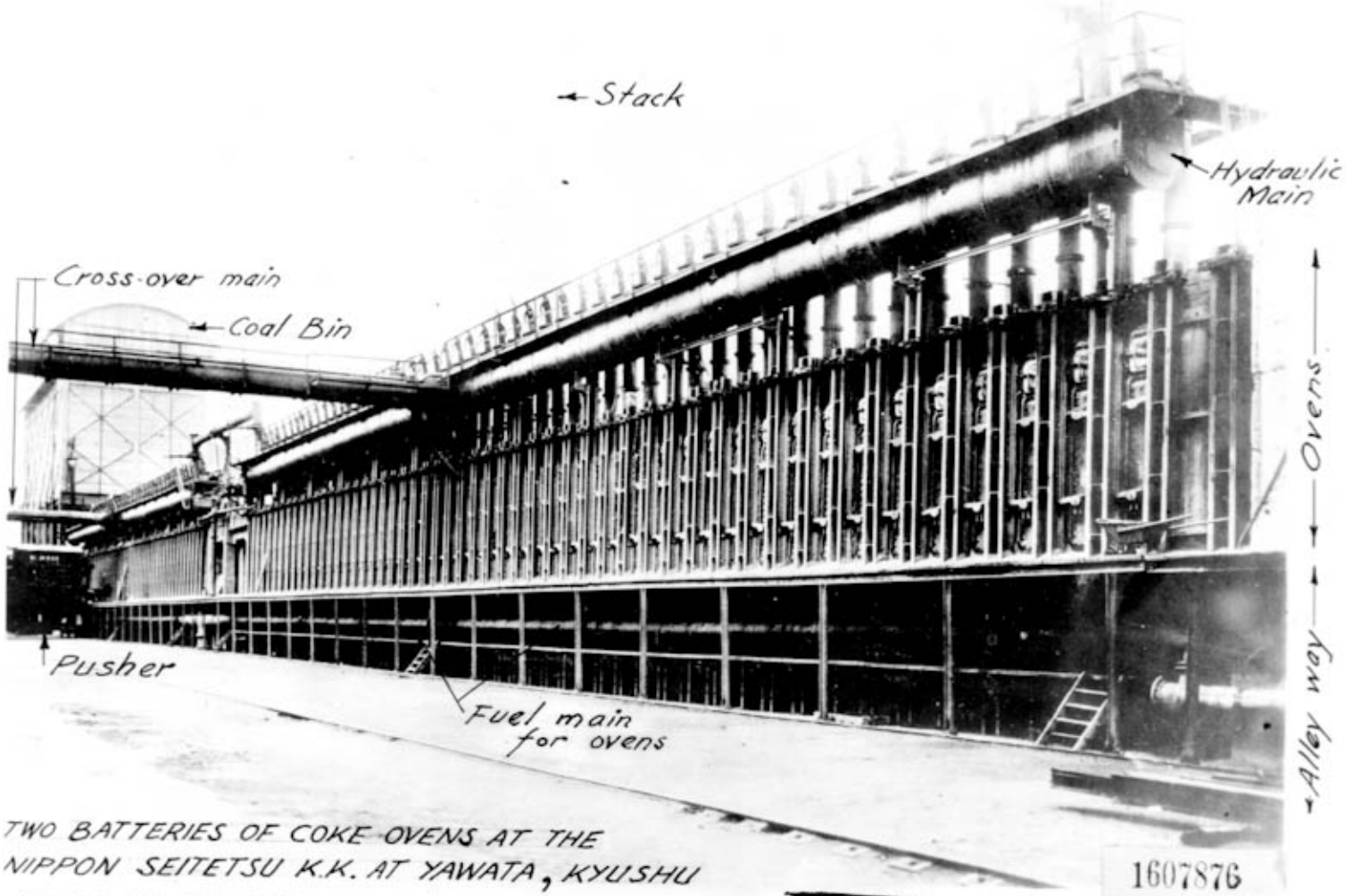


TWO BATTERIES OF COKE OVENS AT THE NIPPON SEITETSU K.K. AT YAWATA, KYUSHU

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APPENDIX D-1

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peculiarly concentrated in the Manchuria, Korea-Kyushu area. Three installations of coke-oven batteries produce in excess of 60% of Japanese capacity. One plant, near Mukden, produces 34%.

Coke is produced in ovens of precision brick construction, easily identified and most susceptible to shock from bombing attacks.

If a crack is made in the bricks and air gets into the ovens, the temperature rises to a point where the bricks are fused and rapid self-destruction results. Reconstruction is estimated to require 18 months.

The Committee estimates that the destruction of the three major targets would reduce Japanese steel output 25% immediately and 50% within a year. The Committee states: "These coke ovens are the prime economic target. They should be attacked as soon as the forces necessary to destroy them become available."

The next target system under consideration is merchant shipping. Shipping is especially critical to Japan for two reasons. In the first place, Japan is an island empire and whose homeland is highly industrialized, but poor in raw materials. The raw materials must be brought to Japan in ships for fabrication. In addition, approximately 20% of Japanese food must be imported to sustain the population. Japan imports 75% of her oil, 88% of her pig iron, 24% of her coal. The second vital requirement for Japanese shipping is, of course, to maintain her armed forces on their many fronts. By the fall of 1943 Japan had approximately 4,960,000 tons of shipping. Her requirements were for 5,080,000 tons, showing a deficit of 120,000 tons of shipping. Her losses in 1943 approached 180,000 tons per month. It is expected that in 1945 her rate of loss will be increased to 180,000 tons per month due largely to increased activities of our submarine forces, which should cause a deficit of 425,000 tons of shipping. Japan is attempting to maintain her requirements by constructing 80,000 tons of steel shipping per month and about 80,000 tons of wooden shipping. It is expected that this shipping loss will force Japan to accept the lowest level of military transportation consistent with purely defensive strategy. If the deficit can be raised to 1,000,000 tons, Japan will be forced to choose be-





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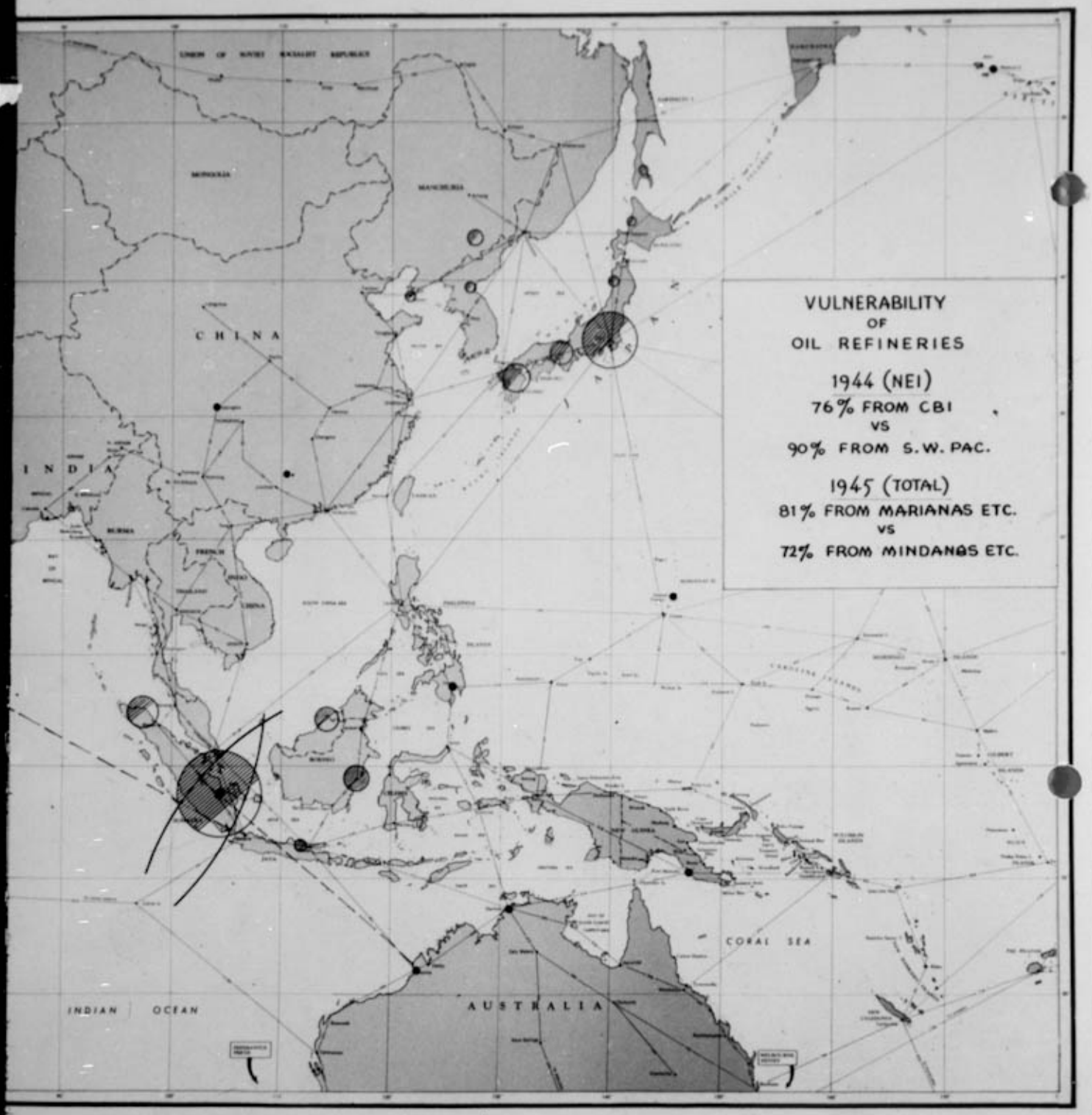
# JAP REFINERY CAPACITY

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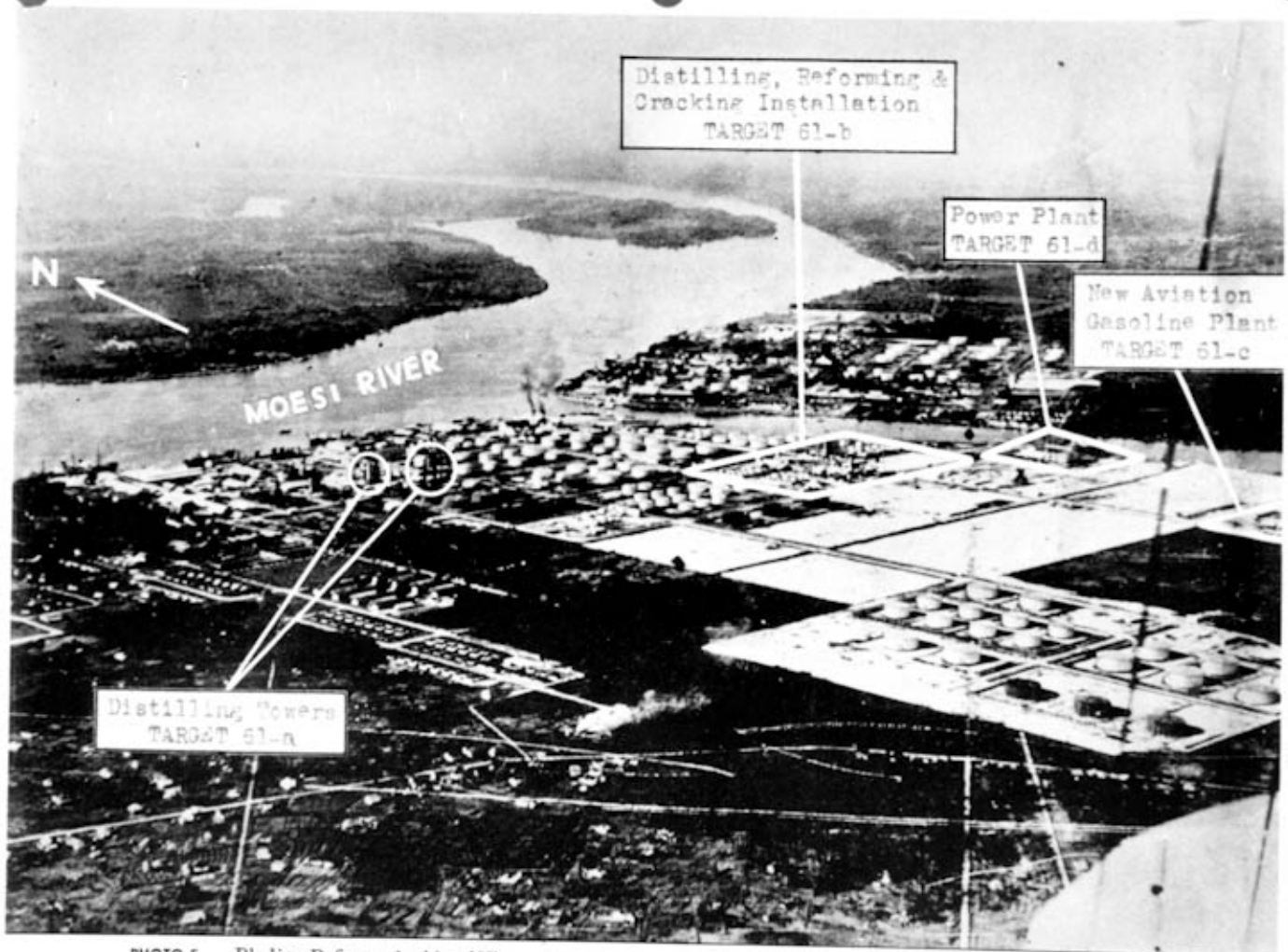


PHOTO E . . . Pladjoe Refinery, looking NE. **TARGET 61a-b-c-d:** (a) Distilling Towers. (b) Distilling, Reforming and Cracking Installation. (c) New Aviation Gasoline Plant. (d) Power Plant.

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tween a critical cut in industrial output and a total withdrawal of shipping from southern areas. Tankers are especially critical in the present Japanese situation. The greatest concentration of shipping is seen to be in the Yellow Sea area.

It is estimated by the committee that Japan has less than a half years supply of petroleum in stock piles, and approximately three-fourths of her requirements are imported from the Dutch East Indies. Most of the fuel oil production of the Dutch East Indies does not require elaborate refining, and a substantial part of it requires no refining at all. The Japanese requirements for fuel oil for 1944 are estimated at 45,150,000 barrels of which 33,000,000 is required for the Japanese Navy. The committee concludes that most of the refineries in the Netherlands East Indies are not critical to Japan. The one exception is the refinery at Pladjoe, near Palembang in Sumatra, the destruction of which would require carrying large tonnage of crude oil to Japan for refining and would add 12 to 15 to the number of tankers required, equivalent to five or six months average sinkings of tankers. Japan is vulnerable in regard to fuel oil. The bottleneck is transportation. The targets at present are Pladjoe and tankers.

This slide depicts the location of the other four prime target systems recommended. They are all highly concentrated in Japan proper. Aircraft production is largely concentrated in 13 plants which produce 60% of all aircraft, 70% of all engines, and 50% of all propellers. 90% of the ballbearings are produced in only six plants. 50% to 85% of the radio radar tubes are produced in two plants.

In addition, a great portion of the Japanese population and the majority of Japanese industry are concentrated in a small number of great industrial cities. Most of these industrial cities are highly vulnerable to incendiary attack. Wood is the basic construction material used in 90% of the construction, which, in many cities, are built so closely together that roof coverage averages 50 to 80% as compared with 35 to 60% in German cities. Tests have been conducted to determine the incendiary vulnerability of Japanese structures. It is estimated as a re-

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sult of those tests that less than 2,000 tons of incendiaries falling within selected areas of 20 cities would produce uncontrollable conflagrations in each of them. Less than 700 tons are estimated for Tokyo, a city of nearly 7,000,000. This is in interesting contrast with Hamburg, a city of approximately 2,000,000, where the RAF dropped 4,849 tons of incendiaries and 5,139 tons of H.E. in order to burn out 70% of the city. The vulnerability of Japanese industrial areas is illustrated by this comparison between the German cities built of stone and brick with slate roofs and, a typical Japanese city of far greater roofage density and highly flammable construction. These urban areas are profitable targets, not only because they are greatly congested, but because they contain numerous war industries, large and small, particularly vulnerable to fire. The Japanese have adopted a widespread practice of sub-contracting to many small handicraft and domestic establishments.

One of the most significant aspects of Japanese vulnerability to air attacks, to weaken her military structure, lies in her industrial isolation. She is cut off from every other industrial nation of the world. This is in marked contrast to the other Axis partner, Germany. For instance, ballbearings were also one of the vital elements of Germany's war economy. Our two attacks on Schweinfurt destroyed 70% of the plant's capacity of the six ballbearing plants in that city. They produced approximately one half the ballbearings made in Germany. Loss of that production capacity was a heavy blow. However, Germany turned to Sweden, Switzerland, Italy, Czechoslovakia and France in an effort to make up her deficiency. No such opportunity is available to the Japanese.

If these target systems are accepted as the proper ones for our initial air bombardment to soften up the Japanese before the final decisive action by our land, sea and air forces, then we may proceed to examine the means available to accomplish their destruction. The first available means upon which we expect to rely for air bombardment against Japan is the B-29 Very Long Range Bomber.

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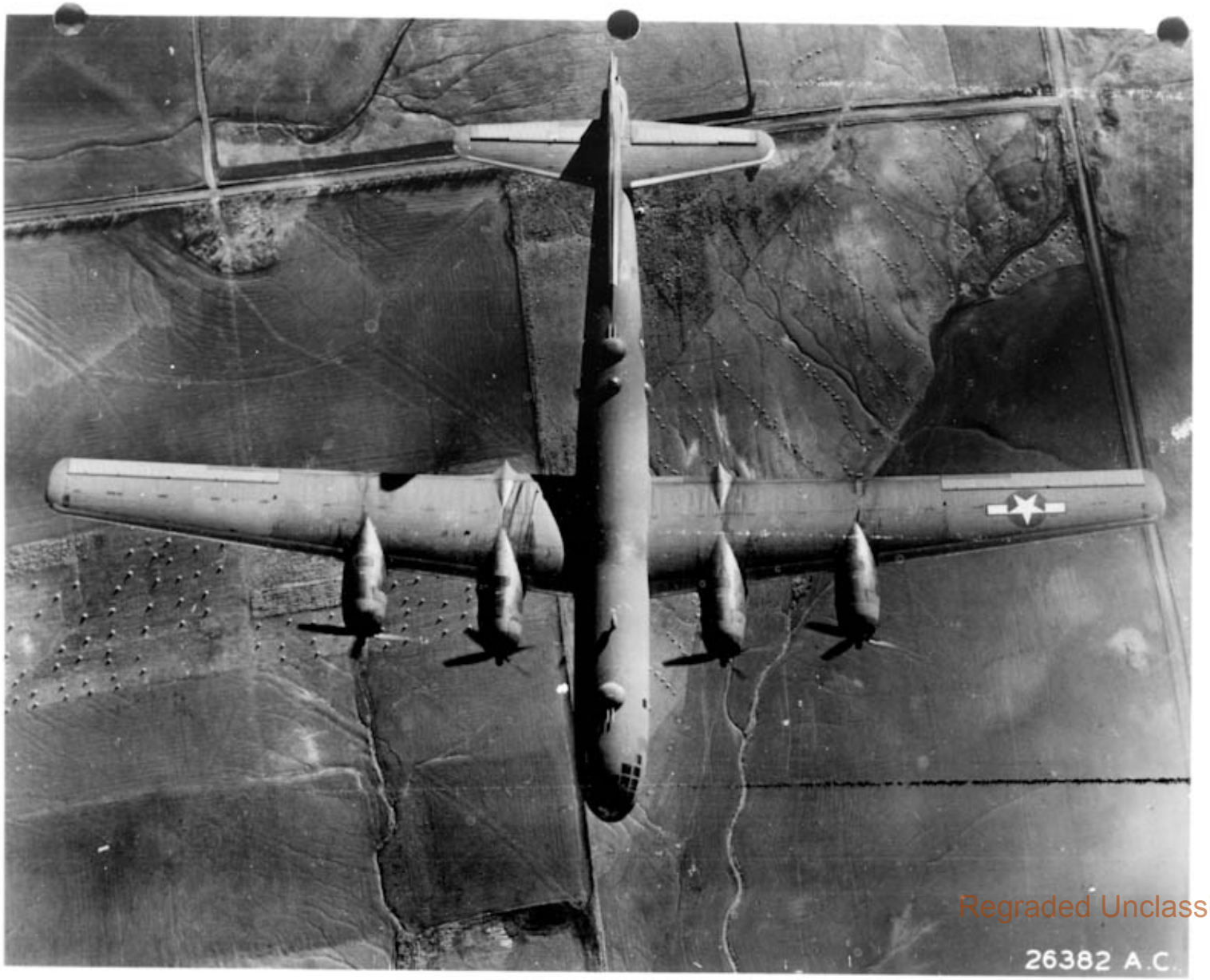


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This airplane was designed and produced to meet this problem of long range attacks against Japan. Its radius of action fully loaded with 10 tons of bombs is approximately 1400 miles if the approach is over water and about 1350 miles if the approach is over land. The difference lies in the fact that early provision must be made for high performance in an approach over land, where there may be interception of enemy fighters. With five tons of bombs the radius of action over water is approximately 1800 miles and over land about 1600 miles. The airplane is very fast, about 370 miles per hour at 30,000 feet, and is heavily armed, with 10 - 50 calibre machine guns and one 20mm cannon in turrets. It is approximately 100 feet long, has a wing span of 141 feet, and weighs fully loaded about 130,000 pounds, twice as much as a fully loaded B-17.

Some question has been raised as to the ability of the airplane to defend itself against Japanese fighters.

We have conducted extensive, and practical, tests to resolve that question as far as it is possible to do so without actual combat.

Ten of our best fighters, new P-51's, flown by experienced fighter pilots, made attacks from all directions against the B-29 at 22,000 feet. The B-29 was cruising at an indicated speed of 200 miles per hour.

They experienced considerable difficulty. They concluded that the best attacks were from head-on, but they found it difficult to get into position for this form of attack because of the small margin of speed which they enjoyed. This is particularly significant when it is realized that the top speed of the best Japanese fighter at 30,000 feet is estimated at 310 miles per hour - actually 50 miles per hour slower than the B-29 and one hundred and thirty miles per hour slower than the P-51B.

The forward top turret is being modified to accomodate four .50 calibre machine guns.

By the end of next month (March) we will have four groups of B-29's including reserves.

The tactics to be used in employing these very heavy bombers will, of course, develop with experience in the theater. There are three general tactical methods that might be employed.



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a. First, they may be used in dense formations in daylight, to conduct precision bombing of selected targets from high altitude. The airplane is as heavily armed as the B-17 and the latter has stood up remarkably well in Europe against extremely heavy fighter opposition. To attack Germany the B-17's have had to penetrate several hundred miles of enemy opposition. In the attacks upon Japan the penetration will, in every case, be shallow since the targets are all practically on the coast.

b. Another method of operation might be at night, using the ordinary bomb sight, very much as the British are operating their heavy bombers over Europe.

c. A third method that is particularly appealing is by night or in overcast conditions using radar type bombing equipment. The B-29 has such equipment built into it at the factory. The equipment is now quite reliable and has been in use for some time from England. Whereas it suffered from some limitations in attacks against critical elements in Germany, it is ideally suited for operations against vital elements in Japan. The equipment throws on a screen a reflection of the terrain over which it passes. Shorelines and especially irregular shorelines are very easily followed. As may be seen from this map, all the principal Japanese cities in which the vital industries are located are ideal targets for radar bombing operations under instrument weather conditions. They are located on pronounced irregularities in the shore line. Tokyo, Kobe, Nagaski and Nagoya are all easily identified. This operation, permitting the use of individual aircraft with maximum efficiency, and maximum security against enemy opposition, may well be our principle tactical method against Japan proper.

With this equipment, the B-29, it is apparent that our bases must lie preferably within 1400 and certainly within 1800 miles of our targets.

In seeking air bases from which to conduct the air bombardment, and the air component of the sea blockade, these five factors seem most critical:

a. We must, of course, be within tactical radius of the target.

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# FACTORS DETERMINING DESIRABILITY OF B-29 BASES

★ DISTANCE FROM STRATEGIC OBJECTIVES.

★ DEFENDABILITY OF AREA.

★ TIMING OF ACQUISITION ··· IN RELATION TO ···

★ AVAILABILITY OF B-29 UNITS.

★ CAPACITY TO ACCOMMODATE STRATEGIC AIR FORCES & LOGISTIC SUPPORT.

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b. The bases should be defensible without committing our forces to an unlimited major conflict on land. For instance, bases in the Shanghai area of China seem desirable from a standpoint of position. However, their acquisition and retention would commit us to a major continental war. Any effort to seize air bases which involves major land engagements with large components of the Japanese Army will involve us in a time-consuming and costly continental war. Hence, from a standpoint of defensibility we would prefer island air bases, An island, once seized and cleared, can be defended by a relatively small force and does not absorb a large proportion of the air, land and sea effort for its defense.

c. We would like to acquire bases at a time rate which will absorb our B-29 groups as rapidly as they become available. That scheduled availability is roughly as follows: We have four groups available now which will be on their way next month to Chengtu to initiate operations against the coke ovens. The second four groups for that operation will be available by September of this year. By December there will be an additional six groups. By March of next year there will be six more. By July there will be a total of 26 and by the end of 1945 there should be 49 groups.

If the war in Europe is not over by July of 1945, only 24 of these groups will be available for employment in the Pacific. The others will be obtained by re-equipping groups of Heavy Bombers now committed in Europe.

d. The next factor is the capacity of the bases to accommodate and support the B-29 units from a logistical viewpoint. The islands which seem capable of accommodating air bases in this *second phase*, the air bombardment of Japan, are as follows: Formosa, Luzon, the Marianas and Paramushiro. In addition, there is the Chengtu base which is in a sense, an island, since it is separated from Japanese forces by 500 miles of extremely difficult terrain. These base area have been carefully surveyed and analyzed by the Army Service Forces.

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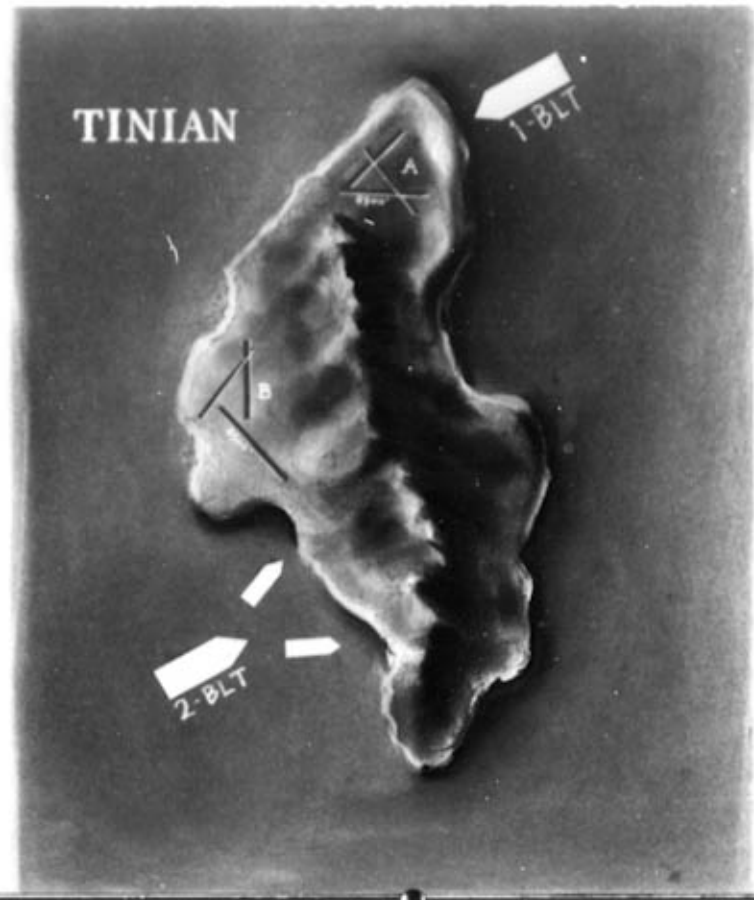

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# ANALYSIS OF PORT CAPACITIES VS REQUIREMENTS (MARIANAS)

AIR FORCE OF 12 VHB GROUPS *
1 HB GROUPS (SEA SEARCH)
2 MB GROUPS
4 FTR. GROUPS

| | PERSONNEL | SHIP TONS |
|---|---|---|
| GROUND & SERVICE (3 DIVS) | 132,000 | 105,600 |
| ** AIR & SERVICE | 79,200 | 63,360 |
| | 211,200 | 168,960 |

PRESENT PORT CAPACITIES IN SHIP TONS PER MONTH (CPS 86/2)

| GASOLINE & OIL | GALLONS | SHIP TONS |
|---|---|---|
| GASOLINE (25% IN DRUMS) | 13,490,408 | 19,109 |
| OIL IN DRUMS | 269,844 | 1,529 |
| BOMBS & AMMUNITION | | 17,329 |
| AIR CORPS TECHNICAL SUPPLIES | | 7,812 |
| | *** | 214,739 |

| | MAXIMUM OCT-JUN | | MINIMUM JUN-OCT |
|---|---|---|---|
| | 198,000 | GUAM | 129,000 |
| | 165,000 | SAIPAN | 152,000 |
| | 88,000 | TINIAN | 87,000 |
| | 451,000 | | 368,000 |

* WITH 6 VHB GROUPS DEPLOYED, REQUIREMENTS ARE REDUCED TO 177,800 TONS
** SERVICE FORCES REQUIRED BY AIR FORCES INCLUDED
*** 3-100,000 BBL. TANKERS AND 20 LIBERTY SHIPS MONTHLY

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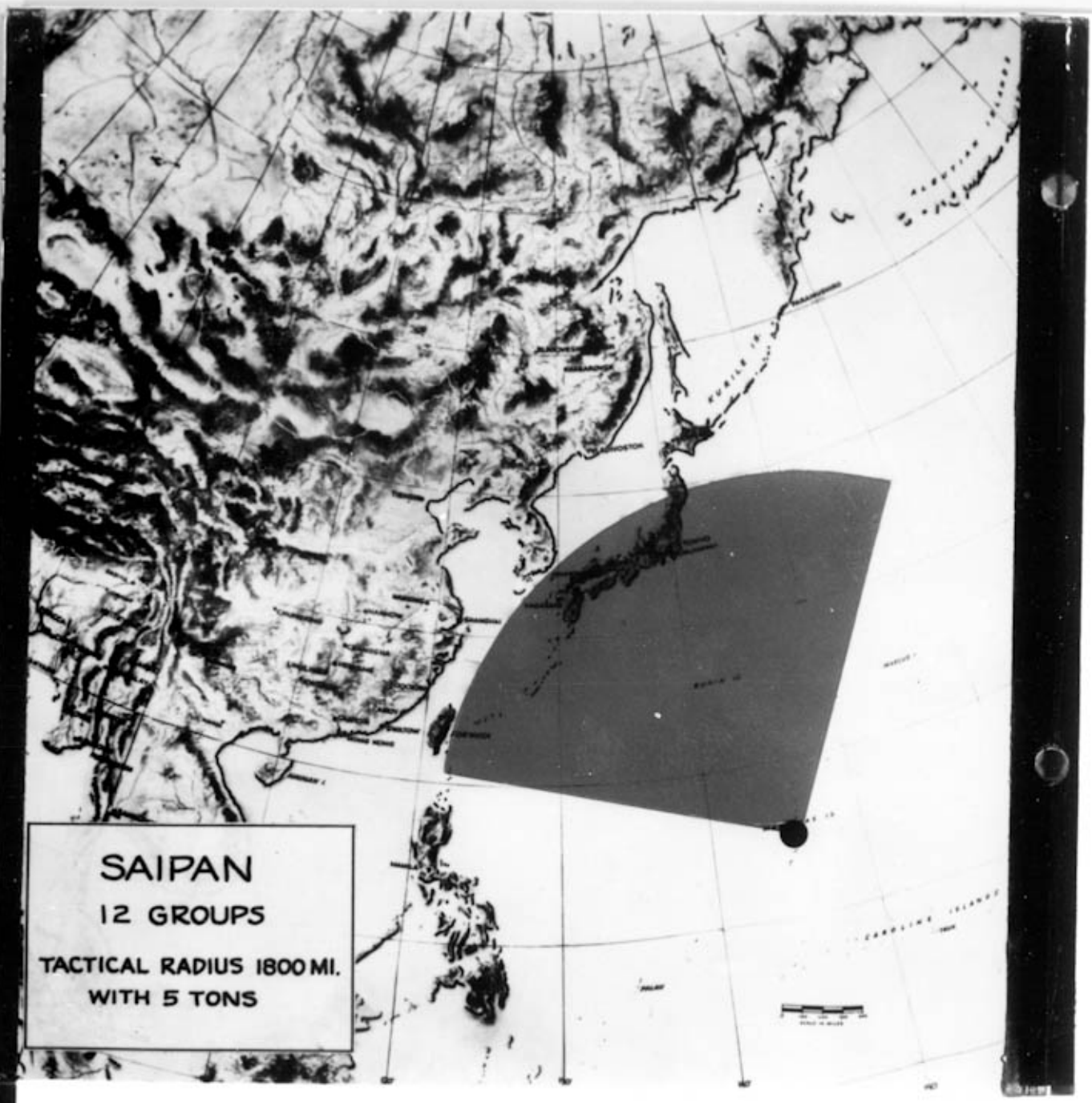


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Considering them successively, there are first the Marianas, These islands, Guam, Saipan, and Tenian, are capable of sustaining B-29 air bases.

This is Guam in the Marianas. (Plans now under consideration in the Pacific indicate the feasibility of capturing this, and the other two important islands of the Marianas group.) The air plan calls for the construction of three B-29 fields with runways 8,500 feet long. Two of the fields have hard-standings for two groups, 56 bombers each. The field which has only two runways has hard standings for only one group. The fighter field has three runways and is adequate to accommodate one complete fighter group.

This is Isengsong, the northern-most field. It is estimated to require the movement of 726,000 cubic yards for grading of runways, 365,000 cubic yards for taxi ways, hard standings and roads. The total ship tons required for materials for construction are 10,760, about one Liberty ship. All the essential facilities for operation of the B-29's are provided at this base, and at the others. The reserve aircraft probably will be stored in the Marshalls or other rear areas.

The two larger B-29 fields could be established in 92 work days and 102 work days, respectively; the smaller B-29 field would require 82 work days while the fighter field would require 41 days, if a construction unit was assigned to each field. (That would require 8 Aviation Engineer Battalions, and would complete construction in 3½ months. If a lesser number of Aviation Engineer Battalions is provided, the work will take longer.) Ship tonnage requirements for construction of airfields for all the islands would be 32,000 tons for equipment and 33,000 tons for materials, a total of 65,000 ship tons - about seven Liberty ships, which is well within the port capacity available.

The logistical requirements to *support operations* against Japan, *after* construction of the air fields, by twelve B-29 groups, one heavy bomber and two medium bomber groups in more local operations, and four fighter groups for defense purposes have been computed. Total monthly tonnage requirements, including those of defense forces, are estimated at 215,000 tons, or three 100,000 barrel tankers and 20 Liberty ships

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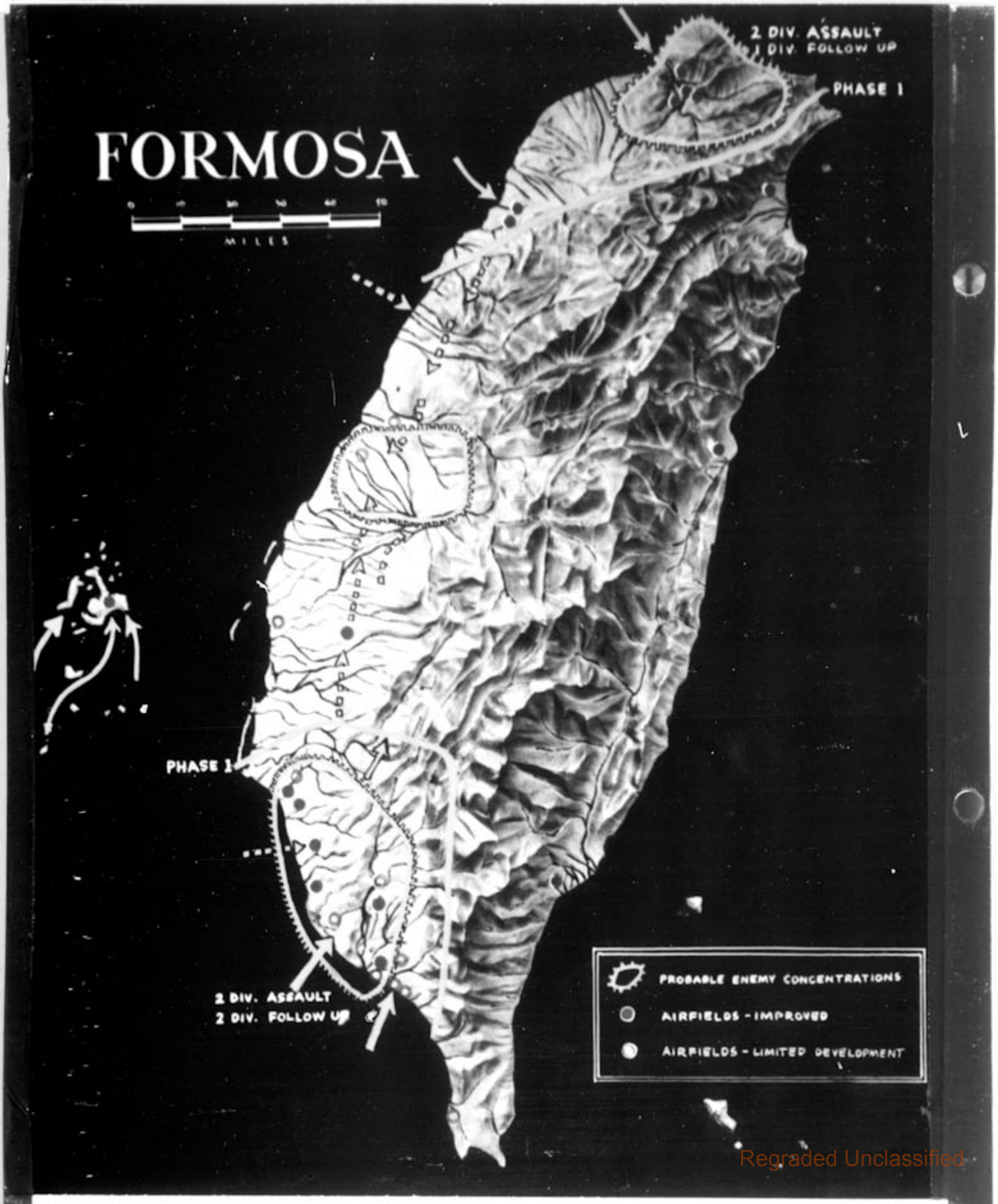


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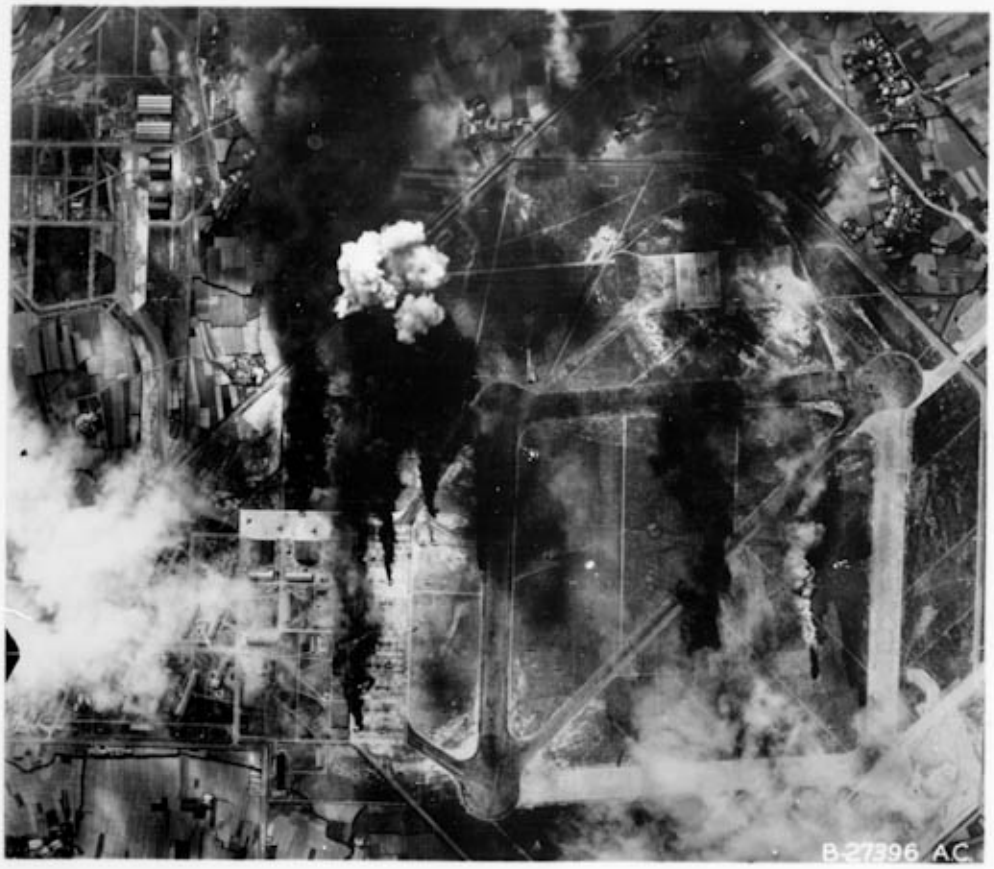


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per month. The Army Service Forces estimate total port and anchorage capacity as 451,000 tons per month from October to June and 368,000 tons from June to October which adequate in either case to meet the requirements for operations.

All of the primary strategic systems in Japan proper are well within five ton tactical radius of the Marianas, and, in fact, are within the indicated eight ton tactical radius for B-29 operations over water.

12 groups of B-29 aircraft operating from the Marianas should be capable of conducting 1575 sorties per month, with a minimum five ton bomb load, or delivering 7,875 tons of bombs each month against these vital Jap home-land objectives. This is two-thirds as much tonnage as the entire 8th Air Force carried against Europe in January, which was the best month of the war. This operational estimate is based on the rate experienced in strategic bombing operations from England.

Operations from the Marianas should cause the concentration of substantial enemy air defense forces back in Japan, with consequent reduction of air forces in the Pacific areas. This should provide a considerable measure of assistance to the ground, naval and air force advance. It will also provide security for the northern flank of the advance across the Central Pacific and permit the conduct of B-24 and other operations to aid in the neutralization of the Carolines, including Truk.

From the standpoint of desirability alone, the island of Formosa is the first choice of all available island bases for strategic bombing operations against Japan's mainland. There are at least 30 existing airdromes on the island of Formosa at this time, which would, of course, require considerable expansion and reconstruction to accommodate B-29 aircraft. However, terrain study by the Army Service Forces indicates that there are no serious problems involved in providing these airdromes. Our studies to date indicate that approximately 20 VLR (B-29) groups, 20 fighter groups, 5 medium bomb groups and 5 heavy bomb groups (B-17 or B-24 type) could be accommodated on the island. The medium and heavy bombers, with a radius of action of 500 and 800 miles, respectively, would be especially valuable against shipping concentrations in Yellow Sea harbors and, in addition,



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would provide strong defense forces.

Using the same rate of operations as was used in the discussion of the Marianas, 20 groups of B-29's will provide for 26,250 tons of bombs per month against Japan - or three and one-third times as much as the Marianas and over twice as much as our best month in Europe.

An outline plan has been prepared for the capture of Formosa, calling for four divisions in the assault and three in follow-up. The Pescadores, which should also be captured, afford a site for a Naval base. One of the critical aspects of an assault upon Formosa is the provision of fighter cover, the direct assistance of fighter-bombers, light and medium bombers, and the early establishment of fighter defenses ashore, since we lack land air bases on any islands close by to provide this support. However, recent air operations have thrown a new light upon this problem.

The 14th U.S.A.A.F., operating from China, has recently conducted a series of operations against the island of Formosa, obtaining valuable photographic reconnaissance of Tenian and other critical areas, and conducting attacks on Japanese installations there.

On November 25th, Jap installations were attacked by 14 B-25's, 8 P-38's and 7 P-51's. This slide shows the airfields now available to us in China. The build up of supplies in this region, from which fighter support would be afforded to an amphibious operation for a few critical days, is a matter well within the realm of practicability, if it is acted upon immediately and given the necessary priority.

The next base area under consideration is northern Luzon. Not only are the distances to Japan at maximum radius but the logistic problems are unusually difficult. There are two potential base areas, one in the Cagayan Valley, served by the port of Apari from which central Japan could be reached. The other is in the valley north of Manila, served by that port, from which southern Japan could be attacked. Either will involve an extensive campaign to rid the area of Japanese.

A preliminary logistic study of Luzon indicates that 8 VLR, 8 heavy bomber, 10 medium bomber and 16 fighter groups might be accommodated there. No estimate is available at this time of the ground forces necessary to





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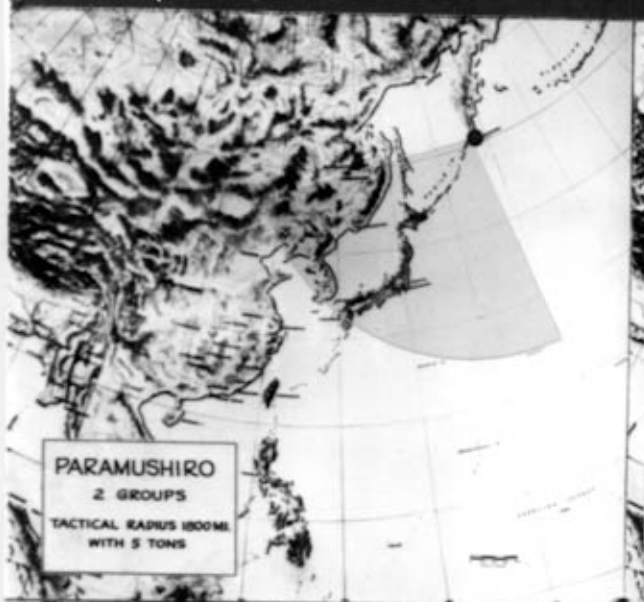


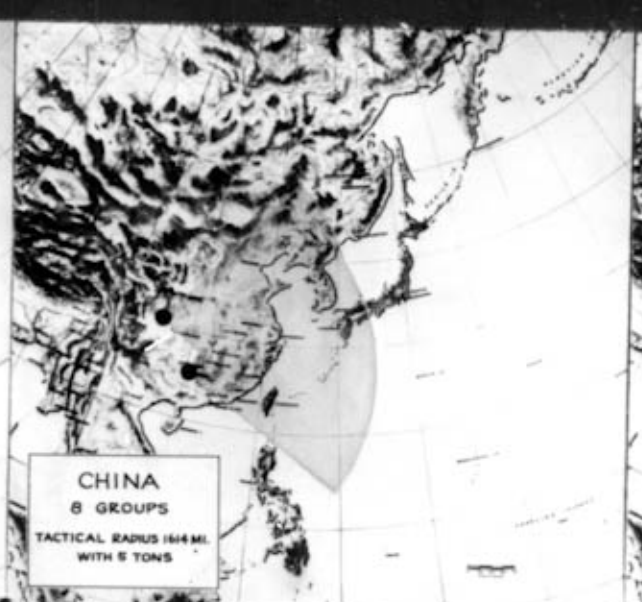


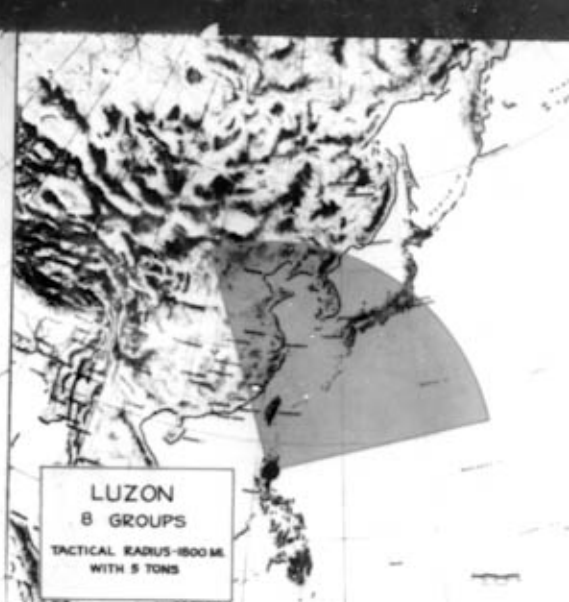

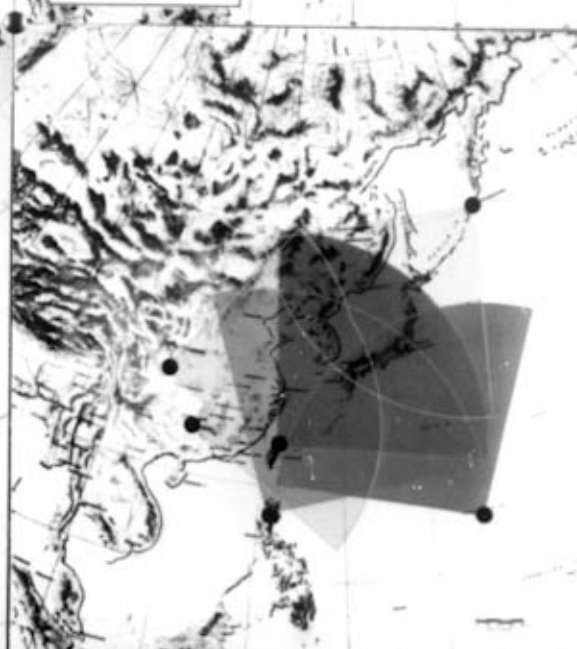

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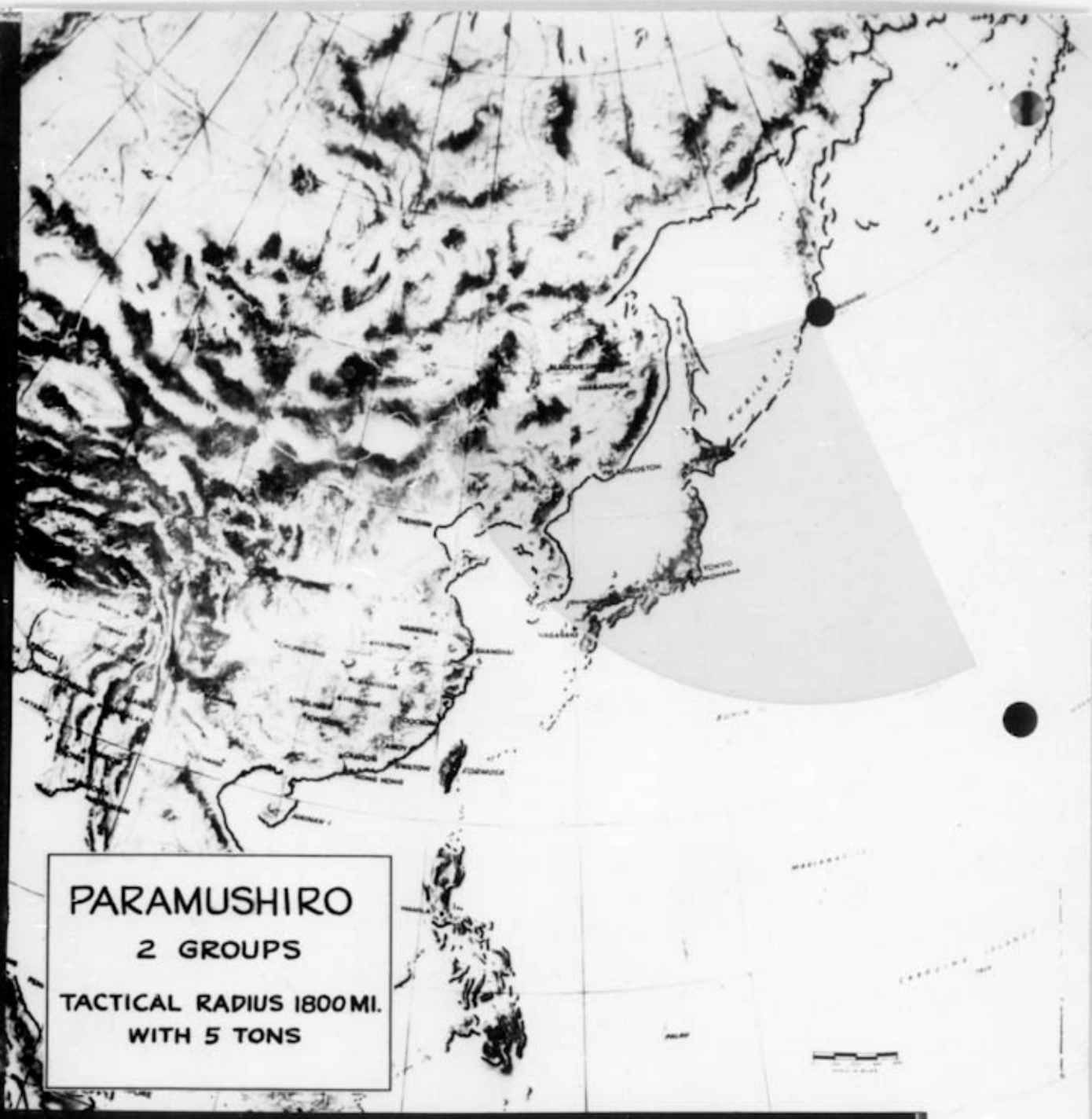


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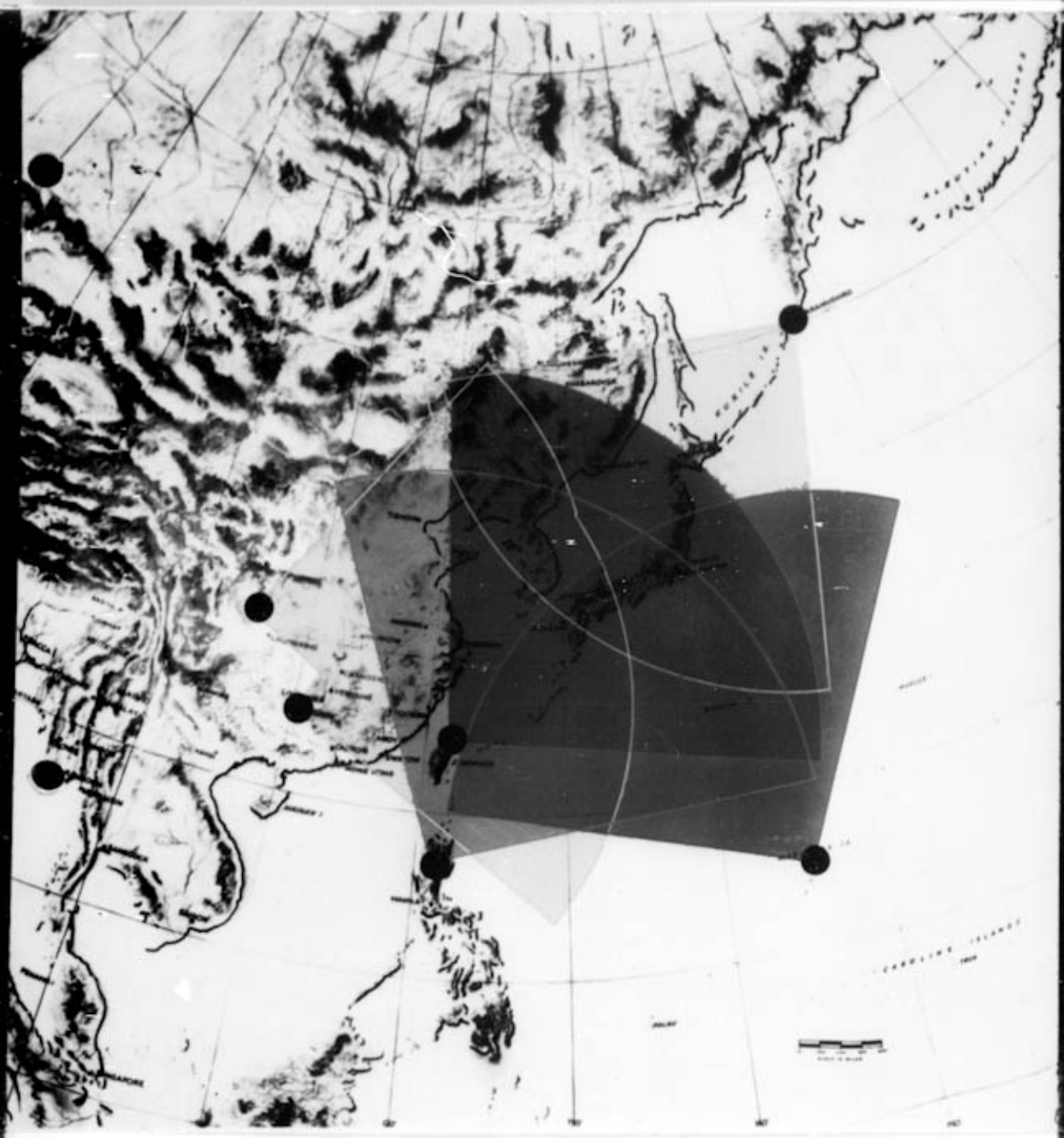

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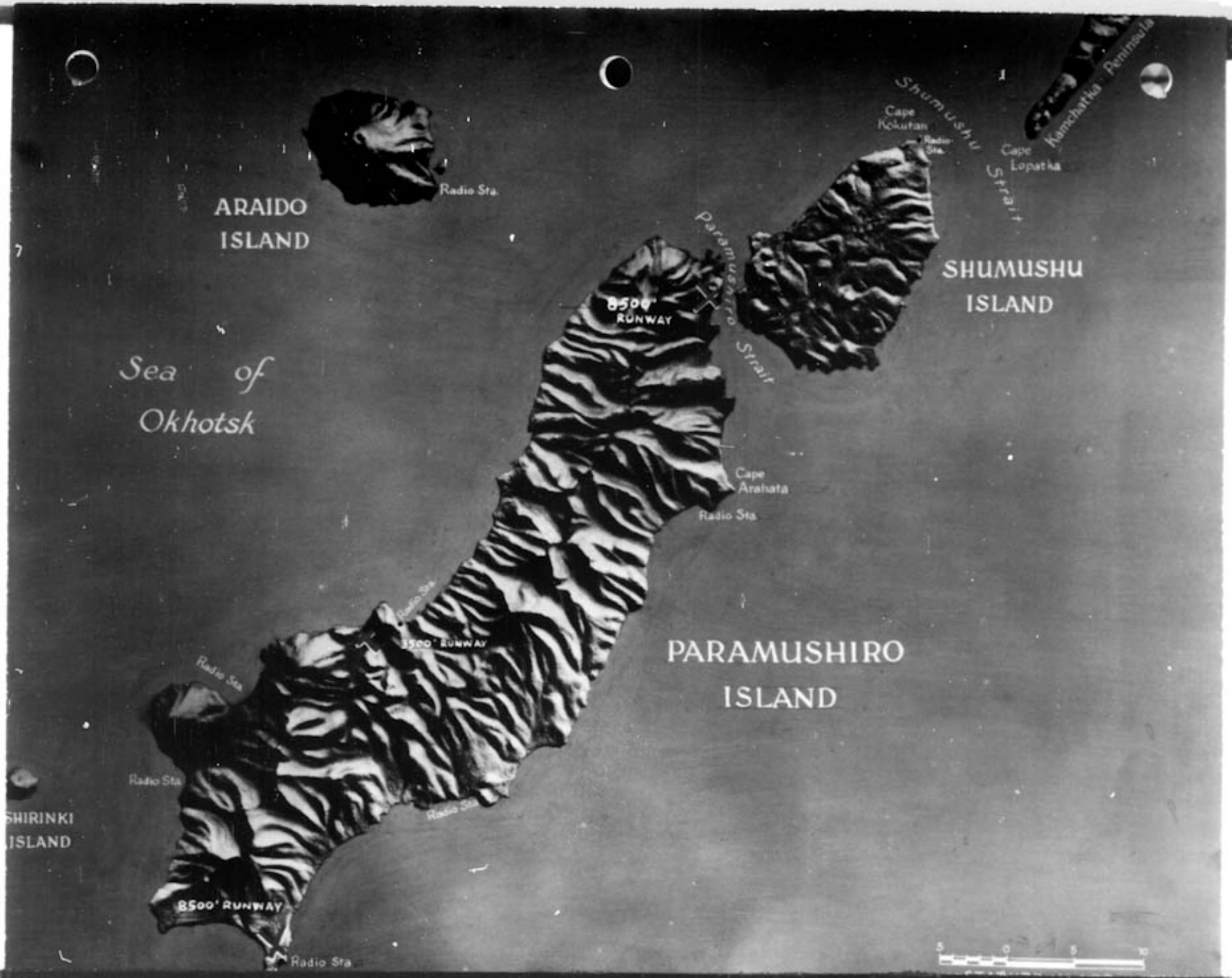


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clear the areas or the time or tonnage required for the construction of airfields, or the maintenance of the required air forces.

There are a number of lucrative targets in northern Japan which could be attacked from Paramushiro. This would, in addition, complicate the Japanese problem of defense and prevent its concentration against the southern approaches. It is estimated that two VLR groups could be profitably employed from this area.

This is an effort to indicate the relative importance of the various base areas which have been discussed, without regard to time of availability. The color of the discs indicate the density of bombs in terms of tons that the B-29 forces just described can carry from various bases.

This is a combination of the foregoing slides. It is significant in that it clearly demonstrates the great importance of Formosa as a base. With the deployments indicated previously, Formosa is about 3 1/3 times as important as the Marianas, which in turn are approximately twice as important as northern Luzon for the air bombardment of Japan proper. Operations from Formosa, additionally, would supplement the sea blockade effectively by assisting to cut the line of communication through the Formosa Strait and attack shipping concentrations in the Yellow Sea.

The total density of bombing from all these bases with the groups mentioned, approximately 50, will provide the same density of bombing against Japan with B-29's that is now being carried out against Germany from the U.K. It is equivalent to 80 groups of B-17's or B-24's and roughly equivalent to the sum of the U.S. and British Bombers. Japan is, of course, many times more vulnerable to that kind of attack than is Germany.

No deployment has been shown in the Maritime Provinces of Siberia. This omission is caused only by the fact that we lack adequate assurance that we will be permitted to deploy forces there, or that logistic and security factors will permit their operation. In the event that such employment should prove feasible, we would recommend the deployment of B-17 and B-24 type groups with fighters as the first priority for units released from the war in Europe.

Additional U.S. Army Air Forces which are released from the war in





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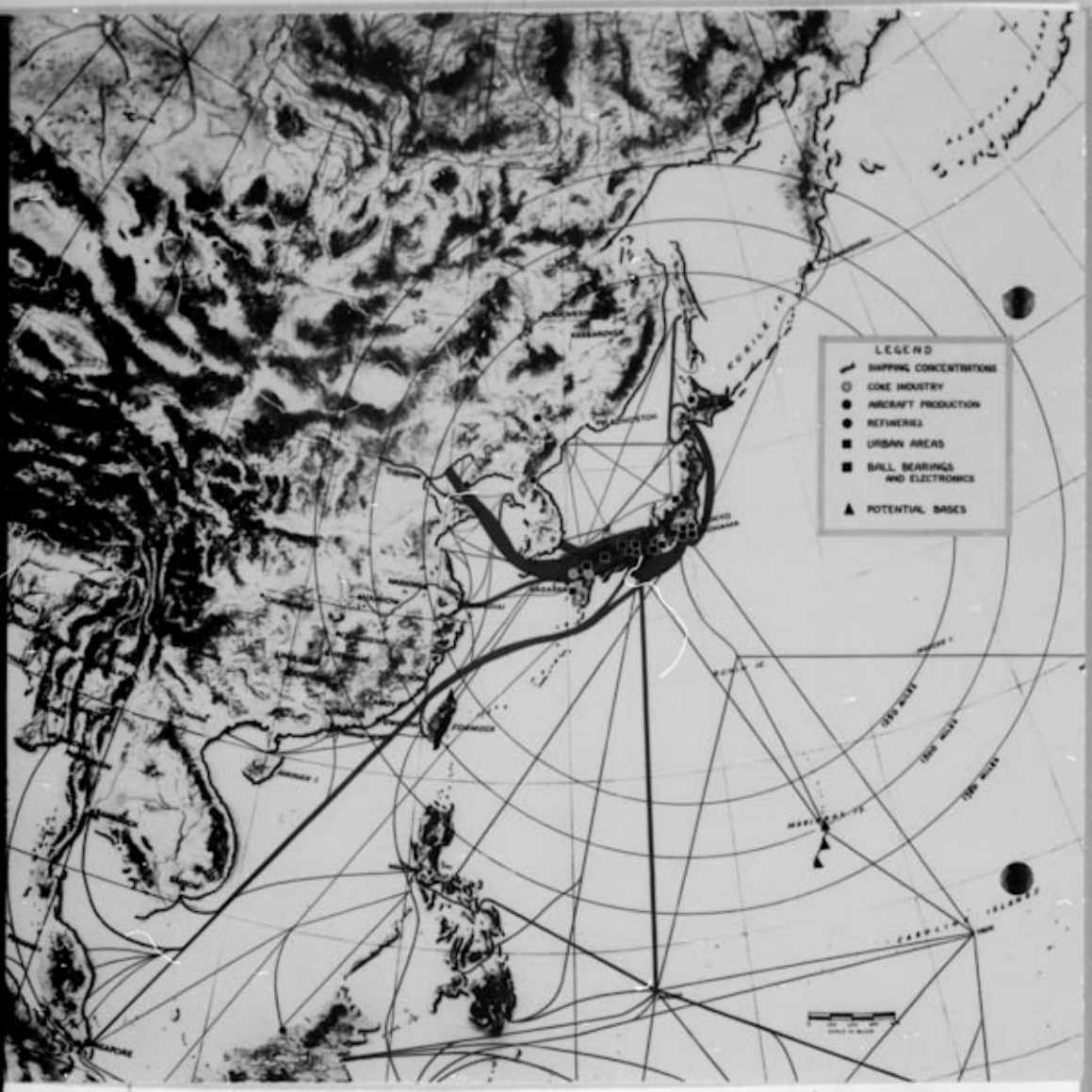


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Europe should collaborate immediately in both the Central and Southwest Pacific areas, in furtherance of our combined drive to obtain bases for the second strategic phase.

We realize that there are other powerful air forces whose employment must be integrated into the picture. The naval air forces will be, we believe, heavily engaged in supporting the amphibious operations to progress westward during the first phase. If they can be made available for one or more carrier strikes against Japan proper, their efforts might be directed toward destruction of the same vital targets, and their operations would constitute a vital contribution to our concerted effort.

The British Royal Air Force should, we feel, support operations in the Southeast Asia area and the Southwest Pacific.

Insofar as employment of available B-29 groups for this second strategic phase, air bombardment of Japan and sea and air blockade, is concerned, it appears from the air point of view, giving consideration to the timing of proposed operations, that we should occupy bases in the following order: First, those in Chengtu from which we can strike the vital targets selected, because they are the most critical objectives now available, and their destruction in 1944 will weaken Japan materially in 1945. Since the refinery in Palembang can be reached by B-29's from Ceylon and since the destruction of that refinery will contribute substantially to the Japanese critical shipping situation, we recommend one or more attacks against Palembang by the forces set up for Chengtu, whenever the opportunity permits. Second, from the standpoint of time, the next most desirable area is the Marianas. This will permit sustained and reasonably heavy attacks against all the critical objectives of Japan throughout 1945. By December 1944 there should be six groups available for these operations, and six more by March 1945. This fits perfectly into the present approved concept of operations. If the Marianas are not ready to accommodate these groups they should be employed, in the interim, in Central and the Southwest Pacific areas against shipping and oil refineries.

The third most desirable base, considering all the factors listed and making allowance for time is, unquestionably, Formosa. The next B-29





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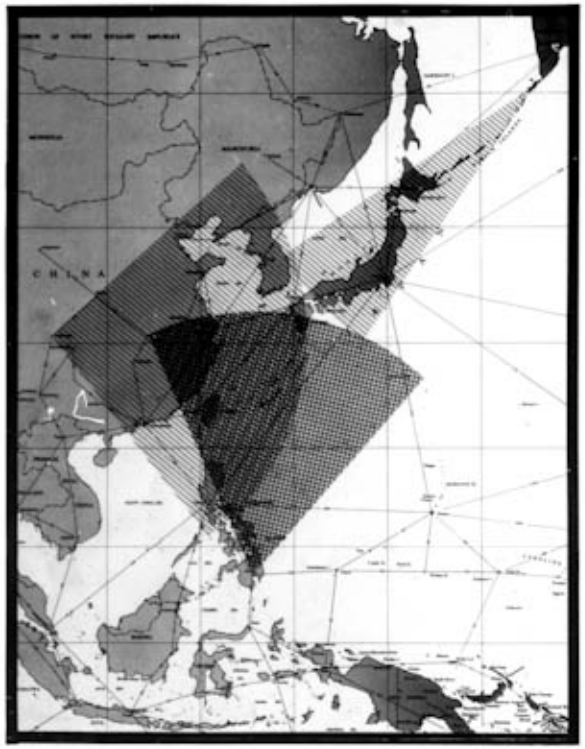


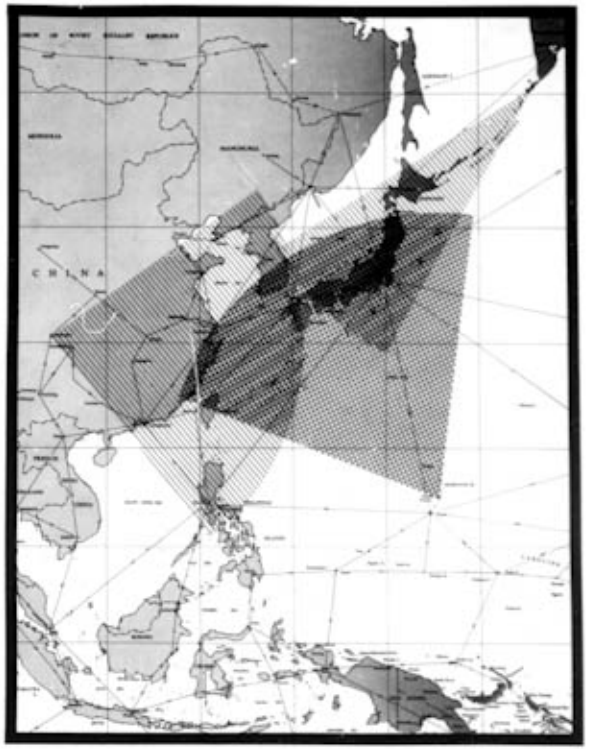


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groups, after filling up the Marianas, should be available to go into Formosa in March 1945, and the full complement of 20 groups could be available by October of 1945.

The next (fourth) most desirable base is probably that in northern Luzon, although further study and investigation is desirable in this respect.

The final base of importance is that of Paramushiro.

This presentation of the Air Forces concept of their role in the defeat of Japan has been of limited scope. We are under no delusion that we have indicated a formula for the defeat of Japan. Rather we have tried to indicate how the Army Air Forces can make their greatest contributions to the agreed combined strategy during the *second strategic phase*, (the softening up of Japan), in preparation for her ultimate defeat by all our combined forces. We fully realize that we have not touched upon the first strategic phase, the securing of objectives, which is the one immediately facing us. That omission is consciously made since we feel that any approach during this phase must continue to be a reflection of carefully integrated operations by land, sea and air forces. Such plans are now being considered by joint agencies. The Air Forces must combine with the land and sea forces to acquire these base areas in the most expedious and effective manner. The significant deductions arising from this discussion which apply to the *first* phase are oriented around the employment of the Air Forces during the *second* phase in such manner as to make our maximum contribution toward our combined strategic purpose, and may be expressed as follows:

First, the Marianas are of great importance to us as air bases from which to intensify, at an early date, the air bombardment of Japan.

Second, Formosa is the objective of critical importance in the succeeding phase.

There is one point of considerable significance, insofar as the first strategic phase is concerned, which we would like to emphasize. It has been proposed that we leave the Marianas and concentrate our efforts on expediting the capture of the southern Philippines. From the



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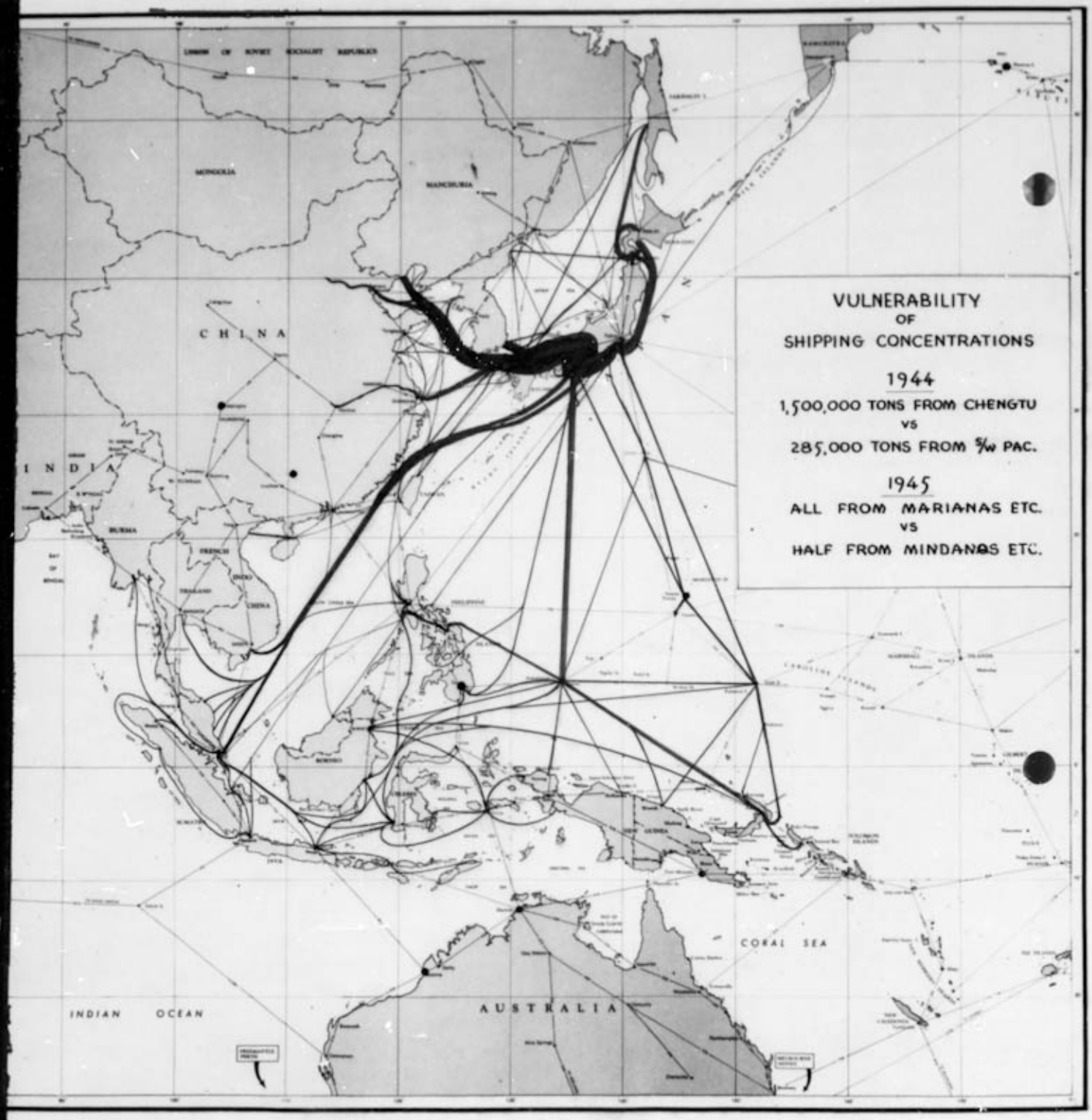
# JAP SHIPPING CONCENTRATIONS

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air point of view, the southern Philippines are of importance only as an intermediate objective, from which to proceed northward or northwestward. We cannot reach any of the vital land targets from the southern Philippines, and we can interdict only a small percentage of Japanese shipping.

To by-pass the Marianas would delay by nearly a year the date when we can conduct sustained bombing of Japan. We feel that is most important that we initiate our operations against the sources of Japanese strength at the earliest possible time. Even the northern Philippines appear to be of lesser importance as air bases than the Marianas. We feel that operating against the southern Philippines as the major axis of our strategy in the Pacific is desirable only if it is necessary in order to seize bases in Formosa or northern Luzon.

Our investigations have disclosed a number of deployments for VLR bombers, varying with the acquisition of bases and the current situation. It is apparent that the control and disposition of these VLR bomber forces should be retained under centralized authority, preferably the Joint Chiefs of Staff, if we are to capitalize upon the full power and flexibility of the aircraft.

Although we have made this investigation from a purely objective viewpoint, without any effort to substantiate any particular strategic concept, we find, on review, that we are in substantial agreement with the strategy accepted at SEXTANT.

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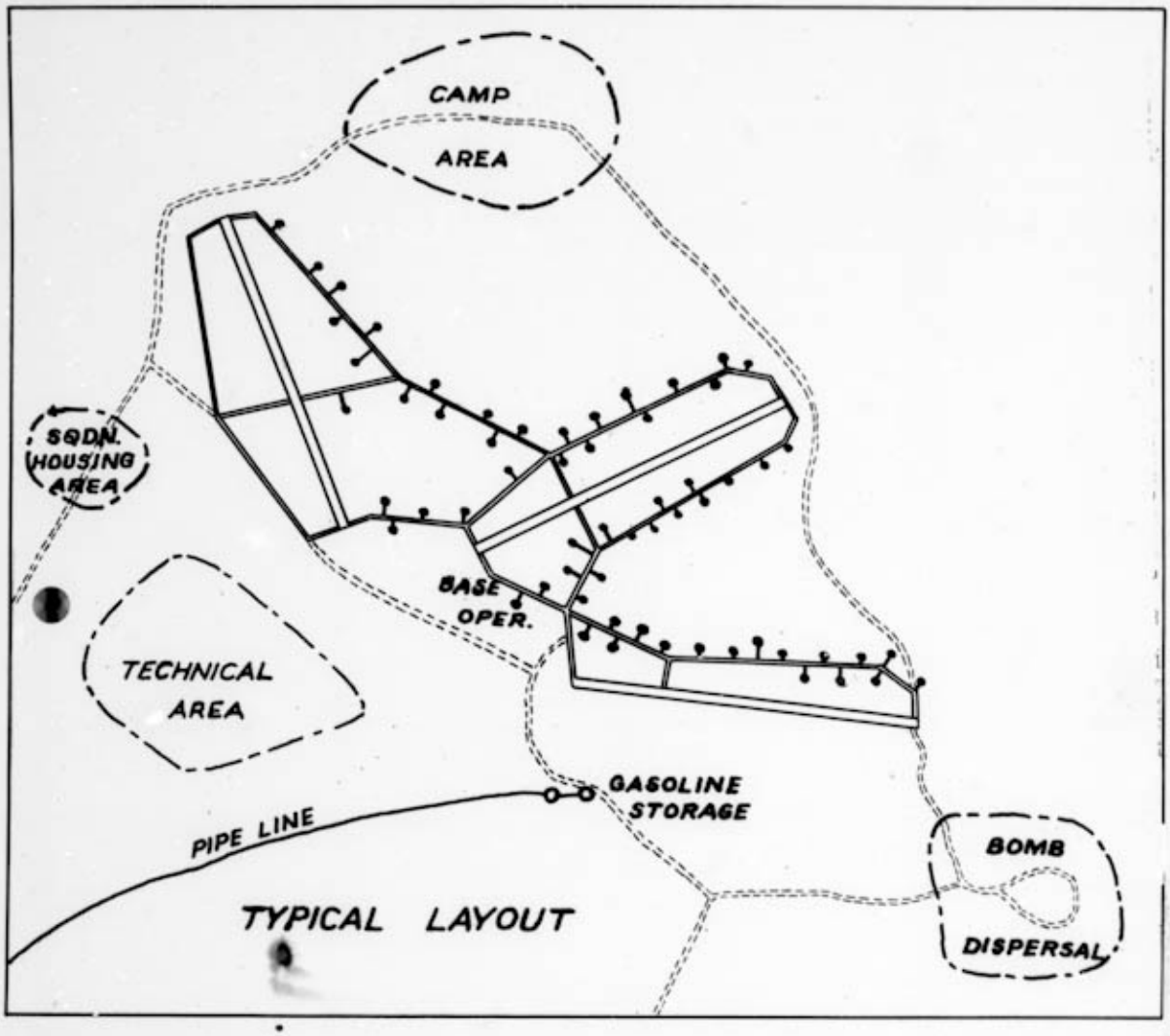


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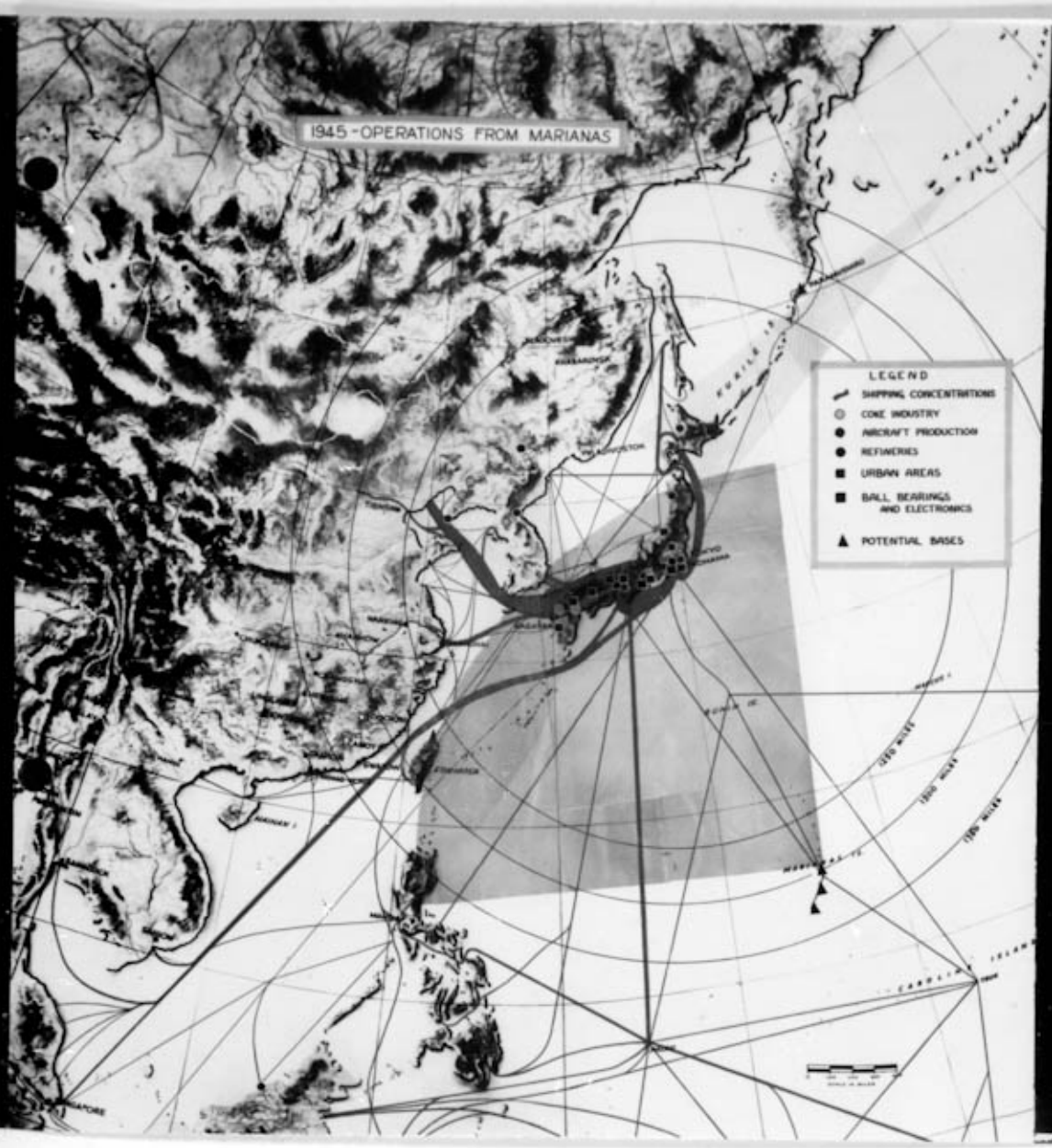


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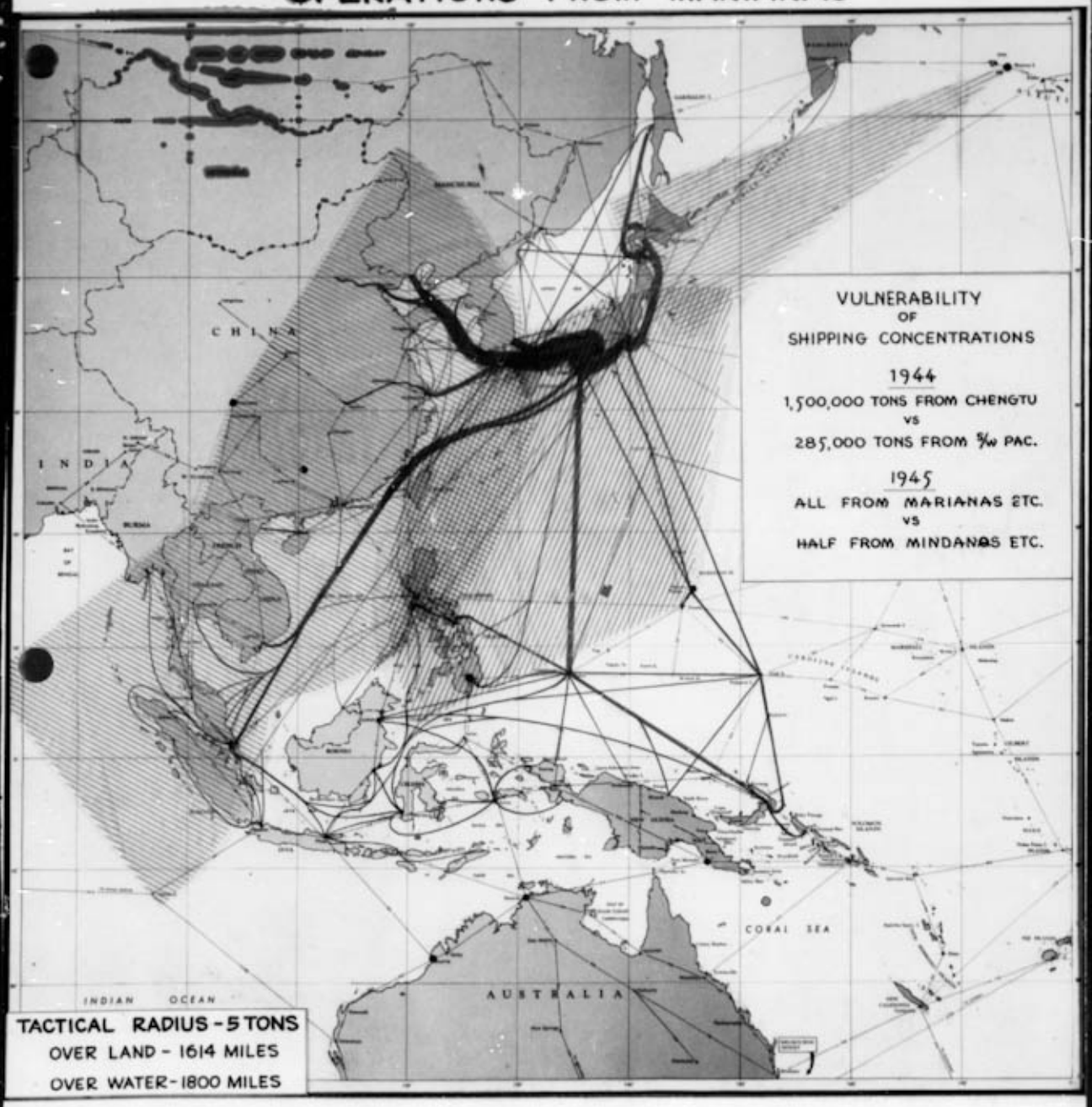
# 1945
# OPERATIONS FROM MARIANAS

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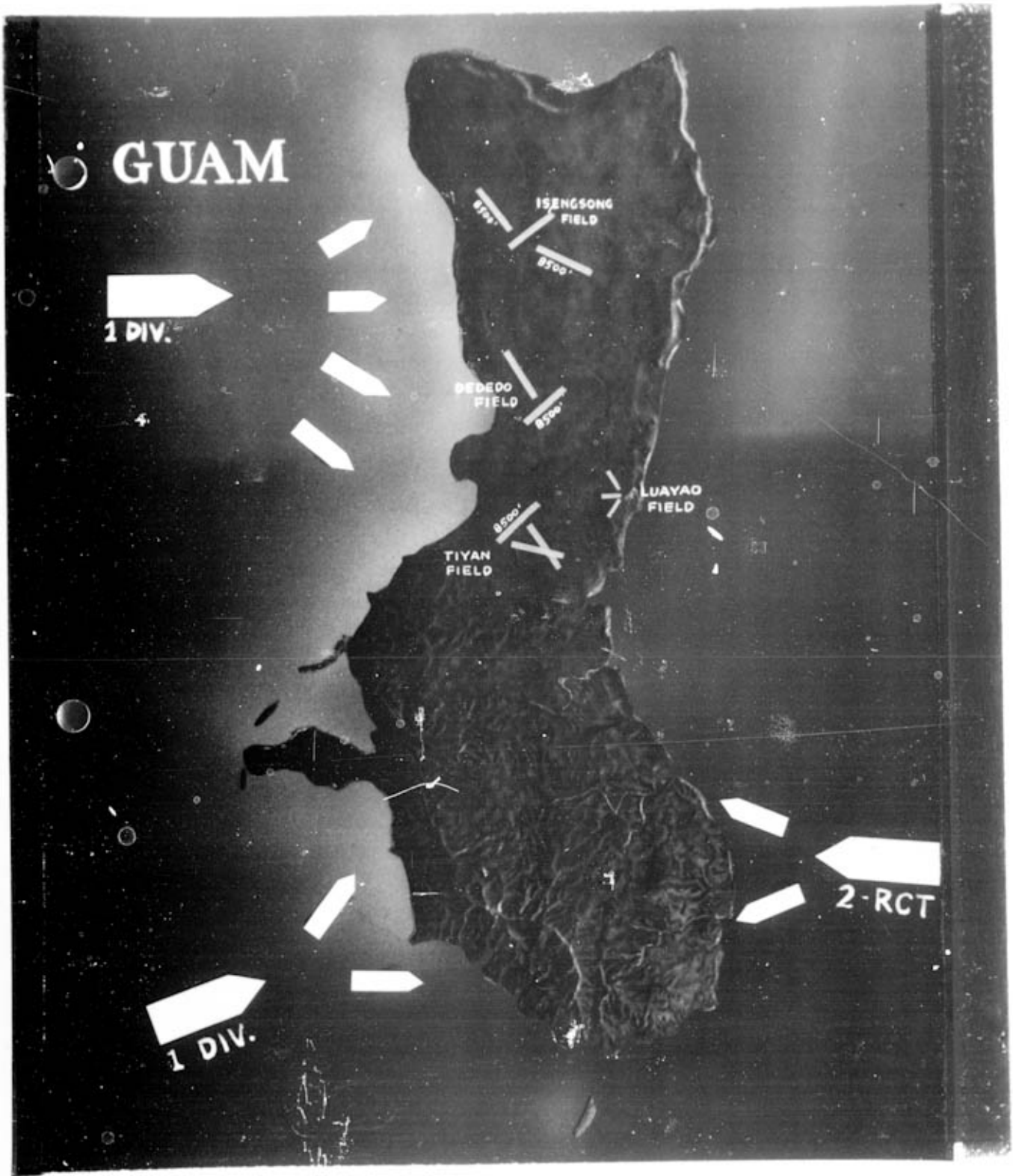


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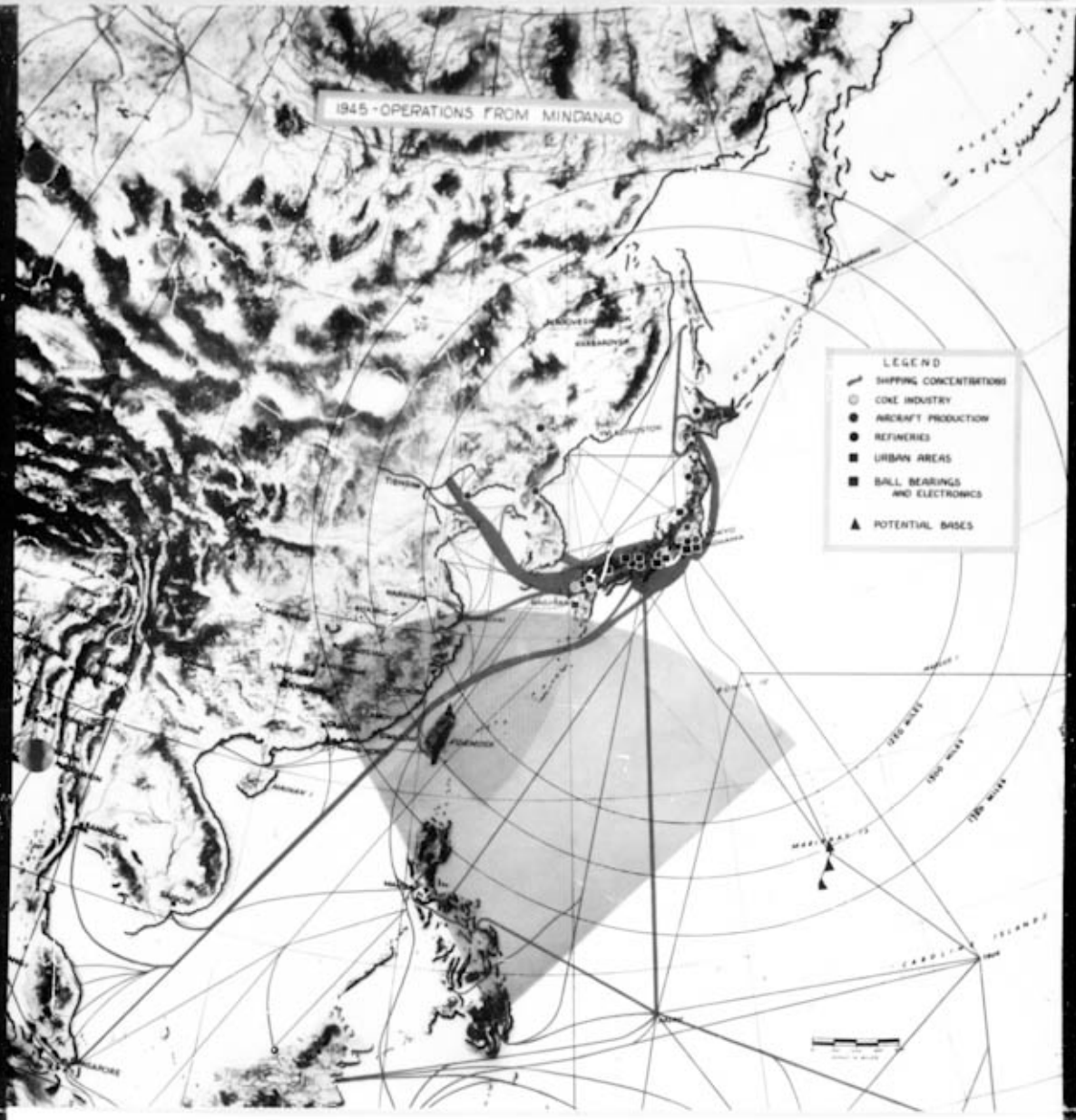


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