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**ORGANISATION
OF THE
JAPANESE ARMY AND NAVY
AIR FORCES**

**Attention is drawn to the penalties attaching to any infraction
of the Official Secrets Acts.**

Promulgated for the information and guidance of all concerned,

By Command of the Air Council,

Air Ministry,
February, 1945.

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PREFACE

In November 1943 the South East Asia Air Command issued *Notes on the Japanese Army Air Force* for general circulation among R.A.F. officers whose activities were centred in the Far East.

The need for a more detailed account, with a necessarily more limited circulation, of the organisation of the Army Air Force, and for the presentation on similar lines of the organisation of the Naval Air Force led to the preparation of the present handbook.

It is hoped that this volume will fulfil the needs of officers in the Directorate of Intelligence of the Air Ministry as well as of those in Commands at home and overseas whose interests lie in the Far East. At the same time the book may prove useful to Intelligence Officers of our Allies in the U.S.A.A.F. and the American Navy.

Readers wishing to grasp the main outlines of the organisation of either the Japanese Army or Navy Air Force are advised in the first instance to read Chapter 2 and to study the five maps on pages 70 to 79 for the former ; or Chapter 22 and the five maps on pages 131 to 139 for the latter.

It will be appreciated that the emphasis has been laid on the principles of organisation and that the picture presented is one of air forces better organised than their present operational state warrants.

Air Ministry,
London.

February, 1945.

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**Organisation of the
Japanese Army
Air Force**

CHAPTER I

Introduction

1. **The Japanese Air Forces** : There is no separate Air Force in Japan. The Air Forces of that country are arms of the Army and Navy and as such each must be considered independently of the other.

2. **The Emperor** : The supreme head of the Army and Navy, of which the Air Forces form an integral part, is the Emperor. The power to reduce or expand the armed forces lies with the Emperor and whatever resolutions may be passed by the Imperial Diet, they cannot be executed without his consent, which is invariably based on the advice of the Chiefs of Staff. By Imperial Ordinance, it has been decreed that the posts of Minister of War and Minister of Marine shall be held only by generals and admirals. Thus a Government cannot be formed unless officers are available and willing to fill these posts.

3. **Board of Marshals and Fleet Admirals** : In peace time the Emperor is assisted by a Board of Marshals and Fleet Admirals consisting of selected military and naval officers of the rank of Field Marshal and Admiral of the Fleet. The Board has an inspecting and administrative office only, and no executive power. These officers are theoretically the Emperor's personal advisers on all matters relating to war. They are automatically members of another council, the Supreme War Council.

4. **Supreme War Council** : In addition to the Board of Marshals and Fleet Admirals, the Supreme War Council consists of :—

- (a) Chiefs of the Army and Naval General Staffs.
- (b) The Ministers of War and Marine.
- (c) Other specially appointed officers.

The Supreme War Council meets to discuss important naval or military matters and its decisions are conveyed to the Emperor. The senior officer presides and majority decisions are taken. The Army and Naval General Staff assist the Supreme War Council when required.

5. **Imperial Headquarters** : In war, the Supreme War Council, together with the whole of the Army and Navy General Staffs, combine to form an Imperial Headquarters Staff which is under the supreme direction of the Emperor.

Army Air Force

6. The Imperial Japanese Army in its more modern form dates from 1871, when the first regular divisions were established, followed by the introduction of conscription two years later. The Japanese Army Air Force is an arm of the Army.

7. Army aviation in Japan started in 1911 when two Army officers returned after training in France. They were followed by a few more officers in 1912 and 1913. In 1919, an Aviation Section was created in the War Office, and in February of the same year a French Aviation Mission, under Colonel Faure, and consisting of some 60 officers and other ranks, arrived in Japan to assist in the training of the J.A.A.F.

By 1920, the first Military Aviation School had been opened at Tokorozawa, near Tokyo, to train about 100 commissioned and non-commissioned officers. Two more Military Aviation Schools were established in 1922 at Shimoshizu and Akenogahara.

8. A reduction of four divisions of the Army in 1924 paved the way for the expansion of the J.A.A.F. which took equal status with the Infantry, Cavalry and Field Artillery, and by 1930 the J.A.A.F. consisted of 26 squadrons, three schools, and two balloon companies.

9. The importance of the J.A.A.F. continued steadily to increase. In August, 1936, the post of Air Corps Commander was created to control all first-line units (less those in Manchuria) and the holder was made directly responsible to H.I.M. the Emperor. This post was superseded by an even more important one in 1938 by the creation of the post of Inspector-General of Military Aviation, under the direct command of H.I.M. the Emperor. The result was that this Inspectorate-General became responsible for the training of the Army Air Force and shared the general control of that arm of the land forces with the Minister of War, the Chief of the Imperial General Staff and the Inspector-General of Military Training.

Naval Air Force

10. The Imperial Japanese Navy is of very modern growth; it came into existence in 1869, and in its early days was organised and trained by a British Naval Mission. At the time of the Washington Conference Japan had reached the stage of being the third Naval Power in the world. The Naval Air Force is an arm of the Navy.

11. Naval aviation dates from 1912, when certain Japanese officers trained in France and America returned home. Shortly after this a Training School was established at Oppama near the Naval port of Yokosuka, and an experimental course was started. From that time until 1921 Naval aviation in Japan may be said to have remained in its infancy, but in that year a British Mission of retired Royal Air Force officers and other ranks went to Japan and assisted in the reorganization of the J.N.A.F.

12. April, 1927 saw the creation of an Aviation Department in the Ministry of Marine, and by 1931 the strength of the J.N.A.F. consisted of 17 shore-based squadrons, exclusive of aircraft in aircraft carriers, seaplane carriers and fighting ships.

13. In 1929 three inspectors of the British Aeronautical Inspection Directorate proceeded to Japan to instruct in the system of aircraft inspection, and they were followed in 1930 by a Royal Air Force Mission which gave instructions in air fighting tactics and air gunnery. In 1931 a warrant officer and an N.C.O. of the Royal Air Force went to Japan to give instruction in armament.

14. As a result of the London Naval Treaty of 1930, which restricted Japanese naval construction, the Japanese decided to expand their air force and a plan known as the First Replenishment Plan was approved, and a Second Replenishment Plan was given Cabinet sanction in 1933. In 1937, and again in 1939, Third and Fourth Replenishment Plans for the Navy were sanctioned by the Cabinet. Owing to the lapse of the Naval Treaties these plans were secret.

15. **Functions of the Japanese Army and Naval Air Forces :** As already stated, the Army and Navy have created and maintained their own air forces on strictly independent lines. The function of the J.A.A.F. is to give support to the Army ground forces while the J.N.A.F. was

designed to give support to the surface fleets, and to be responsible for coastal defence, sea and anti-submarine patrols and convoy protection.

16. This policy of divided responsibility did not work unsatisfactorily as long as the Japanese were able to fight the war according to their own preconceived plan. When, however, Allied pressure began to disturb the execution of their designs it became impossible for the services to keep strictly to their own separate spheres, and in fact the J.A.A.F. has in certain areas had to assume responsibilities of the J.N.A.F., while the J.N.A.F. has in other areas been responsible for co-operation with ground forces. While circumstances have to a certain extent imposed this flexibility on the two air forces, it is evident that in areas for which the Army is mainly responsible their Air Force will be found in greatest strength while the Naval Air Force is based mainly in areas in which it can give the maximum support to naval forces. There are now indications that as Allied forces draw nearer to the Japanese islands a greater degree of co-operation between the two services is being developed.

17. **Relative Efficiency of the Air Services :** Prior to the outbreak of war at the end of 1941 it was generally assumed that the Naval Air Force was superior both in equipment and efficiency to that of the Army. This may have been due in part to the very poor opposition put up by the J.A.A.F. in their encounter with the Russians at Nomonhan, on the Outer Mongolian Border, between May and September 1939. A further reason may have been that in the earlier days of the China Incident the J.A.A.F. had not yet been fully equipped with a long-range medium bomber and the strategic bombing of Chinese cities had to be carried out by medium bombers of the J.N.A.F. Subsequent events have proved that the J.A.A.F. inferiority was only temporary and that by the time the Japanese launched their attack against the United States, Great Britain and the Netherlands their shortcomings in efficiency and equipment had been overcome.

18. **Foreign Influence :** The tendency to regard the Japanese merely as copyists is dangerous. Japanese civilisation which 300 years ago in some ways compared favourably with that of Europe, remained practically static at a time when the Western Hemisphere was making rapid scientific and mechanical progress. When at the Restoration of Meiji in 1868 Japan was opened to foreign intercourse and decided to adopt what she needed from the West she was compelled to employ foreign instructors and designers. That she intended merely to copy Western methods is extremely doubtful. Her object was rather to adapt to her own needs what she considered most useful of the achievements of Europe and America. The result has been a curious mixture of Japanese and Western culture: so far as aviation is concerned the organisation of her Air Forces and their equipment were in the earlier stages influenced by British, American, French and Italian methods and designs. When in 1937 the Japanese, by signing the Anti-Comintern Pact, threw in their lot with Germany, the influence of that country quickly became apparent, and owing to the introduction into Japan during the last few years of a large number of German technicians the influence of that country not only in policy but in organisation and equipment has been preponderant. At the same time the Japanese have done independently a good deal of research work and have not slavishly copied everything German. This, however, does not mean that they are not intensely interested in German technical developments, for it may be assumed that they will endeavour to adapt to their own use everything likely to assist them in the prosecution of the war.

19. **General Conclusions :** All evidence available tends to confirm the theory that the Japanese

Air Forces were in 1941 organised for a swift, short and conclusive war. This they probably considered possible as they undoubtedly relied on an early German victory and the collapse of the British Empire. The Allied counter-offensive which started in the South West Pacific area and has gradually gained momentum upset the original Japanese plans. There is particular confirmation of this in the efforts they have been compelled to make in expanding their aircraft production and their training organisation. From time to time during the war there has been evidence of re-organisation in both services to meet the conditions imposed by the Allied advance in the Pacific. While the Japanese have shown considerable capacity as organisers, improvisation has not been one of their strong points. The speed with which the war has gone against them in the past year has undoubtedly put a strain on their resources and their organisational capacity alike. They can never overcome the difficulties with which they are now confronted and in face of the mounting superiority of forces and equipment arrayed against them their ultimate defeat is inevitable.

CHAPTER 2

Summary of the Organisation of the Japanese Army Air Force

1. The Japanese Army Air Force was planned to co-operate with the ground forces of the Japanese Army, and forms a component of the local Area Army in each theatre of war, under the direction of which it operates. On the other hand it receives its equipment, personnel and supplies through Army Air Headquarters, *Rikugun Kōkū Hombu*, Tokyo, which is responsible for its efficiency.

2. **The establishment of Air Army Headquarters.** The Japanese began hostilities with no J.A.A.F. Command higher than that of an Air Division, *Hikōshidan*. The 3rd Air Division, for instance, co-operated with the 16th Army in the Netherlands East Indies, and the 5th Air Division with the 15th Army in Burma. It was not until 1942 when the maximum expansion had been achieved by the Japanese Armed Forces, and the territories occupied had to be prepared for defence, that the five principal J.A.A.F. Commands of Army rank, namely Air Army Headquarters, *Kōkūgun Shireibu*, were established.

3. The need to add the coping stones to the organisation of the Japanese Army Air Force in this way, long after the outbreak of war, is in marked contrast to the completed state of organisation of the German Air Force before war began in Europe. By the spring of 1939 the Germans had already established four commands to which J.A.A.F. Air Army Headquarters can be compared, namely the Luftflotten Kommandos.

4. The Japanese on the other hand delayed the establishment of Air Army Headquarters until the summer of 1942, when the 1st, 2nd and 3rd were set up in Tokyo, Hsingking and Singapore respectively. The 4th Air Army Headquarters in New Guinea was not established till early 1943 and the 5th in Nanking in the autumn of the same year.

5. **Air Armies.** The Japanese Army Air Force is now divided into five separate Air Armies, *Kōkūgun*, under these five headquarters. Their territorial Commands extend over the areas named below. Each headquarters is located at a strategically appropriate base.

TERRITORIAL LIMITS OF AIR ARMY COMMANDS AND LOCATION OF AIR ARMY HEADQUARTERS.

Spring, 1944

<i>Name of Command</i>	<i>Territorial Limits</i>	<i>Location of Headquarters</i>
1st Air Army	Japan, Korea, Formosa, Karafuto and the Kurile Islands	Tokyo
2nd Air Army	Manchuria	Hsingking
3rd Air Army	Burma, Thailand, Southern French Indo-China, Malaya, Sumatra, Java, and Borneo	Singapore
4th Air Army	Philippines, Celebes, Western New Guinea, etc.	Manila
5th Air Army	China	Nanking

6. Each Air Army Headquarters is responsible for the Air Forces in its area of operations in all their major aspects, that is, for the direction of flying operations, as well as for the necessary ground organisation and for training. Air Army Headquarters has two other tasks in addition :

- (a) it co-operates closely with the local Area Army Headquarters, and
- (b) maintains continuous contact with Army Air Headquarters and its subordinate departments in Tokyo to ensure the flow of equipment, supplies and replacement personnel from the Empire, for its units.

7. The position of the Air Armies in Japan and Manchuria is different from that of the corresponding commands in the various active theatres of war. Those in Japan and Manchuria are available for the defence of the Empire ; but they also form a reserve air force, trained and in training, from which Air Armies in China and the South West Pacific are reinforced.

8. **Air Divisions.** The territory of operations of an Air Army is usually divided up into two or three areas, each commanded by an Air Divisional Headquarters, *Hikōshidan Shireibu*. These are shown in relation to the Air Armies to which they belonged at various stages of the war in a series of maps in Chapter 21. Map No. 8 relating to the spring of 1944 shows two Air Divisions within each Air Army, making ten in all. In China, where the 3rd and 8th Air Divisions are shown as in the area of the 5th Air Army this equal distribution was more apparent than real, for at that time the 8th Air Division existed as a skeleton staff only with no forces attached to it, and the staff of the 3rd Air Division appears to have become that of the 5th Air Army. In any case, this uniform distribution of the Air Divisions did not last long. Two Air Divisional Headquarters' Staffs moved into the Philippines from Manchuria during the summer of 1944, followed gradually by their units in preparation for defence against the anticipated attack on those islands, leaving the 2nd Air Army without a Divisional Command and increasing those of the 4th Air Army from two to four.

9. The forces subordinated to an Air Divisional Headquarters vary in strength and kind according to the tasks it is to undertake. Its Battle Order is only established for a particular campaign, and may be large at one period and small at another.

10. An Air Divisional Headquarters Staff is responsible for the Air Forces in the Division in all major matters. It takes its orders from Air Army Headquarters and elaborates them for its own units, directing flying operations through Air Brigade Headquarters Staffs, *Hikōdan Shireibu*, and administering its airfields and bringing up supplies through Air Sector Headquarters Staffs, *Kōkū Chiku Shireibu*.

11. **Flying Operations.** Flying units of the J.A.A.F. (apart from certain reconnaissance units) are known as *Hikōsentai*, or Flying Regiments, with an aircraft establishment between 27 and 49 per Regiment. They are organised into Air Brigades each under an Air Brigade Headquarters. The flying units in an Air Brigade are not necessarily all of the same kind. Two or three fighter regiments may be brigaded together to form a Fighter Air Brigade, but bomber regiments customarily form a Mixed Air Brigade which includes a fighter regiment or two, to protect the bombers, and a close reconnaissance squadron for the necessary air intelligence. This makes a mixed tactical formation of, say, 120-150 aircraft under an Air Brigade Commander, a Colonel or a Major General.

Reconnaissance is undertaken by small reconnaissance units, *Dokuritsu Hikōchūtai*, literally,

Independent Flying Squadrons, or by detachments of Reconnaissance Regiments attached to Air Army, Air Division or Air Brigade Headquarters.

12. **Ground Administration.** For administrative purposes the Air Division is sub-divided into Sectors. Within the Sector, an Air Sector Headquarters Staff is responsible for the ground administration, that is, for the construction and upkeep of airfields, provision of supplies, and the maintenance of aircraft. Air Sectors may be very large. At one time the whole of Burma formed one Air Sector. On the other hand there may be eight or nine Air Sectors within one Division. The ground units under the command of an Air Sector Headquarters are referred to as Air Sector Forces, *Kōkū Chiku Butai*. These consist chiefly of Airfield Battalions and Airfield Companies, which form the relatively permanent airfield commands, and supply the ground personnel on the airfields.

13. The provision of separate headquarters staffs (a) for directing flying operations and (b) for airfield administration makes for mobility of the flying units, since it permits them to move without requiring the simultaneous shift of airfield personnel. The activities of the two complementary headquarters, Brigade and Air Sector, are kept in step at Air Divisional level.

14. **Strength of the J.A.A.F.** Numerically the strength of the Japanese Army Air Force in midsummer 1944 was estimated to be about 2,000 first-line aircraft organised into some 75 Flying Regiments, grouped into 25 Air Brigades, making 10 Air Divisions in 5 Air Armies, and including besides, the reconnaissance units referred to in para. 11 which may make up 15 per cent. of the strength and which are usually attached to various command headquarters.

CHAPTER 3

The Flying Units

1. For most operations the Japanese unit is the Flying Regiment or *Hikōsentai*, with an aircraft establishment of 27, 37, 42 or 49, depending partly on its type of equipment and partly on its location. Flying Regiments are normally divided into three squadrons, *chūtai*, per regiment.

2. Flying Regiments are identified by number, the numbers running fairly consecutively, but with a number of gaps, from 1 to 98. There are a few Regiments, in addition, in the 100-200 and also in the 200-300 blocs. Five types of Flying Regiment are distinguishable according to their equipment and function. The number assigned to a Flying Regiment does not however indicate its type. It is not possible to say from the description alone that 50 FR, the customary Japanese abbreviation for Flying Regiment, is either a bomber or a fighter unit.

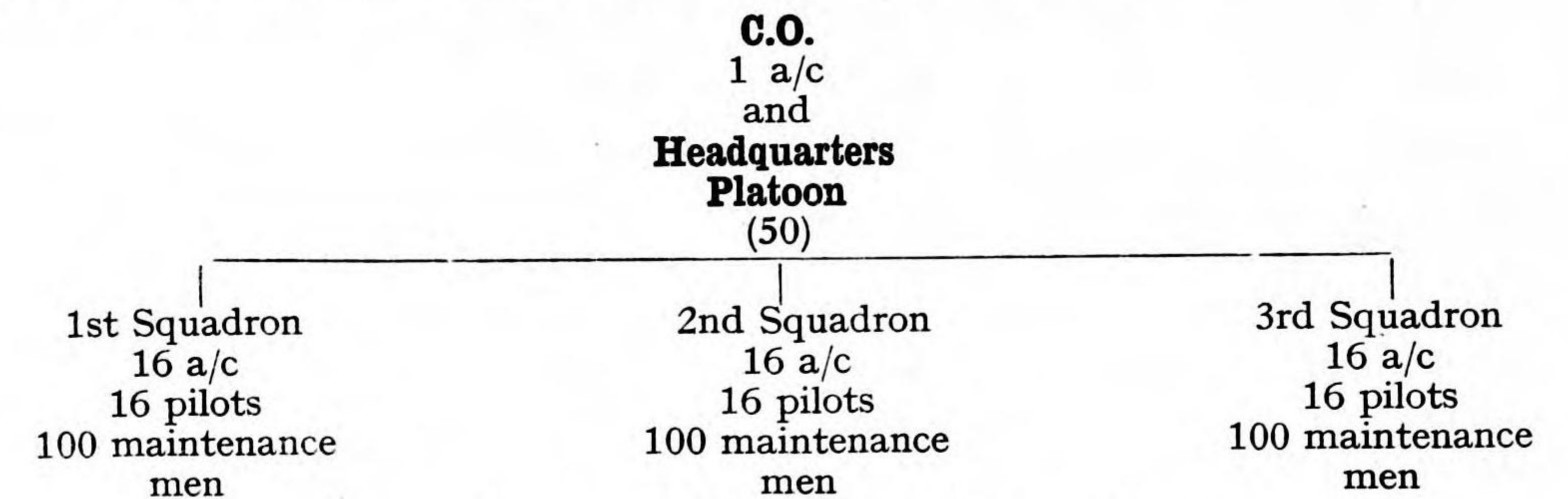
3. The following is a tabular statement of the types of Flying Regiment, the number and kind of aircraft with which they are equipped, and their total establishment of aircrews and ground staffs. A brief statement of the performance of these aircraft is included in Appendix 5 on page 159.

Type of Flying Regiment	Aircraft Establishment	Aircraft Equipment described by Year-Type designation as well as by Allied Operational Code Names	Personnel Establishment
1E—Fighter	42 or 49	T1 Fighter, Oscar ; T2 Fighter, Tojo ; T3 Fighter, Tony ; T4 Fighter, Frank	400
2E—Fighter	42 or 49	T2 Heavy Fighter, Nick	425
Light Bomber	27 or 42	T99 Light Bomber, Lily	460
Medium Bomber	27 or 37	T97 Medium Bomber, Sally ; T100 Medium Bomber, Helen ; Medium Bomber, Peggy	600
Reconnaissance	27 or 18 for two <i>chūtai</i>	T99 1E—Recce Plane, Sonia ; T100 2E—H.Q. Recce Plane, Dinah	360

4. **Fighter Regiments** make up between 45 and 55 per cent. of the Japanese Army Air Force and are mostly equipped with single-engined aircraft. A Fighter Regiment equipped with single-engined aircraft consists of three squadrons, of 16 aircraft and 16 pilots per squadron, plus one maintenance and repair company (also called *chūtai*) of 320 officers, N.C.O.s and men. These three squadrons, and the maintenance and repair company are under a Regimental Headquarters consisting of 5 or 6 officers and some 45 N.C.O.s and men. The odd aircraft for the personal use of the Commander of the Flying Regiment is attached to Regimental Headquarters.

5. The personnel of the repair and maintenance company of the Flying Regiment is divided among the three squadrons so that each squadron is assisted by 100 or more ground personnel, that is one-third of 320.

6. The organisation of the Fighter Regiment is therefore as follows :



Total approximately 400 officers and men.

7. The headquarters platoon under the C.O. of the Flying Regiment includes an adjutant, officers or others in charge of intelligence, ordnance, signals, intendance, and medical services, and their staffs at Headquarters. The Medical Officer and Intendant may be supplied by the local Airfield Battalion.

The C.O. endeavours to organise from the resources of the Regiment a Headquarters' Flight of 4 aircraft, if the aircraft strength of the unit permits, with pilots who include the Adjutant and the C.O.

8. Each squadron has an establishment of 15 or 16 pilots, one-fifth to one-quarter of whom may be commissioned officers.

9. The repair and maintenance company of 320 is divided into two platoons, *shōtai*, as follows :—

- (a) repair and supply platoon, consisting of fitters, electricians, ordnance and signals specialists, and stores personnel, totalling 80.
- (b) maintenance platoon, providing 4 maintenance men per aircraft, with armourers and wireless mechanics in addition, totalling 240.

These in practice are divided among the three squadrons.

10. **Bomber Regiments** are similarly organised ; that is, they consist of :—

- (a) a headquarters platoon of the Flying Regiment, subordinated to which are
- (b) three squadrons usually of 9 or 12 a/c per squadron with aircrews ;
- (c) a repair and maintenance company, the personnel of which are apportioned among the squadrons.

11. Light Bomber Regiments are equipped with 27 (or 37) 1E—Light Bombers, *e.g.* Type 99, Lily, which carry a crew of four. The personnel establishment of a Light Bomber Regiment amounts to 460 consisting of a Headquarters Platoon of 50, three flying squadrons of 36 flying personnel per squadron (pilots, wireless operators, air gunners and flight mechanics), and a maintenance and repair company of 300 distributed between the three squadrons.

12. Medium Bomber Regiments are equipped with 27 (or 37) 2E—Medium Bombers, *e.g.* Type 99, Sally, or Type 100, Helen, which carry a crew of seven. The personnel establishment

of a Medium Bomber Flying Regiment is 600, consisting of a headquarters platoon of 50, three flying squadrons, of 63 aircrew per squadron, and a repair company of 360 distributed between the flying squadrons.

13. **Reconnaissance Flying Regiments**, equipped with the fast twin-engined aircraft Dinah, are engaged in reconnaissance which may be of long range. Reconnaissance aircraft are employed in smaller numbers than those engaged in combat or attack, and consequently the Reconnaissance Flying Regiment usually consists of two squadrons only, with 18 aircraft in all.

14. The results of reconnaissance are required by staffs at Air Brigade, Air Divisional or Air Army Headquarters, who are responsible for planning operations. Reconnaissance units are, in consequence, generally attached to such headquarters.

15. Close Reconnaissance, including air photography, and liaison between one headquarters and another are carried out in the J.A.A.F. by units described as Independent Flying Squadrons, *Dokuritsu Hikōchūtai*. Such Independent Flying Squadrons at one time made up 15 per cent. of the J.A.A.F. strength and were equipped with 9 or 12 Sonia aircraft per squadron. This aircraft is now obsolescent but was the best known Japanese close recce and liaison aircraft until 1944. It has to a large extent been replaced by Dinah.

16. **The Independent Flying Squadron** was designed to be able to operate from a forward airfield with an advancing army, without having to depend on the ground services which the Air Sector Headquarters would set up subsequently. For this reason it has a heavy personnel establishment and is unusually well supplied with vehicles. It is subordinated to Air Brigade or Air Divisional Headquarters.

17. **Direct Co-operation Flying Units**, *Chokkyō Hikōtai*, are also engaged in reconnaissance. These are small units equipped with Sonia aircraft, which are directly under an Army or Navy command for army reconnaissance or artillery spotting in the one case, or submarine patrol or spotting in the other.

18. **Independent Flying Units**. Until the midsummer of 1944 the reconnaissance activities of two or three, or sometimes four, Independent Flying Squadrons, *Dokuritsu Hikōtai*, were often co-ordinated by a unit acting as a headquarters platoon, and known as the *Dokuritsu Hikōtai*, literally, Independent Flying Unit. This unit would be equipped with three or four aircraft for liaison duties. Direct Co-operation Flying Units might also be co-ordinated under an Independent Flying Unit. The subordination of two or three squadrons to a headquarters platoon provides a replica of the organisation of a Flying Regiment, into which reconnaissance squadrons could be readily transformed under the *Dokuritsu Hikōtai* when conditions required, forming Reconnaissance Flying Regiments, usually with two squadrons. The Flying Regiments engaged on reconnaissance referred to in para. 13 have been formed in this way, from the fusion of two Independent Flying Squadrons with the headquarters platoon provided by the *Dokuritsu Hikōtai*.

19. The arrangement by which two or more reconnaissance squadrons operated under a headquarters platoon as described above was by no means invariable and at the present time almost all the *Dokuritsu Hikōtai* have been absorbed into Flying Regiments engaged on reconnaissance.

At the present time a score of Independent Flying Squadrons without such control operate with Air Brigades or Air Divisions.

20. The Japanese employ a series of initials to denote flying units, ground units, and command headquarters on maps and in documents. These are often the initials of the English equivalents of the Japanese terms. Those in common use in reference to flying units are the following; their use is customary in Allied Intelligence.

Japanese Term	English Equivalent	Initials used by Japanese
<i>Hikōsentai</i>	Flying Regiment	FR
<i>Dokuritsu Hikōchūtai</i>	Independent Flying Squadron	FCS
<i>Dokuritsu Hikōtai</i>	Independent Flying Unit	FMS
<i>Hikōdan</i>	Air Brigade	FB

CHAPTER 4

The Air Brigade

1. **Tactical employment of Flying Units.** The Japanese gave a good deal of thought to the problem of the tactical employment of the Army Flying Units before war began. The plan adopted was to associate three or four Flying Regiments together under an Air Brigade Headquarters, *Hikōdan Shireibu*, and to attach a squadron of 9 aircraft to the headquarters for reconnaissance, except when all the Flying Regiments in the Brigade were fighters. In this way the flying units of the J.A.A.F. were formed into a score or so of Air Brigades each with an establishment of between 80 and 160 aircraft and each under a single local tactical command, the *Hikōdan Shireibu*.

2. Air Brigades suited to operations of various kinds, *e.g.* close support of ground forces, fighter-bombing, interception of enemy aircraft, protection of ports, attacks on enemy airfields, and to some extent strategical bombing, were formed by a suitable choice of types of Flying Regiment to constitute the Air Brigade.

3. Early examples of the composition of an Air Brigade conform to three types :—

(a) A Fighter Air Brigade comprising two, three or four Fighter Regiments with no provision for reconnaissance.

(b) A Mixed Medium Bomber Air Brigade comprising one or two Medium Bomber Regiments provided with fighter protection by one Fighter Regiment, and facilities for air intelligence by an Independent Reconnaissance Squadron, *Dokuritsu Hikōchūtai*, or a Squadron from a Reconnaissance Flying Regiment attached to Brigade Headquarters. This makes a total of approximately 115 aircraft.

(c) A Mixed Light Bomber Air Brigade of two Light Bomber Regiments provided with fighter protection by one or two Fighter Regiments. A reconnaissance squadron again formed an essential part of this Light Bomber Air Brigade making a total of some 180 aircraft.

4. These three types of Air Brigade have been maintained, with variations, into 1945. The principal variations are as follows :—

(a) The provision of a reconnaissance unit to operate with a Fighter Air Brigade. No examples from the earlier history of the war are known in which reconnaissance units formed part of a Fighter Air Brigade. Both types of Fighter Air Brigade are now well represented. The addition of a reconnaissance unit to the Fighter Air Brigade may be due to the use of fighters in air co-operation with ground troops.

(b) The Mixed Medium Bomber Air Brigade may now have greater fighter protection than earlier in the war.

(c) The Mixed Light Bomber Air Brigade may now have one instead of two Light Bomber Flying Regiments, and often has more fighter protection.

A Composite Air Brigade containing one Medium Bomber, one Light Bomber, one Fighter Flying Regiment, and one reconnaissance squadron is often referred to in lecture notes among captured documents. No such evenly balanced Air Brigade has been met with in which medium and light bombers are brigaded together with a fighter regiment and

a reconnaissance squadron. The Japanese in practice avoid mixing medium and light bomber regiments in the same Air Brigade, although examples are known.

5. **Air Brigade Headquarters** consists of a staff of 150, under the C.O. of the Air Brigade, who is responsible for operations; it includes an adjutant, responsible for personnel; and officers or others in charge of intelligence, meteorology, ordnance, intendance (food, shelter, clothing and accounts), signals communications and medical services. Air Brigade Headquarters may sometimes be partly at one location and partly at another, operations being conducted from a forward Battle Headquarters, while ordnance, intendance and adjutant sections remain in the rear.

6. The work of Air Brigade Headquarters is facilitated by (a) a Headquarters Flight Platoon (b) a Headquarters Signals Platoon, the personnel of which are not included in the headquarters strength in the previous paragraph. The aircraft of the Headquarters Flight Platoon consists of:—

- (a) the C.O.'s aircraft;
- (b) two liaison aircraft.

A squadron of transport aircraft, say 12 transport aircraft or aircraft which may be used for transport purposes, is at the disposal of the Air Brigade.

7. Transport aircraft attached to Air Brigade Headquarters are for use throughout the Air Brigade. They serve to keep the flying units supplied with their urgently needed requirements, and assist in making the whole Air Brigade, including Brigade Headquarters, mobile.

8. The principal work of the Air Brigade Headquarters is the planning of flying operations and the issue of detailed orders to Flying Regiments or Reconnaissance Squadrons. Such orders relate, for example, to close reconnaissance and photography of enemy positions, to details of attacks on airfields, or to co-operation with any forces, ground, naval or air outside the Brigade. Air Brigade Headquarters reports the results of operations to the next higher command, Air Divisional Headquarters (Chapter 7) from which it receives its main directives.

9. While freed from preoccupation with supply and maintenance duties and staffed to concentrate on tactical problems, Air Brigade Headquarters is responsible for seeing that its operations are not hampered by lack of supplies, breakdown of communications, unserviceable airfields, or by unserviceable aircraft. For this reason the Air Brigade Headquarters has assigned to it certain Air Sector Forces, *Kōkū Chiku Butai*, which carry out the necessary ground duties within the sector in which it operates. While Air Brigade and Air Sector Headquarters co-operate on opposite aspects of the same problem, the Air Brigade Headquarters, in command of operations, can require Air Sector Headquarters to carry out its orders.

CHAPTER 5

The Airfield Battalion

1. **Airfield Battalions**, *Hikōjō Daitai*, form the local command headquarters, and provide the ground personnel of Japanese operational airfields. They attend to the requirements of the Flying Regiments, and are suitably staffed and equipped for these duties. Each battalion possesses a Maintenance Section, which specialises in servicing either fighter, bomber or reconnaissance aircraft.

2. An Airfield Battalion is responsible for (a) the ground organisation of two or three principal airfields and their satellites within the Air Sector in which it operates, and (b) the maintenance of the aircraft of the particular type for which it is staffed and equipped. The Headquarters Staff of the Battalion forms the command of the airfield upon which it is based. Detachments from this staff form the local command of the subordinate airfields.

3. An Airfield Battalion is divided into a number of specialist sections which form sub-units of the Battalion. It is the usual practice to disperse the sub-units or parts of the sub-units over several airfields. The personnel detached from the Battalion and stationed at any particular airfield may be selected either to administer the airfield, that is, to provide a C.O. with forces to deal with administration, defence, signals, medical services, meteorology, etc., or may consist of a Maintenance Section detached from the Battalion to service the aircraft of the type in which it specialises. The Garrison Company is also apt to be detached as a separate unit bearing the number of Battalion to any airfield in the Air Sector requiring defence. This distribution of detachments from the parent Battalion is illustrated in Map No. 1, and provides two unexpected features, viz. :—

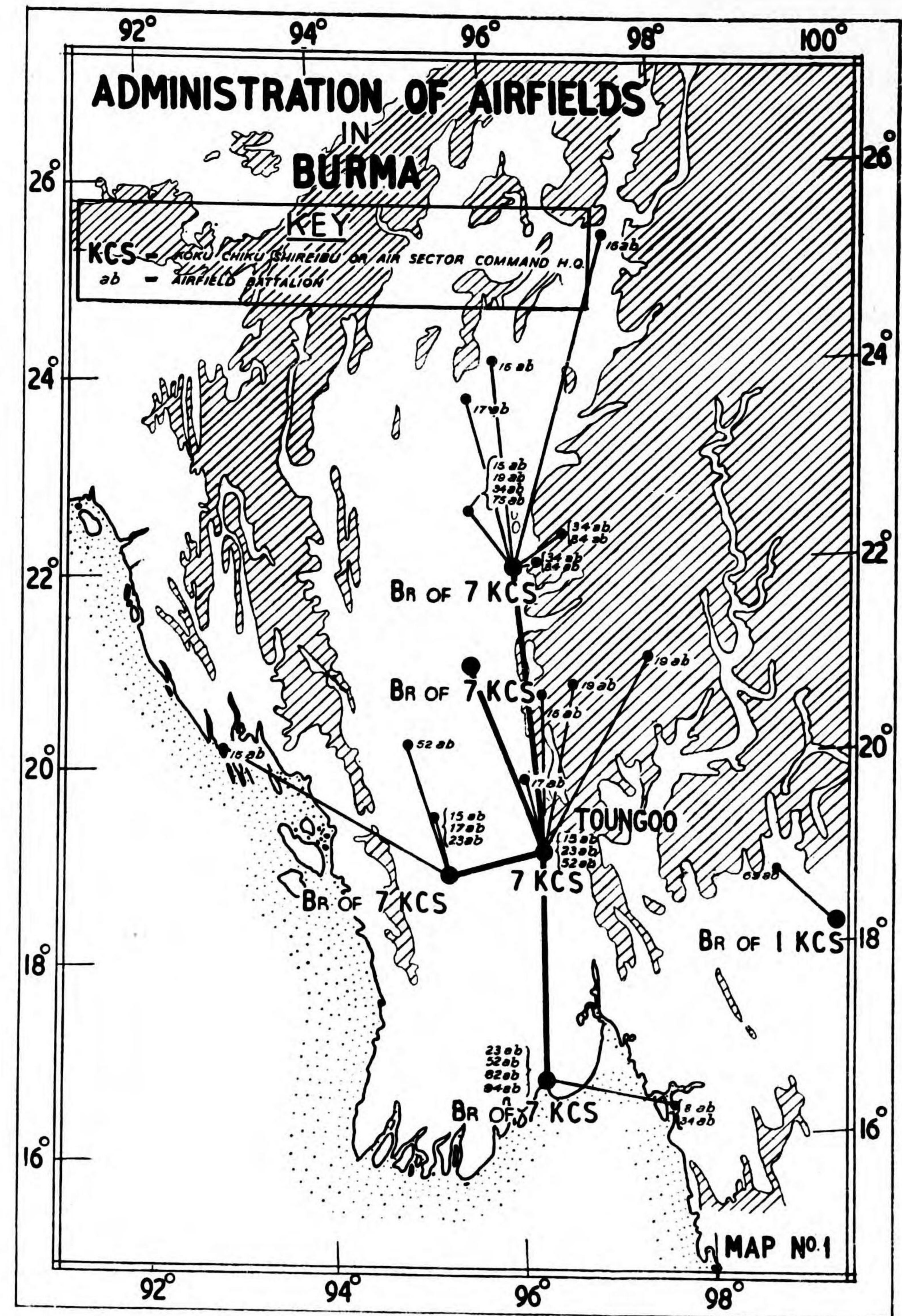
(a) the presence of detachments of three or four different Battalions at the same airfield.

(b) the presence of parts of the same Battalion at widely separated airfields.

4. The principal specialist section of the Airfield Battalion is its maintenance section which may consist of one or two maintenance companies. One maintenance company includes three servicing platoons, and each platoon is designed to service one squadron of, say, 9 a/c. It follows that at any particular airfield the number and kind of maintenance platoons present will depend on the number and kind of aircraft with which the flying units using the airfield are equipped. It may thus appear that four or five Airfield Battalions occupy one airfield. In fact these are sections of Airfield Battalions, one of which is responsible for the command and administration of the airfield, another for its defence, a third and perhaps a fourth for aircraft servicing.

5. The principal ground forces of the J.A.A.F. located at any airfield remain more or less permanently at that airfield. The flying units, on the other hand, make temporary use of the airfield according to operational requirements. Their mobility is greatly enhanced by this plan.

6. Airfield Battalions are numbered fairly consecutively from 1-200, with some additional numbers in the 200-250 bloc. The establishment strength of an Airfield Battalion is between 500 and 600 officers and men, but may be nearer 400 if the Battalion has one Maintenance Company only.



7. The Battalion has a motor transport equipment of 50 to 60 vehicles of various kinds. This M/T provides means of collecting supplies and equipment from dumps outside the airfield and transportation within the airfield. It may be supplemented by Independent M/T Units (Army units) which when working for the J.A.A.F. are placed under the Air Sector Headquarters and may assist in transporting supplies and equipment to airfields from depots within the Sector. Flying Units are in general not provided with many vehicles, and depend on Airfield Battalions for their motor transport.

8. The Commanding Officer of an Airfield Battalion is usually a Major; he ranks as subordinate to the Commanding Officer of the operational unit stationed at the airfield. The following scheme attempts to place the various sections known to form parts of the Battalion in a logical order:—

Sections of an Airfield Battalion

- (a) Commanding Officer.
- (b) Headquarters Staff consisting of—
 - Chief Technical Officer.
 - C.O. Garrison Company.
 - Signals Officer.
 - Meteorologist.
 - Intendant.
 - Adjutant.
 - Medical Officer.
- (c) Maintenance and Servicing Section consisting of—
 - No. 1 Maintenance Company.
 - No. 2 Maintenance Company (if present).
 - Aircraft Salvage Section.
 - Material Section.
 - M/T Platoon.
- (d) Garrison Company.
 - Gas Section.
- (e) Signals Section.
 - Codes and Cyphers Section.
- (f) Meteorological Section.
- (g) Intendant's Section.
 - Pay, Accounts, Rations, Clothing, Works.
- (h) Medical Section.
- (i) Photographic Section.

Each of these sections is responsible through its C.O., who is a member of the Headquarters Platoon under the Battalion Commander, to the C.O. of the corresponding section at Air Sector Headquarters and he again to the corresponding officer at Divisional, and again, at Air Army Headquarters.

9. **Airfield Companies, Hikōjō Chūtai**, are separate units, not part of Airfield Battalions, with separate identifying numbers. They perform similar duties to those undertaken by Battalions. Their smaller size is the only known difference between them and Airfield Battalions.

Duties of Airfield Battalions

10. The duties of the Airfield Battalion are reflected in its organisation. These duties are both practical and administrative. They are directed by the Commandant of the Airfield through a Headquarters Platoon on which the officers commanding the principal sections of the Battalion are represented. Their principal tasks are—

- (a) to maintain and defend the airfield and its installations;
- (b) to keep its stores supplied with food, fuel, bombs, ammunition and equipment;
- (c) to attend to the immediate needs of the personnel on the airfield;
- (d) to service and maintain, and, in part, repair the aircraft stationed on its airfields.

11. **Serviceability of the Airfield.** The most essential practical task of the Airfield Battalion is to maintain the serviceability of the landing ground. This, in effect, is its primary duty, and on occasion the whole of the personnel of the Battalion may be devoted to this single activity.

12. The development of airfields in territory overrun by the Japanese Army is also undertaken by the Battalion Command, through the Airfield Construction Control or Works Section of the Battalion, acting under orders issued by the Air Sector Headquarters (Works Section). The Works Section submits plans and estimates to the Sector Command for the proposed work, and in part hires the necessary labour. The work may include:—

- (a) the drainage of air strips, grass planting, laying and extension of runways and the construction of roads;
- (b) the installation of airfield lighting;
- (c) the construction of shelters, aircraft-pens, etc.

13. **Servicing, Maintenance and Minor Repairs to Aircraft.** The responsibility for the everyday servicing of the aircraft of a flying unit rests in the first place with the ground staff of the flying unit which accompanies it, or at least follows closely behind it, on its travels. In addition at least half the personnel of a large Airfield Battalion is assigned to these duties, which they may in fact undertake wholly pending the arrival of the ground personnel of the flying unit, the bulk of which travels by road. For this purpose the Battalion has one or two maintenance companies in which are included some 15 technical officers.

Each company is divided into four platoons; of these one is a workshop platoon, available for minor repairs for the whole company, while each of the others is equipped for servicing the aircraft of one squadron. The personnel strength of a company is between 200 and 250 men, and is made up of technicians of all kinds under the Chief Technical Officer of the Battalion.

14. These men work in the airfield hangars and assist the ground personnel of the flying unit in various routine tasks, e.g.—

- (a) 10- and 30-hour inspections;
- (b) drainage and change of oil (every 25–30 hours);
- (c) renewal of plugs (every 60–70 hours);
- (d) a complete engine-change (after 250 hours when the engine is sent away for re-conditioning);
- (e) compass adjusting, renewal of windscreens, and other minor repairs and replacements.

The Battalion possesses an Aircraft Salvage Section which is probably also part of the Maintenance Company.

15. Stocks of replacement equipment for the above-mentioned purposes are held by the Battalions on the larger airfields in the charge of a Materiel Section. When an aircraft is damaged, it is inspected by a technical officer, who decides whether it is repairable within the unit or not. Major repairs are not undertaken on the airfield, but the damaged aircraft is sent back to a Field Air Repair Depot, *Yasen Kōkū Shūrishō*, or sub-depot, *bunshō*, and an indent sent to an Air Depot, *Kōkū Shō*, for a replacement. In some cases Mobile Air Repair Platoons, *Kōkū Idō Shūrihan*, may be sent out from the Field Air Repair Depot to the airfield to effect the necessary repairs.

16. **Motor Transport.** Each Airfield Battalion has a Motor Transport Platoon with a personnel strength of 5 N.C.O.s and 45 other ranks under a 1st or 2nd Lieutenant. These include drivers, maintenance personnel, supply personnel for fuel and oil, and clerical staff, and are responsible for all vehicles on the airfield including those of the flying unit. Some flying units have no M/T of their own, in which case their transport needs are entirely supplied by the M/T Platoon of the Battalion.

The total number of vehicles belonging to a larger Battalion is about 50-60 and includes passenger vehicles and motor cycles, lorries, refuelling trucks and A/A trucks. Apart from purely local requirements, the M/T Platoon is responsible for fetching equipment and supplies from the various supply and equipment depots to the airfield for the Battalion and for flying units. The M/T Platoon may be assisted in their tasks by an Independent M/T Unit, *Dokuritsu Jidōsha Tai*.

17. **Supplies.** Considerable supplies of fuel, bombs and ammunition are held on the larger airfields by the Airfield Battalion, and even the smaller landing-grounds have at least a fuel-dump. Fuel is collected from Field Air Supply Depots, *Yasen Kōkū Hokuyūshō* or their sub-depots by the Battalion Materiel Squad, *Zai Ryō Han*, which is responsible for fuel storage on the airfield. M/T for fuel transport is supplied by the Battalion M/T Platoon, and during the process of loading and unloading, the Garrison Company appoints a detachment for guard duties. Bombs and ammunition are drawn from the Branch Depots of the main Supply Depots. Demands for all these supplies are made through the Air Sector Headquarters.

18. **Defence of the Airfield.** Defence of the airfield from attack, both from the ground and (to a large extent) from the air, is undertaken by the Garrison Company of the Airfield Battalion. This comprises some 230 men (*i.e.* about one-third of the total strength of the Battalion) divided into 3 platoons of 50 men each for defence against ground attack, and one A/A platoon of 70 men. Each platoon is further divided into sections. There are four sections to each of the defence platoons, and nine sections in the A/A platoon, the latter equipped with A/A automatic cannon, A/A machine guns and light M.G. Gun positions are constructed around all important airfields.

An anti-gas and smoke section which forms part of the Battalion is probably part of the Garrison Company.

The organisation of the Garrison Company is elastic, and allows detachments to be assigned to each of the group of airfields for which the Battalion is responsible. Each such Garrison detachment forms a complete Defence Unit in itself. Army Defence Units may be attached to co-operate with the Garrison Company.

19. **Signals Communications.** Orders, reports and messages between the airfield and command headquarters, other airfields, or J.A.A.F. installations, are handled by the signals personnel of the Airfield Battalion, for the Battalion and for the Flying Unit.

The signals personnel of the Battalion are responsible for the maintenance and in part at least for the construction of the installations necessary for these communications, which they also operate.

A Codes and Cyphers section, which supplies encoders and decoders to the Meteorological Section amongst its other duties, is included in the signals organisation of the Battalion.

The flying unit has its own signals personnel and equipment separate from those of the Airfield Battalion to control aircraft on operations.

20. **Meteorological Service.** On each airfield there is a meteorological unit whose duties are—

- (a) to make regular meteorological observations ;
- (b) to maintain a listening watch for weather broadcasts ;
- (c) to provide the C.O. of the Flying Unit with forecasts for flights ;
- (d) to notify aircraft of meteorological dangers.

Subordinate detachments would not have a trained meteorologist on their strength. Such detachments, consisting of 1 N.C.O. and 3 O/Rs would obtain their forecasts from the nearest airfield with a fully staffed meteorological station.

The meteorological personnel of an Airfield Battalion form part of the Meteorological Regiment of the Air Army. The chain of command linking them with Regimental Headquarters is through the Meteorological Branch of the Air Sector Headquarters and of the Air Division.

21. **Administration.** The administrative work of the Airfield Battalion is undertaken partly by the Intendant's Section and partly by the Adjutant's Section. The former, a military official, deals with all matters relating to pay and accounts, rations, clothing and accommodation. The Construction Control or Works Section referred to in para. 12 is part of Intendance.

22. Supervision of personnel, postings, promotion, bulletins, daily routine orders, savings, trade tests, and so forth, are dealt with by the Adjutant's or Personnel Section of the Battalion.

23. The Battalion Sick Quarters, and the Sick Quarters for the flying unit using the airfield, come under the Medical Officer of the Battalion, who usually holds the rank of Captain.

24. There is also a Photographic Section carrying a complete developing and printing outfit.

CHAPTER 6

The Air Sector

1. **Air Sectors and Air Sector Headquarters.** J.A.A.F. airfields are grouped into Air Sectors, *Kōkū Chiku*, and each Sector is controlled by a Headquarters Staff, *Kōkū Chiku Shireibu*, to which the Airfield Battalions in the Sector are subordinated.

2. An Air Sector Headquarters is responsible for the construction, upkeep and defence of airfields, for supplies reaching them and for the maintenance of the aircraft using them.

Headquarters is generally established at some convenient position in the Sector, not necessarily at an airfield, to carry out these duties. In addition to the main headquarters there are usually detached branches or offices, *shutchōjō*, or rear detachments, *zanchitai*, at other strategic points within the Sector. In Map No. 1 the headquarters of the 7th Air Sector is at Toungoo, while its branches are at Rangoon, Meiktila, Prome and Mandalay.

3. Airfield Battalions take their orders from Air Sector Headquarters, turn to this headquarters for their requirements and make their reports to the Headquarters C.O.

4. In the first phase of the war when the Japanese were advancing in South East Asia, Air Sector Headquarters Staffs were sent forward with the Army immediately behind the front line, to establish airfields or recondition those of the enemy which had been captured, to establish supply dumps, and to set up the various services needed upon these airfields prior to the arrival of the flying units. In such advances the Air Sector Headquarters was often subordinated directly to the Army Command. In the invasion of Java for example, the 4th Air Sector Headquarters was part of the 16th Army and preceded the flying units to prepare the way for them. But when the area had been occupied the Air Sector Headquarters was transferred to the command of the Air Division, a J.A.A.F. Command. This is the appropriate and customary arrangement. Air Brigade Headquarters and Air Sector Headquarters work together under the command of the Air Division.

5. The size of an Air Sector varies with the theatre of war and with J.A.A.F. strength deployed in the Sector. Burma in early 1944, for instance, formed a single Air Sector, the 7th, shown in Maps Nos. 1 and 2. The fringe of a second Air Sector, the 1st, with its headquarters at Bangkok, can be seen in the S.E. corner of Map No. 1.

6. Until the spring of 1944 the Philippines formed a single Air Sector, but with the concentration of J.A.A.F. units in that area in the summer, several additional Air Sector Headquarters Staffs were drafted in.

7. An Air Sector Headquarters Staff is commanded by a Colonel or Lieutenant Colonel, and consists of Officers, Warrant Officers, N.C.O.s and others directing and co-ordinating the activities of their counterparts in the Airfield Battalions, that is, the Adjutants, Intendants, and C.O.s of the Ordnance, Signals and Meteorological sections on the airfields as shown on page 16, para. 8.

The personnel strength of Air Sector Headquarters may perhaps be 120. Japanese Headquarters Staffs are always surprisingly small.

A Signals Unit and a Headquarters Flight of one or two liaison aircraft, usually Sonias, and one or two transport aircraft are attached to Headquarters.

8. **Air Sector Forces.** Air Sector Forces, *Kōkū Chiku Butai*, is the name given to the ground units under the command of the Air Sector Headquarters. They are of two types :

- (a) units permanently subordinated to the Air Sector Headquarters ;
- (b) units temporarily subordinated to the Air Sector Headquarters for a specific purpose or a limited time.

Of the units permanently subordinated to the Air Sector Headquarters by far the most important are :

- (a) Airfield Battalions ;
- (b) Airfield Companies,

which form the permanent staffs of the airfields. As there are some 250 Airfield Battalions and Companies and 45 Air Sector Headquarters Staffs, the average number of Battalions and Companies per Sector is between 5 and 6. But the tendency is to allocate a greater number of these units to more active sectors than to those where operations or training activities are slight.

9. Units temporarily placed at the disposal of the Air Sector Headquarters include the following :

- (a) Airfield Construction Units, *Hikōjō Setteitai*.
- (b) Land Duty Units, *Rikujō Kimmu tai*.
- (c) Mobile Air Repair Platoons, *Kōkū Idō Shūrihan*.
- (d) Independent M/T Units, *Dokuritsu Jidōsha tai*.
- (e) Certain Army Units, especially A/A Units.
- (f) Local civilian and coolie labour.

Airfield Construction Units and Land Duty Units are supplied to the Air Sector Headquarters for construction of airfields in the Sector under the higher direction of the Intendant of the Air Division and Air Army.

Mobile Air Repair Platoons reinforce repair facilities provided by the Airfield Battalion on a J.A.A.F. Airfield.

Independent M/T Units are called upon to supply additional heavy transport for the conveyance of heavy supplies such as fuel, bombs and ammunition to the various airfields beyond the scope of the M/T of the Airfield Battalion, or to assist in the move of units.

Although each Airfield Battalion and Company is normally responsible for the protection of the airfield and its adjoining area, certain areas might still require reinforcement from the Army. The duty of providing this additional defence would fall within the cognizance of the Air Sector Headquarters.

Casual labour might be employed for any purpose, but more especially for the construction of runways and roads. Used for this purpose it would be assigned by Air Sector Headquarters (Works Section), to the Airfield Battalion (Works Section), where it would come under the immediate supervision of the airfield staff.

10. **Link with Repair and Supply Depots provided by the Air Division.** The Air Sector Headquarters acts as the link between the J.A.A.F. Supply Depots, *Hokyūshō*, and the J.A.A.F. Repair Depots, *Shūrishō* on the one hand, and the units occupying the airfields on the other. Indents from the various sections of the Airfield Battalion or from the flying unit on the airfield are addressed to

the Air Sector Headquarters, and Air Sector Headquarters puts through the necessary demands on the J.A.A.F. Supply and Repair Depots at Air Divisional level, to provide units with their requirements.

11. Day-to-day needs of food, aircraft fuel and ammunition are organised by the Air Sector Headquarters from the appropriate Air Divisional Depots, direct to airfields or via dumps set up by Air Sector Headquarters for the airfields in their Sectors.

CHAPTER 7

The Air Division

Co-ordination of Flying Operations with Ground Activity

1. It has been explained in the previous chapters how airfields in the Japanese Army Air Force are grouped into Air Sectors, and Air Sector Forces provided to maintain the services on the airfields under the direction of an Air Sector Headquarters. This plan relieves commanders of flying units of the responsibility of running the airfields they occupy and of having to secure their own supplies; and in this way frees the Air Brigade Headquarters Staff to concentrate on operational problems.

2. The division of responsibility for (a) flying operations and (b) airfield management, between the Air Brigade Headquarters and the Air Sector Headquarters bestows a high degree of mobility on J.A.A.F. flying units and provides these two staffs with a chance to become specialists in their respective problems. On the other hand, it calls for a co-ordinating staff to ensure that the requirements of operations are provided at the right time and place and in the right quantities. This is the task of the Air Divisional Headquarters, *Hikōshidan Shireibu*, which not only originates operational orders to flying units, but is responsible for the construction, serviceability and defence of airfields, for supplies, maintenance and repairs; and for signals and meteorological services to make the performance of these orders possible.

3. Air Divisional Headquarters consists of a staff of some 250, divided into sub-sections as is customary, each of which is responsible to the C.O., a Lieutenant-General, for a particular aspect of the work, viz. Operations, Intelligence, Administration, Intendance, Medical Services and Ordnance. Three Headquarters Platoons are attached to Air Divisional Headquarters:—

- (a) A Flight Platoon, consisting of a staff of 25 aircrew personnel with five aircraft, viz. the C.O.'s plane, 2 liaison and 2 transport aircraft.
- (b) A Headquarters Signals Platoon comprising the Regimental Headquarters of—
 - (i) the Air Signals Regiment, *Tsūshin Rentai*, of the Air Division;
 - (ii) the Navigational Aid Regiment or Unit, *Kōsoku (Ren) tai* of the Air Division;
 - (iii) the Air Reporting Regiment or Unit, *Kōkū Jōhō (Ren) tai*, of the Air Division.

These signals regiments or signals units are organised into companies, platoons and detachments and distributed among the subordinate commands (Air Brigade and Air Sector Headquarters) and the flying and ground units as described in Chapter 10.

- (c) A Field Meteorological Headquarters Platoon (under Regimental Headquarters at Air Army Headquarters) the units of which are similarly deployed as described in Chapter 11.

An Independent Reconnaissance Squadron is usually attached to Air Divisional Headquarters.

4. An Air Division, like an Air Sector, is a territorial command. Map No. 2 shows the territory covered by the 5th and 9th Air Divisions, and those of the Air Sectors comprising these Divisions on the administrative side.

5. Air Divisional Headquarters are located at a convenient centre from which to direct ground organisation, as well as flying operations and training, *e.g.*,

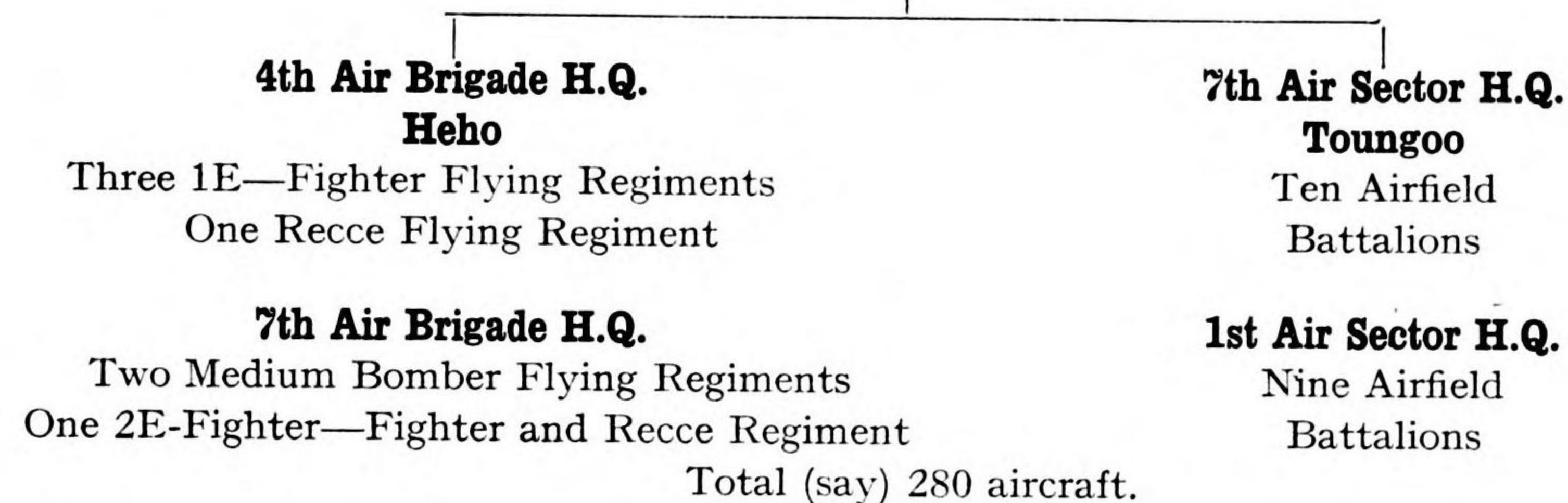
- 2nd Air Divisional Headquarters, Clarkfield.
- 5th Air Divisional Headquarters, Rangoon.
- 7th Air Divisional Headquarters, Macassar.
- 9th Air Divisional Headquarters, Palembang.

The Air Division may have a Battle Headquarters at a more advanced location for supervising operations, the departments directing ground organisation remaining in the rear or at a port.

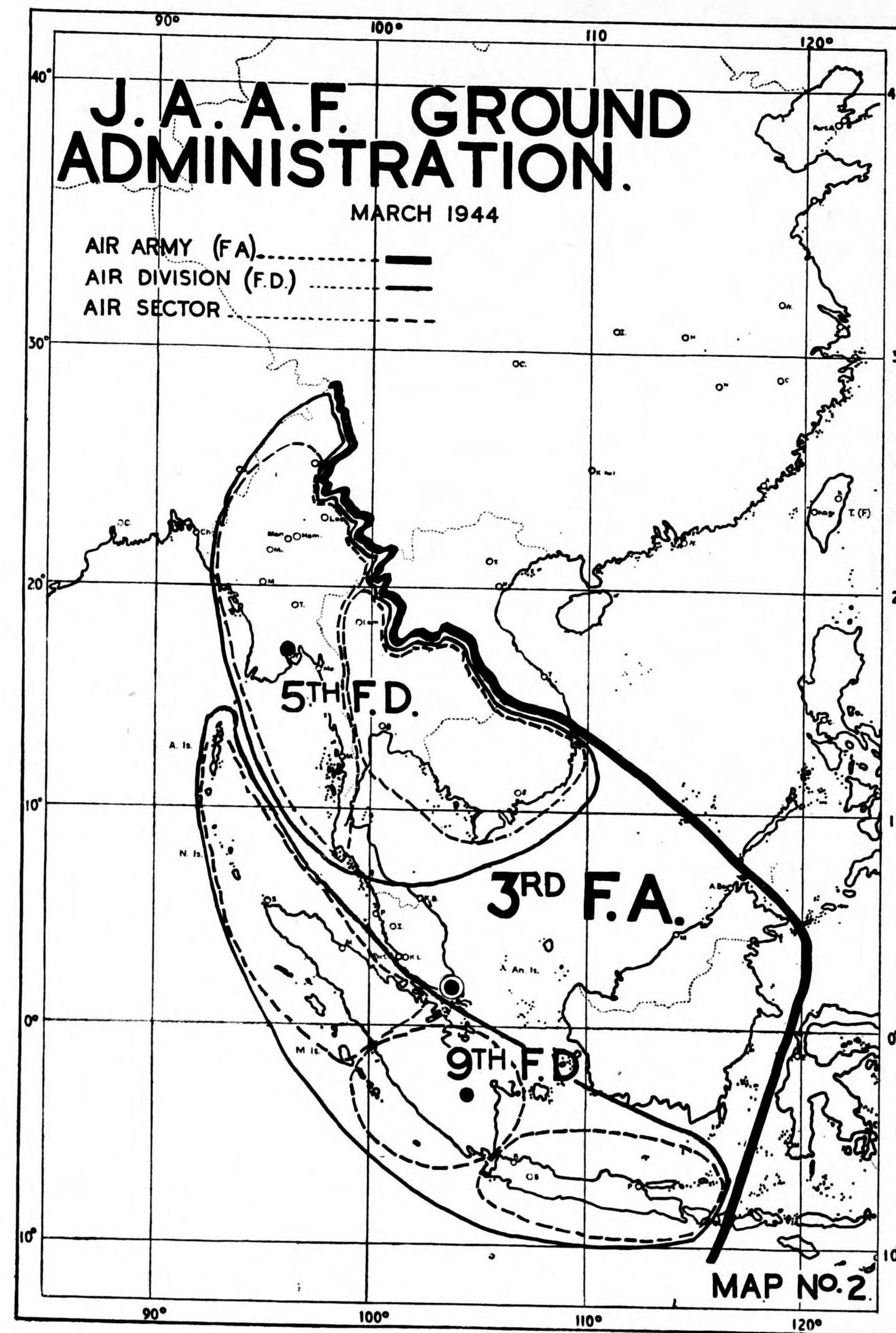
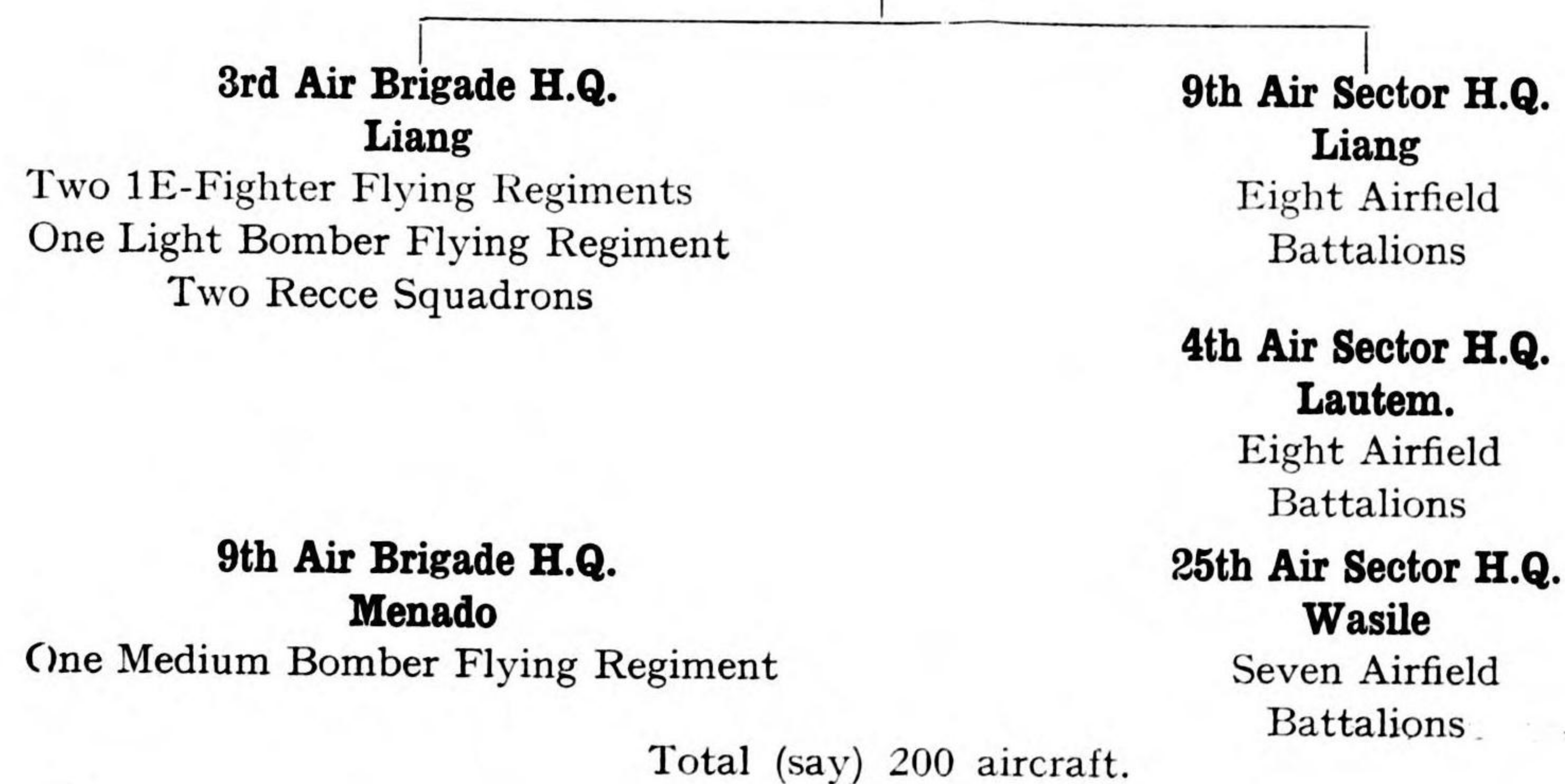
6. The forces at the disposal of Air Divisional Headquarters depend on the task it is to undertake. An Air Division has no fixed size. Its battle order varies according to the requirements of the campaign. In strength of aircraft the Air Division commonly disposes of 250 to 300 planes in an active division, disregarding its training units.

The following are examples of the composition of the principal forces of the 5th and 7th Air Divisions in the first half of 1944 :—

**5TH AIR DIVISIONAL H.Q.
Rangoon.**



**7TH AIR DIVISIONAL H.Q.
Macassar.**



7. An Air Division may direct operations without the assistance of an Air Brigade Staff. The 9th Air Division, Headquarters Palembang, is concerned almost entirely with fighter protection of installations in Sumatra, and with convoy and reconnaissance duties. It conducts these operations directly. An Air Brigade is essentially a tactical command for army co-operation and has long been unnecessary in Sumatra.

8. On the other hand an Air Division may be exclusively concerned with ground organisation. Until the early summer of 1944 there were only weak Army Air Forces in the Philippines. Thereafter J.A.A.F. strength was built up into a considerable force. Two Air Divisional Commands were then sent from Manchuria to the Philippines, one, the 4th, to direct the ground organisation in these islands working through nine Air Sector Headquarters, and the other, the 2nd, to direct the operations of six Air Brigades totalling some 500 aircraft.

The parallel with the Luftgau and Fliegerkorps organisation of the German Air Forces is remarkable in this plan. It has been adopted nowhere else in the Japanese Air Force.

9. Certain essential supply, maintenance and repair units, which must by their nature be semi-permanently located at fixed spots, are directly controlled by Air Divisional Headquarters, and do not usually form part of the Air Sector Forces. These are :—

- (a) one or more Field Air Repair Depots for the repair of aircraft belonging to the Air Division ;
- (b) one or more Field Air Supply Depots for the supply of bombs, ammunition and aircraft fuel to airfields in the Air Division.

10. Other units which are usually part of the Army Order of Battle may be subordinated to the Air Division. These are :—

- (a) Airfield Construction Companies.
- (b) Land Duty Units, for supplying the labour at J.A.A.F. Shipping Transport Depots and at J.A.A.F. Supply Depots.
- (c) Air Defence Units.

Air Divisional Headquarters may detach these units to the Air Sector Headquarters, and in a similar manner may detach units of the Field Air Repair Depot, viz. Mobile Repair Platoons, to the Air Sector Headquarters, so that they may become part of the Air Sector Forces.

11. The Air Division issues the following orders and makes the following reports :—

- (a) Operational orders (flying) to the Air Brigade Headquarters.
- (b) Operational orders (ground) to the Air Sector Headquarters.
- (c) Ordnance orders to the Field Air Repair Depot relating to the delivery of replacement aircraft to units or repair of the aircraft belonging to the Division.
- (d) Ordnance reports to Air Army Headquarters and to Tokyo relating to aircraft strength and to stocks of supplies.
- (e) Activity and Intelligence reports to Air Army Headquarters and to Tokyo.

CHAPTER 8

The Air Army

1. The Air Forces co-operating with the Japanese Army in the campaigns in early 1942 were essentially small tactical formations engaged in reconnaissance and close support of ground forces. They were Air Divisions taking their orders from the Army. At this date no higher command than an Air Division had been found necessary either in Japan proper or overseas.

2. The territorial gains of 1942 had, however, to be defended. This meant that Japanese forces had to be maintained overseas indefinitely and their strength increased to meet inevitable Allied attacks, a very different problem from that of over-running territory ill-prepared to defend itself. A command suitable for tactical operations in support of an army would need strengthening if it was to be responsible also for supplies and replacements reaching its units from Japan, during a long period of occupation and open to unceasing attack.

3. In consequence, the Japanese set up five new commands, known as Air Army Headquarters, *Kōkūgun Shireibu*, at the strategic centres of five principal areas into which they divided the occupied territories of Eastern Asia. The result of this and of the delimitation of these territories is shown in Maps Nos. 5 to 9 on pages 70 to 79, and particularly in Map No. 9 which represents the disposition of Air Army and Air Divisional Commands in the summer of 1944.

4. Three of the new Command Headquarters were set up during the summer of 1942, viz. :—

The 1st Air Army Headquarters at Tokyo.

The 2nd Air Army Headquarters at Hsingking.

The 3rd Air Army Headquarters at Singapore.

The 4th was established in New Guinea early in 1943, and the 5th in Nanking probably not until the beginning of 1944.

5. An Air Army Headquarters Staff is similar in its internal organisation to that of an Air Division, consisting of the following sections : operations, adjutant, legal, intendance, medical and ordnance, with intelligence as part of operations. The personnel strength of Air Army Headquarters may be 450 under a Lieutenant-General.

6. There are three Headquarters platoons attached to Air Army Headquarters, viz. :—

- (a) A Headquarters Flight, consisting of two or three liaison aircraft and two or three transport aircraft with aircrews.
- (b) The Regimental Headquarters Platoon of the Meteorological Regiment responsible for the weather service throughout the territory of the Air Army.
- (c) The Signals Headquarters, *Tsūshin Shireibu*, responsible for the J.A.A.F. Signals Communications throughout the territory of the Air Army.

A Squadron or Flying Regiment may also be attached to Air Army Headquarters for air reconnaissance.

7. Air Army Headquarters is responsible for all matters relating to the air force under its command. In consequence the duties of Air Army Headquarters have four principal aspects :—

- (a) co-operation with the Japanese Army : both the Army and the Air Army receive their orders from the principal Area Army of the area. For instance the Southern Area Army, which is in charge of the Japanese Armies in S.E. Asia, controls the 3rd and 4th Air Armies.
- (b) negotiation with Army Air Headquarters, *Rikugun, Kōkū Hombu*, and its subordinate departments in Tokyo for the requirements in personnel, equipment and supplies, for the units under its command.
- (c) direction of the strategic employment of the air forces in its territory both as to flying operations and as to ground administration.
- (d) direction of flying training within its area.

8. Air Army Headquarters issues orders to the Air Divisional Headquarters subordinate to it. The preoccupation of the higher of these two staffs with the plans of the Area Army, and with negotiations with Japan for supplies and reinforcements, frees the Air Divisional Headquarters to a large extent to concentrate on operational problems within the Air Division.

9. An Air Army Headquarters may direct part of its flying forces through an Air Divisional Headquarters and the remainder directly ; this happened in New Guinea in the early part of 1944 when the 4th Air Army controlled the units of three Air Brigades, through the 6th Air Divisional Headquarters at Wewak and one Air Brigade directly. On the other hand an Air Army Headquarters may direct the ground organisation of an area without the intervention of the Air Division. This appears to be the course adopted in the area of the 3rd Air Army in regard to the ground administration of Borneo. (See Map No. 2.)

10. Since Air Divisional and Air Army Headquarters are both staffed to deal with flying operations as well as ground administration, one can replace the other in given circumstances as the two examples in the previous paragraph show. The best example is provided however by the 3rd Air Division, located at Nanking which was promoted to Air Army status in January, 1944, becoming the 5th Air Army. Up till that date the 3rd Air Division was responsible for the J.A.A.F. in China. After its promotion it continued to direct flying operations and manage the ground organisation in China, without a subordinate Air Divisional Staff, and to act as an Air Army Headquarters in respect of its duties of supplying its units from Japan, and co-operating with the ground Army.

11. The battle order of an Air Army incorporates those of the Air Divisions subordinate to it. A typical battle order for an Air Division is given in the previous chapter. In addition to the units in the battle order of an Air Division, that of the Air Army includes units whose activities cover the whole area and are not confined to the Air Division, the Signals and Meteorological Headquarters for instance referred to in para. 6.

12. The 1st Air Army, Headquarters, Tokyo, and in some respects the 2nd Air Army, Hsingking, stand apart from the other three where fighting is taking place. They are chiefly concerned with training and provide reserves of trained personnel and organised units.

The 1st Air Army is responsible in part for the Air Defence of Japan, but it has other duties which have been its principal concern since its formation. These may be summarised as follows :—

- (a) training aircrews and ground personnel ;
- (b) forming new units ;
- (c) conducting manœuvres with comprehensive forces, for training purposes ;
- (d) supplying new units to J.A.A.F. Commands overseas ;
- (e) providing replacements of personnel to maintain the strength of existing units overseas ;
- (f) receiving into its organisation flying and ground units returning to Japan to rest and refit.

CHAPTER 9

Headquarters Organisation

1. The personnel comprised in an Air Army, which may amount to 100,000, is organised into flying and ground units of various kinds. The units are grouped under appropriate commands or headquarters staffs ; flying units in the main come under Air Brigade Headquarters Staffs and ground units in the main under Air Sector Headquarters Staffs. The staffs are responsible for the operations and preparedness of the units they direct.

2. An Air Brigade Headquarters Staff is responsible for the issue of detailed operational orders to flying units, while an Air Sector Headquarters Staff issues complementary orders relating to the ground organisation which make the flying operations possible. The Air Divisional Headquarters Staff co-ordinates these activities, holding both reins. This ensures that operations on the one hand and supplies and airfield facilities on the other hand are kept in line.

The highest Air Command in the field is the Air Army Headquarters Staff which is responsible for the whole activity of the airforce in its territory, as well as for constant contact with the Departments in Tokyo.

3. Each headquarters staff has an essentially similar organisation, the principal aspects of which are given in the following table. Column I gives the Departments at Army Air Headquarters in Tokyo. Columns II and III give the customary sections at Command Headquarters with their functions, where these are not self-evident.

I Department at Air H.Q. Tokyo	II Sections of H.Q. Staffs	III Principal Duties
General Staff	Operations	Operational orders Intelligence
Air Inspectorate General	Adjutant Legal	Training Personnel
Directorate of Field Intendance	Intendance	Discipline, courts martial Administration ; accounts and pay, food ; clothing and accommodation ; works.
Army Medical Dept. Directorate of Field Air Ordnance	Medical Ordnance	Aircraft, aircraft main- tenance, aircraft fuel, ammunition bombs, etc.
Army Meteorological Dept. Directorate of Air Signals	Meteorology Signals	Signals communications, aircraft safety, aircraft reporting, etc.

The Operations Section of the Headquarters Staff includes the head of each of the other sections upon which operations principally depend, viz., Chief of Air Ordnance, the Signals Officer and Meteorologist to advise the Officer Commanding the Headquarters Staff and his Operations Section.

6. The personnel strength at Staff Headquarters depends upon the scope of the work, which has been described in previous chapters. As originally planned Air Army Headquarters should have an establishment of 250, Air Divisional H.Q. 233, Air Brigade H.Q., 133 and Air Sector Headquarters, 48 only. Practical figures are nearer 450, 250, 150 and 120, exclusive of attached Headquarters platoons to deal with Signals and Meteorology and to provide Headquarters liaison and transport flights.

7. The respective sections of the higher command are represented in the lower by fewer men, generally of lower rank. Even in headquarters with different principal functions, e.g. Air Brigade and Air Sector Headquarters, the same principal sections are present, but the establishment in each differs according to importance of the work of each section. Upgrading a command, for example, from Air Division to Air Army status, as happened when the 3rd Air Division became the 5th Air Army, involves upgrading and filling out the establishment of existing sections.

8. Each *unit* possesses a headquarters staff which reproduces on a small scale the departments of its higher command. Thus a flying regiment with 350 men, possesses a headquarters platoon with an operations section under the commanding officer of the regiment, an ordnance officer in charge of aircraft, bombs and fuel, an M.O., signals and meteorological officers. Similarly an Airfield Battalion, the best known of the ground units, has headquarters staff organised on exactly similar lines. (See page 16.)

9. The requirements of units are indented for, or reports made, through the appropriate officer, N.C.O. or man in charge at the Headquarters platoon of the unit, to the corresponding department at command headquarters. If necessary the indent for requirements of a unit will pass through the chain of command, each time through the corresponding section until it reaches the appropriate Department in Tokyo. Requirements of new aircraft for instance are collected from units through Brigade Headquarters by the Air Divisional Headquarters (Ordnance) and forwarded by the Air Army Headquarters Ordnance as an indent for its monthly quota of replacements to the Directorate of Field Air Ordnance, *Yasen Kōkū Heiki Chōkambu*.

10. In the reverse direction orders from the General Staff and the Departments of Air Headquarters pass through the appropriate channels described above, until they reach units in their appropriate form.

11. Operational orders from the General Staff Operations Department, for instance, would take the form of general directives, and become more precise as they are implemented at lower levels of the operational departments, until at Air Brigade level they take the form of exact instructions for a specific order which the C.O. of the units receiving them attends to in detail.

12. The organisation described above provides that the whole activities of the Air Force in all its aspects are controlled through appropriately organised staffs no matter whether they refer to the provision of food and shelter or to the specific kind of activity for which the unit was created.

CHAPTER 10

Signals Communications

1. **Signals Regiments.** Most of the tasks which fall to a signals organisation in an air force are carried out in the Japanese Army Air Force by four types of specialist regiments. These are as follows :—

Type of Regiment	Duties
(a) Air Route Regiment <i>Kōkūro Rentai</i>	Navigational aid over main air routes.
(b) Navigational Aid Regiment <i>Kōsoku Rentai</i>	Navigational aid in operational areas.
(c) Air Reporting Regiment <i>Kōkū Jōhō Rentai</i>	Reporting of enemy aircraft and interception of enemy radio communication.
(d) Air Signals Regiment <i>Kōkū Tsūshin Rentai</i>	General communications duties by land-line and radio.

The functions of these units will be explained in more detail in paragraphs 5 to 8, but it is first necessary to show how they fit into the framework of the J.A.A.F. organisation.

2. **The Place of the Signals Units in the Organisation of the J.A.A.F.** Each Air Division in an operational theatre has a Navigational Aid Regiment, an Air Signals Regiment and one or more Air Reporting Regiments, to provide its signals service. The Air Route Regiment, however, is on a different footing; as it deals with the main air routes from Japan to the operational theatres its work extends beyond the area of any particular Air Division, and it is, therefore, directly under the Air Route Department of the Air Army.

The various specialist signals regiments in an Air Army make up a Signals Brigade, *Tsūshindan*, under a Signals Headquarters, *Tsūshin Shireibu*, which is responsible to the Directorate of Air Signals, *Kōkū Tsūshin Hombu*, at Army Air Headquarters, Tokyo.

3. **Subdivisions of the Regiments.** The internal organisation of a signals regiment follows a general pattern, though allowance must be made for variations due to the special functions of the different regiments. Each regiment is made up of specialist companies, *chūtai*, and these in turn of platoons, *shōtai*, each comprising many sections, *buntai*. For example, an Air Reporting Regiment consisting of 650 officers, N.C.O.'s and men would be made up of a headquarters staff of 50 and three companies of 200 apiece, each with a headquarters staff of 20 and four platoons of 45, divided into sections under a small platoon headquarters. The section would consist of from 4 to 8 men working together. The Regiment in this instance is thus seen to be divided into some 70 or 80 sections. The commanding officer of the regiment is normally a Lieutenant-Colonel, while the companies are commanded by a 1st Lieutenant, and the platoons by 2nd Lieutenants; the sections are in the charge of an N.C.O.

The specialisation of the companies within the Regiment is illustrated in the Air Signals Regiment, which may have six companies, two of which, *Musen Chūtai*, specialise in radio communication, and four, *Yūsen Chūtai*, in land-line work. Other examples of specialisation will be met when the functions of the different regiments are discussed.

4. **Deployment of the Regiments.** The sections of each regiment, grouped under company and platoon headquarters are distributed over its area of operation, which (except in the case of the Air Route Regiment) will be that of the Air Division. The sections will usually be working on or near airfields, and at any airfield there may be sections of the different kinds of regiment, each performing its special task. The nature of signals work involves the closest co-operation with operational units, and the various signals headquarters work in collaboration with, and indeed form an integral part of the corresponding operational headquarters. This relationship appears at all levels, from platoon and company headquarters right up to the Signals Brigade Headquarters which is a constituent of the headquarters of the Air Army.

5. **Functions of the Air Route Regiment.** The Air Route Regiment performs duties which extend beyond signals communications, but in this chapter its signals duties alone are considered. On the signals side, the Regiment provides navigational aid along the main air routes from Japan to the active theatres, which are followed by transport aircraft and aircraft being ferried out as replacements. These routes are five in number :—

- (a) from Japan to Manila and to the airfields in the area of the 3rd Air Army.
- (b) from Japan to Manila and to the airfields in the area of the 4th Air Army.
- (c) from Japan northwards to Obihiro in the area of the 1st Air Army.
- (d) from Japan to Mukden and Hsingking in the area of the 2nd Air Army.
- (e) from Japan to China, in the area of the 5th Air Army.

The signals duties of the Air Route Regiment are carried out by its Safety Companies, *Hoan Chūtai*, the sections of which are distributed over the airfields along the route. On the southern routes one Safety Company serves an area the size of an Air Division. For instance, the 2nd Safety Company of the 1st Air Route Regiment operates over the area of the 5th Air Division. Within its area, the Safety Company is responsible for the safety of transport and ferried aircraft, which it takes over from the Company operating in the neighbouring Safety Area. The presence of Air Route personnel on airfields in active areas is accounted for by their non-signals duties.

The navigational aids provided by the units of the regiment may be summarized as follows :—

- (a) operation of D/F stations and ground-air radio stations, and also of other navigational installations such as radio beacons and blind-landing equipment.
- (b) passing of positions, weather reports and other information to aircraft in flight, and maintenance of a listening watch for signals from aircraft on the route.
- (c) maintenance of a ground-to-ground radio communications network for reporting aircraft movements. This network is also used for routine reports to Japan and other purposes not directly connected with navigational aid.

6. **Functions of the Navigational Aid Regiment.** The Navigational Aid Regiment and the Air Route Regiment are to some extent complementary to each other, the Air Route Regiment being responsible for aircraft safety on the main routes, while the Navigational Aid Regiment performs a similar service in operational areas. Its duties and equipment, therefore, are very like those of the Air Route Regiment, which are set out in paragraph 5.

In peace-time the Navigation Aid Unit, *Kōsokutai* formed a company of the Air Reporting Regiment. But in war the two are separate, one concentrating on its own aircraft, and the other on the movements of enemy aircraft.

7. **Functions of the Air Reporting Regiment, *Kōkū Jōhō Rentai*.** The principal duty of the Air Reporting Regiment is to watch for enemy aircraft and report their movements. Three methods are employed—visual observation, sound locators, and radar—and the different companies within the Regiment specialise in one or other of these methods.

The visual observation posts are manned by a section of six or seven men under an N.C.O. These include wireless operators who work the sets by which reports on enemy aircraft are passed back to platoon and company headquarters. Reports are made in code by W/T, giving the number of aircraft, type, height and direction of flight. Headquarters notifies the Air Brigade Headquarters and A.A. units by telephone or W/T. All the members of the section take part in the work of "spotting." No mechanical aids are provided, except a telescope or a pair of binoculars and, although a little training is given, the standard of aircraft recognition does not seem high. The Sergeant in charge of one observation post in Burma thought that a Spitfire had two engines.

Radar is in the hands of the Special Warning Companies, *Tokushu Keikai Chūtai*, of the Air Reporting Regiments. The Japanese Army Air Force had lagged behind the Navy in the use of both ground and airborne radar, but it is now developing a number of new types under German influence. Both fixed and mobile types of long range warning radar are in existence.

In addition to its aircraft-reporting activities, the Air Reporting Regiment has certain subsidiary functions. Company and regimental headquarters make statistical analyses of Allied air effort and study our methods: the observation posts report local weather conditions for the meteorological units, though they do not use any meteorological instruments: *Jōhō* personnel inspect crashed Allied aircraft, in order to collect code-books and information about wireless equipment and armament; and, finally, certain companies specialise in the interception of Allied radio communication.

8. **Functions of the Air Signals Regiment.** The Air Signals Regiment is concerned with "Signals" in the strict sense. It instals, maintains and operates both wireless and land-line communications systems, and it is generally responsible for communications between the units within the Air Division, and between the Division and the units outside it.

The special functions of the Air Signals Regiment entail some departure from the normal regimental pattern which has been described above. The usual form of specialisation by companies occurs in the Regiment: the land-line and radio companies have already been mentioned in paragraph 3. In addition, however, the Regiments control subordinate units known as Fixed Air Signals Units, *Kōkū Kotei Tsūshintai*, which operate permanent wireless stations at the principal centres, e.g. Singapore, Manila and Sabang.

Each Regiment has a Materiel Depot, *Zai Ryō Shō*, supplied from the J.A.A.F. Depots of the Director of Field Air Ordnance, from which it obtains the equipment needed for installation and maintenance. For maintenance it has a Signals Maintenance Unit, *Tsūshin Seibitai*, and Mobile Repair Platoons, *Idō Shūrihan*, attached to Regimental Headquarters.

9. **Control of aircraft on operations.** Aircraft on operations are controlled through the Air Ground Wireless Unit, *Taikū Musentai*, consisting of technicians. Like other signals units, this is divided into sections. A section operates the transmitters for communication between a Control

Centre and aircraft on operations. Presumably the procedure of control would be as follows. The controller would have before him a representation of the position of enemy aircraft provided by the Air Reporting service in his area, and, so far as friendly aircraft are concerned, by the Navigational Aid services. This would provide him with the information he would need to direct the aircraft he is controlling. He would pass information and directions by radio telephone through the Air Ground Wireless Unit to the aircraft in flight. The course of friendly aircraft on such operations would be followed by Navigational Aid stations, but they would not intervene in the traffic unless their services were urgently needed.

CHAPTER 11

Meteorology

To avoid repetition in the second half of the book, this chapter includes an account of the organisation of both Army and Navy Meteorological Services.

1. **Japanese Meteorological Services.** The Japanese Army and Navy maintain two separate meteorological services which work closely together. The meteorological service of the J.A.A.F. is part of the Japanese Army Meteorological Service, and similarly that of the J.N.A.F. is part of the Navy Meteorological Service.

2. On each J.A.A.F. airfield, there is a meteorological unit which forms part of the Airfield Battalion, just as in the J.N.A.F. it forms part of the Air Group.

3. The chief duty of the meteorological unit is to provide the C.O. of the flying unit occupying the airfield with weather forecasts for flights. A subsidiary duty is to notify aircraft in flight of meteorological dangers.

4. To perform these duties the meteorological unit must

(a) maintain listening watches for weather broadcasts from the "international" centre, Tokyo, as well as for those from the chief meteorological broadcasting station of the Air Army in its own area, or from that of the Area Fleet of its area, as the case may be.

(b) make regular meteorological observations, and report them to "regional" centres.

Without these activities units on the airfields would be unable to make forecasts.

5. **Synoptic Charts.** Weather forecasting is based on the construction of weather maps, or synoptic charts. Observations for this purpose must be made simultaneously at a large number of stations over a wide area, and communicated to collecting centres by W/T or by land line and then rebroadcast as "collective" messages. The stations which report observations are those on airfields, or others established at convenient positions from the meteorological point of view. The Army and Navy co-operate in reporting to the appropriate collecting centres. The Army is responsible for reports from stations in the principal land areas while the Navy takes charge of reports from airfields on the Pacific Islands. Both co-operate in regions where their activities clearly overlap as in New Guinea, the Philippines and China Coast, etc.

6. Collecting centres broadcast the reports they receive as "collective messages" for reception by the contributing stations, as well as by other collecting centres. On the basis of the broadcasts from such centres, meteorologists on airfields prepare synoptic charts from which, with their own observations, they are able to make forecasts.

7. Codes are used for convenience and brevity in transmitting meteorological observations, which in wartime are made as secret as possible. Each meteorological reporting station is referred to by an identifying number.

8. **J.A.A.F. Meteorological System.** A military organisation covering a wide territory provides a suitable framework for a meteorological system. The following diagram shows for instance the organisation of the J.A.A.F. meteorological system in its relation to that of J.A.A.F. Commands.

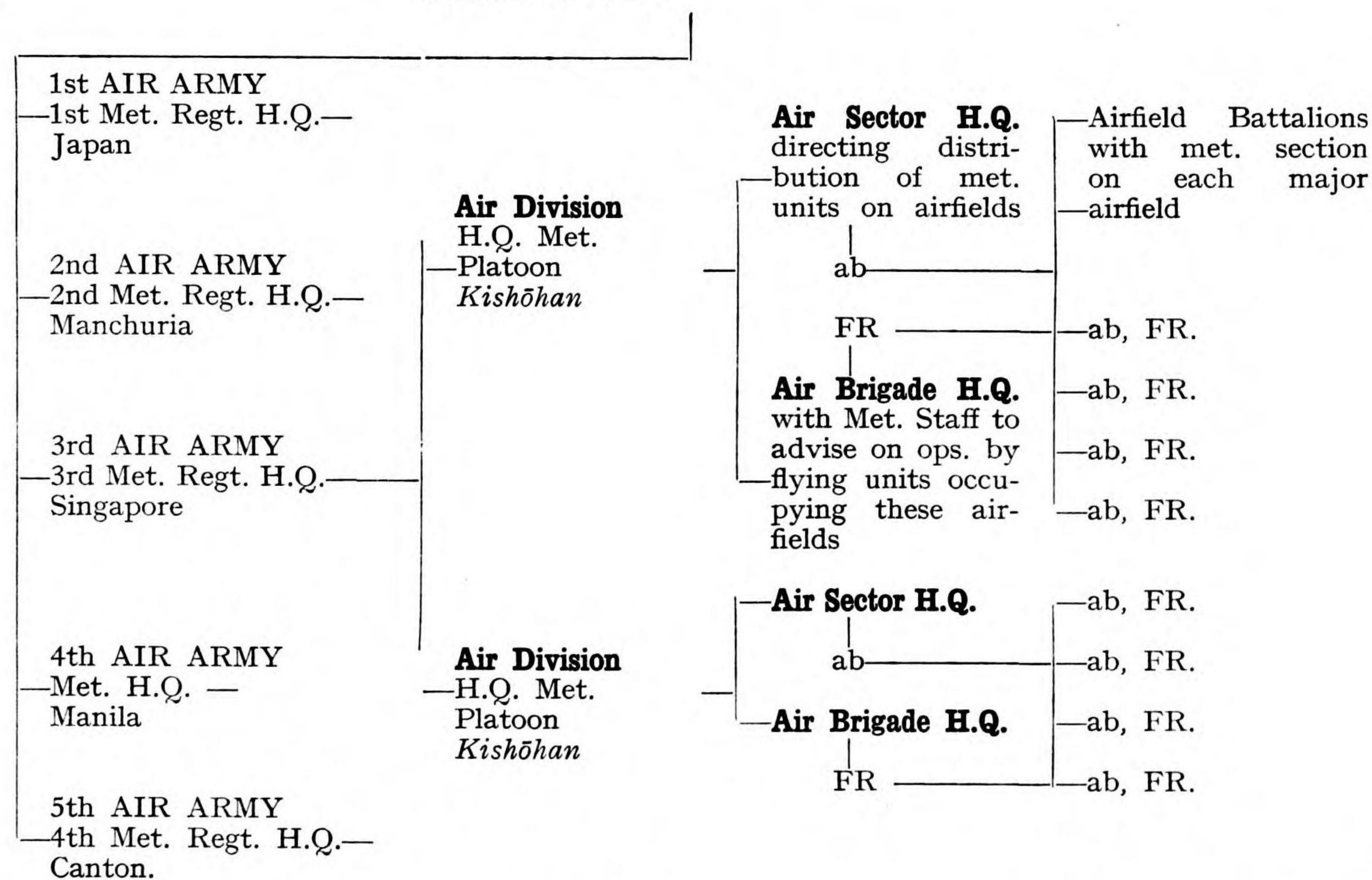
ARMY CENTRAL METEOROLOGICAL DEPARTMENT.

Rikugun Chūō Kishōbu

TOKYO

“ International Centre ”

Collects reports from “ national ” centres and broadcasts data for Japan and international areas.



“ National ” Centres collect reports from “ regional ” centres and broadcast data for area of Air Army.

“ Regional ” Centres collect reports from reporting stations mainly on airfields and broadcast data for the region.

Reporting Stations. Met. sections on airfields report to Regional centres, listen in, but do not broadcast. Their function is advisory to C.O.

9. Each Air Army has an appropriately equipped Meteorological Regiment to carry out the meteorological duties in its area of operations. Its Regimental Headquarters Staff controls the whole J.A.A.F. meteorological organisation in the Air Army area. The regiment is divided into companies, *chūtai*, platoons, *shōtai*, and smaller units. Additional companies sent out from Japan or Manchuria in units, *Kishōtai*, of several companies may be subordinated to Regimental

Headquarters. Sometimes a number of companies subordinated to Regimental Headquarters may be formed into a *daitai*, so that there may be two or more *daitai* under Regimental Headquarters, each composed of several companies.

10. Meteorological Regiments provide staffs

- (a) at the various headquarters subordinate to the Air Army, and
- (b) on airfields, forming part of the Airfield Battalion.

11. The Meteorological section of an Airfield Battalion on an airfield consists of 8-10 men in three categories :—

- (a) W/T operators who maintain listening watches for the broadcasts necessary for the work of the meteorological station or send out encoded observations ;
- (b) encoders and decoders ;
- (c) meteorological personnel capable of constructing and interpreting weather maps.

The total strength of a Meteorological Regiment runs into many hundreds, especially if strengthened by additional Meteorological Units, *Kishōtai*, which may themselves consist of three or four hundred men.

12. **J.N.A.F. Meteorological System.** A diagram for the Navy similar to that on page 36 for the Army, would show :

- (a) The Navy Meteorological Department, Tokyo as the “ International Centre.”
- (b) The Meteorological Departments of the Area Fleets and their subordinate Air Fleets viz.

North East Area Fleet.
(Central Pacific Area Fleet).
China Area Fleet.
South East Area Fleet.
South West Area Fleet.

as the equivalents in status of the “ National Centres ” each covering a defined area of the Pacific Ocean (See Map No. 10, page 85).

- (c) Air Flotilla Headquarters, Meteorological Departments, as equivalent of Regional Centres.
- (d) Air Group Meteorological Sections as Reporting Stations on Airfields.

13. The Naval Meteorological System is similar as regards the provision of personnel. The wide stretches of the Pacific which the Japanese Navy had temporarily under its control, were divided into areas, and each area patrolled by an Area Fleet. There were at the time of the maximum expansion five such Area Fleets viz. North East, South East, South West, Central Pacific and China Area Fleets which together covered the whole of the Western Pacific Ocean north of Australia.

14. A numbered meteorological unit forms part of the attached forces of an Area Fleet : e.g. No. 4 Meteorological Unit, Headquarters, Truk, formed part of the attached force of the Central Pacific Area Fleet, and was responsible for the meteorological service of this area. No. 8 Meteorological Unit similarly, was attached to Rabaul, the Headquarters of the South East Area Fleet. Detachments from such units are distributed on islands throughout their area for the purpose of weather reporting. It is possible that these units provide a service, originally civilian, *additional* to that provided by the J.N.A.F. If this is so the meteorological personnel forming the weather section, *Kishō buntai*, of an Air Group, and the Meteorological staffs at Air flotilla and Air Fleet Head-

quarters would not be derived from the numbered Meteorological unit attached to the Area Fleet but would supplement them.

15. **Equipment and Methods.** Japanese meteorological stations are equipped with the customary apparatus for weather observations, including, at important centres, radiosonde for the investigation of conditions in the upper air. A radiosonde is essentially a small W/T transmitter carried upwards at a constant speed by a free balloon. Connected to the controls of the transmitter are meteorological instruments for measuring pressure, temperature and humidity. Signals are transmitted at fixed intervals of time and from the characteristics of the signals the readings of the meteorological instruments can be deduced.

Data is also provided by meteorological flights, which may be of several hours duration.

Meteorological observations made without instruments are also available on most J.A.A.F. airfields from the detachment of the Air Reporting Regiment at the airfield which has observation posts throughout the area.

16. A Japanese meteorological station is equipped with a W/T receiver for listening in to broadcasts, and with an appropriate transmitter to report its own observations or, in the case of a "regional" or still more important centre, to make collective broadcasts.

17. The Japanese employ the modern methods developed by Norwegian meteorologists for defining the positions of polar and warm fronts prior to making weather forecasts. They recognise the importance of a good meteorological service, and have flown meteorological personnel into battle areas when that has been necessary.

18. During flights, aircraft seek meteorological information or are warned of meteorological dangers by detachments of the Safety Companies, *Hoan Chūtai*, of the Air Route Regiments which are present on airfields along the main air traffic routes; or in operational theatres by detachments of Navigational Aid Regiments, *Kōsoku Rentai*.

These are Signals units which operate wireless and D/F stations mainly on J.A.A.F. airfields. Meteorological stations on the airfields keep them informed of dangers arising from changes in the weather or provide them with specific meteorological information when they ask for it.

CHAPTER 12

Allocation, Storage and Distribution of Aircraft and Aircraft Equipment.

1. **Equipment and Supplies.** The requirements of an Air Force are suitably classed as (a) air equipment or (b) air supplies. Air equipment includes aircraft, aircraft parts, aircraft accessories, and airfield installations. Air supplies refer to expendable goods such as aircraft fuel, bombs and ammunition.

2. **Air Depots.** Equipment and supplies for the Japanese Army Air Force are manufactured to the specifications of the Department of the Director of Field Air Ordnance, *Yasen Kōkū Heiki Chōkambu*. On delivery their storage comes under the control of this Department, subordinate to which are five or more Army Air Depots, *Rikugun Kōkū Shō*, in Japan named after the towns in which they are located, and six outside Japan. The most important in Japan are at Tachikawa, Tachiarai, Utsunomiya, Kagamigahara, and Osaka, while others are located as follows: one in Manchuria at Mukden, one in Korea at Heijo, two in China at Hankow and Hongkong, one in Formosa at Heito, and one, up till the end of 1944, in the Philippines at Manila.

3. The J.A.A.F. Depot at Manila was the only one in the S.W. Pacific. It was the establishment to which all the units in the Southern Air Armies turned for their requirements and was consequently of outstanding importance.

4. Each J.A.A.F. Depot has branches, *bunshō*, in its surrounding territory. The Manila Air Depot for instance had branches in the Philippines, Halmahera Islands, Ceram and elsewhere. The branches hold a particular range of equipment; or may be ammunition depots or depots for aircraft fuel.

5. Each J.A.A.F. Depot is organised to be able to supply the following equipment and supplies:—

- | | |
|--------------------------------------|--|
| (a) complete aircraft. | (f) signals equipment. |
| (b) aircraft equipment. | (g) chemicals and photographic materials. |
| (c) airframe components. | (h) aircraft fuel and lubricants. |
| (d) aircraft engines and propellers. | (i) machine guns, small arms and a/c ammunition. |
| (e) airfield equipment and tools. | (j) bombs and torpedoes. |

6. Each Air Depot has facilities for equipping new aircraft, and for overhauling, repairing or dismantling worn or damaged aircraft. The repair facilities at the Air Depots may be considerable. Repairs to aircraft belonging to Air Armies in the south constituted a large part of the work of the Manila Air Depot. Aircraft, however, are occasionally returned from operational areas for overhaul to the Air Depots in Japan.

7. J.A.A.F. Depots form a link in the training organisation for technicians in the J.A.A.F. engineering service and a place of instruction where air crew and maintenance men may learn about new aircraft models. Repair, supply and maintenance men may not only receive training courses at the Air Depot, but may be organised, equipped and supplied there so as to form regular ground units of the J.A.A.F.

Field Air Repair Depots, Field Air Supply Depots and Independent Maintenance Units, *Dokuritsu Seibitai*, are the principal units formed in this way.

8. **Allocations of equipment and supplies** of all kinds held in Air Depots are made at regular intervals to the Army Air Forces in the Empire and overseas. There is little doubt that industrial production in so far as it is earmarked for Army Air purposes is completely distributed in this way.

9. As regards new aircraft, each of the five principal commands prepares a statement of its requirements based on indents which it collects from the Air Divisions, and from training units. The Divisions draw up their indents from the needs of individual flying units in the Air Brigades and of Independent Flying Units. The indent is made by the Air Ordnance Branch at Air Army Headquarters and is addressed to the Director of Field Air Ordnance in Tokyo.

10. On the basis of these competing indents, and of the plans of the General Staff with regard to the future operational activity of each Air Army, each Air Army is allotted its quota for the month according to types. These aircraft are assigned to the Air Army for transfer to the Air Division and Air Brigade to fulfil, as far as the quota will allow, the requirements of individual units. Similar monthly allocations of aircraft spares are made to Field Air Repair Depots.

11. Allocations of aircraft fuel also are made monthly. The quota is allotted to each Air Army in respect of its forthcoming operational, transport, ferrying and training requirements, and covers its requirements, in so far as production permits, of each grade of fuel used as well as of lubricants. Similar allocations of ammunition and bombs according to type are also made periodically to the principal commands. It may be pointed out that ordnance in the Japanese sense includes equipment and supplies. Bombs, ammunition and fuel are handled by the Supplies Department of the Air Depot.

12. The Ordnance Departments of the principal Air Headquarters maintain branches at the Air Depots from which they receive their aircraft, aircraft equipment and supplies, to supervise their interests. This was particularly true of Manila, since most of the replacement aircraft intended for units in the Air Armies in the south arrived at Clarkfield, and moreover many of their damaged aircraft went to the Manila Air Depot for repair and overhaul. The Air Division may also maintain a liaison office, *Renvaku Han*, at an Air Depot for a similar purpose.

13. **Deliveries from Air Depots** are made by rail, by ship or by air. Since many of the Air Depots are at ports, sea transport takes the bulk of the equipment and supplies.

14. **Ferrying Replacement Aircraft.** New aircraft, including fighter aircraft, allocated to commands are generally ferried, and it is the customary practice to use such ferried aircraft to transport equipment urgently needed by units in operational areas. The responsibility for ferrying aircraft from Air Depots to their destinations rests with the Army Air Transport Department, *Rikugun Kōkū Yusō Hombu*, in Tokyo. This authority has a branch at each Air Depot known as the Flight Department, *Hikōbu*, of the Air Transport Department at the Air Depot.

15. The actual ferrying is carried out under the direction of the Air Transport Department in one of three ways. The flying unit authorised to receive the aircraft may send pilots to the Air Depot in Japan, Manchukuo or elsewhere to take delivery, or aircrews fresh from their finishing courses at the schools and going overseas for further training or to join units, may ferry aircraft

to their destinations. Otherwise (and this is the customary procedure) pilots are supplied by ferrying units of the Air Transport Department. There are about a dozen such ferrying units, each consisting of several groups, *hentai*, of eight or ten pilots. When a delivery is to be made overseas, Army Air Transport Department informs the Air Army Headquarters of the number, type and time of departure of the aircraft and the name of the unit ferrying them. Ferry units possess a small number of transport aircraft which they use as leading aircraft on the outward flight to provide navigational facilities, and as a means for the return of the pilots to the Air Depot after the delivery is completed.

16. **The Air Route Department.** Ferry pilots use the navigational facilities provided by the Air Route Department of the Command through whose territory they are passing and make intermediate landings at airfields on these air routes.

Their needs on the journey are attended to by detachments of Duty Companies, *Kimmu chūtai*, of the Air Route Regiments which are located at the main airfields on the route. Airfield Headquarter Staffs, *Hikōjō Shireibu*, located on the main airfields organise the airfield facilities on the air routes. They are comparable with Air Sector Headquarter Staffs in operational areas.

17. **Equipment of New Aircraft for Operations.** New aircraft arriving at Manila still had to be equipped. This was carried out at the Air Depot and the aircraft then delivered to the airfield where the flying unit was based, by a ferry pilot belonging to the Air Transport Department attached to Manila, or by a pilot from the flying unit to which it was allocated. If the aircraft leaves the Air Depot without first being equipped for operations it may be flown to a Field Air Repair Depot for this purpose and when it is ready collected by pilots from the unit. This practice was not peculiar to Manila Air Depot but is also adopted in other areas.

18. Deliveries of equipment are often made in aircraft being ferried, or in transport aircraft of the ferry unit. In addition, an Air Depot has a number of transport aircraft on its establishment which it may employ to fulfil urgent requests for equipment, such as specified aircraft parts or accessories, aircraft fuel or ammunition.

19. **Fuel, Bombs and Ammunition.** Most J.A.A.F. Depots carry large stocks of aircraft fuel, amounting to several thousand tons. The principal refineries are not, however, near the Air Depots. Whether any fuel stocks in Singapore, Balikpapan or Sourabaya are held in J.A.A.F. installations from which units might be directly supplied, as is likely, is not known. The supply of aircraft fuel is normally from the refineries to the J.A.A.F. Depots and thence to the Field Air Supply Depots.

J.A.A.F. Depots also hold large stocks of aircraft ammunition, pyrotechnics and bombs from which commands draw their allotted supplies. The distribution to units is also through Field Air Supply Depots. A J.A.A.F. Depot must therefore include a large administrative staff dealing with the documents relating to receipt, stock-keeping and despatch of all equipment and supplies, as well as a number of separate and perhaps widely separated stores for the respective categories of goods which they handle, viz. aircraft, aircraft equipment, fuel, ammunition. The most southerly of the Air Depots was that at Manila. Delivery of aircraft equipment and supplies is generally made directly from the Air Depot to the Field Air Repair Depot or the Field Air Supply Depot. To provide centres more easily reached smaller Field Air Depots appear to have been established at Saigon, Singapore, in the Moluccas and at Rabaul. Similar Field Air Depots are located at convenient points in China and Manchuria.

20. The customary consignees of equipment and supplies from Air Depots are therefore as follows :—

- (a) aircraft equipment is forwarded by sea or air to Field Air Repair Depots, or it may occasionally be sent in the first instance to Field Air Depots.
- (b) aircraft fuel, ammunition and bombs are delivered to Field Air Supply Depots or may occasionally be delivered first to Field Air Depots.

CHAPTER 13

Storage and Distribution of Supplies

(a) Air Supplies

1. Large stocks of J.A.A.F. expendable supplies, viz. :—

- (a) aircraft fuel, lubricants, oxygen, etc ;
- (b) ammunition and bombs ;

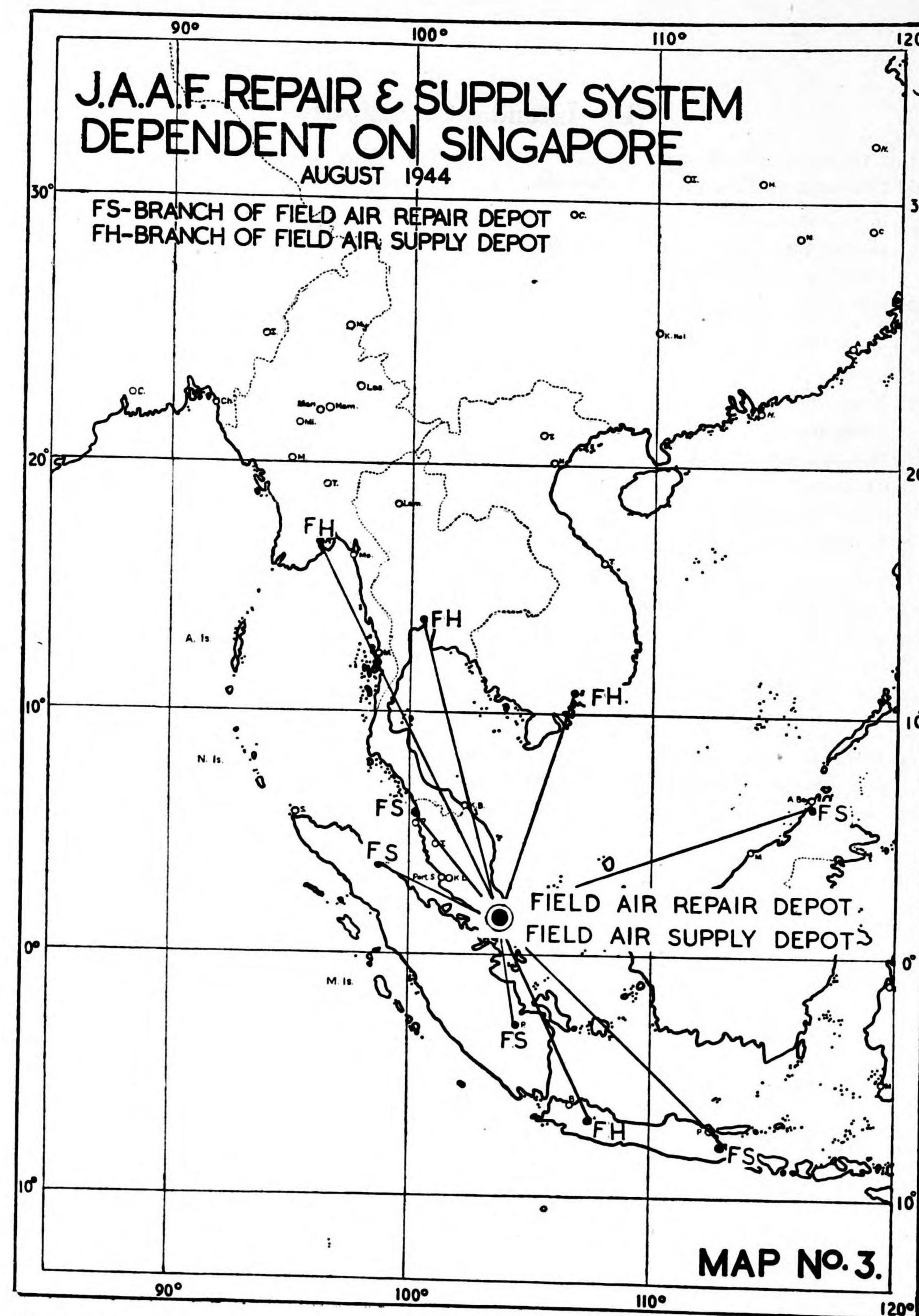
are held by the J.A.A.F. Depots in Japan, Manchuria and elsewhere, and by their branches. In forward areas smaller stocks of the same supplies may be held by Field Air Depots, *Yasen Kōkū Shō*, and by their branches.

2. The Air Depots and Field Air Depots in turn supply Field Air Supply Depots, *Yasen Kōkū Hokyūshō*, and their branches. Field Air Supply Depots are distributed throughout the areas in which the J.A.A.F. operates or trains. There are some twenty-five such depots, each subordinated to one or other of the Air Divisional Headquarters. In the south they are usually located at ports and receive their consignments by sea. Each Field Air Supply Depot has three or four fixed branches, *shishō*, which hold still further dispersed stocks. Map No. 3 shows the locations of the Field Air Supply Depot at Singapore and its branches in Burma, Thailand, French Indo China, and Java. These are designated by the abbreviation FH.

3. In the area of the 3rd Air Army there are all told half a dozen Field Air Supply Depots, each with a number of branches. These serve Burma, Malaya, Sumatra, Borneo and the Netherlands East Indies. Map No. 3 illustrates one of these only. The supply arrangements in the area of the 4th Air Army are similar.

4. Airfields draw their requirements from the branches of the Field Air Supply Depots or from the Field Air Supply Depots themselves as directed by the Air Sector Headquarters Staff of the area. The Airfield Battalion fetches its supplies in its own M/T or may make use of an Independent M/T Unit, made available by the Air Sector H.Q. Staff.

5. The responsibility for bringing up supplies from outside a particular Sector rests with the Air Divisional H.Q. Staff ; the distribution of supplies within the Sector is directed by the Air Sector H.Q.



The Japanese abbreviations for Field Air Supply Depots and Field Air Repair Depots are FH and FS respectively. But for the sake of convenience here these abbreviations are used for the branches of these Depots.

(b) Intendant's Supplies

6. Materials not directly connected with air operations come under the control of the Directorate of Field Intendance, *Yasen Keiri Chōkambu*. This department deals with :—

- (a) administration;
- (b) accounting (pay accounts and stores accounts);
- (c) clothing and rations;
- (d) building and repairs.

7. Characteristic supplies derived through Intendance channels include :—

- (a) clothes;
- (b) bedding;
- (c) mess gear;
- (d) bivouac equipment;
- (e) canteen stores and air rations;
- (f) office requisites;
- (g) building materials.

8. The Director of Field Intendance is represented by an Intendant's Department, *Keiribu*, at the headquarters of commands (Air Army, Air Division, Air Brigade or Air Sector). Under the cognisance of the Intendant comes the supply and allocation of materials to the Works Units of the J.A.A.F. (see Chapter 19) for the construction of airfields and all the installations on them, and the provision of clothing, rations and pay to flying and ground units.

9. To carry out these duties the Intendant's Department has under its control a number of Depots, whence it draws its supplies, e.g. Clothing and Bedding Depots, Baggage Depots, Cement and Timber Depots. Units indent for their needs through the Intendant's sections at the higher Commands and allocation is made to them by the Director of Field Intendance.

CHAPTER 14

Aircraft Maintenance and Repair

1. Minor adjustments to aircraft are undertaken by the technical personnel on the establishment of the Flying Regiment, and servicing, maintenance and minor repairs by the maintenance section of the Airfield Battalion.

2. Field Air Repair Depots, *Yasen Kōkū Shūrishō*, or mobile units subordinated to Field Air Repair Depot Headquarters undertake overhauls and repairs beyond the scope of the Airfield Battalion.

3. Field Air Repair Depots are fixed in location and distributed throughout the area in which the Japanese Air Army operates. They are identified by number, and each possesses two, three or four branches, *bunshō*, in its area. In the area of the 5th Air Division, H.Q. Rangoon, there was for example the 19th Field Air Repair Depot at Bangkok with three numbered branches, viz. 1st branch at Heho, 2nd branch at Saigon and 3rd branch at Rangoon. Map No. 3 shows the locations of the Field Air Repair Depot at Singapore and its branches in Malaya, Sumatra, Java and Borneo. These are designated by the abbreviation FS.

4. Field Air Repair Depots receive their orders from the Ordnance Department of the Air Division, which keeps the Repair Depot informed of the aircraft it intends to send for routine attention or gives specific orders for particular tasks.

5. The number of Repair Depots in the several Air Divisions varies with the importance of the area. There are four or five in the 5th Air Division and perhaps five in the 9th. Java with three of these, is an important area for repair in the North Australia area. By contrast there appears to have been only one Field Air Repair Depot in the Philippines, where alternative repair facilities were provided by the Air Depot at Manila and by Independent Maintenance Units, *Dokuritsu Seibitai*.

6. The personnel strength of a Field Air Repair Depot is approximately 600 men with from two to three hundred in addition at each of its branches. A Field Air Repair Depot draws its equipment, accessories, and tools from the Air Depot or Field Air Depot in its area or from Air Depots in Japan or Manchuria. There are sometimes a couple of transport aircraft attached to a Field Air Repair Depot.

7. The duties of a Field Air Repair Depot are as follows :

- (a) repairing, major servicing and modification of aircraft, including installation and repair of W/T equipment;
- (b) holding such aircraft in store;
- (c) holding stocks of aircraft equipment and accessories for its own use and for supply to its mobile units (para. 8) and to Airfield Battalions in the neighbourhood on orders from the Air Sector Headquarters;
- (d) equipping and arming aircraft prior to delivery to flying units.

8. Mobile Repair Platoons, *Idō Shūrihan*, sent out from the Repair Depot, provide facilities for repairs beyond the powers of the Airfield Battalion to undertake on airfields where flying units are

located. Such platoons consist of motorised workshops for aircraft salvage and repair, with a personnel strength of 50 men, and can be set up where they are required.

9. Mobile Repair Platoons are often attached to Airfield Battalions and so form part of the repair resources under the direction of the Air Sector Headquarters on a busy airfield. These platoons specialise in the types of aircraft they are fitted to attend to. They carry supplies of small spares and so form the nearest source upon which the Airfield Battalion or the flying unit can draw.

10. There is also a second mobile repair unit working in the operational areas and undertaking work in no way differing from that performed by the Mobile Repair Platoons of the Field Air Repair Depots. These are known as Independent Maintenance Units, *Dokuritsu Seibitai*. They reinforce the Mobile Repair Platoons. These latter are part of the Field Air Repair Depots of the area whereas the former are assigned to an area for operations, without being part of the establishment of the Field Air Repair Depots. Independent Maintenance Units were formed in the Repair Departments of the Air Depots in Japan and Manchuria and sent overseas to augment the repair facilities already existing in the south and particularly in the Philippines.

CHAPTER 15

Transport of Personnel, Equipment and Supplies by Sea

1. Sea transport of J.A.A.F. personnel, equipment and supplies is organized and controlled by the Army Transport Shipping Directorate, *Rikugun Yusō Sempaku Hombu*. This is an Army organization, but no doubt a section of it is concerned solely with Army Air business. There is a headquarters, *shireibu*, of this department at each of the main ports e.g., Manila, Singapore, Palau, and branches, *shibu*, at others. As its duties involve close liaison with commands and units concerned with the movements of personnel, equipment and supplies, it is probable that it maintains branch offices at some or all of the J.A.A.F. Command Headquarters.

2. The main functions of this organization are as follows :

- (a) to arrange the loading and unloading of personnel, equipment and supplies ;
- (b) to provide ships and to allocate shipping space for cargoes ;
- (c) to make general arrangements for the movements of convoys ;
- (d) to send appropriate notifications of routes and timetables of sea transport ;
- (e) to keep the various organizations involved informed of all arrangements.

3. The bulk of the cargo carried in this way on J.A.A.F. account consists of fuel and ammunition. These supplies are delivered upon arrival either to the J.A.A.F. Depots or Field Air Supply Depots. These units are responsible for the storage of such supplies until they are delivered to tactical units. There is similar liaison between the Shipping Transport Headquarters and Air Depots and Field Air Repair Depots, with regard to aircraft parts and equipment carried by sea.

4. On arrival at the port of destination, bulk materials cannot be immediately transferred to the appropriate receiving authorities. Here therefore they pass into the custody of the J.A.A.F. Shipping Depots, *Rikugun Sempaku Kōkūshō*, and their branch depots, *shishō*, which possess warehouses at the ports and a number of transport vessels presumably employed for local purposes. These depots are responsible for the goods until taken over by the consignees. It is probable that J.A.A.F. Shipping Depots are also responsible for the accommodation of personnel in transit, where there is no other J.A.A.F. organization on the spot to look after them.

5. J.A.A.F. Shipping Depots and Branch Depots are generally subordinated to the Air Divisions, and are allotted areas corresponding to those of the higher commands, for the supply to which they are responsible.

6. Their functions are in many ways similar to those of the Army Shipping Transport organization, and involve close liaison not only with that organization but also with the authorities who are to receive the goods from their warehouses : collection is generally the responsibility of the consignees, most of whom possess M/T for this purpose. A Field Air Supply Depot, for example, concerned with fuel and ammunition, has some fifty vehicles ; an Airfield Battalion has a similar number. In addition, the Independent M/T units are available to assist in this task. Local transport (horsecarts, ox-carts, etc.) can also be used.

7. The strength of the J.A.A.F. Shipping Depot is usually about 200 J.A.A.F. personnel, as a basis, very largely supplemented by stevedores and labourers recruited locally, as well as by P.W.s, who are largely employed in loading and unloading ships.

CHAPTER 16

Motor Transport

1. All headquarters staffs and the majority of the units of the J.A.A.F. possess sufficient M/T to make them self-supporting within the sphere of their activities, but not, except in a few cases, entirely mobile. The amount of M/T held naturally depends on the functions to be performed, and to some extent upon how far these functions can be supplemented by air transport. Signals Units and Mobile Air Repair Squads, for example, whose duties require a high degree of mobility, possess sufficient transport to make them independent of any other source of M/T, whereas units with a good deal of heavy equipment, but which are comparatively static once they are established, have little M/T of their own, and have to call upon other sources for their moves and for the transport of their equipment.

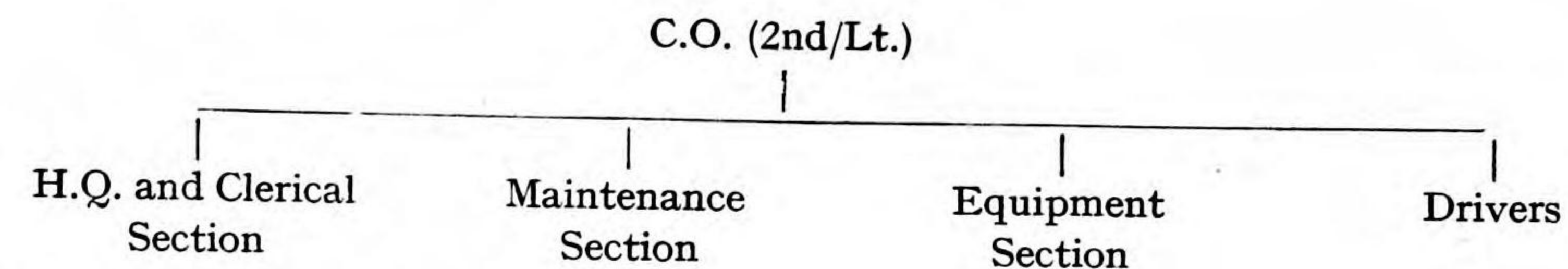
2. All M/T is delivered in the first instance to M/T Depots, *Jidōsha Shō*, in Japan, and to Field M/T Depots, *Yasen Jidōsha Shō*, in operational areas. These come under the control of the M/T Departments of the Area Armies which, it may be assumed, receive their allocations of M/T under the direction of the M/T Section of the Directorate-General of Ordnance, *Heiki Chōkambu*, at Tokyo. The M/T Department of the Area Army then controls allocations of supplies and replacements as between the Armies and the Air Army under its command, and the M/T Sections at each of the subordinate commands distribute it to the M/T sections of their subordinate units. Similarly demands for replacements pass upwards from the units through the commands to the Area Army. The Area Army is also responsible for keeping an eye on serviceability of M/T throughout its command, and from time to time despatches Repair Platoons to supervise and assist in the larger repairs of units' M/T.

3. The amount of M/T held by the various headquarters, is approximately as follows :—

Air Army Headquarters ...	...	29 vehicles
Air Division Headquarters ...	...	24 „
Air Brigade Headquarters ...	...	6 „
Air Sector Headquarters ...	...	14 „

The subordinate (ground) units of the Air Sector all possess sufficient M/T for their needs *in situ*; but the flying units possess little or no M/T of their own. This is supplied for local purposes by the M/T Platoons of the Airfield Battalions and Companies at the airfields where they are stationed. An exception to this is found in the case of Independent Flying Squadrons which appear to be entirely mobile and self-supporting and so possess a considerable amount of M/T of their own.

4. The M/T needs of each command or unit are catered for by its M/T section. The size and relative importance of this section naturally depends on the degree of mobility which the work of the unit demands, but the layout of the section probably follows the same lines in all cases. Thus, for example, an Airfield Battalion, concerned with the general upkeep of some two or three airfields, and supplying transport for both ground and the air personnel stationed there, has an M/T Platoon of about 50 personnel (out of a total strength of 500) with some 50 vehicles, including bowsers and motorcycles and is organised as follows :—



5. **Independent M/T Units.** Apart from the M/T required for the local purposes described above, which fall within the jurisdiction of the local C.O., there is a large amount of M/T required for more general purposes. These purposes may be summarized as follows :—

- (a) deployment of forces, their baggage and equipment ;
- (b) transport of materials in bulk from delivery points (ports or railheads) to units in the field ;
- (c) heavy transport work (*e.g.* salvage of crashed aircraft) beyond the capabilities of the local units' M/T ;
- (d) communications between airfields.

6. M/T for such purposes is supplied by the Independent M/T Units, *Dokuritsu Jidōsha tai*. These units, of which there is a considerable number (possibly as many as 400) form a pool of transport equally at the disposal of the Army and the Army Air Force, to which they are attached as occasion requires. It is probable that they come directly under the command of the Area Army Headquarters, and draw their supplies and replacement from the M/T Depots under this authority.

7. Since it not infrequently occurs that the ground forces of the J.A.A.F. work in close co-operation with the army (especially in the opening-up of new territory), cases are found where the Independent M/T Units working with the J.A.A.F. are directly subordinated to the army ; indeed this may be the rule rather than the exception, and several instances occur of J.A.A.F. units applying directly to the Army for the employment or loan of such M/T.

8. In some cases the Independent M/T Unit works entirely on its own ; in others it assists, or is assisted by the units' M/T ; for particular purposes it may therefore be subordinated to the Air Army, the Air Division, the Air Brigade, or the Air Sector Headquarters (particularly the last named, when it assists the local M/T in transporting supplies and equipment to the Airfields) ; and it is not unlikely that some or all of these headquarters have a certain number of Independent M/T Units more or less permanently attached to them.

9. The normal strength of an Independent M/T Unit is a battalion, *daitai*. This subdivides into four companies, each of which is capable of working as a self-contained unit, completely detached from the parent body. The usual strength of the battalion is about 700–800 men, under a Major or Lt.-Colonel, with some 200 vehicles. Assuming there are 400 such Battalions, this would give a total of 80,000 vehicles.

10. The battalion is organised into a headquarters section, four companies of about 140 men each and a material section which holds fuel supplies and spares ; each company forms a complete unit in itself, with its own headquarters and its own repair section.

11. Road communications between airfields are usually undertaken by the Line of Communications M/T Units, *Heitan Jidōsha tai*, which for this purpose come under the Air Division. A further

type of M/T Unit found working with the J.A.A.F. is the Special, *Tokusetsu*, M/T Unit, which is occasionally employed for transporting heavy material for the construction of airfields.

CHAPTER 17

Air Transport

1. **Air Transport Policy.** Air Transport in the J.A.A.F. is provided in several ways, viz., Transport aircraft are attached to the following units of the J.A.A.F. :

- (a) J.A.A.F. Command Headquarters, i.e., Air Army Headquarters, Air Divisional Headquarters, Air Brigade Headquarters, and Air Sector Headquarters ;
- (b) Certain important J.A.A.F. ground units ; and
- (c) J.A.A.F. training establishments.

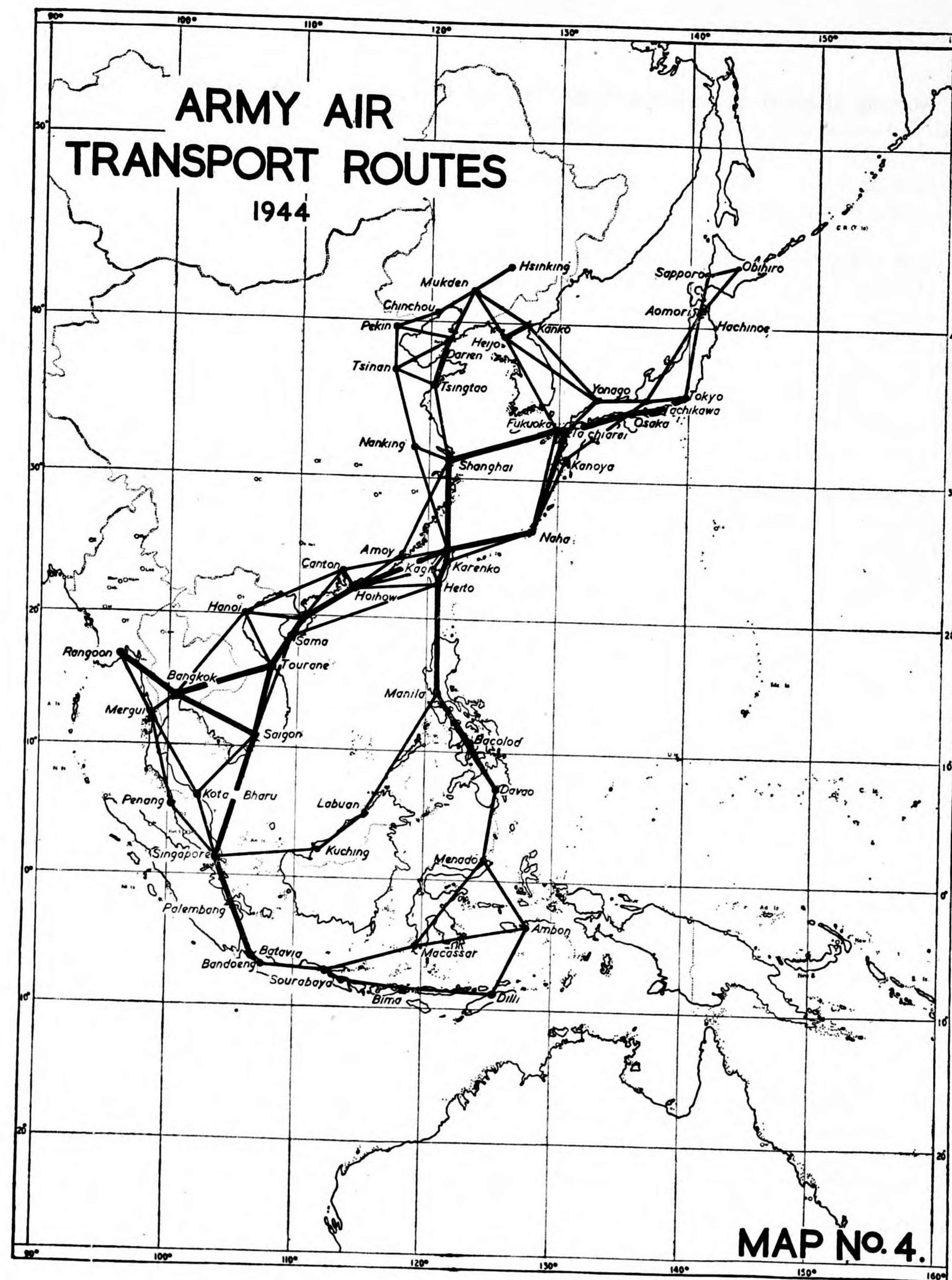
Organized transport units are provided by :

- (d) J.A.A.F. Air Transport Headquarters (Tokyo) ;
- (e) The Air Transport Department of the Southern Area Army ;
- (f) Air Raiding Regiments ; and
- (g) Civil Air Lines.

2. **Aircraft attached to J.A.A.F. Commands.** The Headquarters of each Air Army, Air Division and Air Sector has an establishment of one or two transport and one or two liaison aircraft. (This is also true of Area Army and Army Headquarters). The Headquarters of Air Brigades have different establishments, namely of ten transports and two liaison aircraft. Unlike the other commands, the Air Brigade Headquarters does not itself retain these aircraft for its own use, but instead distributes them among the Flying Regiments it controls. These Regiments have themselves no formal establishment of transport aircraft, and the number they actually receive is at the discretion of the Brigade Staff, which makes its allotments according to operational requirements. This is a more convenient arrangement than the provision of a fixed quota of transport aircraft for each Flying Regiment. Ten transport aircraft for each Brigade ensures adequate mobility for its flying units and Headquarters Staff. The ground units under the command of the Air Sector Headquarters remain at their locations and the modest establishment of one liaison and one transport aircraft per Sector Headquarters is for their day-to-day needs.

3. **Aircraft attached to Air Depots and Sub-depots.** Several J.A.A.F. Air Depots possess four or more transport aircraft, which are chiefly employed in the conveyance of equipment and supplies. In addition, they usually have a liaison aircraft on the strength. Sub-depots sometimes have a transport aircraft or two for similar purposes.

4. **Aircraft attached to Field Air Repair Depots.** Several Field Air Repair Depots have two transport aircraft and sometimes a liaison aircraft as well. The transports are normally used for the conveyance of equipment and spare parts.



5. **Aircraft attached to Training Units.** The Headquarters of Air Training Divisions and Brigades have a transport and a liaison aircraft each. One or two transports are found also on the strength of some of the J.A.A.F. Flying Schools, and of a few, though by no means all, of the Air Training Units. All these aircraft are used principally for communications flights for the conveyance of personnel.

6. **Army Air Transport Headquarters.** Army Air Transport Headquarters, *Rikugun Kōkū Yusō Hombu*, Tokyo, is the chief authority in Army Air Transport matters. It maintains Army Air Transport offices, *Rikugun Kōkū Yusōbu* at J.A.A.F. Air Depots, from which most flights from Japan begin, and at important points and terminals on the Air Transport routes, e.g. at Fukuoka, Nanking, Saigon, Ambon, etc. This Headquarters is entirely responsible for ferrying replacement aircraft from the Air Depots to the flying units in the field. It is also called upon to undertake the transportation of freight and personnel. For these purposes it controls a number of transport flying units (*see* para. 8, *infra*), as well as aircraft under its immediate direction.

7. **Southern Air Transport Department.** The Southern Area Army has its own organization for air transport, called the Southern Air Transport Department, *Nampō Kōkū Yusōbu*. This department had two branches, one in the Philippines and one in Malaya; the headquarters of these were respectively at Manila and Singapore. It also maintains an office in Tokyo, in contact with Army Air Transport Headquarters. The department controls about fifty transport aircraft, and operates throughout the South-West Pacific Area. It undertakes the conveyance of cargo and personnel on behalf of the Southern Area Army and its various subordinate Army and J.A.A.F. units. The Southern Air Transport Department is concerned also with the ferrying of replacement aircraft for the J.A.A.F. units operating with the Southern Area Army, in conjunction with Army Air Transport Headquarters.

8. **Transport Flying Units.** There are about ten Transport Flying Units, *Yusō Hikōtai*. These are under the control of Army Air Transport Headquarters. Except for two previously at Manila, each has its Headquarters at Air Depots in Japan. The prime function of these units is the provision of aircrews to ferry replacement aircraft. They exercise some measure of control over Transport Flying Squadrons, *Yusō Hikōchūtai*, which have transport aircraft on their strength. These aircraft are used for the conveyance of personnel and supplies, and to take ferry crews back to these bases; furthermore vacant space in the aircraft being ferried is regularly used to carry passengers and cargo. Although this transport activity is incidental to the ferrying work, it is sufficiently regular to be regarded as a definite function of these units. Certain of these ferrying units are under the operational control of the Southern Air Transport Department, or of the Air Commands under the Southern Area Army.

9. **Air Raiding Regiments.** The J.A.A.F. has a number of airborne units, *Teishin Butai*. These are described in Chapter 18. Since the flying units, *Teishin Hikōsentai*, of these forces are only very infrequently used for airborne operations, their transport aircraft are continually employed in freight and passenger transport and in assisting in the moves of flying units.

10. **Civil Air Lines.** To supplement its regular transport facilities, the J.A.A.F. has assumed control of the four main Civil Air Lines:—

- (a) Japan Air Lines Ltd., *Dai Nihon Kōkū Kabushiki Kaisha*;
- (b) China Air Lines Ltd., *Chūka Kōkū Kabushiki Kaisha*;
- (c) Manchuria Air Lines Ltd., *Manshū Kōkū Kabushiki Kaisha*; and
- (d) Southern Air Lines Ltd., *Nampō Kōkū Kabushiki Kaisha*.

Japan Air Lines Ltd., conducts regular services from Japan to China, the Philippines, Malaya, and the Dutch East Indies. The China and Manchuria Air Lines operate in the areas suggested by their names. It is possible that Southern Air Lines Ltd. has been taken over by the Southern Air Transport Department. All the Civil Air Lines are completely under military control, and are used chiefly for liaison flights, the carriage of mail, and the conveyance of military personnel and urgently required equipment.

12. **Kinds of transport activity :** Air Transport is used for the following purposes:—

- (a) conveyance of personnel;
- (b) conveyance of equipment, stores, and spare parts;
- (c) conveyance of supplies of ammunition, fuel, food, etc.;
- (d) liaison flights;
- (e) conveyance of mails, documents and signals;
- (f) to guide ferried aircraft;
- (g) conveyance of ferry crews;
- (h) supply dropping from the air;
- (i) glider towing;
- (j) medical evacuation;
- (k) movements of units.

13. **Transport air routes :** J.A.A.F. transport aircraft range over most of the territories held by the Japanese. The principal routes in 1944 are shown on Map No. 4. The services on these routes are provided by the Air Route Departments of the Air Armies through which the routes lie. Air Route Regiments provide the personnel which the Air Route Departments control. The Regiments are divided into companies of two kinds, Aircraft Safety Companies and Airfield Duty Companies. Aircraft Safety Companies provide navigational aids along the routes, and the Airfield Duty Companies attend to the requirements of the crews and aircraft. Small units of each kind are present on all airfields used by transport aircraft operating on the ferry routes. Airfield Headquarters Staffs located at the principal airfields are each responsible for the management of a group of airfields on the route. Each Air Route Department possesses a few transport aircraft of its own, used in the course of its duties.

14. **Use of Operational Aircraft as Transports :** Air transport activity is not confined to the use of regular transport aircraft. It is usual for the Flying Regiments equipped with bomber aircraft, particularly medium bombers, to utilise them for their own transport purposes, and sometimes on behalf of their command headquarters. Some of the troop-carrying aircraft used by the Air Raiding Regiments are converted bombers, while training units frequently make use of their trainer aircraft to transport personnel. Supply-dropping to Army units, e.g. in Burma, China, New Guinea, Menado, etc., has been carried out by medium bombers. Reconnaissance aircraft are frequently used by headquarters for liaison flights. Altogether it may be said that there is no

rigid appropriation of transport and operational types to their original functions, but that whenever a need arises for improvisation, they are pressed into service if at all suitable.

15. **Types of transport aircraft :** The principal types of J.A.A.F. transport aircraft are :

Thora 1 and 2, Thelma 1 and Thelma 1 (Cargo), Topsy 1 and 3.

The following types of operational aircraft are frequently used for transport :

Sally	Lily
Dinah	Helen

Further particulars of these aircraft are given in Appendix 5, p. 159.

CHAPTER 18

Airborne Forces

1. **Two sources of Airborne Strength.** In both the J.A.A.F. and the J.N.A.F. facilities exist for the conduct of airborne operations. In each service, they are founded upon two methods, as follows :—

(a) the employment of certain units called Raiding Forces, *Teishin Butai*, which consist of flying units, and specially trained troops, together constituting the regular airborne arm of the two Services ; and

(b) the employment of aircraft normally used as cargo and passenger transports, or bombers, to carry troops.

2. The greater part of the airborne strength is held by the Army. This arm of the service is formed into a Raiding Brigade, *Teishin Dan*, to which various smaller Raiding Units are subordinate.

3. **A Raiding Brigade** is an airborne force equipped with parachute troops, air landing troops, transport aircraft, and gliders. Its elements are :—

(a) Brigade Headquarters, *Hikōdan Shireibu*, with a staff of two hundred ;

(b) Two Raiding Regiments, *Teishin Rentai*, each with between six hundred and seven hundred and fifty men, most of whom are trained as parachute or air landing troops ; and in addition a heavy weapons unit with fifty men ;

(c) An Air Raiding Regiment, *Teishin Hikōsentai*, which has transport aircraft and aircrews, divided into three squadrons, *chūtai*, each with at least six aircraft ;

(d) A Glider Regiment, *Kakkū Rentai*, equipped with gliders and crews.

4. **Airborne Troops.** The extensive use of airborne troops by the Germans inspired in Japan an ambitious programme for training their own troops for the same kind of activity. About a hundred German instructors were imported and training schools were set up in a large number of places, the chief of which were Kuingshan and Sama, in Hainan.

The Japanese claim to have trained nearly twenty-five thousand troops for parachuting or air landing since 1940.

5. The Raiding Regiments into which some of those troops must have been placed are not very numerous, nor are there more than one or two Air Raiding Regiments, that is, units ready to provide transport aircraft specifically intended for airborne troops. It follows therefore that the majority of airborne troops are normally retained in the infantry and other ground units, and that they are called upon when a specific airborne operation is planned, and conveyed in cargo and passenger transports summoned from other flying units.

6. **Gliders.** A Glider Regiment is known to operate with the Raiding Brigade. Supplies of gliders are held at the Air Depots at Heito and Osaka. There are several types of glider, some of which may be able to carry several tons.

7. In Japan there is an elaborate scheme for training youths in gliding as a preliminary course for aviation candidates, and a gliding college was opened at Ishioka in April, 1944. It is estimated that 73,000 students are undergoing gliding instruction under the tutelage of some 1,250 instructors. Over 2,000 gliders are used, many of which are "one-man" machines, while the larger can carry six or seven persons.

8. **The Navy.** The navy has at least two Air Raiding Units, which are a part of No. 1021 Transport Air Group. Two similar units may perhaps be found with No. 1001 Transport Air Group. Each of these Units has a strength of about eighteen transport aircraft.

9. Very few troops were held by the Navy for airborne operations. There were the Yokosuka Special Naval Landing Units, with about five hundred men, but these were destroyed at Saipan, and no other similar units have replaced them.

10. **Parachute Troops' Equipment.** The parachute troops have equipment suitable for their tasks. Special clothing is provided, with furlined jackets and trousers, and a hood with goggles ; and buff-coloured crash helmets. The naval forces wear green uniforms. Emergency rations are carried, sufficient for three days, and extra shoes and underclothing. Officers are distinguished by a green khaki cap, with an orange star on the front.

11. Weapons are usually pistols, daggers, and automatic weapons of the submachine gun types. It is customary to drop light mortars, machine guns, radios, entrenching tools, folding bicycles, and other equipment by separate parachutes. Flame throwers are sometimes carried. Officers carry .32-calibre automatic pistols, cameras, and field glasses.

12. The total armament of one Raiding Regiment was as follows in 1941 :—

Approximately 300 pistols, 280 automatic rifles, 50 anti-tank rifles, 36 machine guns, 9 40 mm. Arisaka cannon (Model 19) and grenades ; and 36 portable radios.

The 75 mm. mountain gun may also perhaps be used nowadays, as it is easily dismantled and reassembled, and also the 70 mm. Battalion gun might appear.

13. **Use of freight and passenger transports.** There is no doubt that if an airborne operation of any size were planned, the regular Raiding Regiments and Special Landing Units would be supplemented by trained air landing and parachute troops carried in transport aircraft borrowed from other units. It is possible also that training aircraft could be used for this purpose ; in the German air force, several hundred transports could be mustered for an operation from the flying schools.

An example of this occurred in the invasion of Crete. No doubt bomber aircraft could be utilised for troop carrying.

14. The regular airborne forces would provide approximately the following aircraft :—

J.A.A.F. Air Raiding Regiments	50
J.N.A.F. Air Raiding Units of the Transport Air Groups	75
	<hr/>
	125
	<hr/>

15. Aircraft might also be taken from the cargo and passenger-carrying strength of the Air Forces. These aircraft are distributed over the whole of the Japanese occupied area, including S.E. Asia, China and the Western Pacific. Some proportion of their strength in any area might be diverted from its normal work to mount an airborne operation, and possibly some medium bombers belonging to Flying Regiments in the area might also assist.

16. **Types of Aircraft.** The following are the types of aircraft principally used in airborne operations ; their designations and capacities are given below and their performance in Appendix 5.

Operational Code Names	Year-Type Designations	Estimated Capacity
<i>Army land-based transports</i>		
Thora	Type 97	Men 5-8
Thelma	Type 0	16-18
Topsy	Type 100	20-22
Theresa	Type 1	8-10
<i>Navy land-based transports</i>		
Tess	Type 0 Model 11	18-20
Tabby	Type 0 Model 22	22-24
Nell	Type 96 Model 11	12-14
Betty	Type 1	14-16
Liz	Type 2 Model 11	20-25
(G6M1-L)	Type 2	16-18
<i>Navy flying boats</i>		
Mavis	Type 97 Model 11	30-35
Emily	Harezora Model 32	35-40

17. **Past airborne operations.** There have been five airborne operations by the Japanese during the war.

The first use of airborne forces was at Menado on the 11th of January, 1942. On this occasion, for the first and last time in their history, the Yokosuka Special Naval Landing Units, which constituted the Imperial Navy's airborne force, were employed in their original role as parachute troops. The intention was that they should capture Menado airfield, in conjunction with a seaborne invasion force. The troops were dropped by Nell aircraft, and after five hours' fighting, succeeded, before the arrival of their seaborne supporters, in capturing the airfield. The naval airborne units were never again used for parachute operations, and eventually they were wiped out at Saipan.

18. The Army airborne unit, the Air Raiding Brigade, was first employed at Palembang on the 14th February, 1942. The purpose of the operation was to prevent the demolition of two oil refineries there, and to prepare the way for subsequent landings on the airfield. The Japanese succeeded to some extent in preventing the destruction of one of the refineries, although the other was totally destroyed ; the airfield was captured two days later. The whole operation involved the use of about seventy transport aircraft, and about seven hundred parachute troops.

19. The next task given to the Air Raiding Brigade was an attack on Timor about a week later. Some twenty-five or thirty aircraft dropped between three and five hundred men, who were supported by a much larger seaborne force. The Australian garrison at Koepang was greatly outnumbered and was overpowered.

20. No further attacks were made by the Air Raiding Brigade until the 26th of November, 1944. It appears that the Brigade was transferred to the Philippines so that it could attack Morotai. Circumstances changed, and it was deemed more important to make use of the Brigade in defence against the Allied invasion of Leyte. A large convoy of Japanese reinforcements was due at Ormoc Bay, and apparently it was decided to neutralize Allied planes based on Leyte, which might attack the convoy, by the use of airborne troops against their airfields. Only three transport aircraft were used and all the troops carried were disposed of by Allied ground forces ; the operation was a total failure.

21. The next operation by the Brigade took place on December the 6th, 1944. It was an attack directed against Allied airfields on Leyte. The plan was to paralyse the Allied main bases at Tacloban and Dulag and to seize the airstrips at Buri, Bayug, and San Pablo. For this purpose about four hundred and fifty parachute troops were to be distributed among these objectives, by about forty Topsy transports. Ground troops were to attack in co-operation.

Two transports set out for Dulag ; both were shot down and only five parachutists reached the ground alive, and these were soon dealt with. Two more aimed at Tacloban ; one crashed into the runway and the other was shot down into the sea by gunfire. The majority of the troops descended near San Pablo and Buri, while others came down at Bayug. They succeeded in holding these landing grounds for a while, and Japanese ground troops attacked to support and reinforce them. U.S. forces were, however, able to counter-attack, and by December the 12th had cleared the airfields. While the enemy failed to achieve any major objective in the Leyte attacks, some disturbance and hindrance was caused to the Allies.

CHAPTER 19

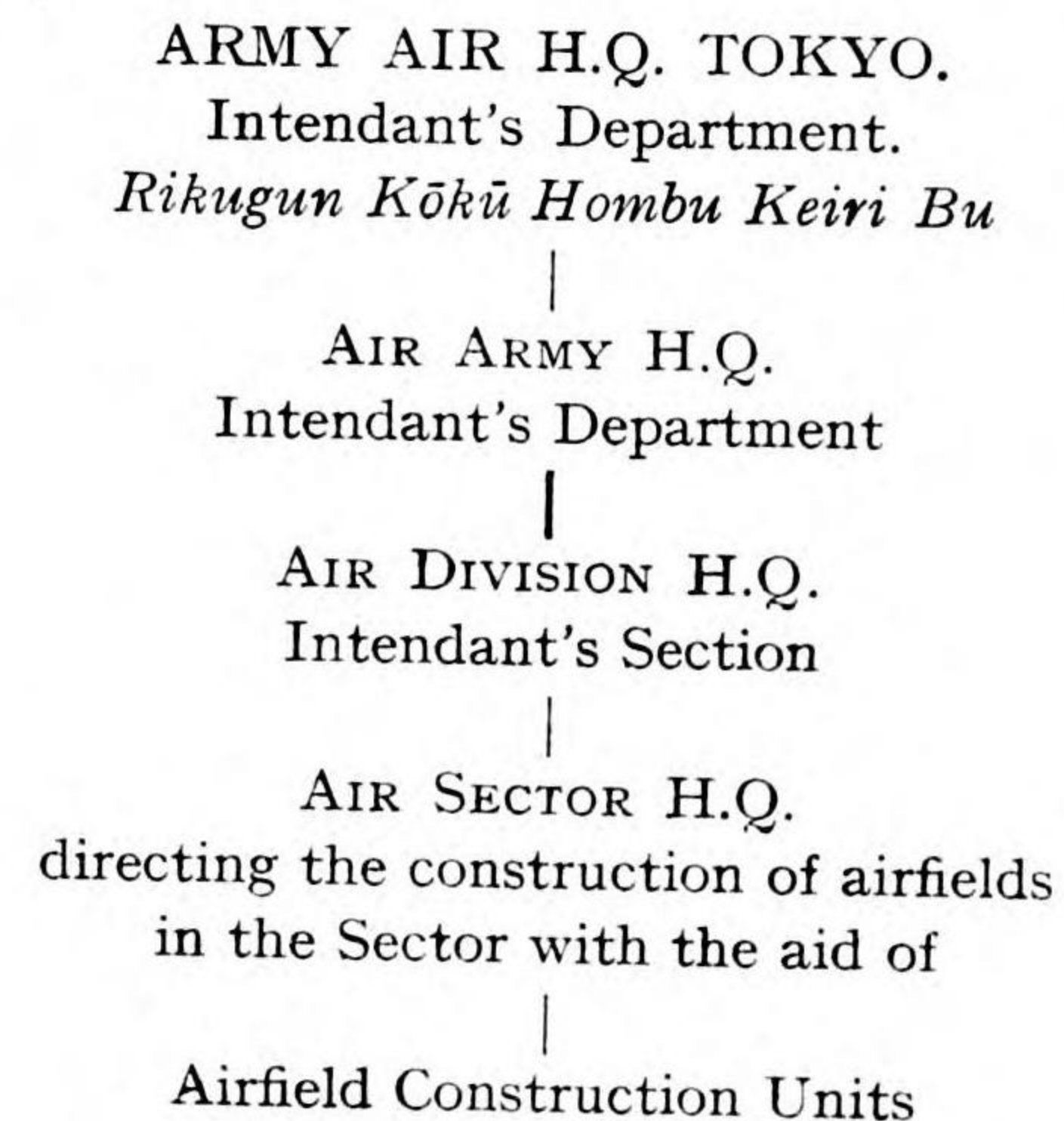
Works

1. The construction of airfields and the installation of airfield equipment is undertaken in the Japanese Army Air Force by Airfield Construction Units, *Hikōjō Settei Tai*, acting under the direction of the Air Sector Headquarters of the district in which the airfield is to be made.

2. An Airfield Construction Unit consists of a body of between 100 and 200 Japanese personnel, together with as many as 1,000 labourers recruited from Formosans or impressed native coolies. Units formed early in the war were generally composed of up to 600 Japanese military personnel, assisted by native labour. Units formed later, numbered 101 upwards, generally consist of a cadre only of such military personnel together with a large body of labourers.

3. Airfield Construction Units are usually grouped for administration under an Airfield Construction Headquarters, *Hikōjō Settei Shireibu*, which acts as a Regimental Headquarters Staff for units in its area.

4. Airfield Construction Units are subordinated for operations to Air Sector Headquarters. This headquarters reports to the Intendant's Department, Works Section, at Air Divisional Headquarters. This in turn is controlled by the Intendant's Department of the Air Army. The latter reports to the Intendant's Department at Army Air Headquarters, Tokyo. The organisation is illustrated in the following diagram :—



5. Organisation of Airfield Construction Units

Airfield Construction Units are numbered consecutively from 1–25 or thereabouts, and again from 101–about 150. They are often divided into three or more detachments for work on neighbouring airfields, and these detachments are to a great extent organised on the lines of the main unit.

The main Airfield Construction Unit is often organised, under a headquarters platoon, into three companies and a maintenance unit, and the unit usually commanded by a Major.

The headquarters platoon consists of administrative, medical, intendance and supply personnel.

The companies are divided into specialised and labour squads, the latter doing the heavy manual work and the former comprising demolition, survey, roller, signals and tractor squads. The maintenance unit looks after all mechanical repairs and provides vehicle drivers. The Labour Squads usually consist of Japanese military supervisors with native or Formosan labourers.

One or two of the officers are often qualified technicians with experience of engineering and/or construction work, and some units also have civilian engineers and assistant engineers.

Detachments of the main unit vary in size but normally consist of 30–40 men under a Lieutenant, with an Intendance N.C.O., medical orderly and one or more civilian engineers.

6. Preliminary Work on Airfields

Before an airfield is constructed suitable sites are surveyed, special attention being paid to ease of access, drainage, freedom from obstacles, and prevailing wind. A site near the coast is chosen when possible so that supplies may be easily landed. The climate, in its relation to flying and to the health of personnel, is also considered.

An officer of the Pay Branch from Division or Air Sector Headquarters visits the site to assess the cost of materials required and estimate the amount of labour needed. The Survey Section produces the plans for the work.

7. Airfield Construction

After the preliminary work the construction of the airfield progresses by stages. The following is the usual order adopted :—

- (a) clearing and drainage of sites ;
- (b) levelling ;
- (c) construction of main runway (usually 1,500m. × 100 m.) ;
- (d) taxiways ;
- (e) dispersal areas ;
- (f) subsidiary runway ;
- (g) aircraft revetments ;
- (h) camouflage.

Where materials are available runways are paved or asphalted, but makeshift airfields often have runways of powdered coral or even rolled earth. Underground hangars are sometimes constructed, especially at permanent airfields.

Incidental facilities are also provided. These include living accommodation for military personnel and labourers, and "cages" for prisoners of war. Power plants, signals, communications, water supply, roads and storage dumps for fuel, bombs and supplies are constructed.

The maintenance of the airfield when it is completed normally falls to the Airfield Battalion or Company stationed there, but an Airfield Construction Unit has often been called upon to repair bomb damage and fill in bomb craters.

8. Equipment

A fully equipped Airfield Construction Unit requires much mechanical apparatus. This includes :

- | | |
|--|--|
| (a) about 6 cars and 30 trucks ; | (g) tractors ; |
| (b) motor excavators ; | (h) cranes and winch trucks ; |
| (c) tracked bulldozers ; | (i) air compressors ; |
| (d) graders and rollers (either steam or diesel) ; | (j) generators ; |
| (e) rock-crushers ; | (k) repair lorries ; |
| (f) tractors ; | (l) numbers of carts, trolleys, rails. |

Besides this heavy equipment there are numbers of hand tools, electrical, lighting, demolition, and signals apparatus required.

Many of the M/T vehicles have been found unsatisfactory, and lack of spare parts for all mechanical apparatus has caused frequent stoppages of work and makeshift repairs.

9. Labour

The military personnel of an Airfield Construction Unit is the core of the organisation, and each unit has allocated to it a large number of labourers for the heavy manual work. Military personnel perform the specialist tasks, and act as foremen and supervisors of the labourers.

These labourers are of four types, one or all of which may be employed by the same unit :—

- Locally recruited native Labour. This is the most common, and the Japanese appear to have had little difficulty in hiring or requisitioning labour of this kind.
- Formosans, Koreans or volunteers from Japan. Once enrolled these labourers are sent to any area.
- Prisoners of war, especially Indonesians and Dutch natives, have been employed as labourers.
- Volunteers and details from locally stationed Infantry regiments may be employed.

The number of native and other labourers used depends on local conditions and the supply available. It is frequently as high as 2,000, but is more usually between 500 and 1,000. One Airfield Construction Unit employed 2,000 prisoners of war as well as natives.

10. Other Works Units

Other Works Units which may co-operate in Airfield Construction are mainly comprised of Japanese Army personnel and labourers. These units are briefly :—

- LAND DUTY COMPANIES, *Rikujo Kimmu Chūtai*, which provide manual labour for works undertakings of all kinds. They are frequently employed on road and bridge construction under specialist technicians of the Army. They also help Airfield Battalions in the maintenance of airfields, and load, unload and transport supplies and materials.
- SEA DUTY COMPANIES, *Kaijō Kimmu Chūtai*, are similar to Land Duty Companies, but specialise in loading and unloading ships.
- CONSTRUCTION DUTY COMPANIES, *Kenchiku Kimmu Chūtai*, construct barracks, workshops, power houses, stores and hospitals.
- LABOUR UNITS, *Sagyō Tai*, consisting mainly of Formosan or Korean labourers of the peasant type are employed on manual work of all kinds—including farming and exploitation of occupied territories.
- MOBILE LUMBER SQUADS, *Idō Seizan Han*, are frequently employed in clearing forest and jungle prior to the construction of airfields on the site.

CHAPTER 20

Training

(a) Organisation

1. **J.A.A.F. Training Organisation at the Outbreak of War.** At the time war broke out, the J.A.A.F. training system comprised a number of schools for training in flying and ground services under the Inspectorate General of Aviation Training, *Kōkū Sōkambu*. These schools co-operated with certain civilian flying training centres in Japan, most of which they have now absorbed.

2. The schools consisted of five types (a—e), see chart, page 66, viz. :—

(a) Preparatory.

(i) Youth Aviation Cadet Schools, *Shōnen Hikōhei Gakkō*, for potential aircrew. Recruits were youths from Middle Schools. No flying was taught. Students graduated from here to the Elementary Flying Training Schools as Superior Privates. Rejects as aircrew were diverted to specialist training (W/T, maintenance).

(ii) Air Training Units, *Kōkū Kyōikutai*, mostly for ground personnel. On completion of this training, recruits passed either to specialist schools (W/T, maintenance, etc.) for further instruction, or direct to ground units serving overseas. Air Training Units also provided a pre-flight course for personnel enlisting through the army as potential aircrew. From here recruits entered the Elementary Flying Training Schools with the rank of corporal.

(b) Specialist Technical Training.

The specialist schools included a Ground Maintenance School, *Rikugun Kōkū Seibi Gakkō*, Technical Schools, *Rikugun Kōkū Gijutsu Gakkō*, and a Signals School, *Rikugun Kōkū Tsūshin Gakkō*. All these schools provided courses of instruction for graduates from (a) (i) and (ii), as well as for personnel on attachment from serving units.

(c) Elementary Flying Training.

The Elementary Flying Schools, *Hikō Gakkō*, received the recruits from the Youth Aviation Cadet School and the Air Training Units, both under (a) above.

(d) Advanced Flying Training.

Trainees completing the elementary flying courses of (c) passed into Advanced Flying Schools, *Hikō Gakkō*, for specialist training on fighter, bomber or reconnaissance aircraft.

New flying units were formed at these schools and on completion of their advanced flying courses, trainees were posted to these new units, or to serving units, where they received their operational training.

These schools also provided short courses on other subjects as required for personnel from front-line units.

(e) Officers Training.

Two schools existed for officers, the Officer Cadet Preparatory School, *Yokashikan Gakkō*, and the Air Officers' School, *Kōkū Shikan Gakkō*. At the Officers' School only elementary flying was taught, officers joining up with other ranks at the advanced training stage.

3. **War Emergency Training Organisation.** See page 67. The system described in the above paragraphs was insufficient for the growing needs of the war and in 1942 it was supplemented by a second system providing additional facilities for advanced flying training which eventually provided about three times the number of replacement personnel turned out by the older system. The older system was maintained, however, as a home organisation, the new one being primarily designed to exploit training facilities overseas, although it was directed from Japan.

4. The supplementary organisation set up to meet the war emergency was under the 1st Air Army which was formed at the same time, namely in May, 1942. There were two Flying Divisions under the 1st Air Army; one was an operational Flying Division with its own battle order, the second was a Flying Training Division known as the 51st *Kyōiku Hikōshidan*, located at Gifu.

5. Under the Flying Training Division a number of administrative Flying Training Brigades, *Kyōiku Hikōdan*, were formed to direct the activities of eighteen Flying Training Regiments, *Kyōiku Hikōrentai*. These provided flying training overseas similar to that given at the Advanced Flying Schools of the "home" organisation, listed in para. 2 (d) above.

The Air Training Units mentioned in (a) (ii) were transferred to this organisation, these units remaining in Japan. Later, an Air Training Brigade, *Kōkū Kyōikudan*, was formed to direct their activities. Graduates from these ground units and from the Flying Training Regiments passed into operational units overseas.

6. Two important changes in the organisation outlined above took place in 1944 :—

(a) *Expansion of the War Emergency Organisation.* In the autumn of 1943, to increase the flow of pilots, conscription was applied to students of universities and higher schools, classes hitherto exempt from compulsory service. Four thousand teaching establishments are said to have been shut down in consequence. This large new influx of recruits was too much for the two existing training organisations to handle, and consequently in the spring of 1944 elementary flying training establishments were considerably enlarged and the Advanced Flying Training Regiments, *Kyōiku Hikōrentai* (para. 5), were increased in number from 18 to approximately 50. At the same time they were renamed Flying Training Units, *Kyōiku Hikōtai*. Other training units, *Rensei Hikōtai*, were also formed to conduct specialist advanced flying training.

All these Advanced Flying Training Units (with the exception of about five) are located overseas, being divided, in the second half of 1944, almost equally between Manchuria, Korea, Formosa, Philippines, Malaya and Java, and China. Their activities are directed, in each area, by Flying Training Brigades which are in turn subordinated for operations to the Air Army in whose area they are located, and which is responsible for the training in its area.

(b) *Raising of status of the home-based Flying Schools.* In the summer of 1944 the schools located in Japan, para. 2 (b), (c) and (d), were raised to Divisional status and in addition given the name "Kyōdō." Thus, Akeno *Hikō Gakkō* (Akeno Flying School) became Akeno *Kyōdō Hikōshidan* (Akeno Flying Training Division), and similarly for all schools located in Japan.

The *Kyōdō* organization has three functions, viz. :—

- (i) the formation of new units.
- (ii) the training of units withdrawn from active service for re-equipping.
- (iii) the supply of replacement personnel to serving units.

7. **Summary.** From the outline given above of the training system, it will be seen that there are two sources supplying personnel for flying units : (a) the home-based system of schools directly under the Inspectorate-General of Aviation Training. This system supplies about a quarter of the numbers required. (b) The system of training units, almost entirely overseas, controlled by the Inspectorate General of Aviation Training through the 1st Air Army and the 51st Flying Training Division. This emergency or war-time organisation provides roughly three-quarters of the flying personnel required. Thus the principal source of supply of trained personnel (flying and ground) for Air Armies overseas is the 1st Air Army.

8. **Operational Training.** On completion of their advanced flying training at establishments of either the "home-based" or "overseas" organisation aircrews are posted to an operational regiment for operational training. This is carried out in operational units mostly in non-combat areas. The lines for this training are laid down by the Inspectorate-General of Aviation and responsibility for supervising the actual work lies with the Officer i/c Operations in the Air Brigade and the Officer i/c Intelligence in the Flying Regiment.

(b) Field Air Replacement Unit

9. There has long been in existence one Field Air Replacement Unit, *Yasen Hojū Hikōtai*, under the 3rd Air Army, serving as an Operational Training Unit from which the 3rd and 4th Air Armies draw aircrew and urgently needed ground personnel as replacements for flying units.

10. Personnel enter the Field Air Replacement Unit, which is based on an airfield in the neighbourhood of Singapore, from advanced flying training centres and from operational flying training units, *Rensei Hikōtai*.

11. Training is carried out in four "units" of the Field Air Replacement Unit, viz. a Fighter Unit, a Light Bomber Unit, a Medium Bomber Unit, and a Reconnaissance Unit.

Operational types of aircraft are used. The training for bomber crews from Flying Regiments includes night landings, bombing practice and formation flying, and last four weeks.

12. The reasons for the establishment of a Field Air Replacement Unit to serve the two Air Armies in the south, which the Air Armies in the north do without, must be their greater distance from Japan, and their greater activity, which demand the services of such a unit.

(c) Individual Training of J.A.A.F. Recruits

(i) PILOTS

13. **General.** Recruits to the J.A.A.F. destined to become pilots normally pass through the following courses :—

Preparatory Training	...	...	...	...	2/12 months
Elementary Flying Training	...	...	...	...	8 months
Advanced Flying Training	...	...	...	...	4 months
Operational Flying Training	...	...	...	...	2/6 months

It is proposed to deal briefly with each of these stages in turn, outlining the type of instruction provided in each.

14. Preparatory Training. The length of this introductory training varies with the age of the recruit. Recruits of military age, and men transferred from other branches of the Army, receive a short two months' "recruit training" course of a general nature, designed to provide an introduction to air force routine and inculcate a spirit of devotion to that service. Boy recruits on the other hand, take a 12 months' cultural course in academic subjects, including science, languages, arithmetic and history. Physical training forms an important part of the curriculum.

Not all the graduates of these courses are destined to be pilots; categorisation of trainees is made at the end of the courses into pilots, W/T operators and maintenance crews, pilots being posted to an elementary flying training establishment, and the rest to specialist schools.

15. Elementary Flying Training. Eight months are spent at the elementary flying training schools, during the first six months of which all pilots-to-be train "en bloc" regardless of the type of aircraft they may eventually specialise on. During this period, flying time totals 20 hours dual and 70 solo, a biplane trainer being used.

Before the conclusion of the course, recruits are separated into fighter, bomber and recce classes, and spend two months converting to the special type of aircraft they will use at the advanced flying training centres. Flying time on this conversion course is reported to be 30 hours.

16. Advanced Flying Training. Pilots spend four months at an advanced flying training school, where instruction is given in formation flying, combat tactics, air-firing and night flying. Flying time here is reported to total 120 hours in advanced trainers, obsolescent operational types and a few first-line aircraft. The flying time of bomber pilots is somewhat longer.

17. Operational Training. Having successfully completed their advanced flying training, pilots are then posted to an operational unit for operational training. This is supposed to last for six months, during which the pilots receive further instruction in combat tactics and become acclimatised to local fighting conditions. Although six months is the stated training time, pilots are often required to participate in operations long before that time has expired. Flying times during this stage of training are unknown, though it is believed that efforts are made to raise the trainee's total to 400 hours at least before operations.

Summary of Fighter Pilot's Career

	<i>Months</i>	<i>Flying Time</i>
Preparatory Training (no flying)	2/12	—
Elementary Flying Training	8	120 (20 dual)
Advanced Flying Training	4	120
Operational Flying Training	2/6	160
	<u>16/30</u>	<u>400</u>

(ii) NAVIGATORS, W/T OPERATORS, AIR GUNNERS, BOMBADIERS

18. Navigators, wireless-operators, air-gunners and bombardiers are selected from those recruits rejected as pilot candidates, the segregation being made at the end of the first three months' elementary flying training, after instructors have had the opportunity of discovering the potentialities of each recruit. They are then posted to one or other of the specialist schools for further training.

(iii) GROUND PERSONNEL

19. In the units listed under paragraph 2 (a) ii, potential ground personnel receive one month's military training, followed by another month on whatever branch of maintenance or signals work they have been chosen for. They are then passed either to a Specialist School for further instruction and thence to an operational ground unit, or direct to an operational ground unit, where further experience is gained.

(iv) REPAIR, MAINTENANCE AND SUPPLY PERSONNEL

20. Technical ground staff for units engaged in aircraft repair and in handling air supplies are trained in the Air Depots.

21. Replacements. Personnel replacements for J.A.A.F. units serving overseas are derived from six sources. These are shown in the accompanying table against the class of serving unit they feed with replacement personnel.

Class of Serving Unit	Source of Replacement Personnel
(a) Command Headquarters overseas	Command Headquarters in Japan
(b) Flying Regiments	Advanced Flying Training Units
(c) Ground Units	Air Training Units
(d) Signals Units	Signals Regiments of the 1st Air Army
(e) Meteorological Units	Meteorological Regiment of the 1st Air Army
(f) Ordnance Units	Air Depots of the Directorate of Field Air Ordnance

22. Home Depot Units : For record purposes, each J.A.A.F. unit overseas is attached to a Home Depot and this Depot is one of the units in the group from which it derives its replacement personnel.

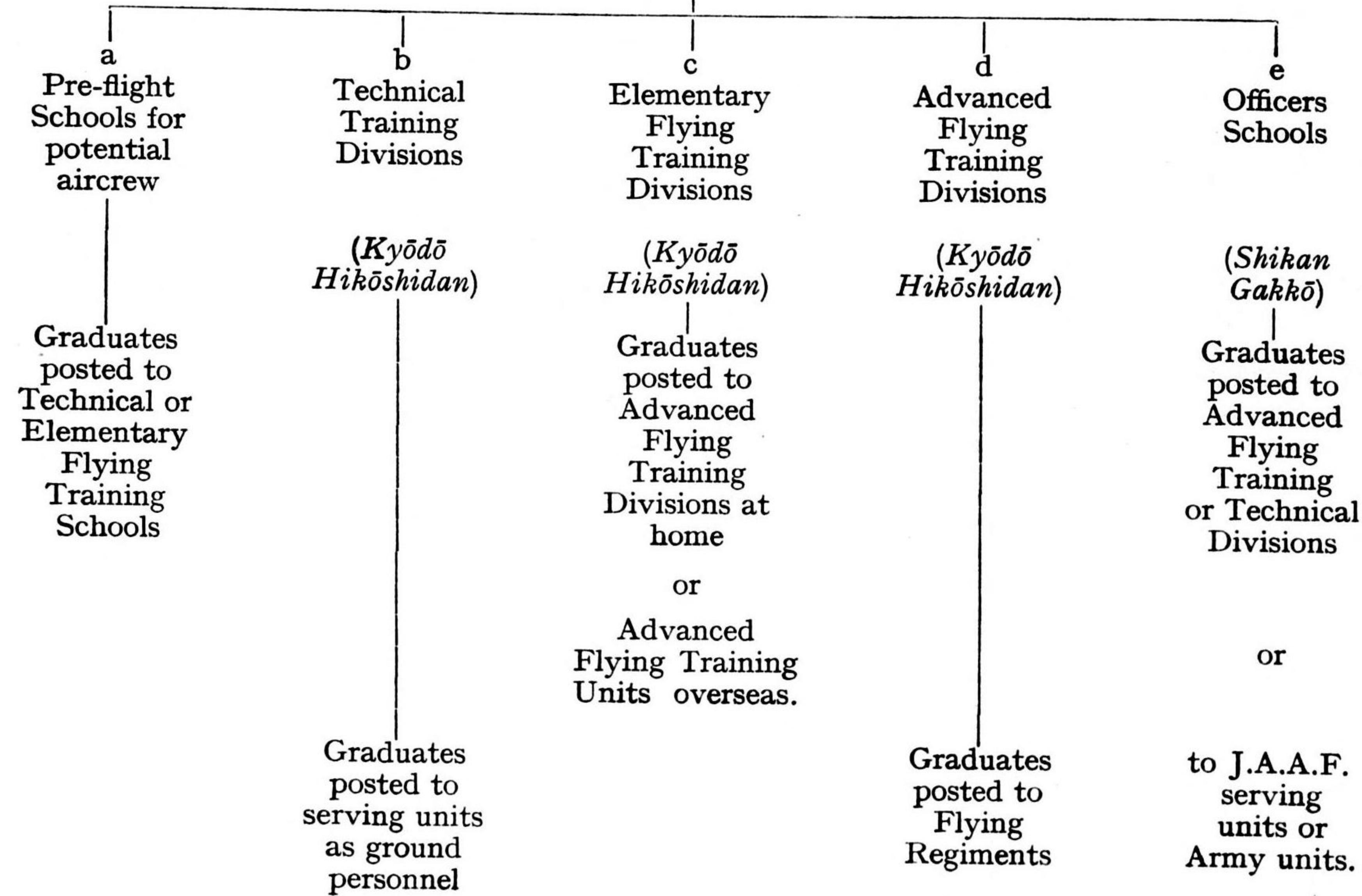
The records kept by the Home Depot Unit include particulars of pay, promotions, postings and attachments, family history, deaths, etc. These records are kept up-to-date by regular reports from serving units.

**J.A.A.F. TRAINING ORGANISATION
KYODO ORGANISATION**

Training in Japan

INSPECTORATE GENERAL OF AVIATION TRAINING

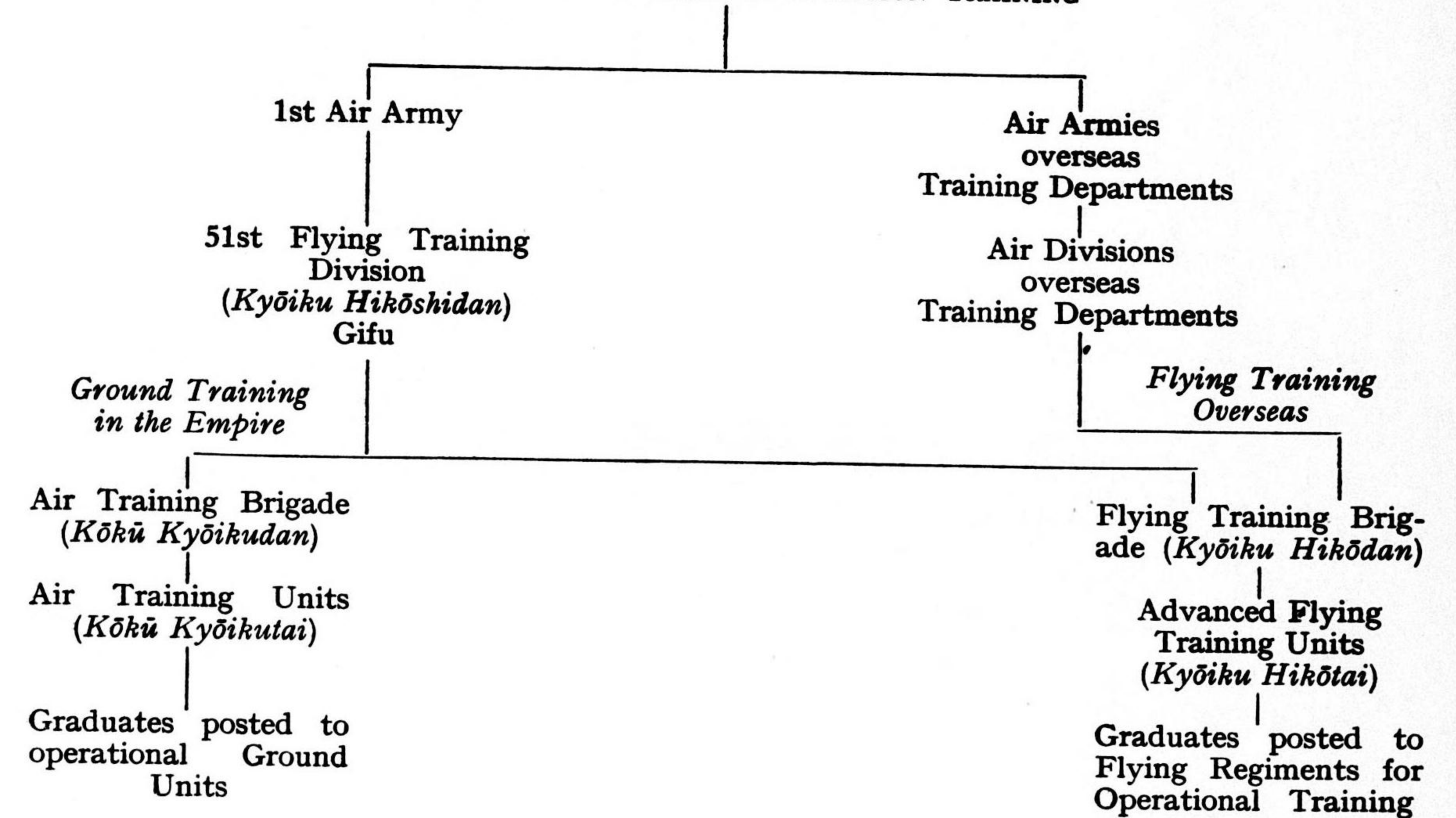
Kōkū Sōkambu



WAR EMERGENCY ORGANISATION

Flying Training overseas and Ground Training in the Empire

INSPECTORATE GENERAL OF AVIATION TRAINING



WAR EXPERIENCE ORGANIZATION

Types of organization and systems which are being developed in the field
Experimental Command of Aviation Training



JAPANESE
ARMY
COMMANDS

CHAPTER 21

MAPS ILLUSTRATING THE DISPOSITION
OF THE
PRINCIPAL J.A.A.F. COMMANDS
AT FIVE STAGES OF THE
WAR

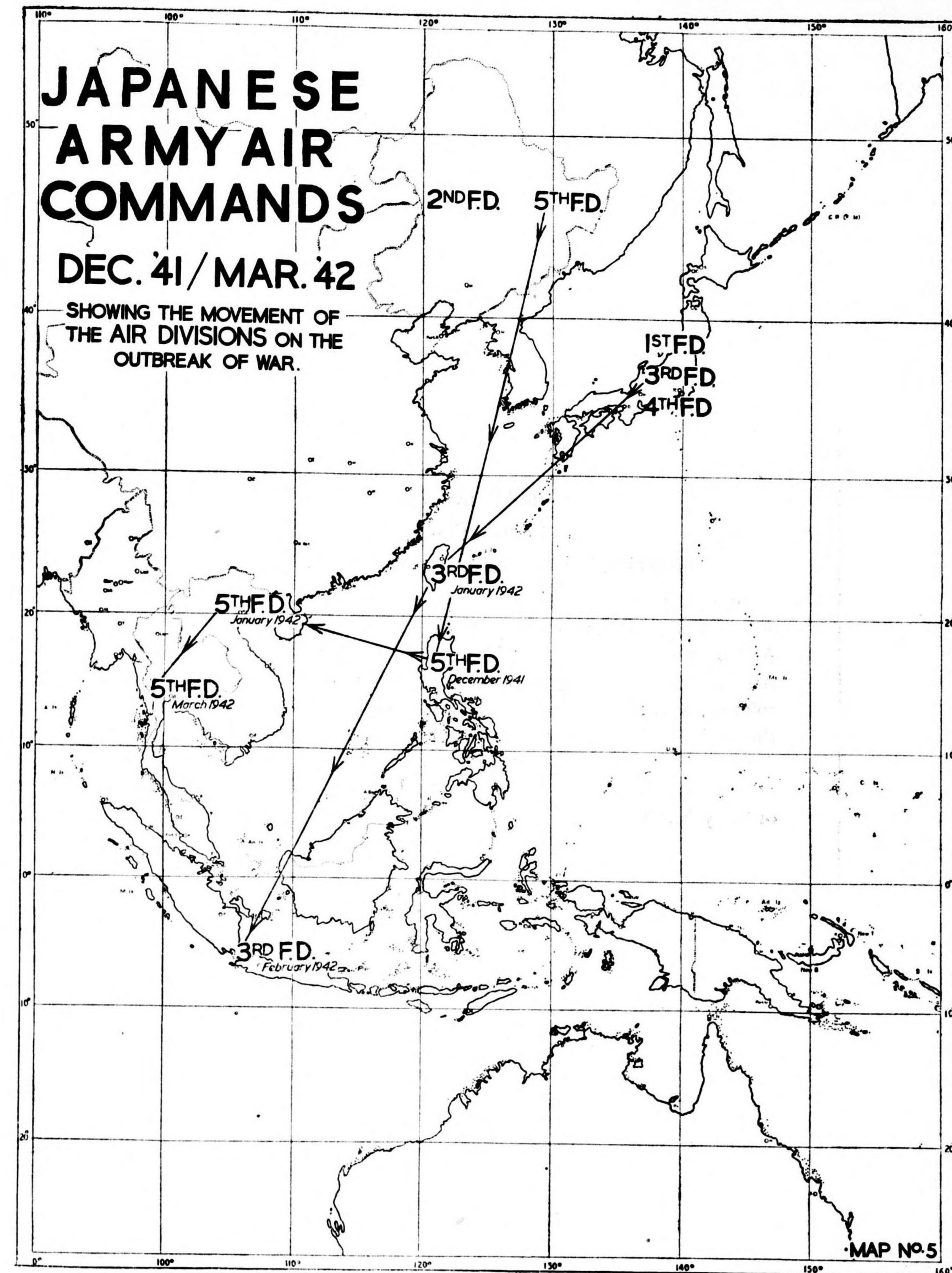
The customary abbreviations are used in Maps Nos. 5-9, viz. F.A. for Air Army and F.D. for Air Division. Boundaries of Air Armies are indicated by bold continuous lines where their position is fairly certain, and by a dotted line where it is conjectural.

MAP No. 5
(December, 1941)

Japanese Army Air Commands
Showing the movement of the Air Divisions on
the outbreak of war, December, 1941

At the time of the outbreak of war with Great Britain, the United States, and the Netherlands, the J.A.A.F. comprised five Air Divisions, of which two, the 3rd and 5th, played leading roles in the operations immediately following. The former provided air support for the forces landing in Sumatra and Java, while the latter was responsible for activities further north.

Of the remaining three Air Divisions, the 1st has never moved from Japan, while the 2nd and 4th did not move south until the summer of 1944 (see Map No. 9).

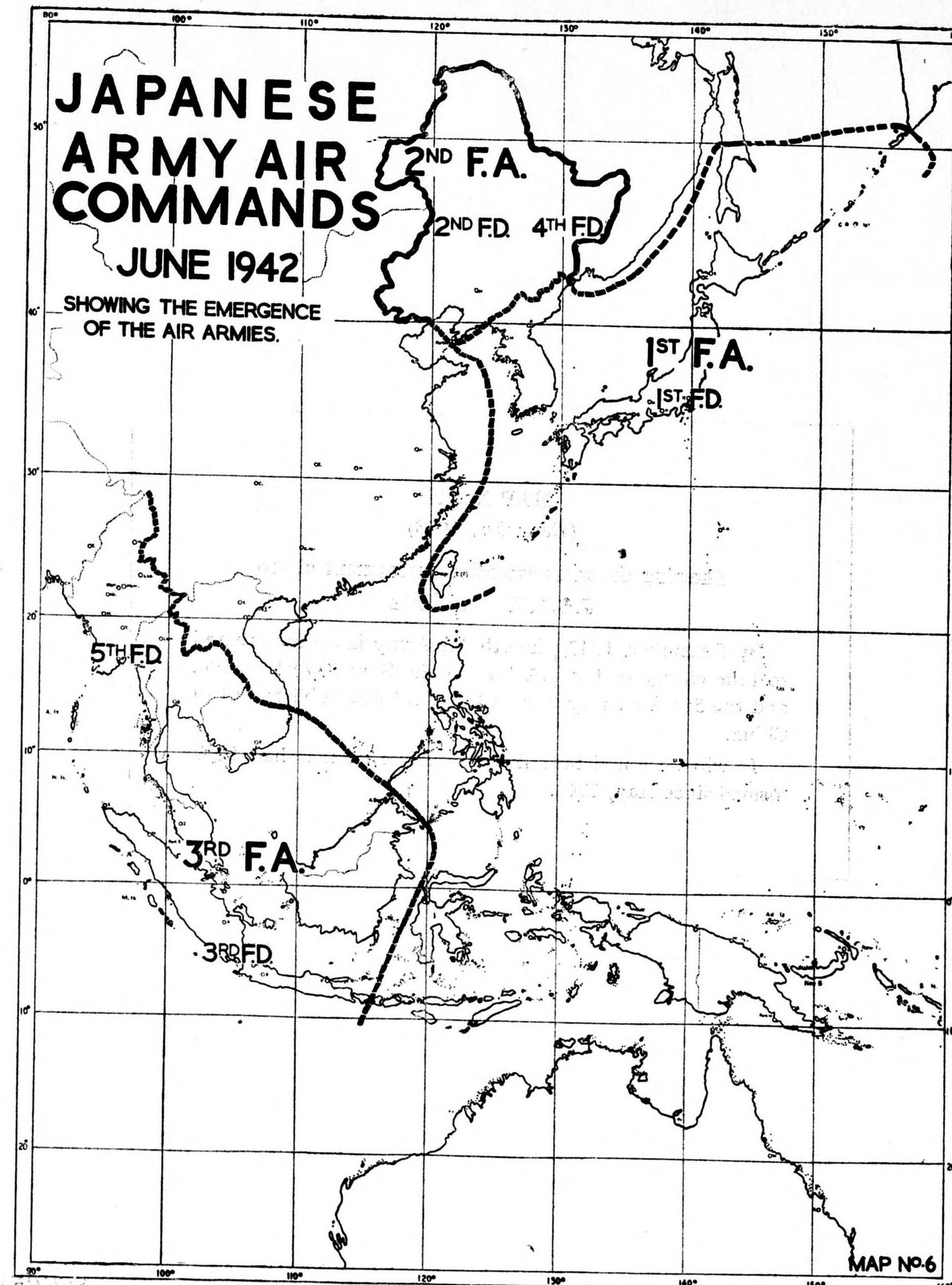


MAP No. 6

(June, 1942)

Showing the emergence of the Air Armies

June, 1942, marked the virtual end of Japanese expansion and the beginning of the period of attempted consolidation. At this point the J.A.A.F. was in process of creating three Air Armies, each responsible for clearly defined territorial spheres, viz.: The 1st Air Army, Headquarters, Tokyo; the 2nd Air Army, Headquarters, Hsingking; the 3rd Air Army, Headquarters, Singapore. From now on the Air Division ceases to be the highest command formation of the J.A.A.F.



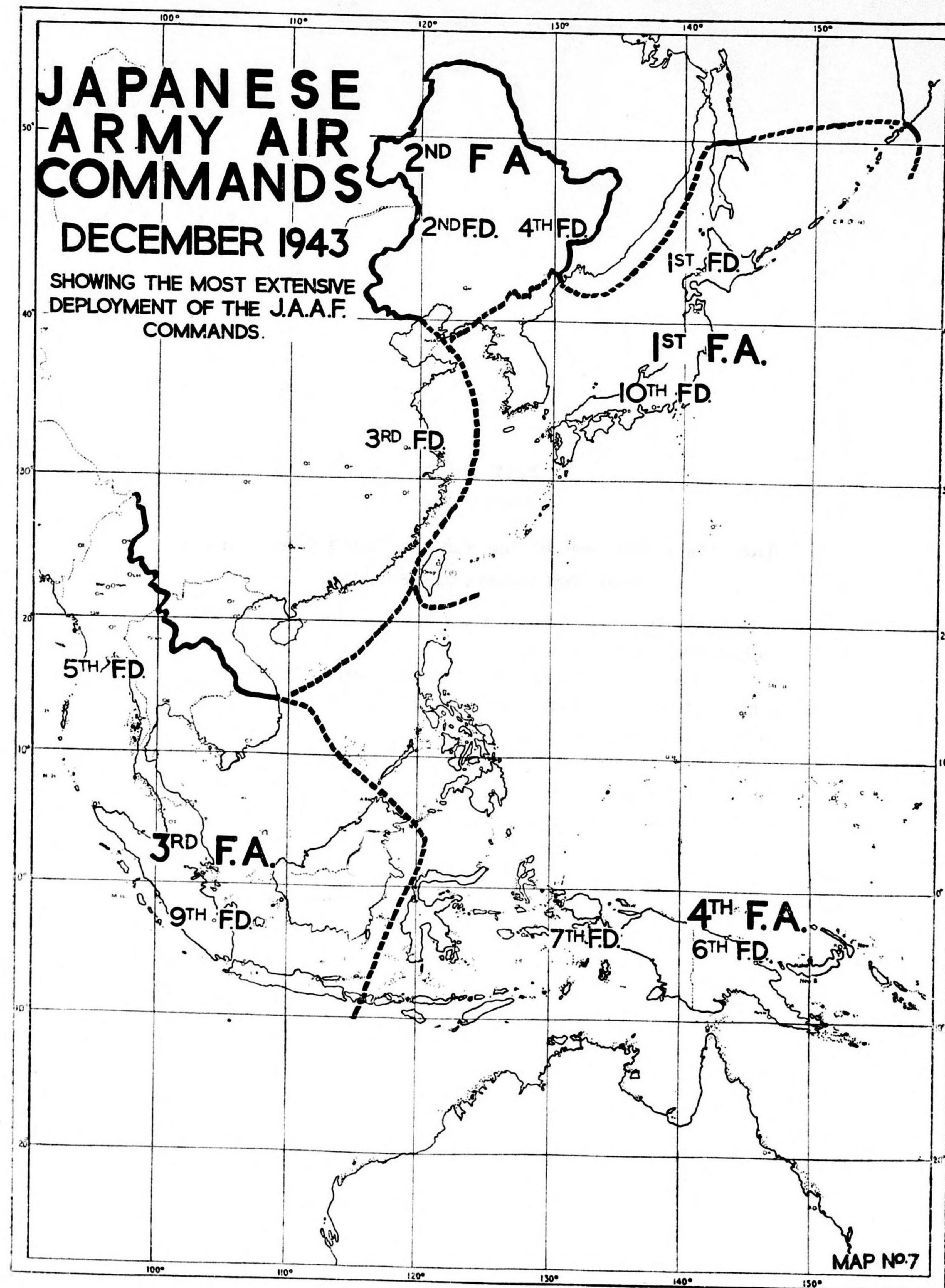
MAP No. 7

(December, 1943)

**Showing the most extensive deployment of the
J.A.A.F. Commands**

By December, 1943, the 4th Air Army had been created to take charge of the J.A.A.F. in the South West Pacific, and the 5th Air Army was on the point of establishment in China.

It will be noted that five new Air Divisions had been formed since May, 1942.



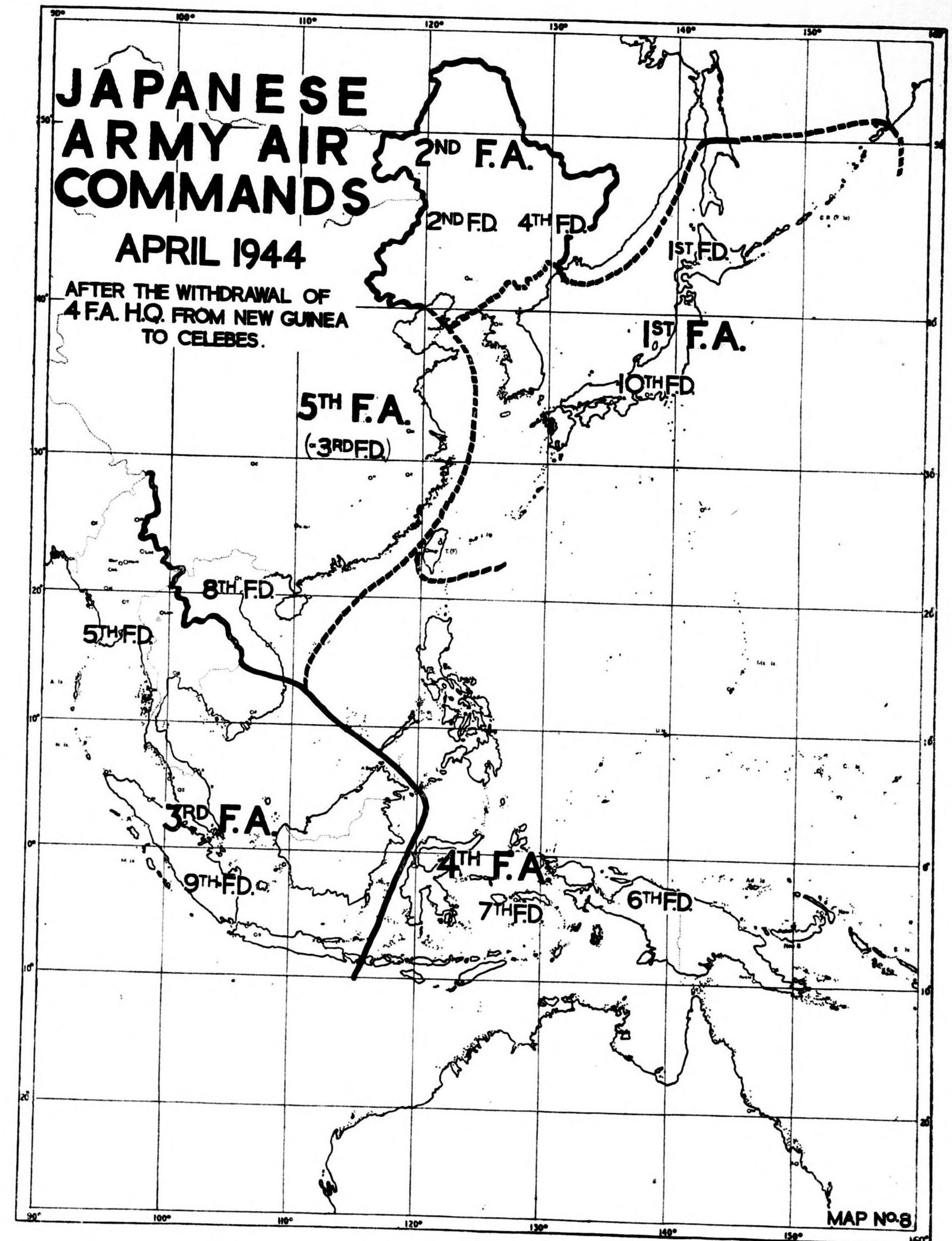
MAP No. 8

(April, 1944)

**After the withdrawal of the 4th Air Army Headquarters
from New Guinea to the Celebes**

In April, 1944, the Greater East Asia Co-prosperity Sphere had already begun to contract, but the J.A.A.F. had made no substantial alterations to the disposition of its chief commands, apart from the withdrawal of the 4th Air Army to the west.

The picture of J.A.A.F. organisation is especially interesting at this period, since the original plan of two Air Divisions in each Air Army is closely followed.

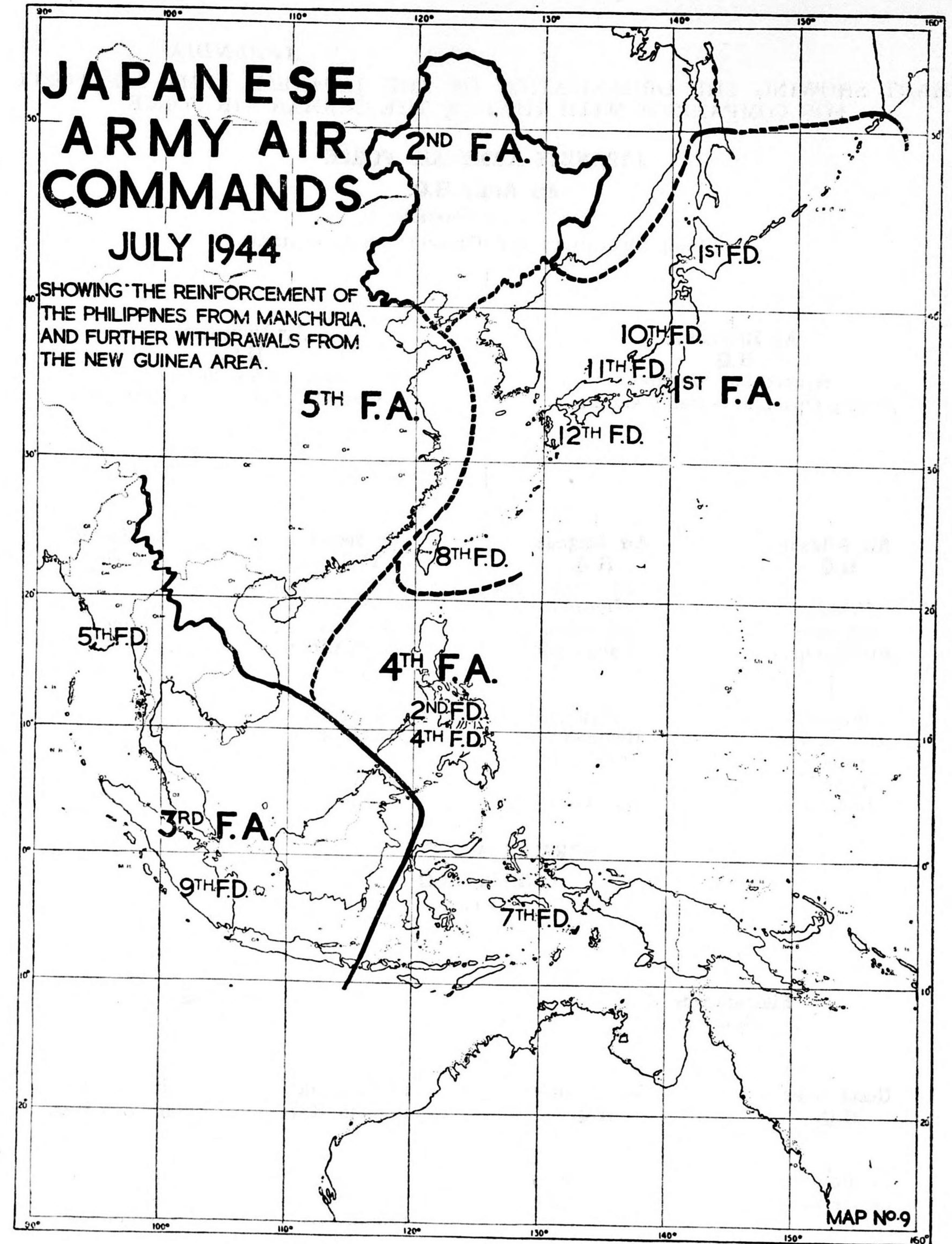


MAP No. 9

(July, 1944)

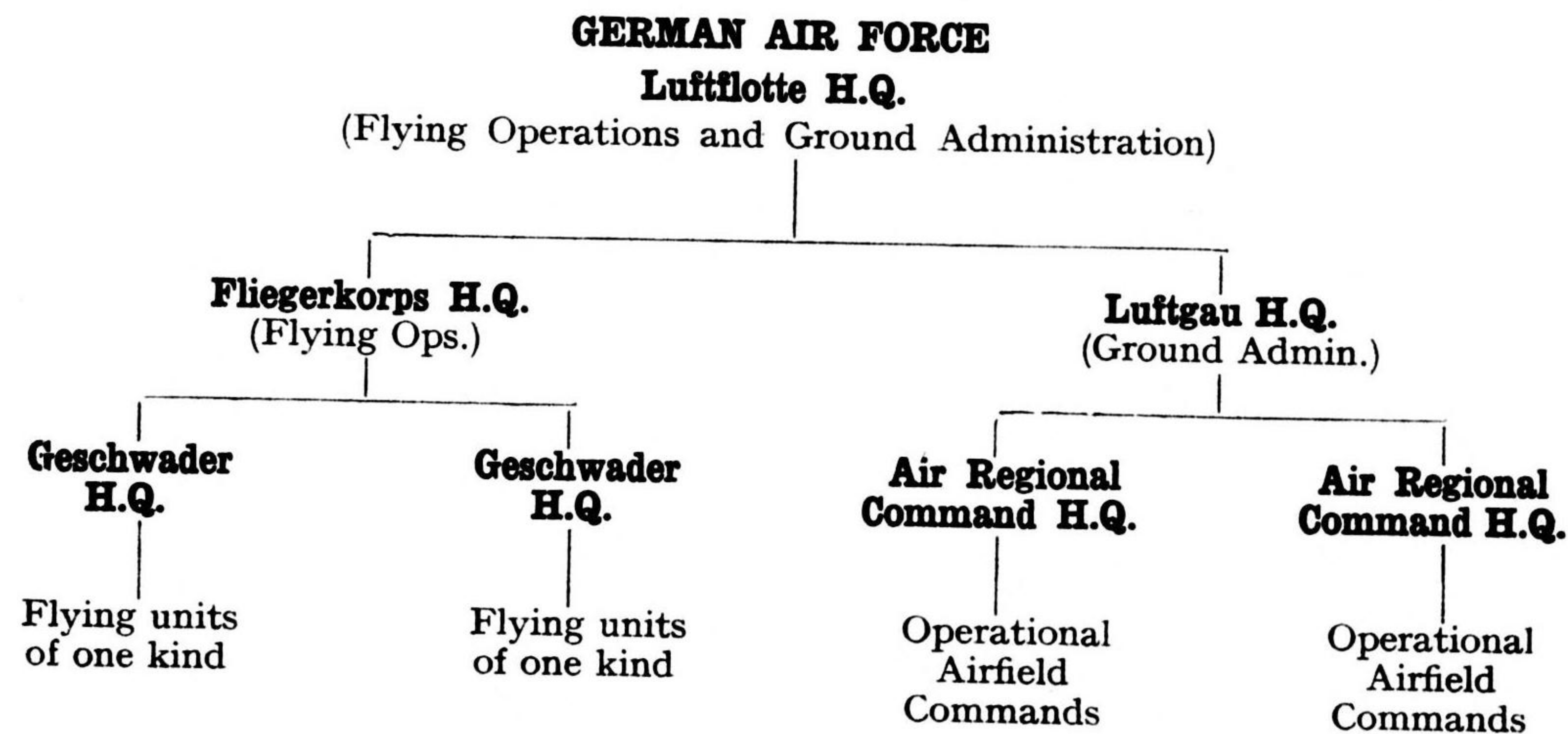
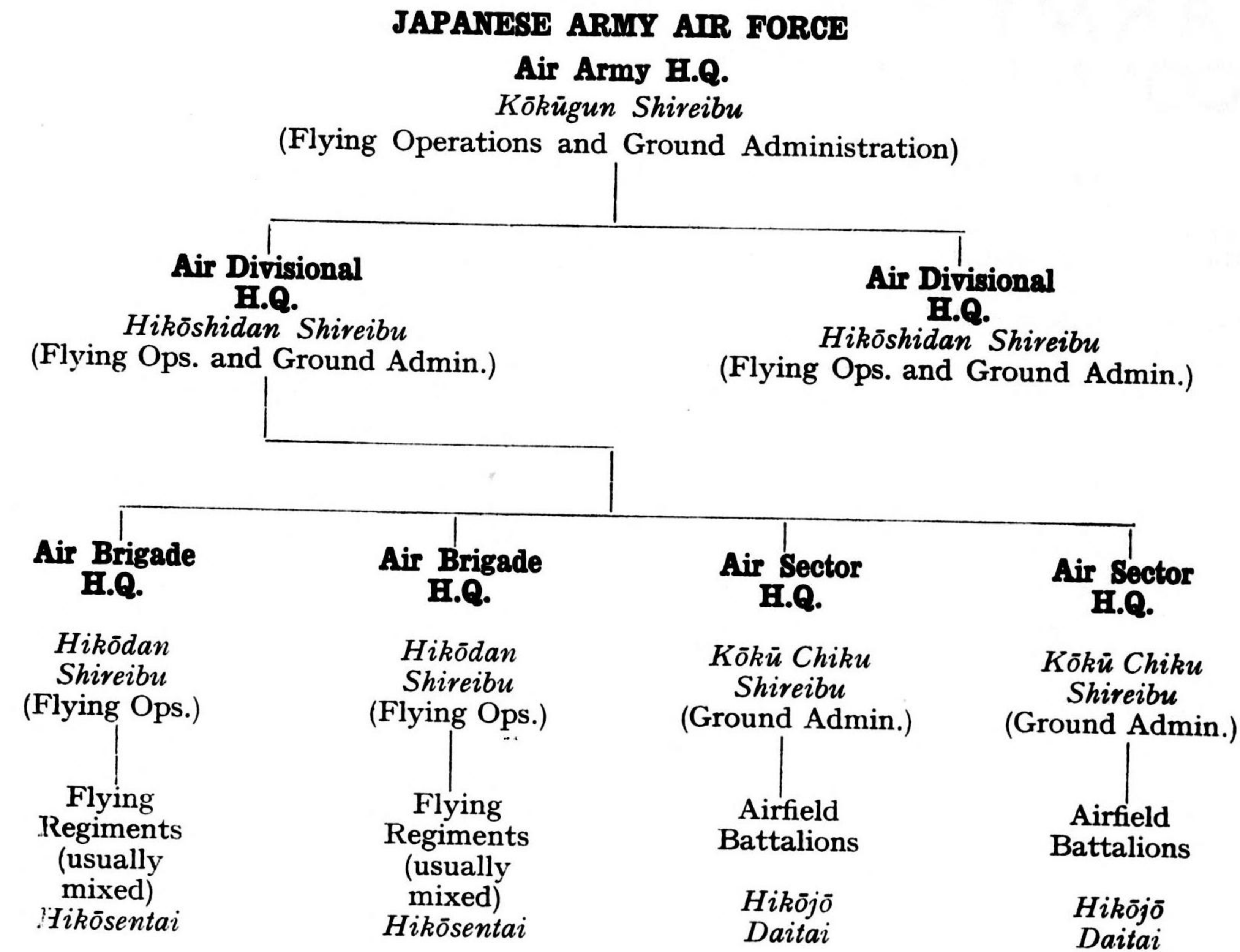
**Showing the reinforcement of the Philippines, etc.,
as on opposite map**

The dispositions of J.A.A.F. commands show radical changes. The plan of two Air Divisions in each Air Army (cf. Map 8) no longer holds good. Two Air Divisions have been moved from Manchuria to reinforce the 4th Air Army in defence of the Philippines. The 6th Air Division, disorganised by events in New Guinea, has ceased to be an effective command. The 3rd Air Division is now fully absorbed into the organisation of the 5th Air Army. Four Air Divisions are established in the area of the 1st Air Army in Japan. Another Air Division, the 8th, is moved to Formosa to strengthen Japan's South Western approaches.



APPENDIX

CHART SHOWING THE ORGANISATION OF THE JAPANESE ARMY AIR FORCE FOR COMPARISON WITH THAT OF THE GERMAN AIR FORCE



**Organisation of the
Japanese Naval
Air Force**

CHAPTER 22

Summary of the Organisation of the Japanese Naval Air Force

1. The Japanese Navy and the Japanese Naval Air Force form a close partnership. The Air Force, which forms part of the Navy, is organised so as to secure for the Navy the maximum advantage to be had from air power in naval co-operation. Conversely the Navy is organised so as to permit the Naval Air Force to form an integral part of its structure. It is the aim of this chapter to show in outline how each is organised and how their parts fit together.

THE JAPANESE NAVAL AIR FORCE

2. **Air Groups.** The Japanese Naval Air Force is made up of Air Groups, *Kōkūtai*, approximately ninety in number, each comprising a flying unit and complementary ground forces. All but five are land as opposed to carrier based. The ground forces of the Air Groups are not simply ground crews forming part of the flying unit, but are adequate in strength to administer an airfield; or if the Air Group is not land based, to provide similar services on board a carrier.

3. The Air Group varies in size, depending on its equipment. A large Air Group equipped with medium bombers would have a personnel establishment of over 2,000, and an equipment of 84 aircraft. A unit of this size is capable of sustained operations from its own resources from an isolated air base for long periods provided its supplies and replacements are assured. Air Groups tend to get split up between two or more bases. The practice has been for the Air Group to occupy a principal air base and to send out to other air bases detachments consisting of a small flying unit, maintenance and base personnel.

4. **Air Flotillas.** Between forty and fifty Air Groups are organised into Air Flotillas and Air Fleets. An Air Flotilla is composed of a number of Air Groups under an Air Flotilla Headquarters. Their flying units work together under the Air Flotilla Commander. In consequence each Air Group in the Flotilla is equipped with aircraft of one type, so that when they co-operate, one Air Group provides reconnaissance, another dive-bombers and another fighters, and so on. This is recognisable at once in any list of Air Groups in an Air Flotilla through the Japanese practice of numbering Air Groups in such a way as to indicate their function. Thus Air Groups bearing numbers between 100-199 are equipped as reconnaissance units; those between 200-299 as fighters, between 300 and 399 as interceptor or night fighters, between 400 and 499, float plane units, between 500 and 599 as attack units, between 700 and 799 medium bombers, 800 and 899 flying-boat units, 900-999 reconnaissance float planes, 1,000 and upwards transport units.

The composition of various Air Flotillas is given on pages 4 and 98, from which their nature as mixed tactical air forces can be seen on inspection.

5. **Air Attack Force.** The flying units of the Air Flotilla together form an Air Attack Force. This is usually made up of the flying units of a single Air Flotilla, reinforced as occasion requires by the incorporation of a flying unit or more from a neighbouring Air Flotilla. Changes in the Air Groups made early in 1944 have made borrowings from other Air Flotillas easier and Air Attack Forces are no longer so closely related to a single Air Flotilla as they were earlier in the War.

6. The Air Flotilla pattern is not followed in the Carrier Divisions. Each Carrier Division includes one Air Group, the aircraft of which are called upon to perform a variety of tasks, and

must therefore consist of several types. These are therefore mixed Air Groups, and are identified by numbers in the 600-699 bloc.

7. **Air Fleets and Base Air Forces.** An Air Fleet consists of two or more Air Flotillas under an Air Fleet Headquarters. The Air Groups in the Air Fleets are land-based and their flying units, *i.e.* exclusive of the base personnel of the Air Groups, form a land-based air force, or Base Air Force, *Kichi Kōkū Butai*. The Base Air Forces have been numbered consecutively from 1-7 as they have been formed. The following list shows the relationship between the Base Air Forces and the Air Fleets:—

The 1st Base Air Force	} consists of the flying units of	The 11th Air Fleet formed at end of 1941.
The 2nd Base Air Force		The 12th Air Fleet formed in early 1943.
The 3rd Base Air Force		The 13th Air Fleet formed late 1943.
The 4th Base Air Force		The 14th Air Fleet formed end 1943.
The 5th Base Air Force		The 1st Air Fleet formed end 1943.
The 6th Base Air Force		The 2nd Air Fleet formed mid-1944.
The 7th Base Air Force		The 3rd Air Fleet formed mid-1944.

8. **Air Groups not in Air Flotillas.** Some forty or fifty Air Groups are neither in Air Flotillas nor in Carrier Divisions. A dozen or so of these are named after the various Naval Stations in the Naval Commands of Japanese Home Waters, *e.g.* Yokosuka Air Group, and have no numbers. They act as a "Coastal Command" for Japan and are equipped with torpedo bombers, or float-planes, or fighters or with a mixture of types.

9. A few named Air Groups among those referred to in the preceding paragraph, as well as numbered Air Groups equipped with float planes are independent of the Air Fleets. They provide escorts for convoys over the main convoy route.

THE JAPANESE NAVY AND ITS AIR COMPONENTS

10. The Japanese Navy consists of—

- (a) Area Fleets;
- (b) A Striking Fleet;
- (c) An Escort Fleet;

under a Combined Fleet Headquarters.

The purpose of the Area Fleet is to screen and protect the area by anti-submarine patrols and by the interception of enemy reconnaissance craft. The principal naval and naval air forces which would be engaged in the event of a major attack are in the Striking Fleet. The Escort Fleet protects convoys over the main convoy routes. Each has its appropriate air component.

11. **Area Fleets.** At the period of their maximum expansion, the Japanese divided the Western Pacific into six areas as shown in Map No. 10. Five of these, that is excluding the coastal waters of Japan, were defended by Area Fleets, each bearing the name of the area in which it was stationed, *viz.* the South East, the North East, the South West, the Central Pacific, and the China Area Fleets.

Each Area Fleet Headquarters disposes of forces of three kinds—

- (a) A Fleet of light naval vessels;

(b) Base Forces, and

(c) an Air Fleet (or in the case of the China Area Fleet a smaller air force).

The Fleet patrols the Area and reports to Area Fleet Headquarters.

The Base Forces stationed at the principal harbours in the Area defend the bases and ensure the safety of the seas surrounding them. Base Forces consist of coastal and harbour defence units and surface escort craft, with a detachment of float planes for reconnaissance and anti-submarine patrols.

The Air Fleet co-operates with the Fleet and with the Base Forces in patrols, anti-submarine searches and in the interception of enemy naval and air forces.

12. The following list shows the air components of the Area Fleets at the time of the maximum development of Area organisation, that is in the period during which the Pacific Area Fleet was in existence. Air cover for the China Area Fleet is sufficiently provided for by two land-based Air Groups without a Flotilla Headquarters Staff to co-ordinate them.

Air Components of the Area Fleets

S.E. Area Fleet	N.E. Area Fleet	S.W. Area Fleet	Central Pacific Area Fleet
11th Air Fleet	12th Air Fleet	13th Air Fleet	14th Air Fleet
25th	27th 51st	23rd 28th	22nd 26th
Air	Air Air	Air Air	Air Air
Flotilla	Flotilla Flotilla	Flotilla Flotilla	Flotilla Flotilla
Air Group 151	252 203	153 331	202 201
Air Group 252	452 502	381 551	301 204
Air Group 253	732 553	(753) 705	503 501
Air Group 582	801 701	851	755 751
			802

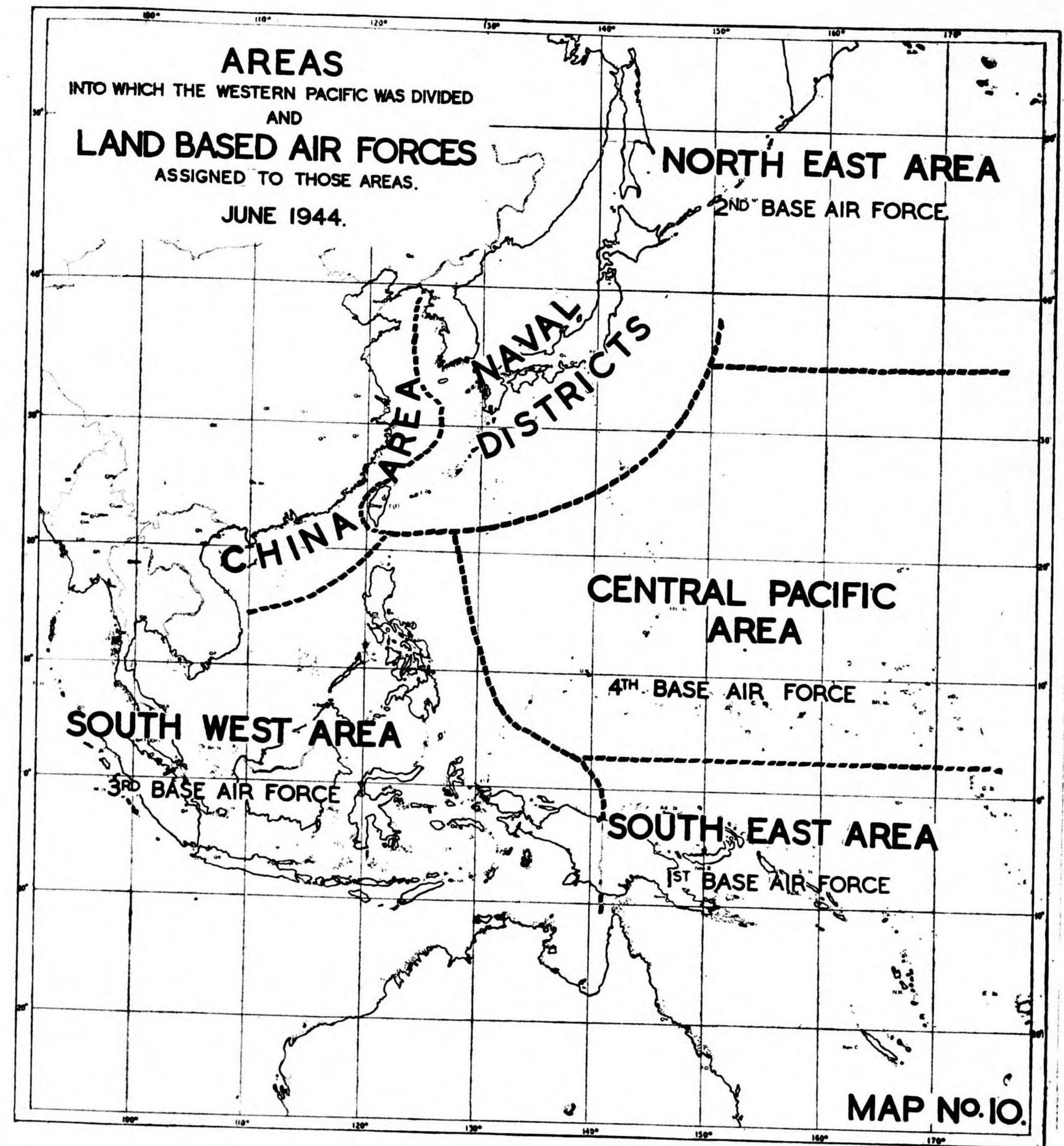
13. **The Striking Forces** of the Japanese Navy comprise—

- (a) the Capital Ships and the Carrier Divisions, forming the 1st Mobile Fleet,
- (b) the Submarine Fleet, and
- (c) a land-based Air Fleet.

This Force under the C.-in-C. Combined Fleet is not confined to any area but would come to the aid of the Area Fleet in the event of a major allied attack (as in the Mariana and the Philippine Islands in 1944).

14. The Carrier Divisions comprise the carrier-borne strength of the Japanese Navy (apart from a few aircraft carried on board warships). This amounts to five Air Groups. The Carriers and their carrier based Air Groups together form the Third Fleet. This Fleet works with the main Battleship Fleet.

15. By far the larger air component of the Striking Force of the Japanese Navy is its land-based



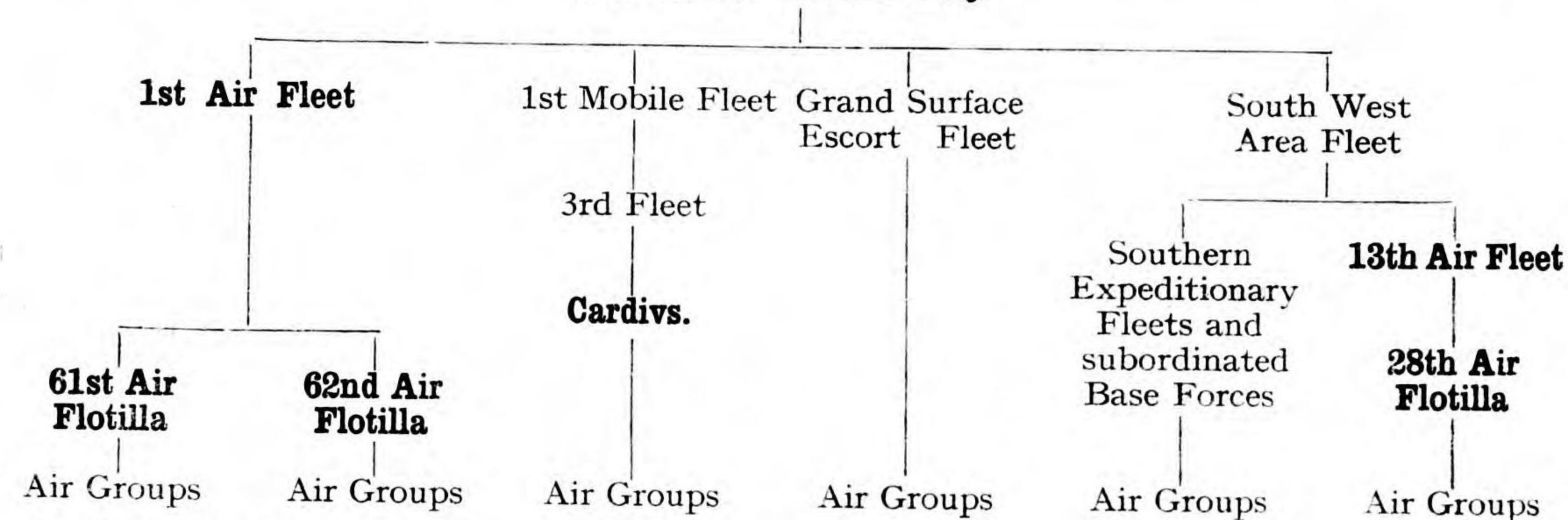
Air Fleet. This was formed towards the end of 1943 and named the 1st Air Fleet, in spite of the fact that four other Air Fleets were already in existence and assigned to the four principal Area Fleets. The 1st Air Fleet was built up to a large force of some twenty or more Air Groups in two Air Flotillas, partly by the formation of new Units and partly at the expense of Air Fleets already assigned to the previously existing Air Fleets. The two Air Flotillas of the 1st Air Fleet moved out to the Marianas as a suitable central position in the early part of 1944.

16. **The Grand Surface Escort Fleet** provides protection for convoys on all the principal routes. It consists of surface vessels including escort carriers, and a land-based air force provided by Air Groups equipped with Float planes. Detachments from these Air Groups are stationed at the principal bases along the convoy routes.

17. Outside Japan, the Naval Air Forces in any area may operate under several commands, only ultimately under the C.-in-C. Combined Fleet. First there will be the Air Groups in the Air Flotillas belonging to the Area Fleet. Next there may be Air Groups of the Air Flotillas of the 1st Air Fleet, and of the Cardivs. Furthermore, there will be Air Groups under the Escort Fleet, and detachments of those belonging to Surface Fleets which form part of the Area Fleet. Finally, there are the float plane detachments working with the Base Forces.

The following diagram showing the air components of the various Fleets operating in the Philippines area in March 1944 illustrates the interlocking of naval and naval air forces.

Air Components of the Fleets operating in the Philippines Area in March 1944.
COMBINED FLEET H.Q.



18. **Japanese Naval Air Forces in the Homeland.** The foregoing paragraphs describe the Overseas Organisation of the Japanese Naval Air Force. The Naval and Naval Air Units in the Japanese homeland area are not, however, part of this organisation, but are controlled by four Naval District Commands and six Guard Districts. These are similar in function though the latter have less wide powers. The Naval Districts are as follows: Yokosuka, Sasebo, Kure, Maizuru; and the Guard Districts, Ominato, Chinkai, Osaka, Takao, Ryojun (Port Arthur), and Hainan.

The Naval Districts and Guard Districts are important naval commands directly subordinate to the Navy Ministry and the Naval General Staff. They control coastal defence naval forces together with some 25 named Air Groups equipped with reconnaissance, fighter and torpedo or dive-bomber aircraft which form the defensive air screen for the Empire.

All Air Groups are originally formed and largely trained in Japan before they go overseas, and the Naval and Guard districts control this recruitment and training of naval air personnel.

Separation of Flying Units from Ground Units in the Air Groups

19. It will not have escaped the reader that the Air Group forms the basic unit out of which the naval air component of any naval command is invariably built. In the early stages of the war, when the Japanese had the initiative, there may have been advantages in the plan of combining under one Commander flying personnel and airfield staffs; but these were lost as soon as the Japanese were driven to defend themselves. For such a large unit is not designed for mobility. The flying unit away from its base rapidly loses its operational readiness.

The problem of meeting attack from any quarter required a form of organisation which would provide an attack force less tied to its bases. The flying unit of the Air Group should be free to leave its base and find similar facilities at a number of alternative air bases. The task of modifying the Air Group so as to reconcile unit mobility with operational readiness occupied Japanese minds throughout 1943 and resulted in changes that were introduced in early 1944. In the first place the flying units in Air Flotillas and in Carrier Divisions received new establishments which provided that each flying unit had aircraft of one type only and removed many anomalies in the composition of the Air Groups as given in paragraph 4. The new establishments set up Flying Units, *Hikōtai*, that were fully mobile, taking with them when they moved a minimum of essential ground personnel. In the second place the Flying Units received numbers distinct from the Air Groups to which they belonged so that a parallel between the Flying Regiments and Airfield Battalions of the Army Air Service was established.

In the third place new enlarged establishments were set up for the ground personnel of the Air Group so that several bases could be adequately staffed. The full solution to the problem of providing a range of bases for the flying units in an Air Flotilla may never have been adopted. It involved the formation of Air Base Units of two kinds; one kind which would be able to ensure the operational readiness of several types of aircraft operating from the base, and a second principal maintenance base for all aircraft of the Flotilla at a centre well in the rear. Some Air Base Units were formed from the ground personnel of disbanded Air Groups, but in the main the task of maintaining the operational readiness of Flying Units was left to the enlarged ground staffs of the Air Groups.

20. **Strength of the J.N.A.F.** At midsummer 1944 the front-line strength of the J.N.A.F. was estimated to be 2,700 aircraft. These were organised into about 25 named Air Groups and 65 numbered Air Groups.

With one or two exceptions, all the named Air Groups were in the Empire, and formed a defensive screen for Japan proper.

Of the numbered Air Groups about 45 were organised into eleven Air Flotillas, and the Flotillas into seven Air Fleets.

Five of the numbered Air Groups belonged to the Carrier Divisions, and nine were attached to Surface Fleets.

Parts of four Air Groups were attached to Base Forces.

CHAPTER 23

Air Groups

1. In midsummer 1944 the Japanese Naval Air Force was organised into eighty-five or ninety operational Air Groups, *Kōkūtai*, each with an establishment of between 400 men in a small Air Group engaged on reconnaissance, and 2,000 in a large bomber Air Group. The aircraft equipment of the former would amount to 18+6 reconnaissance aircraft and of the latter 72+24 medium bombers.

2. The personnel of an Air Group is divided into fifteen or more specialist sections known as *buntai*. As an example, in any Air Group equipped with medium bombers, four sections, *hikōbuntai*, would be devoted to flying operations, four to maintenance, one each to intendance, signals, M/T., meteorology, medical services, and so on. Organised in this manner an Air Group should be capable of sustained operations from its own resources for a long period from an isolated air base, provided its supplies and replacements were assured. In this it differs from the Japanese Army Air Force which provides separate commands for directing ground organisation and flying operations.

3. Air Groups are identified either by name or by number. Sixty-five of the ninety Air Groups are numbered and the remaining 25 named. The named Air Groups are attached to Naval Commands in Japan from which they derive their names, e.g. Sasebo Air Group. They provide coastal patrol and escorts, performing the function of a Coastal Command. When a named Air Group is drafted overseas, it usually loses its name and is assigned a suitable number.

Between forty and forty-five of the numbered Air Groups are organised into Air Flotillas. The remainder are attached to the Carrier Divisions or to Surface Fleets, e.g. to the Grand Surface Escort Fleet, the China Area Fleet, or to one of the Expeditionary Fleets, etc.

4. The numbers by which Air Groups are identified indicate their character, as shown by the type of aircraft with which they are equipped. The principal exceptions to this useful plan are dealt with in para. 6.

<i>Air Groups with numbers between</i>	<i>Kind of Aircraft</i>
100 and 199	are equipped with Reconnaissance aircraft
200 and 299	„ „ „ „ <i>“ Kō ”</i> Fighters.
300 and 399	„ „ „ „ <i>“ Otsu ”</i> or <i>“ Hei ”</i> Fighters.
400 and 499	„ „ „ „ Float planes.
500 and 599	„ „ „ „ Attack aircraft
600 and 699	„ „ „ „ Mixed aircraft
700 and 799	„ „ „ „ Medium bombers.
800 and 899	„ „ „ „ Flying boats.
900 and 999	„ „ „ „ Recce. float planes, occasionally with bombers in addition.
1,000 and up	„ „ „ „ Transport aircraft.

Kō, Otsu, Hei, are equivalent to 1st, 2nd, 3rd.

“ Kō ” Fighters attack enemy fighters.

“ Otsu ” Fighters intercept enemy bombers.

“ Hei ” Fighters are night fighters.

The tens digit in the number distinguishing an Air Group indicates its home base according to the following scheme :—

<i>Home Base</i>	<i>Tens digit in Air Group number</i>
Yokosuka Naval Station	0, 1, or 2
Kure Naval Station	3 or 4
Sasebo Naval Station	5, 6 or 7
Maizuru Naval Station	8 or 9

If the units digit is odd the Air Group was originally named, if even, numbered.

For instance, an Air Group with the number 345 would be equipped with fighter aircraft, and have Kure Naval Station as its home base, and would originally have been a named Air Group before it was sent overseas.

5. It will be seen that Air Groups are usually equipped with aircraft of one principal kind. This is a suitable plan when Air Groups work together in an Air Flotilla, for then their various specialist flying units co-operate, the 100's providing reconnaissance, the 200's fighters, the 500's attack a/c, and the 700's medium bombers, and so on.

6. Air Groups not forming part of an Air Flotilla need a mixed establishment of aircraft, since they operate independently of each other and each must be prepared to carry out a variety of tasks. These mixed Air Groups fall into two classes :—

- Air Groups in the 600 bloc belonging to the Carrier Divisions come in this category. Each is equipped with fighters, dive-bombers and torpedo bombers, and each can undertake its own reconnaissance.
- single Air Groups assigned to the various surface fleets for anti-submarine patrols and for escort come in this class. These Air Groups are generally in the 900's equipped principally with float planes. The Air Groups co-operating with the China Area Fleet, however, are numbered 254 and 256, and while they possess fighters, as their numbers indicate they should, they have float planes and torpedo bombers in addition.

7. The various sections of an Air Group fall into three divisions :—

- Flying units, *Hikōtai*, made up of two *Hikōbuntai* per *Hikōtai*.
- Flight Department, *Hikōka*, made up of an Aircraft Maintenance and an Equipment Maintenance Section.
- Administrative Sections.

8. Flying Units, *Hikōtai* (symbol F.A.), are designated according to their respective missions as follows :—

- Fighter Units. *Sentōki Hikōtai* written S. Hikōtai, or S FA.
- Attack Units. *Kōgeki Hikōtai* written K. Hikōtai, or K FA.

(c) Recce. Units. *Teisatsu Hikōtai* written T. Hikōtai, or T FA.

(d) Paratroop Transport Units. *Unsō Hikōtai* written U. Hikōtai, or U FA.

Each of these classes is further subdivided. The further classification, together with examples of the types of aircraft of the classes and sub-classes is given below :—

Column I Class and Sub Class	Column II Allied Code Name	Column III Aircraft Type	Column IV Japanese Code Name or Type Number
Fighter <i>Hikōtai</i> S.			
<i>Kō</i> Fighters, to combat enemy fighters	Zeke	1-E. F.	Type 0 c.b. fighter.
<i>Otsu</i> Fighters to combat enemy bombers	Jack	1-E. F.	<i>Raiden</i> = Thunder.
<i>Hei</i> Fighters, night fighters	George Irving	1-E. F. 2-E. F.	<i>Shiden</i> = Lightning. <i>Gekko</i> = Moonbeam.
Attack <i>Hikōtai</i> K.			
Carrier-borne bombers (Dive-Bombers)	Judy	1-E. D.B.	Type 2 c.b. bomber <i>Suisei</i> = Comet.
Carrier-borne Attack Plane (Torpedo a/c)	Jill	1-E. T.B.	<i>Tenzan</i> = Heavenly Mountain.
Land-based bombers	Frances	2-E. B.	<i>Ginka</i> = Milky Way.
Land-based Attack planes	Betty Nell	2-E. B. 2-E. B.	Type 1 l.b. attack plane. Type 96 l.b. attack plane.
Recce. <i>Hikōtai</i> T.			
Ship-borne Recce. Planes	Judy	1-E. R.	Type 2 c.b. recce.
Land-based Recce. Planes	Irving	2-E. R.	Type 2.
Recce. Sea Planes	Jake	1-E. R.F.P.	Type 0.
Float Plane	Rufe	1-E. F.R.F.	Type 2.
Fighter Recce.			
Bomber Recce.			
Flying Boats	Emily	4-E. F.B.	Type 2.
Search Planes	Mavis	4-E. F.B.	Type 97.
Paratroop Transport <i>Hikōtai</i> U.			
Transport Planes	Tess Tabby Nell Mavis	2-E. Tr. 2-E. Tr. 2-E. Tr. 4-E. F.B.	Type 0 Compare D.C.2. Type 0 Compare D.C.3. Type 96. Type 97.

Note.—Carrier-borne, C.b. indicates nothing more than a type of aircraft suitable for operating from a carrier and capable of being fitted with the necessary gear. It is usually land-based.

9. Flying units were classified in the form shown in Column 1 above, and new establishments set up for each, in the early part of 1944. It was the intention that these new establishments should be introduced by the 1st April as standards and that Flotilla Commanders should proceed to organise their units on the new basis.

10. Each class and sub-class of *Hikōtai* is identified by a block of numbers preceded by the initial letter S, K, T, or U to denote its class. The establishment of each class and sub-class in aircraft and personnel is given in the tables following :—

Standard Establishments of *Hikōtai*.

Class of <i>Hikōtai</i>	Sub Class	A/C	<i>Hikōtai</i> Block Nos.	Personnel				Flying men per aircraft	Maintenance men per a/c
				O/C	Flying	Main- tenance	Total		
S	<i>Kō</i> Fighters	36/12	S 1 -400	1	36	144	181	1	4
	<i>Otsu</i> Fighters	36/12	S 401-800	1	36	144	181	1	4
	<i>Hei</i> Fighters	18/6	S 801-1000	1	46	114	161	2.6	7
K	Carrier borne Bombers	36/12	K 1 -200	1	90	134	225	2.5	3.6
	Carrier borne Attack A/C	36/12	K 201-400	1	144	116	261	4	3.1
	Land based Bombers	36/12	K 401-600	1	144	204	349	4	5.5
	Land based Attack A/C.	36/12	K 601-800	1	252	252	505	7	7
T	Shipborne Recce A/C.	18/6	T 1 -200	1	96	114	211	5.3	6
	Landbased Recce A/C.	18/6	T 201-300	1	132	171	304	7.3	9
	Recce Seaplanes	18/6	T 301-600	1	72	59	132	4	3
	Floatplane Recce								
	{ Fighter	18/6	T 601-900						
	{ Bomber	18/6							
Flying Boats	12/4	T 601-900	1	72	72	145	4	4	
Search Planes	18/6								

11. The Air Groups in the Air Flotillas were already equipped with aircraft of one principal class so that their functions could generally be inferred from their number. Renaming and introducing new establishments for flying units within the Air Groups in accordance with the schedule in para. 10 would not therefore disturb the existing subordination of flying units to Air Groups to any great extent. In cases where Air Groups were not already equipped with aircraft of one principal class, changes were made so as to provide that, generally speaking, each Air Group should have two similar *Hikōtai*.

12. The refinement which results from allotting a distinguishing number to the Flying Unit of an Air Group is illustrated by the following hypothetical example :—

Air Group 204 might contain S319FA and S320FA.

The number of the Air Group in this instance would suggest that it is equipped with *Kō* fighters in accordance with the schedule in para. 4, and likely to be *Zekes* according to the schedule in para. 8. The numbers S319 and 320 would identify the two flying units in the Air Group as *Hikōtai* in the *Kō* Fighter sub-class in accordance with the schedule in para. 10.

13. The establishments given in para. 10 provide for a 33 $\frac{1}{3}$ per cent reserve of aircraft with each class of unit in addition to its initial equipment, but do not provide for a corresponding reserve of aircrews. This is not unusual in the formal statement of establishments : the number of pilots provided by the establishment in the case of units equipped with (a) *Kō* and *Otsu* fighters ; (b) carrier attack ; (c) land-based bombers ; (d) land-based attack a/c. ; (e) recce. seaplanes ; and (f) shipborne fighter and bomber recce. units, is just sufficient for the number of aircraft in the initial equipment, viz.

One pilot for each a/c in the I.E. of *Hikōtai* equipped with fighter aircraft.

Four aircrew for each a/c in the I.E. of *Hikōtai* equipped with carrier-borne attack aircraft, land-based bombers, recce seaplanes, and flying boats, and

Seven aircrew for each a/c in the I.E. of *Hikōtai* equipped with land attack a/c.

14. **Maintenance personnel included in the *Hikōtai*.** In addition to aircrew personnel, each flying unit has sufficient maintenance men on its establishment to keep the aircraft serviceable, and can call upon two or three transport aircraft to serve them when the unit moves. They are mostly specialists and number between three and nine men per aircraft, depending on the type. This by no means renders the *Hikōtai* independent, however. The total personnel of a single-engined Fighter Regiment of the J.A.A.F. numbers 330 for 36 a/c., whereas for the corresponding Fighter *Hikōtai* of the J.N.A.F. the establishment is 181 only for 36 a/c., and of these about 16 of the most important technicians are permanently lent to the Flight Department, which provides maintenance and repair facilities at the base. This light establishment no doubt makes the *Hikōtai* mobile, but at the same time heavily dependent on the resources of an organised airfield for its maintenance, ordnance and administrative needs, that is, on the other sections of the Air Group.

15. At the time of the introduction of new establishments for the Flying Units new establishments were also adopted for the Aircraft Maintenance, and Aircraft Equipment Maintenance Sections of the Air Group. The new establishments were as follows :—

Standard Establishments for the Flight Departments of an Air Group serving one *Hikōtai*

Aircraft Type		Personnel				
Class	Sub Class	Operations Head-quarters	Stores Section	Aircraft Maintenance Section	Equipment Maintenance Section	Total
S	<i>Kō</i> Fighters	5	25	196	63	289
	<i>Otsu</i> Fighters	5	25	196	63	289
	<i>Hei</i> Fighters	5	22	180	39	246
K	Carrier-borne Bombers	5	24	268	45	342
	Carrier-borne Attack A/c	5	24	268	92	389
	Land-based Bombers	6	32	390	112	540
	Land-based Attack A/c	6	32	390	58	486
T	Shipborne Recce. A/c	4	17	154	29	204
	Land-based Recce. A/c	4	21	180	49	254
	Recce Seaplanes	4	19	154	9	186
	Seaplane Fighters	4	20	154	11	189
	Seaplane Bombers	4	19	154	16	193
	Flying Boats	6	29	222	63	320
	Search Planes	4	18	187	10	219
U		4	13	197	—	214

16. The officers and men of the Flight Department are not part of the *Hikōtai*. They are established at the air base, and are responsible for the maintenance and upkeep of the aircraft of the *Hikōtai*. A single seater *Kō* fighter *Hikōtai* for example has an establishment of 181 personnel,

144 of whom are maintenance men on the unit's establishment. The 289 men in the above list are additional to these, making a total of 470 men concerned with the operation and maintenance of the 36 aircraft (plus 12 in reserve) of the *Hikōtai*.

17. The relationship between the maintenance personnel on the establishment of the Flying Unit and the maintenance personnel in the Flight Department is very close.

(a) the Officers Commanding the Aircraft Maintenance Section and the Equipment Maintenance Sections of the Flight Department are on the establishment of the *Hikōtai*.

(b) again, each *Hikōtai* of 36 a/c, consists of two squadrons, *Hikōbuntai*, of 18 a/c. The Aircraft Maintenance Section is divided into two corresponding sub-sections each to look after the aircraft of one Squadron. Each Officer in Command of the two sub-sections is also on the establishment of the *Hikōtai*.

(c) finally, ten or so specialists from among the *Hikōtai* maintenance personnel are permanently lent to the Flight Department, though they no doubt accompany the *Hikōtai* when it is ordered away from its own base for operations.

18. The Flight Department is divided into three subordinate sections under a small operations headquarters consisting of the Commanding Officer of the Department and the principal officers of the sections. The Sections are: (a) Stores; (b) Aircraft Maintenance; (c) Equipment Maintenance Sections.

The Stores section under an O.C. Fuel and Stores is responsible for the storage, issue and stock-keeping of (i) tools, aircraft equipment and aircraft spares; (ii) oil and fuel; (iii) ammunition other than bombs.

The Aircraft Maintenance Section consists of:—

(i) an aircraft section which attends to the upkeep and (minor) repairs of the aircraft in the *Hikōtai*.

(ii) an aircraft instruments section;

(iii) an electricians section;

(iv) an aircraft accessories section.

For a single-engined fighter unit of 36 aircraft the establishment provides for 168 under (i), 6 under (ii), 3 under (iii), and 9 under (iv).

The Equipment Maintenance Section (previously known as the Ordnance Section, *Heiki*, and possibly still so called), handles:—

(i) bombs;

(ii) machine guns;

(iii) torpedoes;

(iv) photographic apparatus;

(v) optical instruments.

For a single-engined fighter unit of 36 a/c the establishment provides for 60 men for (i) and (ii) together and 2 for (iv).

19. **Administrative Sections:** The remaining sections of the Air Group are concerned with airfield administration and include a Signals Section; an Intendant's Section dealing with pay,

accounts, rations and accommodation; an M/T Section; a Meteorological Section, making regular meteorological observations, maintaining a listening watch for weather broadcasts, and providing forecasts for flights; a Medical Section to run the sick quarters; and others depending on the needs of the unit. The total strength of the auxiliary sections may amount to 350 men for an Air Group in the 500 bloc. On a pro rata basis air groups with other equipment would then have the numbers given in the appropriate column in the final table in para. 20a. This table gives the total establishment strength for the various classes of Air Groups in Flotillas, assuming each to include two *Hikōtai*.

20. An example may now be given of the manner in which an Air Group in the 500's equipped with attack aircraft in two *Hikōtai* and organised on the plan described in the above paragraphs would be grouped into numbered sections (*buntai*).

Section Number	Title of Section	Personnel Strength
1	1st Flight Section, (<i>Hikōbuntai</i>)	} 486
2	2nd Flight Section	
3	3rd Flight Section	
4	4th Flight Section	
5	1st A/C Maintenance Section	
6	2nd A/C Maintenance Section	
7	1st Equipment Maintenance Section	
8	2nd Equipment Maintenance Section	
9	A/C Maintenance Section at Base	} 565
10	Equipment Maintenance Section at Base	
11	Communications Dept. (Signals)	} 350
12	1st Lieutenants Dept. (including Met, M/T, Guard and others)	
13	Overhaul and Replacement Department	
14	Medical Department	
15	Supply (? Intendants) Department	
		Total=1,401

One *Hikōtai* comprises Sections Nos. 1, 2, 5 and 7.

The second *Hikōtai* comprises Sections Nos. 3, 4, 6 and 8.

Sections 9-15 remain at the base. Sections 9 and 10 are given in detail in para. 15.

Sections 11-15 are dealt with briefly in para. 19 above.

20a. Personnel Establishments of Air Groups comprising 2 Hikōtai.

Air Group in series	Mission	Example of a/c	Personnel					A/c establishment
			a Hikōtai (Flying Unit)	b Hikōtai (Maintenance & Ordnance)	c a and b together	d Other Sections of Air Group	e Total	
100s.	Recce	Judy	422	340	762	254	1,016	36/12
200s.	Fighters	Zeke	362	473	835	278	1,113	72/24
300s.	Fighters N. Fighters	Zeke	362	473	835	278	1,113	72/24
		Irving	322	398	720	240	960	36/12
400s.	Float Plane Recce	Jake	264	308	572	190	762	36/12
500s.	Carrier b. Bombers	Judy	486	565	1,051	350	1,401	27/24
	Land based Bombers	Frances	698	896	1,594	531	2,125	72/24
600s.	Mixed							
700s.	Land b. Attack	Betty	1,010	796	1,806	602	2,408	72/24
800s.	Flying Boats	Emily						
900s.	Recce Float Planes	Jake	264	308	572	190	762	36/12
1,000s.	Transport a/c		360	355	715	235	950	36/12

21. The revisions in the establishments described in this chapter have doubtless been undertaken in accordance with the recommendation dated April, 1943, set out in Appendix 1 on page 140, or with modifications of these recommendations. These recommendations deal not only with problems of air force organisation but with the underlying principles of strategy in naval air co-operation which prompted their adoption.

The crux of the organisational problem is the unwieldiness of the Air Group. How can the flying unit be kept mobile and at the same time at a high level of readiness if it is dependent on a single fixed base? In the Army Air Force this problem was solved by providing a large number of adequately equipped air bases so that a flying unit would not be tied to any particular base.

22. The proposal on the Naval Air side was :—

- (a) to equip each flying unit with one class of aircraft and to provide it with just sufficient maintenance personnel to service them, and not too many to make it impossible for them to accompany the unit when it moved ;
- (b) to increase the number of base personnel in the Air Group and to form them into Air Base Units, distributing the Air Base Units over several Air Bases from which the flying unit could operate.

No such general reorganisation of the ground personnel of Air Groups into Air Base Units, *Kōkū Kichi Tai*, took place. But a few were established, partly from the ground personnel of disbanded Air Groups.

The best known Air Base Unit was that at Truk and Tenian, numbered 101, which furnished base facilities to all flying units using Takejima, Eten and Tenian, and must therefore have been equipped to deal with aircraft of many kinds. One such Air Base Unit capable of dealing with all types of aircraft was proposed for each Air Flotilla.

The views (and misgivings) of the Japanese themselves on this problem of how best to provide at one and the same time for the operational readiness and for the mobility of the flying units of the Air Groups are given on pages 148 and 149.

CHAPTER 24

The Air Flotilla

1. For co-operation with the naval surface forces the eighty or more operational Air Groups of the J.N.A.F. are assigned to the following types of commands :—

- (a) About 65 per cent. of the total number are formed into land-based Air Flotillas.
- (b) About 5 per cent. are allotted to Carrier Divisions.
- (c) 10–15 per cent. are attached to Surface Fleets—*e.g.*, Grand Surface Escort Fleet, The Southern Expeditionary Fleets, The China Area Fleet—and are again land-based.
- (d) Some 15–20 per cent. are assigned to Naval Districts and Guard Districts in Japan and the Empire.

2. Twelve Air Flotillas have been noted during the course of the war. Eight of these are numbered consecutively, from 21 to 28; two, numbered 50 and 51, are primarily engaged in training; the remaining two are numbered 61 and 62.

3. **Composition.** The Air Flotilla is most often composed of three or four Air Groups, but not uncommonly has six to ten. The number varies according to the location of the Air Flotilla, the duty expected of it, and the operational requirements in the area in which it is stationed.

The Japanese adopted the plan of providing composite defensive forces in the five areas shown on Map 10 into which they eventually divided the Western Pacific Ocean, which were intended

to remain in the area to which they were allocated. The air component of these Area Forces consisted of small Air Flotillas; the larger Air Flotillas shown below as examples, were allocated to the 1st Air Fleet, which had a different rôle to play. (See Chapter 25, para. 5.)

Each Air Group in a Flotilla is equipped with aircraft of one type. The essence of Air Flotilla organisation is in associating together several differently equipped Air Groups to co-operate with each other. This provides a tactical formation properly balanced and with considerable flexibility of air strength.

As the numbers assigned to Air Groups in general indicate their function, a list of Air Groups making up an Air Flotilla shows a characteristic sequence. Thus, in March, 1944, Air Flotillas Nos. 61 and 62 were constituted as follows:—

61st Air Flotilla	
121	Air Group equipped with reconnaissance aircraft
261	“ Kō ” fighter aircraft
263	“ Kō ” fighter aircraft
321	“ Hei ” fighter aircraft
341	“ Otsu ” fighter aircraft
343	“ Otsu ” fighter aircraft
521	2.E bomber aircraft
523	dive-bomber aircraft
761	medium-bomber aircraft
1,021	transport aircraft

62nd Air Flotilla	
141	Air Group equipped with reconnaissance aircraft
221	“ Kō ” fighter aircraft
265	“ Kō ” fighter aircraft
322	“ Hei ” fighter aircraft
345	“ Otsu ” fighter aircraft
361	“ Otsu ” fighter aircraft
522	bomber aircraft
524	bomber aircraft
541	dive-bomber aircraft
762	medium-bomber aircraft

4. The Air Attack Force. The Flying Units of the Air Groups in the Air Flotilla are grouped for operations into a flexible fighting organisation known as the Air Attack Force.

Its composition may vary from time to time according to the operations which it has to undertake. For instance, some operations may require only fighter aircraft, when Fighter *Hikōtai* only would be used. At other times, Attack *Hikōtai* or Bomber *Hikōtai* may be used separately, but it is more common for the force to comprise a combination of types.

5. Strength. An Air Flotilla consists of a small land-based Air Force under a Headquarters Staff. No establishment figures can be given for the strength of an Air Flotilla either in aircraft or personnel since its size depends on the tasks it is planned to undertake.

The 61st and 62nd Air Flotillas, constituted as above in para. 3, may however be taken as typical of the larger kind of Air Flotilla.

Approximate establishment figures for these two Flotillas would give each of them some 500–600 aircraft of various types, and about 10,000 men.

In practice, establishment figures are rarely attained, owing to operational losses and replacement difficulties.

The figures for the smaller Air Flotillas consisting only of three or four Air Groups would be proportional to those given above.

6. Administration of the Air Flotilla. *Administrative orders*, which include training and movements of units, go out to subordinate units in the name of the Air Flotilla.

Matters dealt with by Air Flotilla Headquarters include the following:—

- (a) general organisation;
- (b) allocation of Air Groups to specific bases;
- (c) maintenance of air bases;
- (d) supplies of fuel, ordnance, apparatus, food and clothing;
- (e) replacement of aircraft;
- (f) replacement and transfers of aircrews and ground personnel;
- (g) personnel matters and records;
- (h) training exercises;
- (i) arrangements for transport of personnel and equipment.

Operational orders are issued to flying units in the name of the Air Attack Force Headquarters.

Since the Commanding Officer of the Air Flotilla commands the Air Attack Force, Air Attack Force Headquarters is the Operations Department of the Air Flotilla.

7. Units Controlled by Air Flotilla Headquarters. In addition to the Air Groups, Air Flotilla Headquarters may from time to time control attached forces. These often include:—

- (a) Reconnaissance and transport aircraft attached to Headquarters.
- (b) Torpedo Adjustment Groups consisting of naval personnel attached for maintenance work on aerial torpedoes.
- (c) Construction Battalions (or detachments) occasionally coming under Air Flotilla control when working on airfield sites.
- (d) Ships—seaplane tenders, transports, and target ships for training exercises.

CHAPTER 25

The Air Fleet

1. The Air Flotillas described in the previous chapter are grouped together to form Air Fleets. Until the summer of 1943 it was customary for an Air Fleet to consist of two Air Flotillas under an Air Fleet Headquarters, but since then, Air Fleets have consisted of one, two, three or four Flotillas, or have been left with a few fragmentary forces only.

2. The Japanese have seven Air Fleets, each identified by number. Those first formed were not numbered 1st, 2nd and 3rd, however. These came later, as the following list giving the dates of their creation shows :—

11th Air Fleet	formed about the end of 1941.
12th " " "	early in 1943.
13th " " "	in September 1943.
14th " " "	at the end of 1943.
1st " " "	towards the end of 1943.
2nd " " "	about July 1944.
3rd " " "	about July 1944.

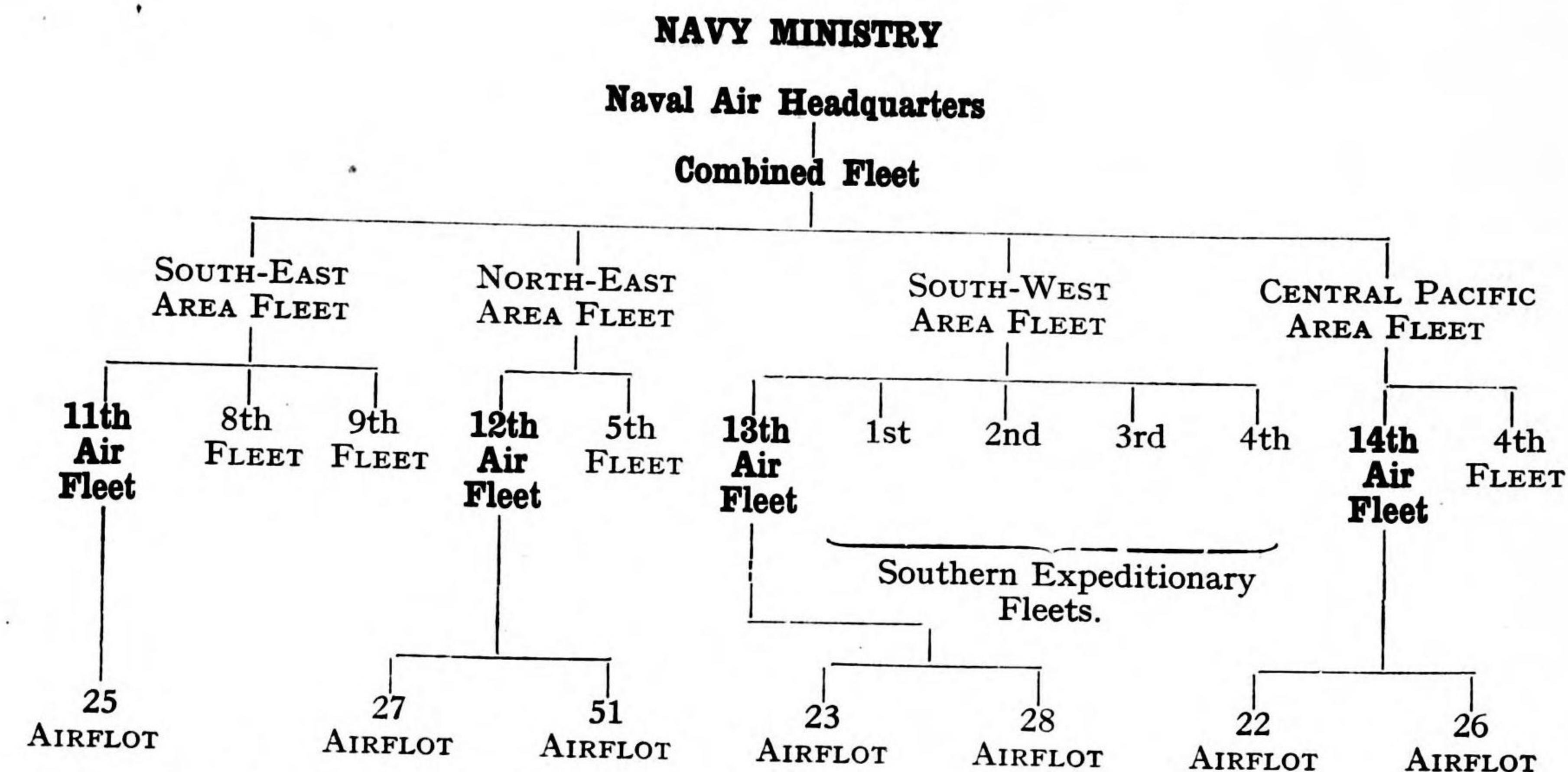
3. The flying units from the Air Groups comprised in an Air Fleet together form a land-based air force. The Japanese have therefore seven naval land-based air forces. These, unlike the Air Fleets of which they form part, were numbered consecutively from 1 to 7 in order of their creation. They are as follows :—

1st Base Air Force	consisting of the Flying Units of the 11th Air Fleet.
2nd Base Air Force	" " " " " " 12th Air Fleet.
3rd Base Air Force	" " " " " " 13th Air Fleet.
4th Base Air Force	" " " " " " 14th Air Fleet.
5th Base Air Force	" " " " " " 1st Air Fleet.
6th Base Air Force	" " " " " " 2nd Air Fleet.
7th Base Air Force	" " " " " " 3rd Air Fleet.

The disposition of the Air Fleets and of their subordinate Air Flotillas at different stages of the war is illustrated in the maps in Chapter 34.

4. **Air Fleets 11 to 14** form the air components of the four Area Fleets which were created to defend the Western Pacific Ocean, viz. : the South East, North East, South West and Central Pacific Area Fleets. The chain of command and the relationship of the Air Fleets to the surface fleets forming part of the Area Fleets is illustrated in the following diagram, which shows the position in March 1944.

Diagram showing the chain of command in the Area Fleets and the position of the Air Fleets forming part of the Area Fleets

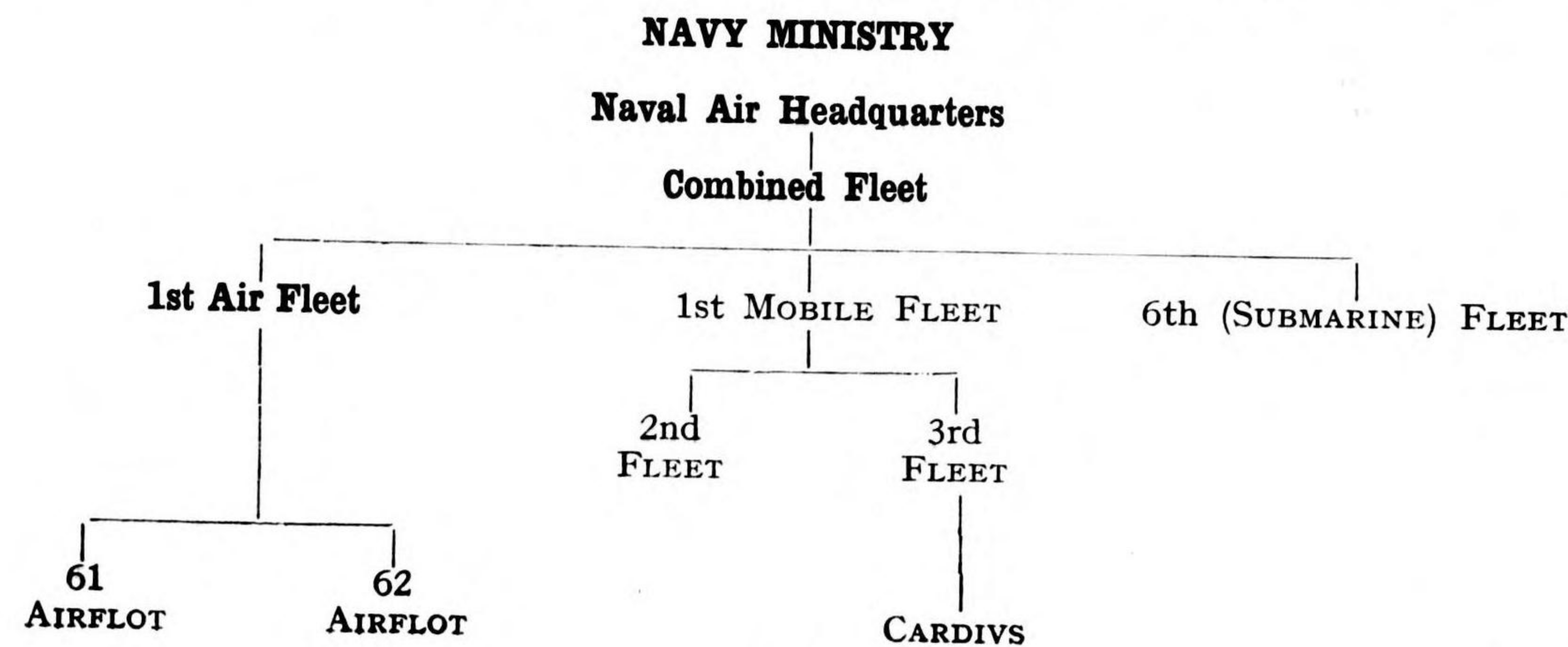


5. **The 1st Air Fleet** was brought into being towards the end of 1943 to form part of the Striking Forces of the Navy, as opposed to the Air Fleets considered above which were holding forces only. In consequence of the part it was designed to play, it remained independent of Area Fleet organization and was placed directly under the C.-in-C. of the Combined Fleet. In this way it provided a land-based air force (the 5th Base Air Force) to co-operate with the 2nd Fleet (the battleship fleet), and the carrier-based air force in the Carrier Divisions, in meeting allied attacks wherever they should fall. The chain of command of the Striking Forces of the Navy and the position of their land-based and carrier-based components is illustrated in the following diagram :—

STRIKING FORCES

March 1944

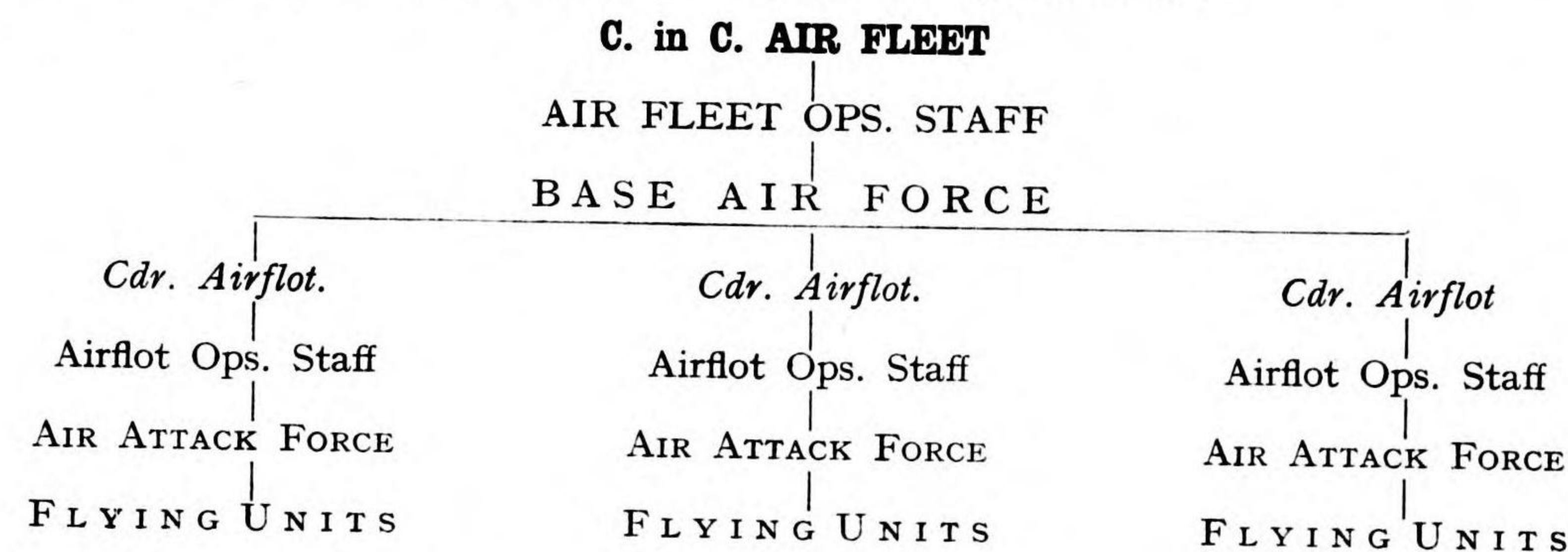
Diagram showing the chain of command of the Naval Striking Forces and the position of the land-based and carrier-based air components in these Forces.



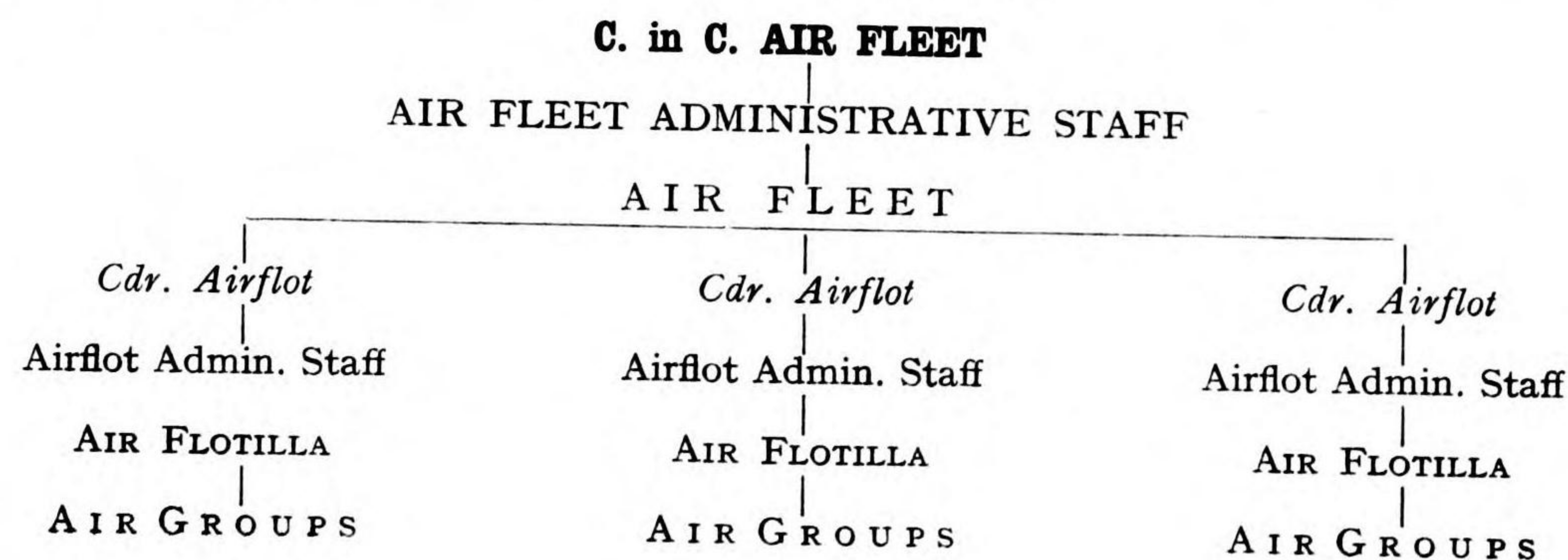
As shown in the above diagram the 1st Air Fleet consists of the two large Air Flotillas 61 and 62. At a somewhat later date the 62nd was transferred to a newly-formed 6th Base Air Force, but the 1st Air Fleet was strengthened by the 23rd Air Flotilla from the 13th Air Fleet and the 22nd and 26th from the 14th Air Fleet. After its creation the 1st Air Fleet moved to the Mariana Islands with headquarters at Tinian and was thus as conveniently placed as a land-based air force with the duties assigned to it could well be. It would be ready either to reinforce the air strength of the Area Fleets in the outer areas threatened by Allied attacks or defend the vital approaches to Japan.

6. **Composition of an Air Fleet.** An Air Fleet consists of (a) an Air Fleet Headquarters ; (b) Air Flotillas ; (c) attached units.

Operational orders are issued to the Air Attack Forces of the Air Flotillas by the C.-in-C. of the Air Fleet, normally a Vice-Admiral, in his capacity as commander of the Base Air Force. It follows that the Base Air Force Headquarters is the operations section of the Air Fleet Headquarters Staff. The following diagram gives the operational chain of command :—



7. *Administrative* orders are issued in the name of Air Fleet by the Administrative Staff at Air Fleet Headquarters which is responsible to the Commander-in-Chief for the administration of the whole Air Fleet. This responsibility is delegated in matters of detail to the commanders of the Air Flotillas and Air Groups with their respective administrative staffs. The Air Fleet, however, decides policy matters and exercises general supervision of the administrative organisation. The following diagram gives the Administrative Chain of Command :—



Under the Commander-in-Chief, the Staff Officers and specialist officers at Air Fleet Headquarters are responsible for the general supervision and control of the administrative services throughout the command. Powers are delegated to the Commanders of Air Flotillas and of Air Groups to deal with matters of detail or routine but more important matters are dealt with by directives from the Air Fleet Staff, acting under the instructions of the Area Fleet.

Such matters include :—

- (a) general organisation or reorganisation of the Air Fleet.
- (b) construction, extension and maintenance of air bases.
- (c) disposition of Air Flotillas and Air Groups and their allocation to bases.
- (d) arrangements for transport and transfers of Air Flotillas, Air Groups and equipment.
- (e) problems of supply.
- (f) technical reports.
- (g) aircraft losses and allocation of replacements.
- (h) communications.
- (i) training exercises.
- (j) defence measures.

8. Liaison Between Commands

Co-ordination of naval and air strength is assisted by close liaison between the Staffs of the Area Fleet and the Air Fleet.

- (a) The Commander-in-Chief of the Area Fleet is generally the Commander-in-Chief of the Air Fleet.
- (b) The Chief of Staff and other staff officers frequently hold dual appointments in both commands.
- (c) The Air Staff Officer at Area Fleet Headquarters is responsible for air operations and administration within the Command and passes on Area Fleet instructions to Air Fleet Headquarters.

Besides his duty of assisting the Senior Staff Officer in the planning and execution of combined air and naval operations, the Air Staff Officer is responsible for :—

- (a) Air operations.
 - (b) Maintenance of air bases.
 - (c) Installations and construction.
 - (d) Detailed battle reports.
- (d) There must be close collaboration between Area Fleet and Air Fleet in matters affecting Naval Stores Departments, Air Arsenals, Works and Buildings Departments, and Repair Sections, since these are themselves parts of naval establishments.

There is also co-operation between the staffs of the Air Fleet, Air Flotillas and Air Groups—this normally being effected by the attachment of officers of the lower command for spells of duty at superior headquarters.

9. Units attached to the Air Fleet

Some or all of the following types of units may be attached to an Air Fleet either temporarily or more or less permanently :—

- (a) Headquarters Reconnaissance Flying Unit.
- (b) Transport Aircraft Unit.
- (c) Ships, usually transports, seaplane tenders or training vessels.
- (d) Torpedo Adjustment Groups.
- (e) Construction Battalions, for assistance in the construction of new Air Bases (usually subordinated to the Base Force of the area).
- (f) Air Base Units, *see* pages 87, 150.
- (g) Army Air Units. These are not infrequently subordinated to an Air Fleet for operations.

CHAPTER 26

Area Fleets

1. In order to defend their Pacific Island conquests and keep open the sea approaches to them, the Japanese divided their newly acquired territory and the surrounding seas into four Areas, the responsibility for the defence of each of which was vested in an Area Fleet, under the supreme command of the Combined Fleet. The Area Fleet commands forces of the following kinds, viz.

- (a) a Fleet of naval craft (light cruisers, destroyers, submarines and other small craft).
- (b) Base Forces located at strategic points in the Area and controlling patrol and surface escort craft, coastal and harbour defence units.
- (c) an Air Fleet.

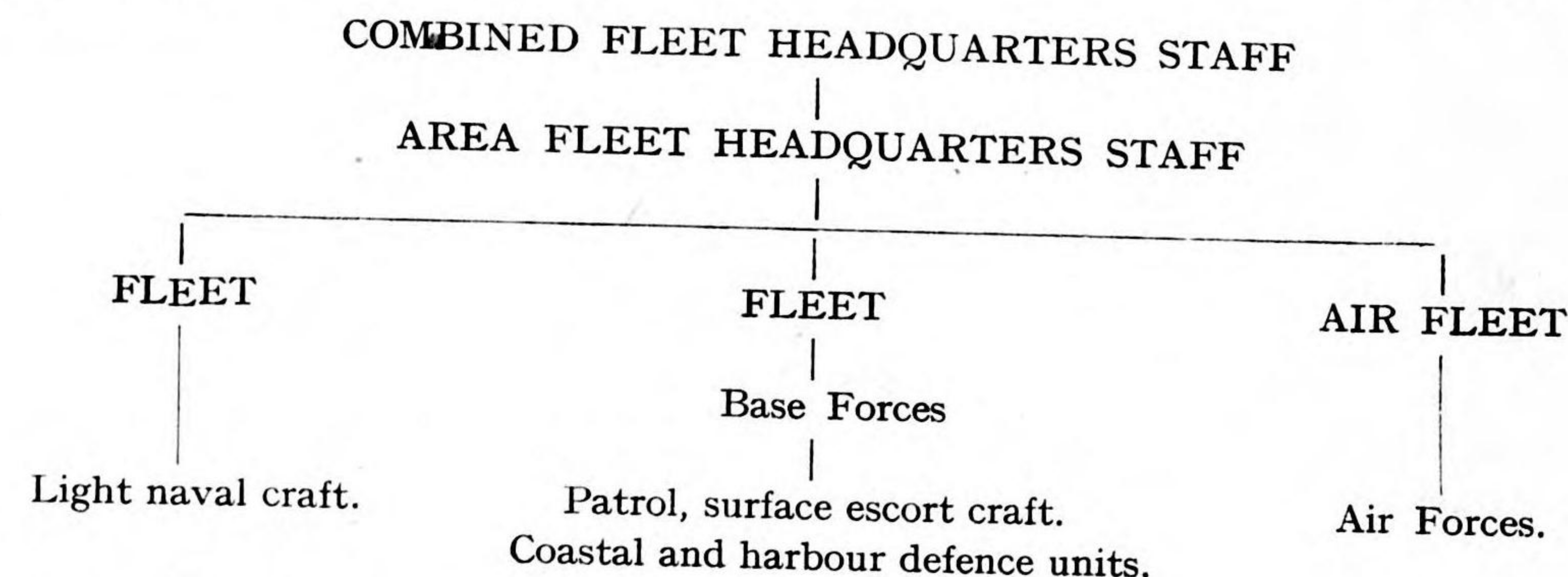
The dispositions of the Area Fleets in 1943 and 1944 were as follows, viz. :—

<i>Area Fleet</i>	<i>Area for which Responsible</i>	<i>Forces Controlled</i>
S.E. Area Fleet	Eastern New Guinea, New Britain, New Ireland, Solomon Is.	8th and 9th Fleets, Base Forces and 11th Air Fleet.
N.E. Area Fleet	N. Japan and Kuriles.	5th Fleet, Base Forces and 12th Air Fleet.
S.W. Area Fleet subdivided into 1st, 2nd, 3rd and 4th Southern Expeditionary Fleets.	Burma, Malaya and French Indo China coasts, Netherlands East Indies and Philippines.	Fleet of cruisers, destroyers and submarines, Base Forces, and 13th Air Fleet.
Central Pacific Area Fleet	Marshall Is., Caroline Is., Mariana Is.	Fleet of light surface craft, Base Forces and 14th Air Fleet.

The China Area Fleet is not dealt with here. It was established to protect the inner line of Japanese conquests before the advance into the Pacific.

2. The function of the Area Fleet is to provide static defence for the Area and keep open the sea lanes. The holding forces it controls are not intended to counter a major allied attack. To meet this it would be assisted by the forces of the 1st Air Fleet and the Japanese surface fleet.

3. **Chain of Command** : Each Area Fleet consists of the above-named forces under a Headquarters Staff, commanded by an officer usually of the rank of Vice-Admiral, which controls the activities of the subordinate commands of the Area Fleet, viz., the Fleets of surface vessels, Base Forces and Air Fleets. This control may be indirect. Thus the Central Pacific Area Fleet Headquarters Staff directs the 4th Base Force, Truk, and the 6th Base Force (formerly at Kwajalein) through its subordinate command the 4th Fleet. The following diagram illustrates the organisation of an Area Fleet :—



4. At Area Fleet Headquarters there are the following departments :—

- | | |
|---|-------------------------------|
| (a) operations. | (f) civil administration. |
| (b) supply. | (g) intelligence and signals. |
| (c) transport. | (h) paymaster. |
| (d) construction, repair and maintenance. | (i) medical. |
| (e) personnel. | (j) meteorological. |

Each of the above departments is headed by an officer who is usually of the rank of Commander, and its work consists in the planning of all matters relating to the subjects within its jurisdiction and in exercising a general supervision over the subordinate commands.

CHAPTER 27

The Carrier Division

1. Japanese Naval Air organization provides for Air Flotillas, *Kōkūsentai*, numbered 1 to 10 for aircraft of Carrier Divisions. Of these numbers allotted, only 1 to 5 have so far been used.

Air Flotillas numbered 11 to 20 were assigned to Seaplane Tender Divisions. Two or three of these were active in 1941, but have now disappeared.

Air Flotillas with numbers of 21 and upwards are composed of the land-based naval aircraft which come under the Air Fleet organisation.

2. Subordination

(a) *Carrier Divisions.* After some experiments, a stable organisation was evolved under which all the Carrier Divisions were placed in the Third Fleet.

This Fleet, composed entirely of Cardivs plus a number of screening vessels, combines with the 2nd Fleet, the main battleship fleet, to form the First Mobile Fleet.

The First Mobile Fleet is the main striking force of the Japanese Navy, and the Japanese have appreciated the importance of air power in modern naval warfare by including in their battle fleet almost the entire strength of their aircraft carriers. The First Mobile Fleet is controlled by the Combined Fleet Headquarters.

(b) There are several Escort Carriers in service which each operate a small number of aircraft—mainly for convoy escort and anti-submarine screening. These vessels generally operate under the Grand Surface Escort Fleet or one of its components.

(c) *Seaplane Tenders.* The Seaplane Tenders which still operate are now attached to the Combined Fleet, an Area Fleet or an Air Fleet. Their function is mainly to provide mobile reconnaissance units, but they are often used to bring up reinforcements of aircraft and personnel and to assist in transfers of Air Groups.

3. Functions of Carrier Divisions

Carrier Divisions operate in several ways :—

(a) *As advanced Striking Force of the Battle Fleet.* Cardivs have been used to deliver a surprise assault against opposing surface forces, at sea or in port, and to paralyse Allied air opposition, in advance of naval action by units of the main Japanese battle fleet. Cardivs may also be used against land objectives which are important enough to warrant a major action.

(b) *Special missions.* One or more Carrier Divisions with escorting warships have been used for specific and localised attacks. They may search out and attempt to destroy Allied convoys or task forces in this way, or may be used against Allied air fields and bases. They were much used in the early Japanese invasions of the East Indies and outer Pacific areas.

(c) *Defensive rôle.* The Carrier Divisions provide protection for the units of the battle fleet against Allied air and submarine attacks. Aircraft carriers, however, are vulnerable targets, and have nearly always themselves been the primary objective of attack by both sides.

(d) *Aircraft shore-based for land operations.* Groups and units of Carrier Divisions have frequently been based on land as reinforcements for the shore-based aircraft when critical situations arose.

(e) *Transportation.* When not engaged in operations, or when their units are based ashore, the Carriers are often used to carry supplies of aircraft, personnel and equipment from the Empire to operational areas.

(f) *Escort Duties.* One or more aircraft carriers may be detached as escorts for important convoys. Its aircraft then provide reconnaissance patrols and anti-submarine protection.

4. Organisation of Carrier Divisions

(a) For operations the Cardivs are under the control of the Commander-in-Chief of the Third Fleet. The latter receives orders from the C.-in-C. of the 1st Mobile Fleet. It is noteworthy that the C.-in-C. of the 1st Mobile Fleet may also be the Commander of the 3rd Fleet.

(b) The aircraft and air force personnel of each Carrier Division form one complete Air Group for administrative purposes. They are allotted to the two or three carriers forming the Cardiv, and each carrier may operate as an independent unit, or in co-operation with others.

The Commanding Officer of the Cardiv Air Group is usually a Captain or Commander, and controls all air force personnel.

Naval personnel forming the complement of each carrier are under independent naval command. These personnel are only concerned with the operation of the ship and with its defence.

(c) The Cardiv Air Group is comprised of three or four Flying Units, *Hikōtai*, usually a fighter unit, dive-bomber unit, torpedo bomber unit and reconnaissance unit. Each of these *Hikōtai* is complete with the necessary maintenance, ordnance and administrative personnel and is self-sufficient.

Each *Hikōtai* is under the command of an officer in the flagship of the Cardiv—usually the officer in command of the flagship's fighter, torpedo bomber, dive bomber or recce unit.

(d) The *Hikōtai* are sub-divided into subordinate units so that each carrier has its own fighter, dive-bomber, torpedo bomber and recce unit.

The recce unit may be composed of three or four aircraft of the dive-bomber type fitted with radar for tracking Allied forces.

These carrier units may operate independently, but more generally work as part of the *Hikōtai*.

(e) The maintenance, ordnance and administrative personnel on board accompany the flying units when they leave the carrier and become shore-based.

(f) A Flight Deck crew of approximately 100 personnel is provided by the naval personnel of the carrier.

(g) There is usually a Rear Detachment of the Air Group which is home-based in the Empire. Its function may be mainly administrative, concerned with records and personnel, though it may also be responsible for replenishment of aircraft, equipment and personnel of the Air Group.

5. Strength of Carrier Divisions

(a) *Carriers.* The Japanese are thought to have had in operation—

1. About 12 large aircraft carriers (some converted from battleships).
2. About six smaller carriers.
3. About five escort carriers.
4. About five seaplane carriers.
5. About ten seaplane tenders.

Most of classes 3, 4 and 5 are converted liners or merchant ships.

Operational losses are believed to include :—

1. Five or six large carriers.
2. Two or three smaller carriers.

The large carriers of class 1 displace about 30,000 tons and carry 60–72 aircraft. The small carriers (12,000–15,000 tons) carry 30–36 aircraft.

Class 3, 4 and 5 vessels usually carry 12 or 13 aircraft, and generally are of 5,000-8,000 tons.

(b) *Carrier Divisions.* Three Carrier Divisions are normally operating. The aircraft complement for a Carrier Division composed of three large carriers is 180.

Personnel of aircrews and maintenance sections required to operate these aircraft amount to about a thousand men, exclusive of the naval complement of the carriers.

(c) *Types of Aircraft.*

1. *Fighters.* Zeke—Type 0 fighters, models 21 and 52.
2. *Dive Bombers.* Val 22, Type 99, Model 22. Judy 11, Type 2, Model 11. *Suisei* or Comets.
3. *Torpedo Bombers.* Kate 12, Type 97, Model 12, which are being replaced by Jill 12 (*Tenzan*).

CHAPTER 28

Base Forces, Naval Districts and Guard Districts

1. **Base Forces, *Konkyochitai.*** As part of the system of Pacific Ocean defence outlined in Chapter 26 the Japanese established a chain of naval bases throughout their newly acquired territories. At each base, a Base Force Headquarters is established, commanding units whose duty it is to man and defend the base and to carry out patrol and escort operations in the waters within their area. They are responsible for coastal, harbour and anti-aircraft defences. Such forces, as has previously been pointed out, are not intended to carry out more than routine duties and are not the main forces which would be engaged in countering an Allied invasion force.

2. A Base Force is usually commanded by a Rear-Admiral and is subordinate to one of the Area Fleets. Sometimes it is controlled by a command which is itself subordinated to the Area Fleet. Thus the 8th Base Force, Rabaul, is controlled by the 8th Fleet which is a subordinate command of the South Eastern Area Fleet.

3. Each Base Force consists of an Headquarters Staff and the various forces controlled by it. The Headquarters Staff is responsible both for administration of the base and for operational orders issued to its subordinate forces.

4. The forces controlled by the operational section of the Headquarters Staff of the Base Force are grouped together under the title of an Area Defence Force. Thus the defence forces of the 8th Base Force, Rabaul, are known as the Bismarck Islands Area Defence Force. Such defence forces may be classified as follows, viz.

- (a) patrol and escort vessels, submarine chasers, minesweepers and other small craft.
- (b) Guard Forces, *Keibitai*, comprising some vessels of the type mentioned in (a), coastal defence and anti-aircraft units, observation and look-out posts.
- (c) a detachment of aircraft, usually consisting of float planes.
- (d) a signals detachment.

5. The administrative section of the Headquarters Staff of the Base Force controls maintenance, ordnance, medical, intendance, meteorological and works activities. As the Base Force is responsible for the construction and maintenance of buildings, harbour facilities and airfields, it has a large labour force both civilian and naval.

6. The fleet of small vessels controlled by the Base Force is engaged in patrolling the waters within its area, escorting ships sailing to and from the Base and hunting Allied submarines. In performing these duties it is assisted by the detachment of floatplanes. The Guard Force has artillery for harbour defence and also light and heavy anti-aircraft batteries to deal with raiding Allied aircraft. Warning of the approach of the latter would be given by the Look-Out Stations or Observation Posts, some of which have radar equipment. In the event of a major Allied attack upon the Base the Area Defence Force would take the first shock of the attack but would call for assistance from the Base Air Force whose duty it is to provide for the aerial defence of the district, and also from Army Forces in the neighbourhood. In addition, if the attack were thought to be upon a sufficiently vital point, the heavy ships of the Japanese Navy would be brought in along with the forces of the 1st Air Fleet.

7. The disposition of the Base Forces in 1944 was as follows :—

North Eastern Area Fleet :

Kuriles Base Force.

Central Pacific Area Fleet :

4th Base Force, Truk.

5th Base Force, Saipan.

30th Base Force, Palao.

South West Area Fleet

1st Southern Expeditionary Fleet :

9th Base Force, Sabang.

10th Base Force, Singapore.

11th Base Force, Saigon.

12th Base Force, Port Blair.

13th Base Force, Rangoon.

15th Base Force, Penang.

3rd Southern Expeditionary Fleet :

31st Base Force, Manila.

32nd Base Force, Davao.

South Eastern Area Fleet :

1st Base Force, Buin.

2nd Base Force, Wewak.

7th Base Force, Sio.

8th Base Force, Rabaul.

14th Base Force, Kavieng.

2nd Southern Expeditionary Fleet :

21st Base Force, Sourabaya.

22nd Base Force, Balikpapan.

23rd Base Force, Macassar.

24th Base Force, Ende.

4th Southern Expeditionary Fleet :

25th Base Force, Kokas.

26th Base Force, Kau.

27th Base Force, Sarmi.

28th Base Force, Manokwari.

Unclassified :

Amoy Base Force.

Bako Area Base Force.

Hongkong Area Base Force.

Okinawa Area Base Force.

Port Arthur Base Force.

Shanghai Base Force.

Tsingtao Base Force.

Yangtze River Area Base Force.

Chichijima (Bonins) Base Force is believed to be subject to Yokosuka Naval District.

8. The floatplanes belonging to the Base Force are normally a detachment of an Air Group of the 900 class attached to the Area Fleet but there are a few Base Forces which have a separate establishment of aircraft, of the same kind.

9. **Naval Districts and Guard Districts** : For the coastal and harbour defence of Japan and the territory adjoining, and for convoy escort and patrol duties in the surrounding waters, the Japanese have a different organisation which developed alongside the naval expansion of Japan herself. These responsibilities are shared by the Naval Districts and Guard Districts which are disposed as follows, viz.

- | | |
|--------------------------|-------------------------|
| Yokosuka Naval District. | Ominato Guard District. |
| Kure Naval District. | Osaka Guard District. |
| Sasebo Naval District. | Chinkai Guard District. |
| Maizuru Naval District. | Hainan Guard District. |
| | Ryojun Guard District. |
| | Takao Guard District. |

The Naval Districts are much the more important and their patrol, escort and harbour defence duties are subsidiary to their main function of Naval Bases and to their responsibilities for naval construction and the training of naval personnel.

Most of the Naval Districts and Guard Districts have an Air Group attached to them bearing the same name. These are the named Air Groups referred to on page 83 as forming a "Coastal Command." They are in general equipped with aircraft of every functional type as they have to carry out patrol and escort duties and at the same time form an essential part of the air defence system of Japan.

CHAPTER 29

Operational Commands and Area Forces

See Maps 15 and 16

1. **The Area Force** : The chief Japanese Naval and Naval Air Commands, viz. Area Fleet, Air Fleet and Air Flotilla Headquarters, are responsible for operations by the forces under their control and for their administration and supply. The operations section of each of these commands is referred to by a separate title, e.g.

Area Force Headquarters in the case of the Area Fleet.

Base Air Force Headquarters in the case of the Air Fleet.

Air Attack Force Headquarters in the case of the Air Flotilla.

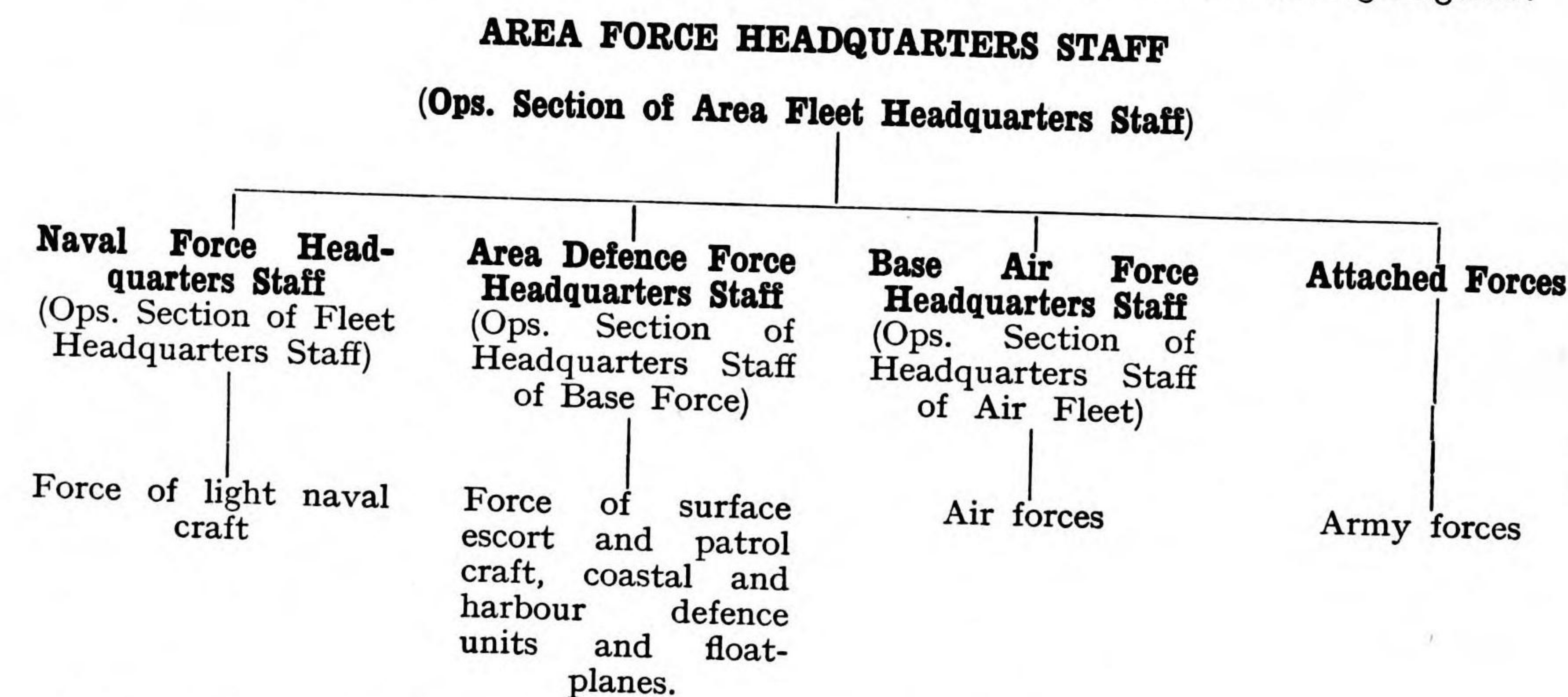
These operational headquarters control Area Forces, Base Air Forces (*i.e.* land-based Air Forces) and Air Attack Forces respectively.

The Officer Commanding the Air Fleet commands the Base Air Force ; similarly the Officer Commanding the Air Flotilla commands the Air Attack Force as would be expected. The adminis-

trative duties are carried out by the remaining sections of the Air Fleet and Air Flotilla Headquarters. The Naval and Air Forces of the Area Force are of the following kinds, viz.

- a force of naval craft (light cruisers, destroyers, submarines and other small craft) commanded by the operational section of the Headquarters Staff of the particular Naval Fleet attached to the Area Fleet ;
- a force of patrol and surface escort craft and floatplanes, together with coastal and harbour defence units, all of which are grouped together under the title of an Area Defence Force ;
- a Base Air Force ;
- attached forces. These are usually Army forces not administratively under the control of the Area Fleet.

The chain of operational command in the Area Force is illustrated in the following diagram :



2. The disposition of Area Forces in early 1944 was as follows, viz.

<i>Area Force</i>	<i>Operational Area</i>
South East Area Force ...	Eastern New Guinea, New Britain, New Ireland, Solomon Is.
North East Area Force ...	N. Japan, Kuriles.
South West Area Force ...	Burma, Malaya and French Indo-China Coasts, Netherlands East Indies and Philippines.
Central Pacific Area Force ...	Marshall Is., Caroline Is., Mariana Is.

The South Western Area Force is subdivided into the Western, East Indies, Philippines and North of Australia Forces, which are commanded respectively by the operational sections of the Headquarters Staffs of the 1st, 2nd, 3rd and 4th Southern Expeditionary Fleets.

3. The Area Force Headquarters Staff is a combined operational staff controlling naval, air and land forces. It is commanded by the C.-in-C. of the Area Fleet. There is no separation of matters naval and military from those concerned with the air alone. There is, however, a section whose special function is the planning of air operations. Complete separation between the three arms

occurs in all lower formations. Thus the Area Defence Force is a purely naval force, although it may have floatplanes attached to it for patrol and convoy escort work. In like manner the Base Air Force, as its name implies, is purely an air force.

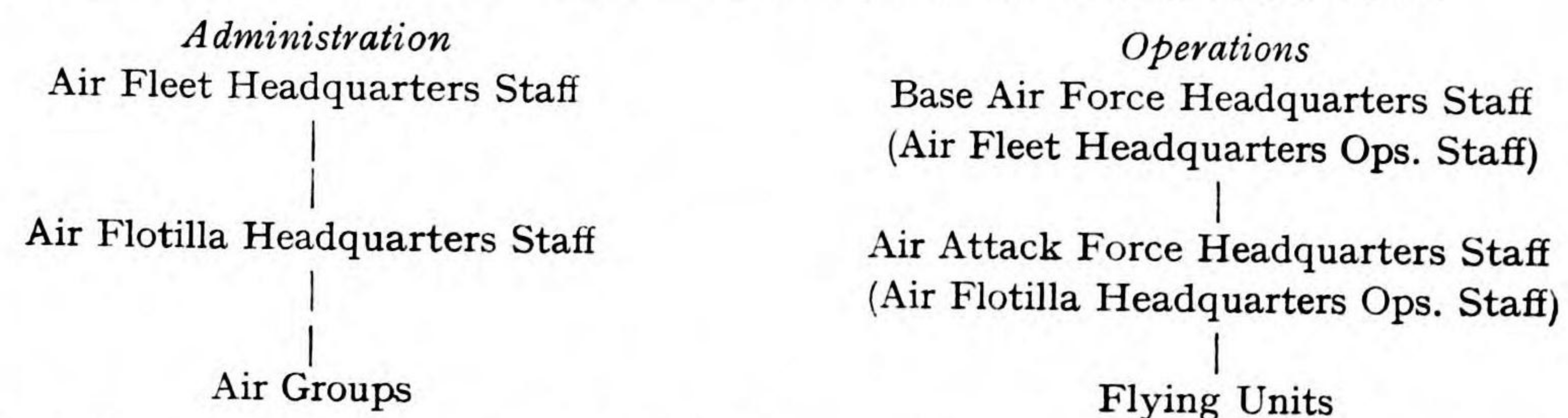
4. The work of the Area Force Headquarters Staff consists in laying down the general plan of operations for the forces under its command and in supervising its execution. It specifies the forces to be engaged, the territorial area within which each is to operate and the particular duty allotted to each. Special attention is directed to the co-operation between naval, military and air forces. In the scheme for area defence, provision is made for the reinforcement of the local air forces by the forces of the 1st Air Fleet, in the event of a major Allied attack. In such circumstances the C.-in-C. of the 1st Air Fleet takes over the command of all the land-based air forces in the area, except those attached to the Area Defence Forces.

THE BASE AIR FORCE

5. The Air Fleet commands all the air forces of the Area Fleet, of which it forms part, with the exception of the floatplanes attached to the Area Defence Force. The flying units of the Air Fleet form the Base Air Force, *Kichi Kōkū Butai*. Base Air Forces were numbered consecutively from 1 to 7 in the order in which they were created. The 5th Base Air Force formed part of the Combined Fleet. The disposition of the Base Air Forces in July, 1944, was as follows :

<i>Base Air Force</i>	<i>Air Fleet</i>	<i>Command Headquarters</i>	<i>Subordination</i>
1st Base Air Force	11th Air Fleet	Rabaul	S.E. Area Force
2nd Base Air Force	12th Air Fleet	Shimushu	N.E. Area Force
3rd Base Air Force	13th Air Fleet	Manila	S.W. Area Force
4th Base Air Force	14th Air Fleet	Saipan	Central Pacific Area Force
5th Base Air Force	1st Air Fleet	Davao	Combined Fleet
6th Base Air Force	2nd Air Fleet	Kanoya	—
7th Base Air Force	3rd Air Fleet	Kisarazu	—

6. The Base Air Force Headquarters Staff exercises its control through a subordinate command, the Air Attack Force Headquarters Staff, which is the operational section of the Air Flotilla. The following diagram shows the chain of command of the air forces of the Area Fleet :



The Base Air Force Headquarters Staff is responsible for the supervision of the execution of the operational plan laid down by the Area Force, and to be carried out by the Air Attack Forces.

7. **The Air Attack Force, *Kōkū Kūshū Butai*** : The Base Air Force is subdivided into one or more Air Attack Forces, each Air Attack Force being composed of the air forces of the particular

Air Flotilla or Flotillas in the Air Fleet. If the Air Fleet consists of one Air Flotilla the Base Air Force will consist of one Air Attack Force, whilst if the Air Fleet consists of two Air Flotillas the Base Air Force will consist of two Air Attack Forces, and so on. The Air Attack Force consists of flying units of the Air Groups in the Flotilla. The maintenance, ordnance, medical, intendance, meteorological and other sections of the Air Groups do not form part of the Air Attack Force but receive their orders from the appropriate sections of the Air Flotilla Headquarters Staff complementary to the Air Attack Force Headquarters Staff, or at a higher level from the appropriate section of the Air Fleet Headquarters Staff complementary to the Base Air Force Headquarters Staff. The Air Attack Force Headquarters Staff issues operational orders to the flying units which are to carry them out. These orders are naturally of a much more detailed nature than those issued by the Base Air Force. It can be said indeed that whilst the Area Force and the Base Air Force are concerned with the making of operational plans and the issuing of general orders relating to them, the Air Attack Force issues the actual tactical orders within the scope of the plan and the general orders laid down by the Area Force and the Base Air Force. The Air Attack Force is an essentially elastic formation : flying units are added to or taken away from its strength in accordance with operational requirements and the prevailing circumstances at any particular time. The separation of the Air Group into two parts, viz. the Flying Unit, *Hikōtai*, and the maintenance section, has made it possible in any particular emergency for an Air Attack Force to be created out of units of several different commands. Such forces are *ad hoc* formations only and are disbanded when the particular situation they were created to meet no longer exists.

The disposition of Air Attack Forces in March, 1944, was as follows :—

See Map No. 16

<i>Air Attack Force</i>	<i>Air Flotilla</i>	<i>Command H.Q.</i>	<i>Base Air Force</i>
2nd Air Attack Force	22nd Air Flotilla	Truk	4th Base Air Force
3rd Air Attack Force	23rd Air Flotilla	Wasile and Ambon	3rd Base Air Force
6th Air Attack Force	26th Air Flotilla	Palau	4th Base Air Force
7th Air Attack Force	27th Air Flotilla	Ominato	2nd Base Air Force
8th Air Attack Force	28th Air Flotilla	Sabang	3rd Base Air Force
31st Air Attack Force	51st Air Flotilla	Bihoro	2nd Base Air Force
41st Air Attack Force	61st Air Flotilla	Saipan	5th Base Air Force
42nd Air Attack Force	62nd Air Flotilla	Japan/Marianas	5th Base Air Force

It will be noted that the Air Attack Force bears a number 20 less than that of the Air Flotilla from which it is derived.

CHAPTER 30

Supply, Maintenance and Repair

1. The supply, maintenance and repair system of the J.N.A.F. is shown in the following table. The functions mentioned in the first column are performed by one or other of the organisations listed in the second.

Function	Responsible Organisation
Manufacture, equipment and supply of new aircraft and aircraft parts.	(Factories) 1. J.N.A.F. Depots and Branch Depots. 2. Branch Workshops and Supply Factories of the Depots. 3. J.N.A.F. Technical Depots and Branch Technical Depots. 4. Naval Stores Departments.
Manufacture and supply of ammunition, bombs, torpedoes, air equipment other than aircraft parts, fuel.	(Factories and Refineries) 1. J.N.A.F. Depots and Branch Depots. 2. Branch Workshops and Supply Factories of the Depots. 3. J.N.A.F. Branch Technical Depots. 4. Ordnance and Fuel Sections of the Naval Stores Departments. 5. Torpedo Adjustment Groups.
Supply of Provisions and Clothing.	(Factories and local producers overseas) 1. Clothing and Provisions Sections of the Naval Stores Departments.
Repair and Maintenance of aircraft.	1. Maintenance sections of flying units (<i>Hikōtai</i>). 2. Maintenance and equipment maintenance sections of the Air Groups (<i>Kōkūtai</i>). 3. Repair depots of J.N.A.F. Depots and Branch Depots. 4. Branch Workshops of the Depots.
Allocation of shipping space for all supplies.	Naval Transport Departments.

2. **Air Depots and Branch Air Depots** : J.N.A.F. Depots and Branch Depots are located both in the Empire and in the Pacific theatre of operations. Prior to May, 1943, there were eight main Depots in the Empire and probably six outside it, each with a number of Branch Depots subordinated ; these were as follows :—

Within the Empire	Outside the Empire
No. 1 Naval Air Depot, Kasumigaura	No. 101 Naval Air Depot Singapore
No. 2 " " " " Kisarazu	No. 102 " " " " Surabaya
No. 11 " " " " Hiro	No. 103 " " " " Manila
No. 21 " " " " Omura	No. 104 " " " " Truk
No. 31 " " " " Maizuru	No. 106 " " " " Marshalls
No. 41 " " " " Ominato	No. 108 " " " " Rabaul
No. 51 " " " " Chinkai	
No. 61 " " " " Takao	

In May, 1943 those outside the Empire were renamed as follows :—

- No. 101 became No. 1 Branch, S.W. Naval Air Depot.
- No. 102 became S.W. Naval Air Depot.
- No. 103 became Branch Factory, S.W. Naval Air Depot.
- No. 104 became No. 1 Branch S.E. Naval Air Depot.
- No. 106 became No. 2 Branch S.E. Naval Air Depot
- No. 108 became S.E. Naval Air Depot.

In April, 1944 the S.E. Naval Air Depot moved to Saipan from Rabaul, and later to Guam, and in August the S.W. Naval Air Depot moved to Manila from Surabaya. Early in 1944 certain Branch Air Depots were raised to full Air Depot status.

3. Those overseas are responsible for carrying out their functions within certain definite geographical limits, that is, supply, maintenance and manufacture of aviation equipment within their area. Such Depots and their Branches, therefore, must carry stocks of aircraft and equipment of all types required, or likely to be required by units operating in their area ; whereas the Empire Depots are not bound by any such considerations, and can specialise to a large degree both in the type of aircraft they supply and the repairs they undertake.

4. J.N.A.F. Depots in the Empire are of greater size and importance than those overseas, for the following reasons :—

- (a) some of them are engaged in the manufacture of aircraft, aircraft parts, and equipment and in the assembly and modifications which cannot be undertaken outside the Empire ;
- (b) seriously damaged aircraft are returned to them from overseas for repair, conversion or salvage ;
- (c) they are engaged in training maintenance personnel prior to service abroad.

Some Empire Air Depots are reputed to employ between 30,000 and 50,000 people, mainly civilians ; the strength of the S.W. Area Depot, on the other hand, is probably less than 2,000.

5. The Air Depots in Japan are organised into a number of sections, each specialising in a particular activity, with the appropriate hangars and branch workshops, viz. :—

- | | |
|------------------------------|---------------------------|
| (a) General Affairs Section. | (f) Construction Section. |
| (b) Aircraft Section. | (g) Replacement Section. |
| (c) Engines Section. | (h) Medical Section. |
| (d) Ordnance Section. | (i) Accounts Section. |
| (e) Instruments Section. | (j) Training Section. |

The personnel is largely civilian under naval officers ; the Commanding Officer is a Vice-Admiral or a Rear-Admiral.

6. **Functions of Air Depots and Branch Air Depots :** The main activities of the Air Depots and their branches are as follows :—

- manufacture of a small number of aircraft ;
- manufacture of aircraft engines, air equipment, signals equipment, aircraft armament, bombs and ammunition ;
- equipment of new aircraft, and repair of damaged aircraft.

7. The great majority of Japanese aircraft are manufactured by civilian firms, but two Air Depots at least manufacture a few, perhaps amounting to 4% of the total production. The principal activities, however, of the Air Depots are the manufacture of aircraft parts and air equipment generally and the equipment of new aircraft.

8. The completed aircraft parts and equipment are used either to fit out the new aircraft as they come from the factories (this equipping of new aircraft is done in the Replacement Shops of the Air Depot) ; or they are held in store either at the Air Depots themselves or at the Naval Stores Departments (*see* para. 12 below). Stocks of bombs and ammunition are for the most part also held in the Naval Stores Departments.

9. **Naval Technical Air Depots :** Technical research, experiment and the testing of equipment is undertaken mainly by the Naval Air Technical Depots and their Branch Technical Depots. The main Naval Air Technical Depot is situated at Japan's most important naval station, Yokosuka, with branches elsewhere. The main Depot is concerned with research on aircraft as a whole, while the Branch Technical Depots are charged with research on weapons and instruments. The activities of the Naval Air Technical Depot and Branch Depots are concerned with the following :—

<i>Main Technical Air Depot</i>	<i>Branch Technical Air Depot</i>
Scientific Research	Bombs
Aircraft (Fuselages)	Ordnance
Test flights	Electrical apparatus
Landing gear	Pyrotechnics
Material	Optics
Training (Mechanics)	Instruments

10. **Allocation of Aircraft, Aircraft Equipment and Supplies :** The administrative machinery by which aircraft, aircraft parts, equipment and supplies are assigned to the flying units follows the same general lines as in the J.A.A.F. Monthly allocations are made by the Naval Air Directorate, (General Affairs Section) to the Air Fleets. These allocations are passed to the Air Depots and Branch Air Depots, which make the necessary arrangements with the Air Fleets for their transference from these Depots. Similarly demands for replacement aircraft pass upwards from the Air Groups through the Air Flotillas and Air Fleets to the Naval Air Directorate. The allocation of aircraft to particular Air Flotillas and Air Groups is probably made by the Air Fleets. Delivery may be made either direct to the flying units or to the Replacement Shops of the Depots or Branch Depots in the appropriate area.

11. Transport of aircraft and equipment may take the form of air ferrying (which is the usual procedure), or aircraft may be sent by sea and assembled at their point of delivery. Some of the Air Depots situated on the communications arteries are more concerned with air transport than others, and have a number of transport aircraft and flying boats of their own for transport of equipment, as well as a number of ferry-pilots. But generally speaking, the responsibility for flying aircraft and equipment to the units is undertaken by the pilots of the Air Groups themselves ; some Air Groups are largely concerned with this duty alone. When the aircraft or equipment are transported by sea they are delivered to the Depots or Branch Depots, where the aircraft are finally equipped, stored and eventually delivered.

12. **Supplies and Equipment other than Aircraft and Aircraft Parts :** Supplies and equipment other than aircraft and aircraft parts are held by (a) the Air Depots and Branch Air Depots, and (b) the Naval Stores Departments. The latter, which are distributed over the whole of the operational area, are subordinate to the Bureau of Naval Stores at Tokyo. They are primarily naval organisations, but a large part of their activities is concerned with naval air supplies. The material handled by the Naval Stores Department may be classified as follows :—

- air equipment other than aircraft parts ;
- bombs, ammunition, mines, guns, torpedoes, bomb-trolleys, etc. ;
- fuel ;
- clothing and provisions.

13. To fulfil these functions the Naval Stores Department is organised into the following sections :—

- General Affairs Section.
- Accounts Section.
- Ordnance Section.
- Stores and Fuel Section.
- Clothing and provisions Section.

14. The main duty of the Department is the accumulation of stocks of "expendable" supplies, viz., bombs and ammunition, aircraft fuel, clothing and provisions. In this connection a distinction may be drawn between the procedure adopted in the case of aircraft, aircraft parts and equipment on the one hand and "expendable" supplies on the other. In the case of the former, the main reserves are held at the Air Depots, but of the latter large stocks are accumulated at all the large air bases, under the Naval Stores Department ; and it is clear that an effort is made to

build up a sufficient reserve of these materials in operational areas in case sea communications are interrupted. Aircraft which can be flown out fall into a very different category from fuel, which requires a large number of tankers, and of which the transport is slow. In August, 1943, twelve main Supply Bases, fifteen Advanced Supply Bases, and twenty-seven Front Line Bases were designated, covering the whole area of operations, at which large stocks of bombs, fuel, aerial torpedoes and aviation fuel were to be built up during the next six months; in addition, ammunition and provisions for a year were to be prepared for the local garrison. Some of the latter would be produced locally. Besides this, stocks are held at all the airfields.

15. Supplies at these bases come under the jurisdiction of the Chiefs of the Naval Stores Departments in the various areas. They in turn are responsible to the Bureau of Naval Stores at Tokyo. Naval Air matters are presumably passed by this Bureau to the Naval Air Directorate.

16. The manufacture of ammunition and the refining of fuel takes place partly in Japan and partly overseas. Both pass either directly to the places of storage or indirectly, *via* the Naval Stores Departments. Most of the Naval Fuel Depots in the Empire hold large stocks of aviation fuel; the most important of these Depots are the following:—

No. 1 Naval Fuel Depot at Yokohama.

No. 2 Naval Fuel Depot at Mie.

No. 3 Naval Fuel Depot at Tokuyama.

No. 4 Naval Fuel Depot at Fukuoka.

No. 5 Naval Fuel Depot in Korea.

Outside the Empire, apart from the storage bases, there are many Depots and refineries, notably in Sumatra (Palembang), Java, Borneo (Balikpapan) and Malaya (Singapore). Aircraft fuel for the Naval Air Force is doubtless stored at these centres of production.

17. **Torpedo Adjustment Groups**: The final preparation of aerial torpedoes for operations is the duty of Torpedo Adjustment Groups. These are mobile units, each of which is responsible, under the jurisdiction of the Air Fleets, for torpedo adjustment at a number of bases. After the torpedoes are received from the Naval Stores Departments they are handled by these Groups and when ready for operations are handed over to the flying units.

18. **Repair and Maintenance of Aircraft**: Repair and maintenance of aircraft are carried out by the following:—

(a) Maintenance and equipment-maintenance personnel of the Flying Unit, *Hikōtai*, on the airfields and aircraft carriers.

(b) Base maintenance personnel of the Air Group, *Kokūtai*, assisted by civilians at the major bases.

(c) Branch workshops and Repair Depots of the Air Depots.

19. The Air Group of the J.N.A.F. includes a considerable number of maintenance personnel. The intention is to make the Air Group as far as possible a self-supporting formation, independent of assistance from outside. There are a comparatively large number of bases with equipment capable of dealing with even major repair and maintenance jobs, as well as with the equipment of new aircraft. These are staffed largely by civilians, but probably also by the base maintenance personnel of the Air Groups.

20. The work which the Air Group personnel can undertake may be classified as follows:—

(a) minor inspections, made after every mission—checking of timing, cylinder heads, etc. (requiring four men for one hour).

(b) medium inspections, made after every 300 hours—overhauling of cylinders, pistons, etc. (requiring four or five men for about six days);

(c) major inspections, made after every 400 hours—complete breakdown of engine, grinding of valves, etc. (requiring about twenty men for about ten days).

21. Aircraft are returned to the Air Depots for major repairs or modifications; examples of such work are: fitting of new wings, or the conversion of operational aircraft to training aircraft. For such work there is a Repair Depot attached to each Air Depot and bearing the same number; in addition there are workshops and branch workshops of the Air Depots and Branch Air Depots with repair facilities.

22. **Transport Departments**: The cargoes on board all naval transports carrying naval or air personnel or material are controlled by the Naval Transport Directorate, which administers a number of District Transport Sections and their branches throughout the whole of Japan and Japanese occupied territory; there is almost certainly one such section located at each Air Depot. The work of the District Transport Section is to arrange and direct the composition of convoys, appoint routes and time-tables, and generally to superintend the employment of transports carrying naval or naval air material, including ammunition and fuel (which form the bulk of the material thus carried). Thus, returns of convoy movements, the nature of the cargo, ports of call, etc., all pass between the various District Transport Sections, under the direction of the Directorate at Yokosuka.

CHAPTER 31

Air Transport

1. **J.N.A.F. Air Transport Policy**. In order to provide the air transport facilities demanded by the dispositions of the Japanese forces during the war, the J.N.A.F. has built up a transport organisation by following a policy in many respects similar to that by which the J.A.A.F. air transport structure has been created. Three principles have been resorted to, as follows:—

(a) transport and communications aircraft have been attached to the naval and naval air commands, and to the flying units and certain ground units;

(b) several air transport units, with a substantial establishment of transport aircraft, have been formed, specifically to fulfil air transport functions;

(c) the air transport services of the Civil Air Lines have been made use of to some extent.

2. **Allocation of Transport to Naval and Naval Air Commands.** The majority of J.N.A.F. transport aircraft and almost all the communications aircraft, instead of being composed into separate transport units, are attached to commands and units of the Japanese Navy and Naval Air Force as follows :—

(a) *Naval Commands* : This class comprises the Headquarters of the various Naval Fleets. Of these, the most important is the Combined Fleet Headquarters, and to this command is attached a Transport Aircraft Unit, with a strength of at least six aircraft. The Area Fleets, which are subordinated to the Combined Fleet, each have Transport Aircraft Units, with strengths ranging between four and twelve transport aircraft, and furthermore the Expeditionary Fleets and the 5th Fleet, which come under the orders of the Area Fleets, have each three or four transport or communications aircraft operating with their headquarters.

The 2nd, 3rd and 6th Fleets, in which the main fighting units of the Imperial Navy are found, and the Diversionary Attack Forces and the Mobile Striking Fleet, composed for operational purposes of warships from the 2nd and 3rd Fleets, have a few transport aircraft attached to each of their respective headquarters, so, too, probably have the Carrier Divisions themselves, which make up the 3rd Fleet.

In the aggregate there are about a hundred transport and communication aircraft divided somewhat unevenly among the Naval Command Headquarters, and used chiefly for cargo and passenger carrying on behalf of the fleets as a whole, or for courier and liaison duties for the various Headquarters staffs.

(b) *Air Commands* : As with the Naval Commands, so transport aircraft are found on the strength of the Air Commands, that is to say, the Air Fleets and Air Flotillas. Each of these has a Transport Aircraft Unit, with a slightly greater strength of transport aircraft than those with the fleets, but in other matters similar to them. Altogether there are over a hundred transport and communications aircraft with the Air Commands.

3. **Transport Aircraft on the strength of Operational Air Groups, etc.** The main strength in operational aircraft of the J.N.A.F. is carried by the operational Air Groups. Most of them are subordinated to the Naval Air Commands. It has been the policy of the Naval General Staff to allot a quota of transport and communications aircraft to each Command for distribution among its subordinate units. The manner of this sharing out is not laid down by the higher authorities, but is at the discretion of the command concerned, and so the proportion which each unit receives is governed by the individual considerations that apply. In the aggregate there are about two hundred and fifty transport and communications aircraft on the strength of all the Air Groups taken together, and the complement of each Air Group varies between two and six of these aircraft, according to its location, command, and strength of operational types.

4. The aircraft distributed amongst the subordinated Air Groups should not be confused with those reckoned in paragraph 2 as being on the strength of the Command Headquarters. The strength given for the Air Groups represents those aircraft actually distributed by the Commands, not those retained.

5. **Training Air Groups.** The Air Groups employed in air training, of which there are about ninety, also control some transport and communications aircraft. Since training aircraft can often

be temporarily diverted to passenger carrying or liaison duties, not every Training Air Group has an establishment for transports.

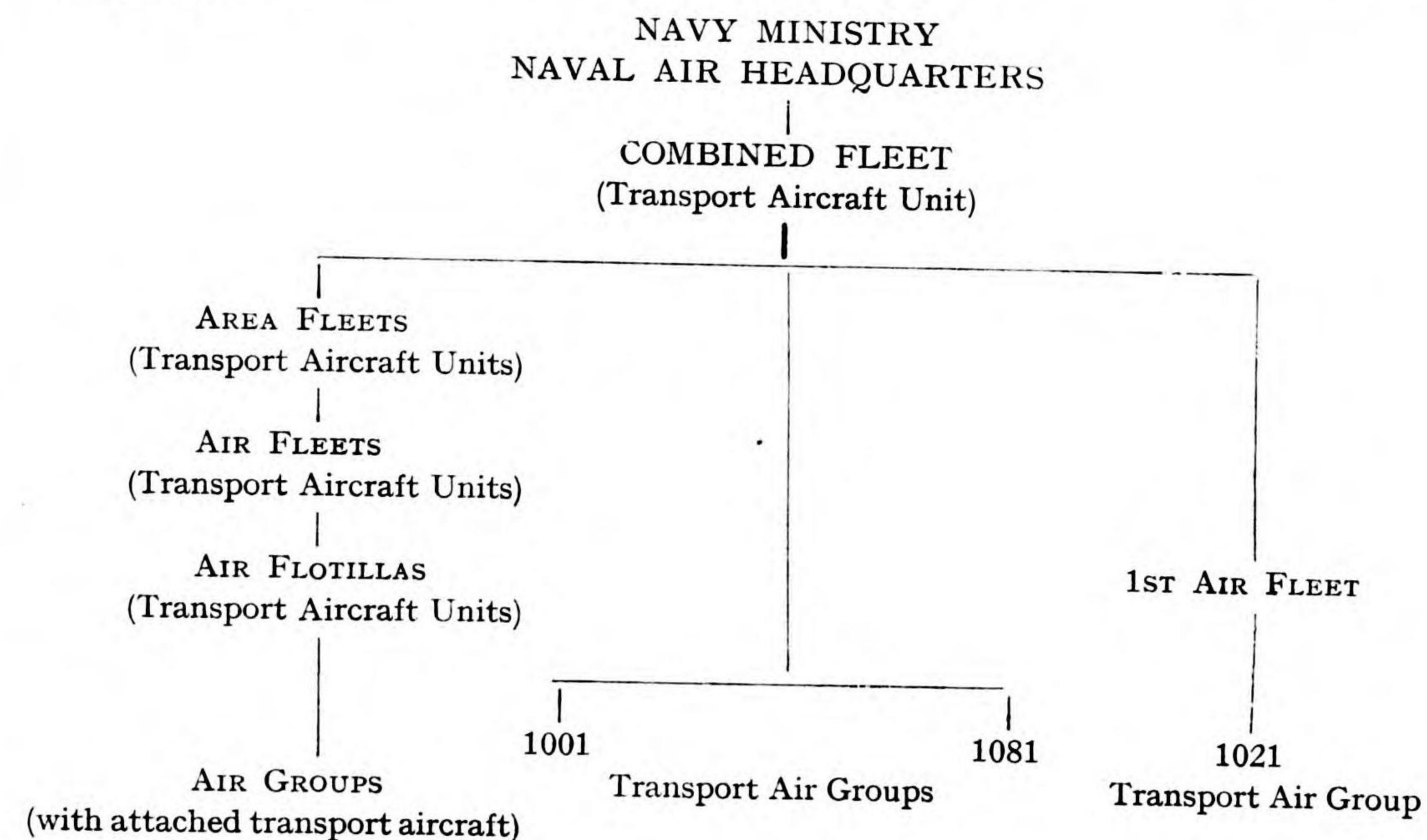
6. **Naval Districts, Guard Districts and Base Forces.** The various naval commands placed upon naval bases and establishments throughout Japan and the conquered territories have each a few transport and communications aircraft attached. The strength of these varies from two to six aircraft, according to the importance of the base, and altogether over a hundred of such aircraft may be divided among these commands.

7. **Air Depots and Branch Air Depots.** The Air Depots, which are the depots in which J.N.A.F. replacement aircraft, equipment and spare parts are stocked have each a few transports, used chiefly for the conveyance of their stores to the units which need them. About fifty aircraft altogether are distributed among these units.

8. **Naval Air Transport Units.** There are three Air Groups engaged solely in air transport, designated by numbers exceeding one thousand, namely Air Groups 1001, 1021 and 1081, and they have between them fully a hundred transport aircraft.

9. Nos. 1001 and 1081 are subordinated to the Combined Fleet, and are available for transport duties throughout the Navy and the J.N.A.F. as required. Their assistance is usually invoked when a unit moves from one location to another, to help transport its ground personnel and equipment. These Air Groups are not confined in their activity to any particular area, although their Headquarters are permanently in Japan. No. 1021 Air Group is subordinated to the 1st Air Fleet. It forms a mobile force available to assist units in any area.

10. **Diagram of the Transport System.** The following diagram shows the organisation of the transport system :—



11. The Combined Fleet has a Combined Air Transportation Section in its Headquarters, concerned with the direction of air transport activity within the command. Similar sections exist in the various Area Fleet Headquarters.

12. **Air Transport Routes :** The routes on which the bulk of J.N.A.F. air transport traffic is carried are shown on Map No. 11. The J.N.A.F. maintains Air Transport Sections at the principal airfields on these routes, which are concerned with administration of the transport services.

13. **Transport Aircraft Types :** Several types of aircraft are employed principally for transport and communications. The land-based transports are :—

Type 0 transport aircraft, Model 11 (Tess).

Type 0 transport aircraft, Models 22 and 32 (Tabby).

Type 96 transport aircraft, Models 21 and 22 (Nell).

Type 1 land attack aircraft (Betty).

Type 2 land attack aircraft, Model 11 (Liz).

Two types of flying boat are also used :—

Type 2 flying boat (Emily).

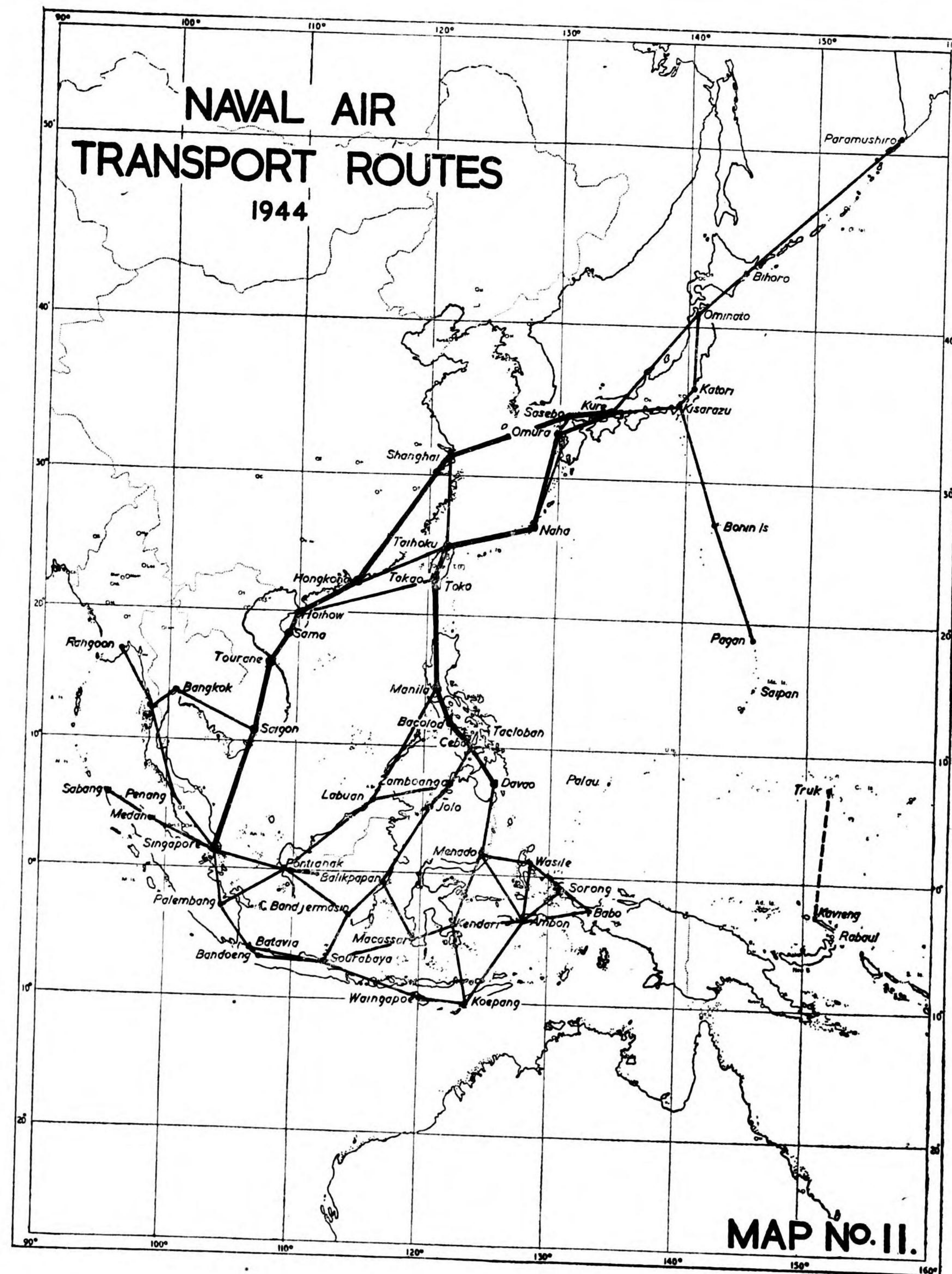
Type 97 flying boat (Mavis).

Other types of aircraft are sometimes diverted temporarily to transport use, and on a few occasions J.N.A.F. units have Army types of transport, but in general the types listed are the ones chiefly made use of. Brief particulars of the performance of these aircraft are given in Appendix 5.

14. **Kinds of transport activity :** The activity of J.N.A.F. air transport organisation consists chiefly of the following :—

- (a) the conveyance of passengers ;
- (b) the conveyance of equipment and spare parts ;
- (c) the conveyance of fuel, ammunition, food and other supplies ;
- (d) the conveyance of parachute and air landing troops ;
- (e) the conveyance of mails and dispatches.
- (f) the evacuation of wounded ;
- (g) the movement of units ;
- (h) the dropping of supplies from the air ;
- (i) the provision of pilots to ferry new and repaired aircraft from the air depots to the operational units, *i.e.* ferrying.

15. **Strength of the Organisation :** According to an estimate based on a method which assigns to all J.N.A.F. commands and units, complements of transport and communications aircraft similar to those which are known to be maintained by certain of them, the J.N.A.F. transport organisation has at its disposal about seven hundred and fifty aircraft, of which about five hundred are chiefly used for the conveyance of cargo and passengers, and the rest as courier and liaison aircraft. About a hundred transport aircraft are in the organised transport units, and the remainder are attached to commands and units. It would be difficult for a large force of transports to be assembled in one place, since the attached aircraft are widely scattered.



CHAPTER 32

Works

1. The Works and Buildings Headquarters, *Shisetsu Hombu*, a department of the Navy Ministry, is responsible for the plans for airfield construction, the supply of equipment and materials not likely to be available where the airfield is to be built and for the provision of civilian engineers and technicians to carry out the work.

2. The Works and Buildings Department is represented at the various Command Headquarters, namely at Area Fleet, Fleet and Base Force levels and provides the necessary trained technical staff to direct the labour engaged and technical equipment and materials.

3. The work is carried out by Naval Construction Battalions or Pioneer Units, *Setsuie Tai*. These units, however, are also employed on other kinds of Naval Construction work such as defences, port installations, etc. They are assisted when necessary by Naval Repair Sections and Engineering Sections which undertake specialist work such as the installation of technical apparatus : radar, W/T, night-flying facilities, etc. Manual labour for construction work is provided by recruited or impressed native, coolie, Korean or Formosan labourers.

4. Construction Battalions are usually attached to Base Forces in the area in which they are operating. They may, however, be placed under the control of other regional naval commands, or under an Air Flotilla, Air Fleet or even under the direct command of an Area Fleet. Their work is directed as described above.

5. Construction Battalions consist of from 450 to 2,000 men, the average strength being about 1,000. Of these the majority are civilians, either civil engineers and technicians or native, Korean or Formosan labourers. The Naval personnel are officers, warrant officers or petty officers of the Technical or Civil Engineering Branch, *Gijutsu*, and are specialist engineers or tradesmen. There are usually 80 to 120 naval personnel in each construction battalion.

6. For administrative purposes Constructional Battalions are divided into companies under a Battalion Headquarters and the companies in turn into Platoons, and so on. Battalion Headquarters is responsible for personnel, their discipline, supplies and health.

7. Local Labour Squads are allotted the manual work—

- (a) clearing forests ;
- (b) constructing roads and runways ;
- (c) digging drains ;
- (d) collecting coral for surfacing ;
- (e) constructing storage dumps and shelters.

8. Equipment of a Construction Battalion normally consists of up to 50 trucks and vehicles, five or six steam or diesel rollers, two or three bulldozers, three tractors, with concrete mixers, generators and water sprinklers.

9. **Co-operative Units :**

- (a) Tunnelling Units, *Suidotai*, are sometimes attached to Construction Battalions to assist in the construction of underground shelters, defences and storage dumps.
- (b) Transport Units—such as Sea Transport Battalions or Independent M/T Companies—help to transport supplies and materials to the sites where they are required.
- (c) Miscellaneous exploitation units, such as Forestry Units, Agricultural Development Units, and **Marine Products Units** supply both army and naval units with timber and provisions.

CHAPTER 33

Training

1. The Bureau of Training, *Kyōiku Kyoku*, at Naval Air Headquarters, lays down the lines for the training of all Naval Air Personnel. A single Combined Air Training Command, *Rengō Kōkū Sōtai*, based at Gifu, is responsible for carrying out the policy thus laid down.

2. There are six *Combined Air Groups*, *Rengō Kōkūtai*, Nos. 11–14, 18 and 19, subordinate to this command in which all J.N.A.F. personnel are trained. These combined Air Groups are Headquarter Staffs, the training itself being given in Training Air Groups, *Kōkūtai*, under the supervision of the Combined Air Group Headquarters.

3. Each Combined Air Group is responsible for training in a particular area. At the same time the training given by one Combined Air Group is not the same as that given by another. The following table shows the location of each and the nature of the training it conducts :—

Command	Location	Function
Combined Air Group 11	Central Honshu	Mainly elementary flying training
Combined Air Group 12	Kyushu	Mainly advanced flying training
Combined Air Group 13	Japan and China	Navigation, W/T, air gunnery training
Combined Air Group 14	Formosa	Mainly advanced flying training
Combined Air Group 18	Japan	Unknown
Combined Air Group 19	—	—

4. **Training Air Groups :** Air Groups carrying out the training of flying and ground personnel number about a hundred. Apart from six in Formosa, and isolated ones in the Philippines, Indo-China, China and Korea, all these Air Groups are in Japan (unlike the J.A.A.F., most of whose training units are overseas).

5. There are five types of Training Air Groups :—

(a) *Preparatory*

(i) Preflight training groups for potential air crews. Recruits are drawn from the navy, from civil life or from the Youth Air Training Corps (an organisation similar to the Air Training Corps in the R.A.F.). At the end of this training, which varies in length according to the age of the recruit, trainees are classified into pilots, navigators, bomb-aimers, air-gunners and wireless operators.

(ii) Disciplinary, or "boot-training" groups for potential ground personnel.

(b) *Specialist Training*

Specialist training groups exist for providing courses of instruction for other-than-pilot aircrews graduating from (a) (i) ; others provide courses in elementary and advanced maintenance training for graduates of (a) (ii). Courses are also available in both these types of specialist training groups for personnel detached from serving units.

(c) *Elementary Flying Training*

The elementary flying training groups are fed by recruits from the groups under (a) (i) who have graduated as potential pilots.

(d) *Advanced Flying Training*

These groups specialise on fighter, bomber or reconnaissance training for pilots graduating from the elementary flying training groups.

6. **Operational Training** : Operational flying training is carried out in operational units, to which pilots are posted after completing their advanced flying training. Often these operational units are ones being newly formed in Japan.

7. Operational training is supervised by the command to which the operational unit is subordinated. This, in most cases, is an Air Flotilla, which, for training purposes, is normally given the use of two or three airfields, one or two "target" ships and, when required, a training aircraft carrier.

8. **Expansion of J.N.A.F. Training System** : As a result of the increasing demands of the war, considerable expansion in the training system took place in late 1943 and the spring of 1944. This expansion was of two kinds :—

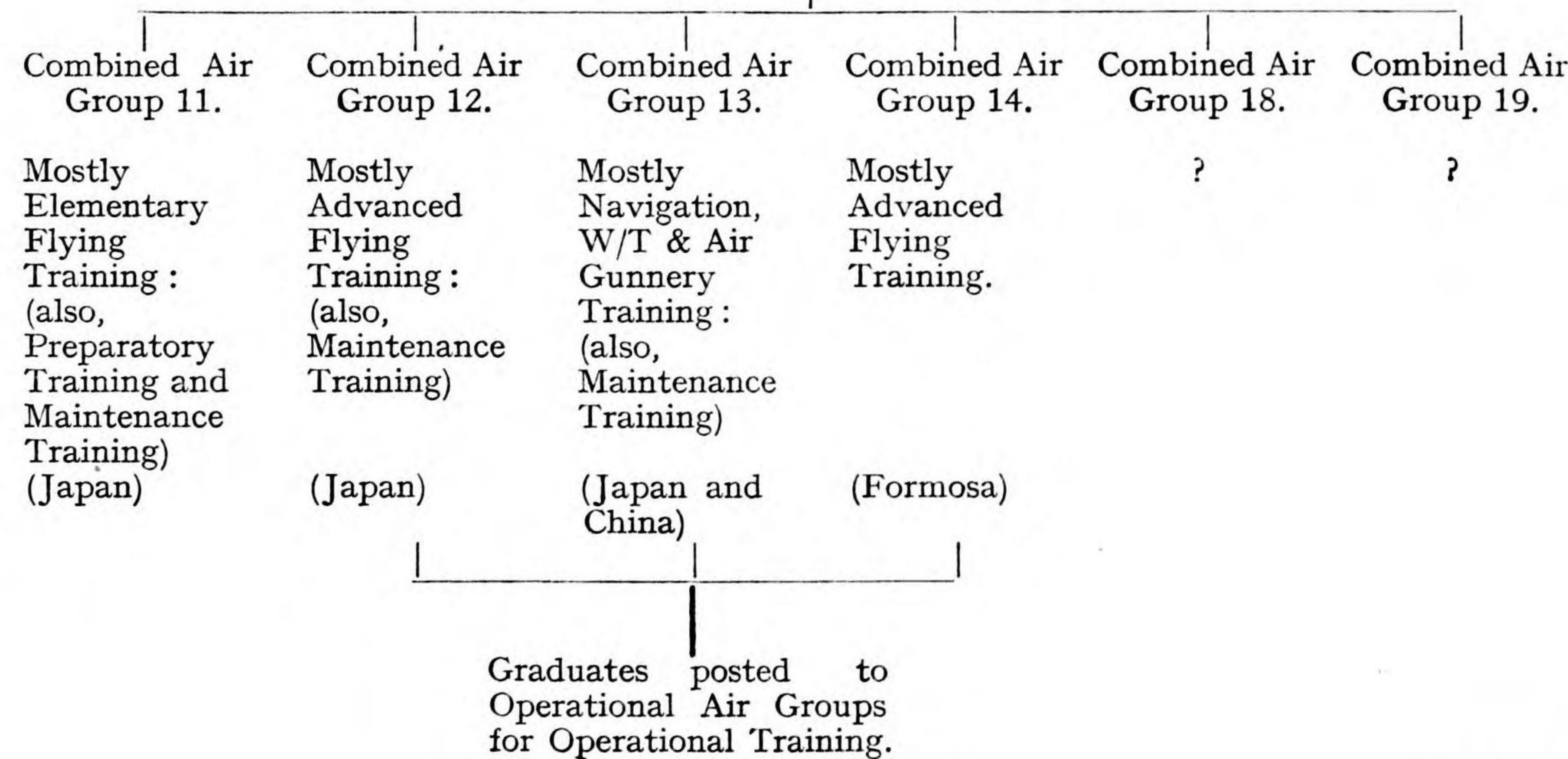
- (a) an increase in the number of training groups of all kinds ; and
- (b) an increase in the numbers of aircraft used at many of the elementary and advanced Flying Training Groups.

9. The supply of personnel for this enlarged system was drawn mostly from the University and Higher School graduate class, conscripted in mid-1943. See page 62.

J.N.A.F. TRAINING ORGANISATION

Training Bureau, Naval Air H.Q.

Combined Air Training Command



INDIVIDUAL TRAINING OF J.N.A.F. PERSONNEL

(a) *Pilots*

10. **Pre-flight training** : The length of the pre-flight course for potential aircrew varies according to the age and educational background of the entrant. For volunteers straight from school there is a course lasting for 1½–2½ years primarily educational and cultural in nature, but including instruction of an elementary kind in various aspects of Air Force work.

11. Recruits of military age take a six or eight weeks pre-flight course designed to improve their physique and introduce them generally to Air Force routine.

12. An "aptitude for flying" test is given at both of these courses after which recruits are divided into three classes, pilots, navigators and W/T operators, and posted to other Groups for further training. Pilots go on to elementary flying training Air Groups.

13. **Elementary Flying Training** : No distinction is made at this stage between fighter, bomber or reconnaissance pilots, all of whom train together on an elementary biplane trainer. The course lasts four months, instruction being given in take-off, landings and circuits. Flying time is about 100 hours, 20 of which are on aircraft with dual control. Classes are held in the principles of flying, with some instruction also in aircraft maintenance and meteorology.

14. At the end of this course trainees are subdivided into fighter, bomber and reconnaissance pilots, and posted to Air Groups specialising in these types.

15. **Advanced Flying Training** : Four months are spent at the Advanced Flying Training Air Groups. Advanced trainers and obsolescent operational aircraft are used, flying time being in the region of 100 hours for fighter pilots, including about 10 on "conversion." Reconnaissance pilots do their "conversion" at the Elementary Flying Training Group. Flying time for bomber pilots is rather more than that mentioned.

Combat tactics, air-firing, navigation, etc., are taught, more importance being attached to the pilot's actual performance in the air than to his theoretical knowledge. In the case of fighters, for example, no theoretical test at all is given.

16. **Operational Training** : Having completed the advanced flying course, pilots are posted to an operational unit for operational training. Here bomber pilots are "crewed-up" for the first time with graduates from navigation, W/T and gunnery schools.

17. Operational training is intensive, considerable time being spent in formation flying as well as in combat tactics, high and low-level bombing, carrier-landings, and night flying. Bombing exercises are carried out with "target ships." The time spent on operational training varies from two to six months according to operational requirements, and, therefore, no definite figure can be given for flying hours. The minimum target is believed to be 60 hours.

18. Summary of Fighter Pilot's Career :

	Months	Flying Time
Preparatory Training	1½/2	—
Elementary Flying Training	4	100 (20 dual)
Advanced Flying Training	4	100
Operational Flying Training	2/6	(?) 60/100
Total	11½/16	260/300

(b) Navigators, Bomb-aimers, W/T Operators and Air Gunners

19. Navigators, bomb-aimers, W/T operators and air-gunners are selected at the pre-flight training groups from recruits rejected as pilot candidates. They are then posted to specialist groups to begin their technical training, after which they join operational groups and are "crewed up" for the first time.

(c) Ground Personnel

20. After a month's "boot-training," recruits destined for ground duties requiring some measure of technical skill are sent to maintenance training groups for three to six months, the time depending on the course taken. (These groups also conduct an advanced course of nine months for personnel from serving units.) Recruits destined to be employed on simple tasks, such as plane-fuelling, are normally posted direct to an operational unit.

CHAPTER 34
MAPS ILLUSTRATING THE DISPOSITION
OF THE
PRINCIPAL NAVAL AIR COMMANDS
AT FOUR STAGES OF THE WAR

MAP No. 12
Japanese Naval Air Commands
December 1941

1. The 11th Air Fleet was the expeditionary naval air force, and moved outwards from the Empire with the Japanese Navy in the invasions of French Indo-China, Malaya, the East Indies, and the Solomons.

2. The 11th Air Fleet at this time probably consisted of Air Flotillas 21, 22, 23 and 24.

(a) *21st Air Flotilla*. Originally based at Kanoya, may have been in French Indo China at this date. It included the Kanoya Air Group equipped with fighters and bombers, and the Tookoo Air Group equipped with flying boats.

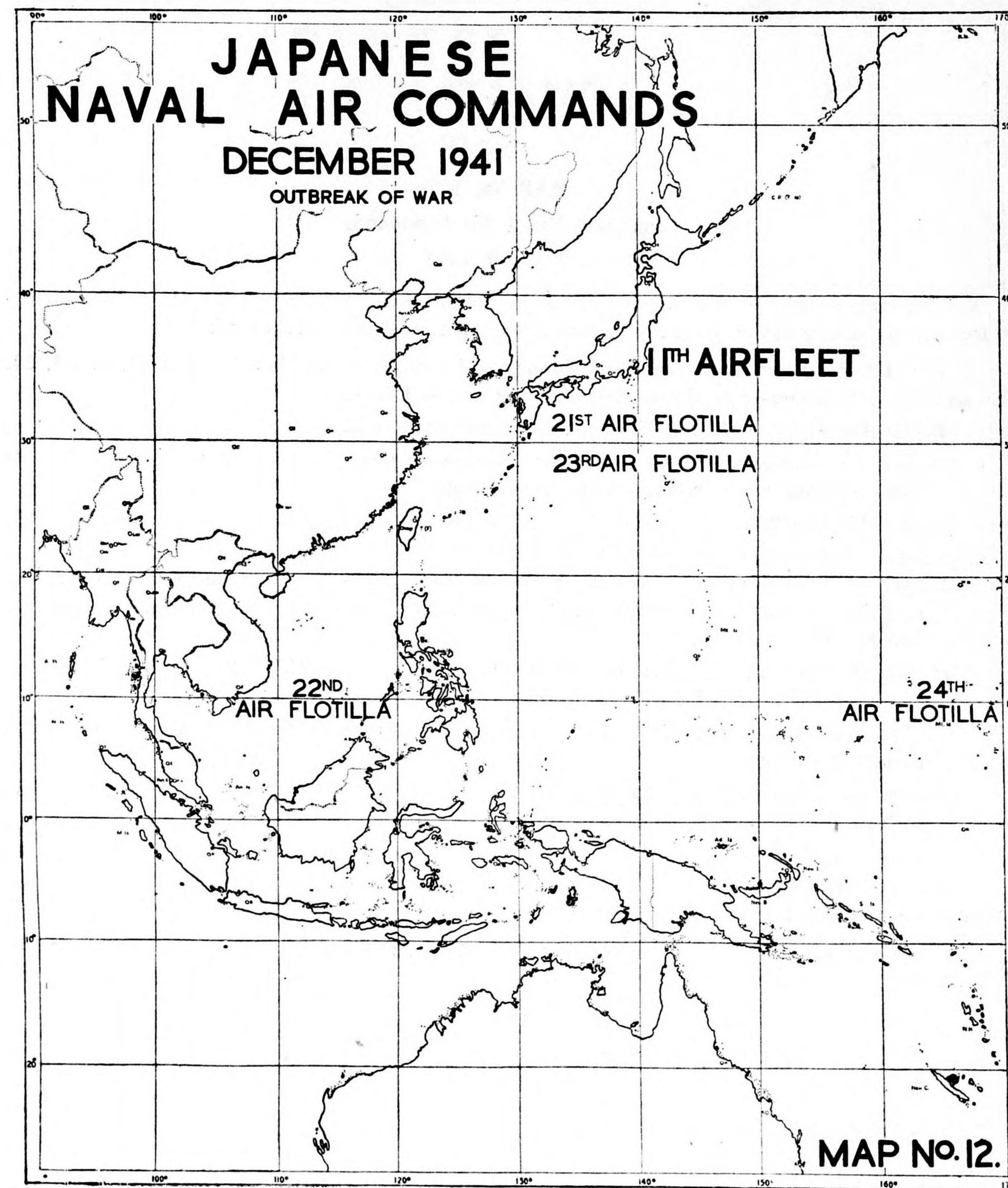
(b) *22nd Air Flotilla*: Was based at Saigon. It included the Genzan Air Group and the Bihoro Air Group, both equipped with bomber aircraft.

The Flotilla saw service in Indo-China and the invasion of Java. It was relieved at Sabang in May, 1942, by 21st Air Flotilla, and was then sent north to the Kuriles.

(c) *23rd Air Flotilla*: Moved south to Java in February, 1942, and is tentatively placed in the Empire at this date. It included the Takao Air Group, equipped with bomber aircraft, and the No. 3 Air Group, equipped with fighters and recce aircraft.

(d) *24th Air Flotilla*: Was based at Jaluit in the Mandates. Its composition at a little later date included the Chitose Air Group and the Yokohama Air Group.

Note.—The Air Flotillas in the early days possessed land-based aircraft but also had one or two seaplane tenders and auxiliary vessels attached to them.



MAP No. 13
Japanese Naval Air Commands
December 1942

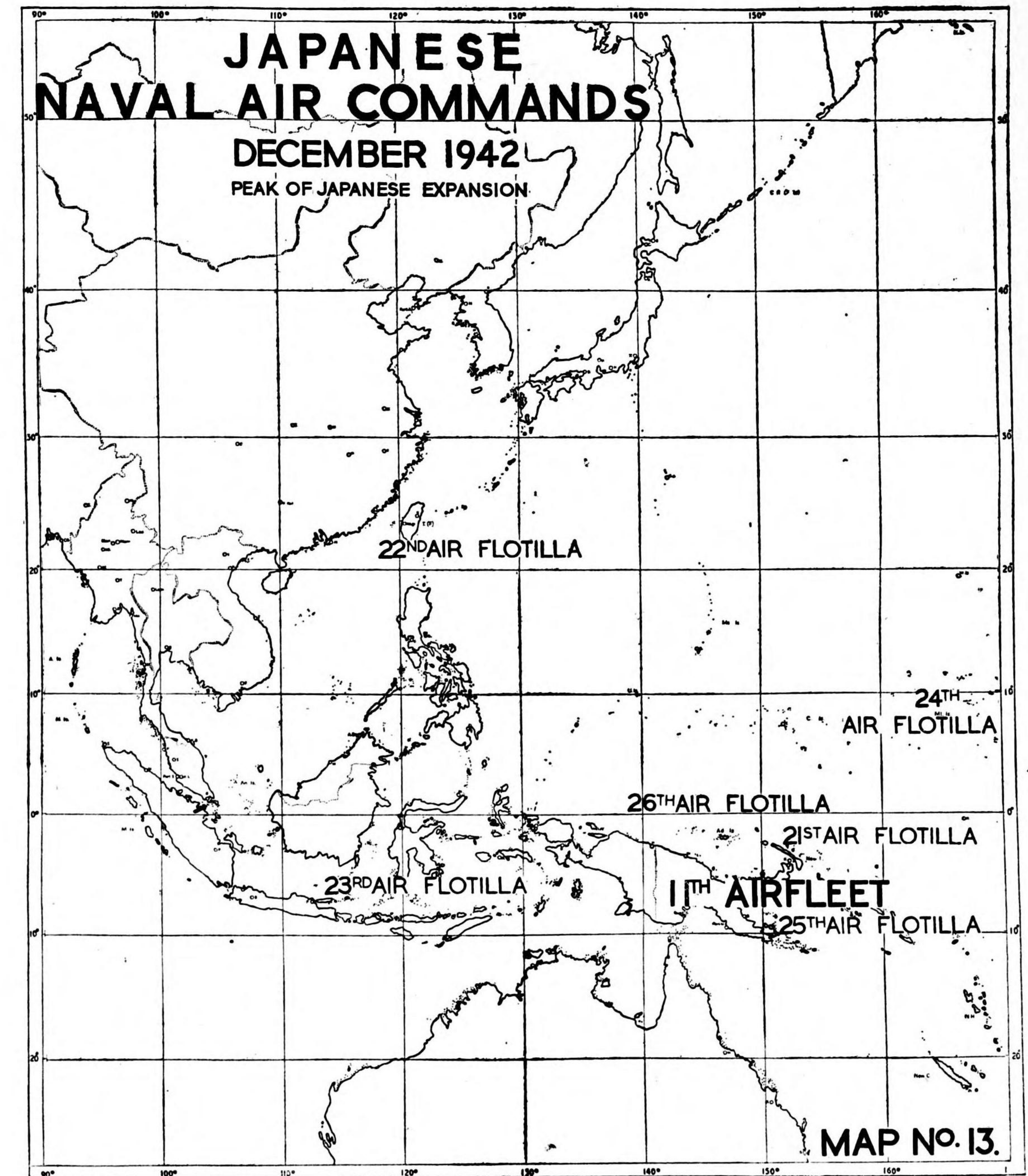
1. This map illustrates the disposition of Japanese Naval Air Commands at the time when Japanese expansion to the Outer South Seas Area had almost reached its peak.

2. The 11th Air Fleet is now based at Rabaul, and consists of Air Flotillas Nos. 21, 22, 23, 24, 25 and 26. The disposition of these Air Flotillas was as follows:—

- (a) *21st Air Flotilla* : In the Bismarcks—New Britain Area.
- (b) *22nd Air Flotilla* : Was temporarily at Takao after its operational tour in the Kuriles. It was preparing to move South again at this time.
- (c) *23rd Air Flotilla* : This Flotilla had been engaged in the invasion of Java, and during 1942 its units moved about between Java—Timor—Celebes—Saipan.
- (d) *24th Air Flotilla* : Was moving from the Marshalls to the Northern New Guinea area. At this time its composition was thought to include the Chitose Air Group, No. 1 Air Group, and No. 14 Air Group.
- (e) *25th Air Flotilla* : Organised early in 1942 from the former 6th Air Squadron, this Flotilla consisted of the Tainan Air Group, Misawa Air Group, and the No. 4 Air Group.
 It was in action in the New Britain Solomons Area, and by the end of the year had been almost destroyed.
- (f) *26th Air Flotilla* : Was formed during the summer of 1942. Some of its units were sent to New Guinea, but part probably remained in Japan. Believed to include the Kisarazu Air Group and the No. 6 Air Group.

Notes.—(1) Captured documents of the organisation of the 11th Air Fleet in June and July, 1942, do not include 23rd Air Flotilla.

(2) Other named Air Groups were probably in the 11th Air Fleet area, but were not included in the Flotillas.



MAP No. 14
Japanese Naval Air Commands
 September 1943

1. By this date, three Air Fleets had been created and assigned to defend three areas which together covered the whole of the Western Pacific Ocean apart from Japanese Home Waters and the China Seas.

2. These were as follows :—

(a) 11th Air Fleet—based on Rabaul, controlling Air Flotillas 21, 22, 25 and 26 in the New Guinea—Bismarcks—Carolines—Marshalls Area, and responsible for the defence of the South East Pacific Area.

(b) 12th Air Fleet—based at Paramushiro, consisted of Air Flotilla 24 operating in the North Empire and Kuriles, and responsible for the defence of the North East Area.

Latitude 24° North was the demarcation line between the areas of the 11th and 12th Air Fleets.

(c) 13th Air Fleet—at Penang, controlled Air Flotillas 23 and 28 in the Netherlands East Indies—Malaya Area, and responsible for the defence of the South West Pacific Area.

3. *Air Flotillas of the 11th Air Fleet.*

21st Air Flotilla : Headquarters at Tenian, later moved to Truk. Consisted of Air Groups 151, 201, 253 and (751). This Air Flotilla ceased to operate after the end of 1943.

22nd Air Flotilla : Headquarters believed at Ruotto. In Oct., 1943, this Flotilla was detached from the 11th Air Fleet and placed under the 4th Fleet at Truk.

Its composition then was Air Groups 252, 552, 755, 802.

25th Air Flotilla : Headquarters at Rabaul. This Flotilla probably comprised Air Groups 251, 501, 702, (751).

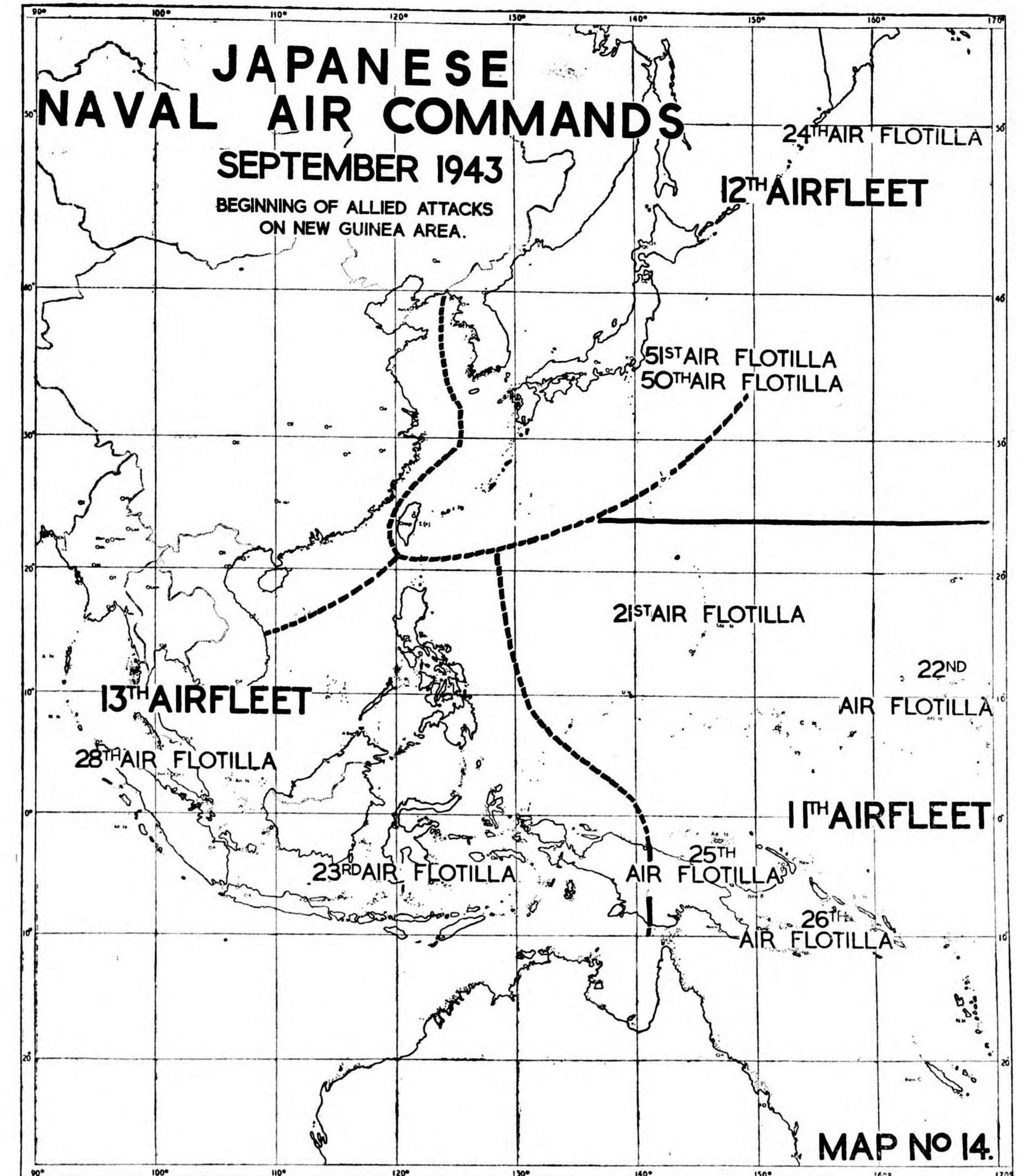
26th Air Flotilla : Was in the Buin Area after moving South from the Empire. It possessed about 150 aircraft of which one-half were fighters and the remainder bombers and dive-bombers.

4. *Air Flotilla of the 12th Air Fleet :* 24th Air Flotilla had been withdrawn from the Bismarcks under the 11th Air Fleet, and assigned to the 12th Air Fleet in N. Japan and Kuriles. Probably composed of Air Groups 281, 452, 531, 732.

5. *Air Flotillas of the 13th Air Fleet :* Formed in Sept., 1943, this Air Fleet consisted of 23rd *Air Flotilla*, H.Q. Kendari. Comprising Air Groups 202, 753 (932, 934). 28th *Air Flotilla* : H.Q. Sabang. Composed of Air Groups 331, 551, 851 (936).

Note.—(1) Air Flotillas 50 and 51 were at Tateyama (?) and Yokohama, and were Air Training Flotillas.

(2) Air Flotilla No. 50 was disbanded in December, 1943.



MAP No. 15
Japanese Naval Air Commands
March 1944

1. By this time Allied forces had increased the scale of attacks on the New Britain, Bismarcks and Marshalls areas. Japanese forces were on the defensive in these areas and were being forced back in New Guinea.

2. The Central Pacific Area had now been delimited from the North-East and South-East areas, and a new Air Fleet, the 14th, organised and assigned to the new area as the air component of the Central Pacific Area Fleet.

The 14th Air Fleet was composed of Air Flotillas 22 and 26, and operated in the Marshalls-Carolines area.

3. By this time, too, the Naval Air Forces had been reorganised to provide :—

- (a) holding forces—to defend the various areas into which the Pacific had been divided ; and
- (b) a striking force—consisting of a new land-based air force, the 1st Air Fleet. This was directly subordinate to the Combined Fleet, and formed, along with the Carrier Divisions of the 1st Mobile Fleet, the air component of the main battle force of the Japanese Navy.

The 1st Air Fleet had its Headquarters at Tenian at this time, having moved down from the Empire where it had been organised at Katori. It was composed of Air Flotillas 61 and 62, two large recently-formed commands.

61st Air Flotilla : In the Saipan-Guam area Air Groups 121, 261, 263, 341, (343), (521), 523, 761.

62nd Air Flotilla : Some units were moving up to Tenian, but others remained in the Empire. Air Groups 141, 221, 265, 322, 361, 521, 522, 524, 541, 762.

4. *The 11th Air Fleet* had by this time lost most of its strength. With Headquarters still at Rabaul it now controlled only Air Flotilla 25.

25th Air Flotilla probably included Air Groups 151, 251, 253 and 582 (till its disbandment).

5. *The 12th Air Fleet* was still in N. Japan, and was now comprised of Air Flotillas 27 and 51. Air Flotilla 51, having completed its training, had moved to the Kuriles.

27th Air Flotilla : Air Groups 252, 452, 752, 801.

51st Air Flotilla : Air Groups 203, 502, 553, 701.

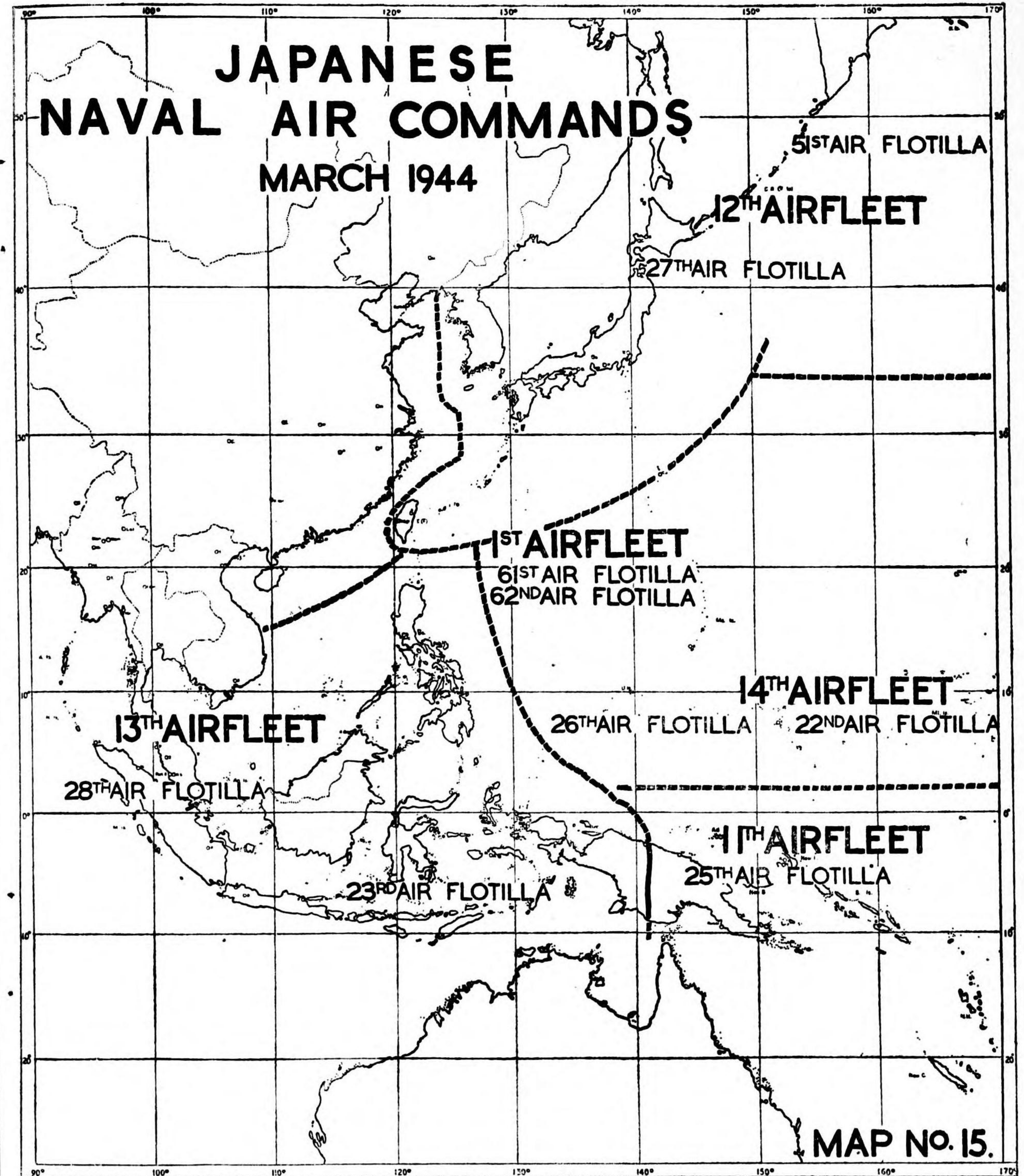
6. *The 13th Air Fleet* remained at the Malaya station with Air Flotillas 23 and 28 at Kendari and Sabang as before.

23rd Air Flotilla : Air Groups 153, 381, (753).

28th Air Flotilla : Air Groups 331, 551, 705, 851.

7. *The 14th Air Fleet* was stationed in the Marshalls-Palao area, and consisted of Air Flotillas 22 and 26.

22nd Air Flotilla : Air Groups 202, 301, 503, 755, 802.



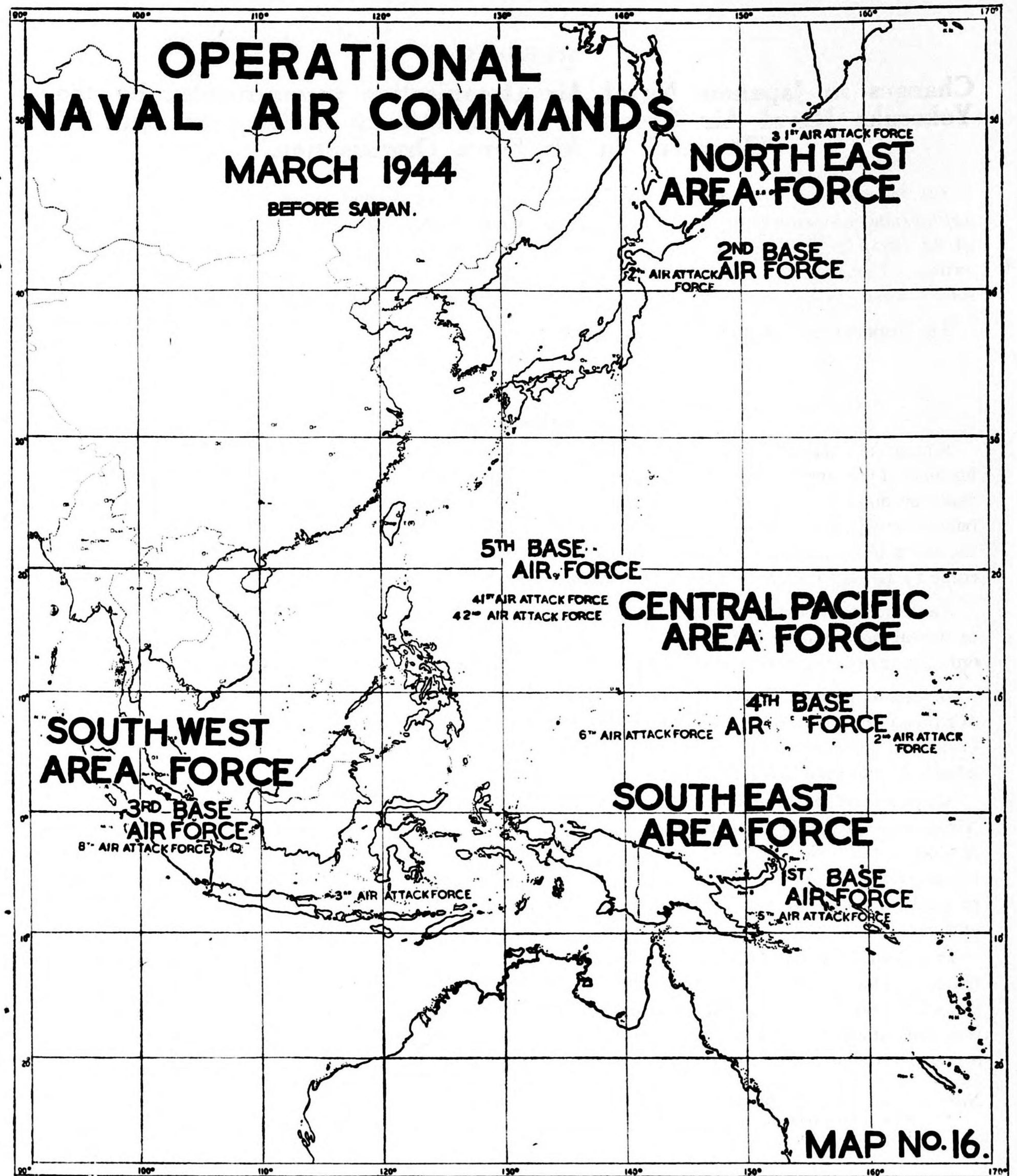
26th Air Flotilla : Air Groups 201, 204, 501, 751.

Note.—*Relationship to Area Fleets.*

1. The 11th Air Fleet was the air component of the South East Area Fleet.
2. The 12th Air Fleet was the air component of the North East Area Fleet.
3. The 13th Air Fleet was the air component of the South West Area Fleet.
4. The 14th Air Fleet was the air component of the Central Pacific Area Fleet.
5. The 1st Air Fleet was not placed under any Area Fleet, but was under the direct command of the Combined Fleet. It was an Air Force that was centrally placed in order to be able to throw in its strength to assist other Air Fleets that needed reinforcements against major Allied attacks in their areas.

MAP No. 16
Operational Naval Air Commands
March 1944

This map shows the disposition of the Base Air Forces and of the Air Attack Forces of the Air Fleets and Air Flotillas respectively as set out on Map 15.



APPENDIX 1

Changes in Japanese Naval Air Organisation recommended by the Yokosuka Naval Air Group in April, 1943, in a document entitled "Research in Air Force Organisation."

The following is a translation of a document captured on Saipan which gives an account of the appropriate organisation of the Naval Air Force to achieve the requirements of Japanese naval strategy in the Pacific. The organisation as set out differs from that in force at the time the document was written. Considerable changes were made in 1943 and 1944 on the lines proposed, although there are some features, principally on the maintenance side, which may not have been put into practice.

The footnotes are not part of the original document.

Introduction

Numerous battles have proved that success in operations depends solely on control of the skies, because of the development of air power. Examples taken from the Greater East Asia War prove that the main role in control of the sea has passed from the surface forces to the air force. Air battles which were formerly considered to be preliminary skirmishes before the decisive battle of the fleets have themselves become the decisive battles, while battles between surface forces have come to display the characteristics of skirmishes or battles of pursuit.

Naval strategy has reached a crucial turning point in both offence and defence. Because control of the air precedes control of the sea it is no longer possible to get and maintain control of the sea only by destroying enemy surface forces in a decisive battle in accordance with the old theories.

So long as present operations are developing with base air warfare¹ as their centre, the object of offensive operations will be to prevent the advance of enemy air power by intercepting operations. Land and surface forces will be supported by extending our air power over enemy territory by advancing our own bases.

Air power will from now on be the mainstay of the navy. In view of the tendency to make Base Air Forces² the main strength of our naval forces, it is necessary to discard the relics of the out-moded tactical idea founded on previous theories, which stakes everything on a decisive fleet engagement. The planning of the whole navy must be unified by the rapid establishment of the proper³ organisation with the air force as its main strength. Its total power must be assembled and used to the full.

This study refers to the above essential points, and gathers together opinions deduced from recent combat lessons. It requires close scrutiny of the fundamental principles, and further study should be continued concerning many of its details. However, since it is felt that a guide must be provided quickly on logistics and maintenance during the changing phases of the present war, it is suggested as a plan and contributed for reference.

Notes.—¹ i.e., with land-based air forces.

² i.e., land-based.

³ appropriate.

CHAPTER 1

General Plan

SECTION A—COMBINED FLEET

Rengō Kantai

This is divided broadly into the Striking Forces, *Kidō Heiryō Ku*, which are free for diversions at all times and places, and the Area Forces, *Hōmen Heiryō Ku*, which are stationed separately in each area and which are responsible for patrolling and defending their areas. Striking forces are divided into base striking forces⁴ and surface striking forces. Being decisive battle forces these always maintain a high degree of training by means of constant practice. They constitute the main force during offensive operations. During defensive operations they are generally disposed at rear bases so that they can be concentrated in the main theatre of battle after one move forward.

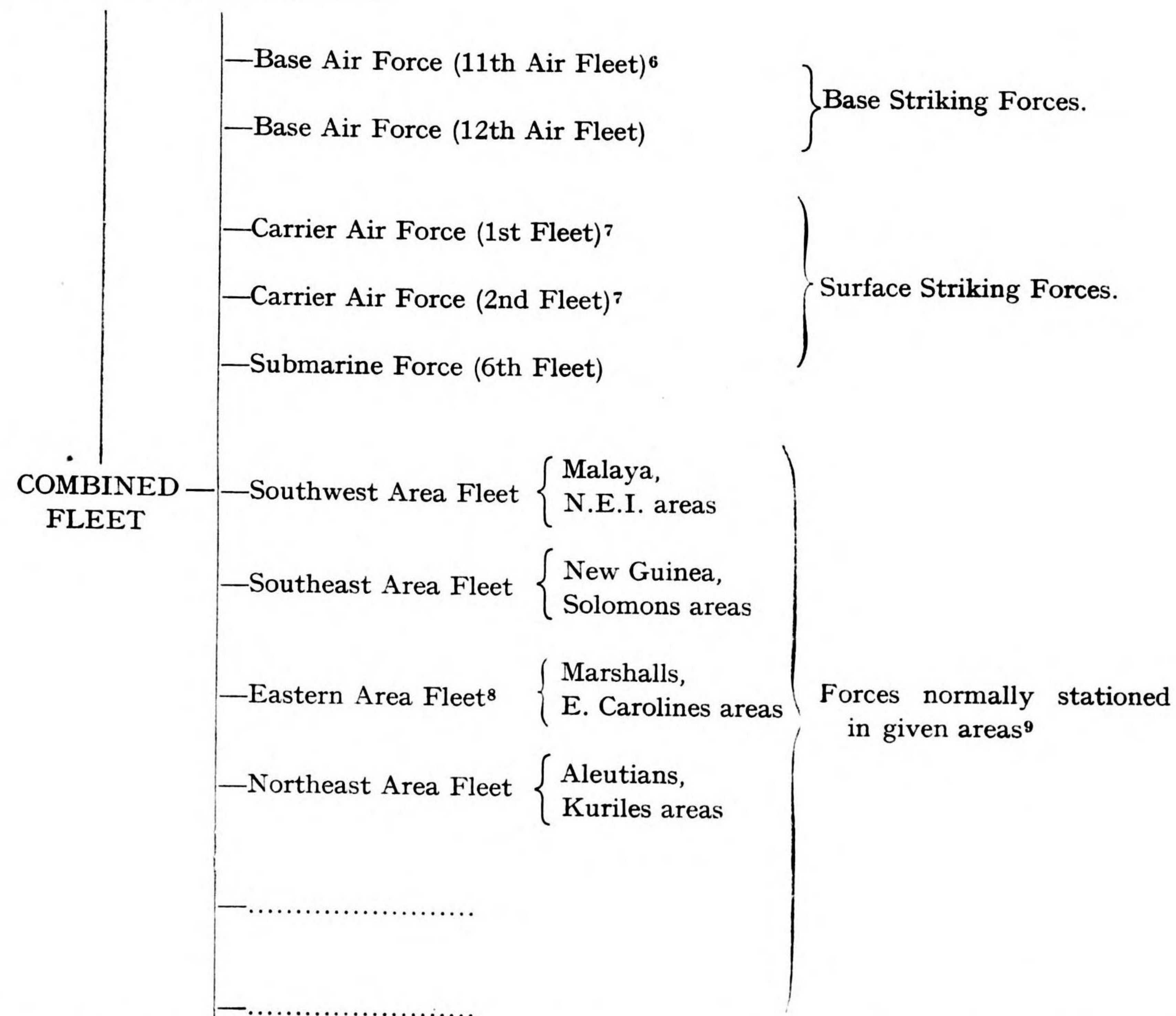
Area Forces are organised into several Area Fleets, *Hōmen Kantai*, which are assigned to areas having Base Air Forces, *Kichi Kōkū Butai*, as their mainstay⁵. They are responsible for interception in their areas.

Notes.—⁴ the 1st Air Fleet forms these forces.

⁵ i.e., the 1st, 2nd, 3rd and 4th Base Air Forces attached to the respective Area Fleets.

* In conformity with the above principles, a plan for the organisation of the Combined Fleet based on present conditions is as follows :—

C.-IN.C. COMBINED FLEET



* The Combined Fleet Commander will be in direct command of an Air Fleet which will be the nucleus of the main operations.

Notes.—⁶ The 11th Air Fleet located in the Solomon Is.-New Guinea Area suffered very severe losses during 1943 and did not in fact form any part of the Base Air Force of the Striking Force. Neither did the 12th Air Fleet located in Northern Japan which remained part of the North Eastern Area Force. The 1st Air Fleet which ultimately formed the Air Striking Force was originally organised from newly created Air Flotillas.

⁷ This was so in principle but the 3rd Fleet was made the Carrier Fleet.

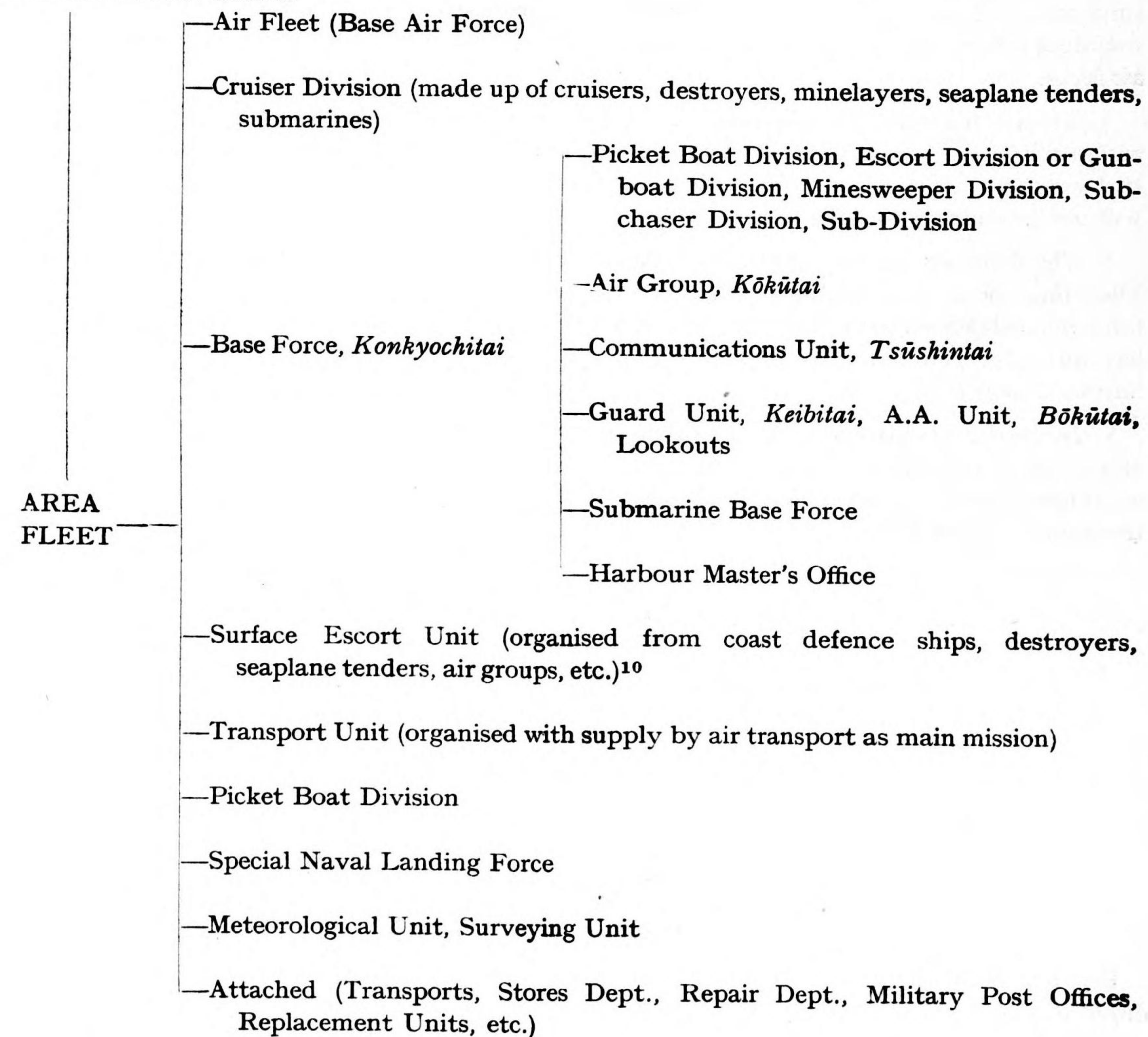
⁸ This Area Fleet never came into being. In fact the Central Pacific Area Fleet was formed which covered the Western Carolines as well as the areas stated.

⁹ In the previous paragraph the Base Air Forces are referred to as the mainstay of the Area Forces. See note ⁵.

SECTION B—AREA FLEETS

The Area Fleet has the duties of patrolling and defending a single area, fighting close to its bases, patrolling occupied areas, convoying, supply and similar local operations. Consequently, although it must have more or less special characteristics adapted to the area in which it is located, generally the following organisation will be suitable :—

COMMANDER-IN-CHIEF



The gist of the organisation is as follows :—

1. Since it is the Base Air Force which will effectively stop the enemy's advance by covering a broad interception front, the Area Fleet organisation accordingly has a Base Air Force as its main

Note —¹⁰ This refers to the local harbour force and not to the Surface Escort Units commanded by the Grand Surface Escort Force Headquarters.

strength. Other military forces must adapt themselves to the air operations at all times by co-operating with the Base Air Force.

2. In operations in a single area, if the highest commanding officer does not have unified command of both air and sea forces, the carrying out of harmonious operations is difficult. Since leadership of the operations of the air force which is the main strength of an intercepting operation has an important influence on the whole operation, the organisation must be such that the highest commanding officer will have personal control over the surface force, together with command of the air force.

3. Though normally the required patrols are carried out by the air force, it will be necessary to assign patrol and picket boat divisions directly to the Area Fleets in order to cover gaps caused by bad weather. The use of patrol and picket boat divisions under the command of the Base Force will not be suitable for thorough patrolling.

4. The necessary air strength¹¹ will be attached to the local defence forces, *Kyokuchi Bōbi Butai*. They must be so organised as not to interfere with co-operation with the main strength of the air force in local defence and protection of communication lines. For that reason, an Air Group which has anti-submarine patrol planes as its main component will be assigned to the Base Force and the Surface Escort Unit.

5. In view of the present condition of surface transportation, the enlargement and strengthening of air transport facilities by furnishing cargo planes is planned. In addition transport units will be organised so that replenishment of material and parts at advanced bases can all be handled by air transport. These will be directly attached to the Area Fleets.

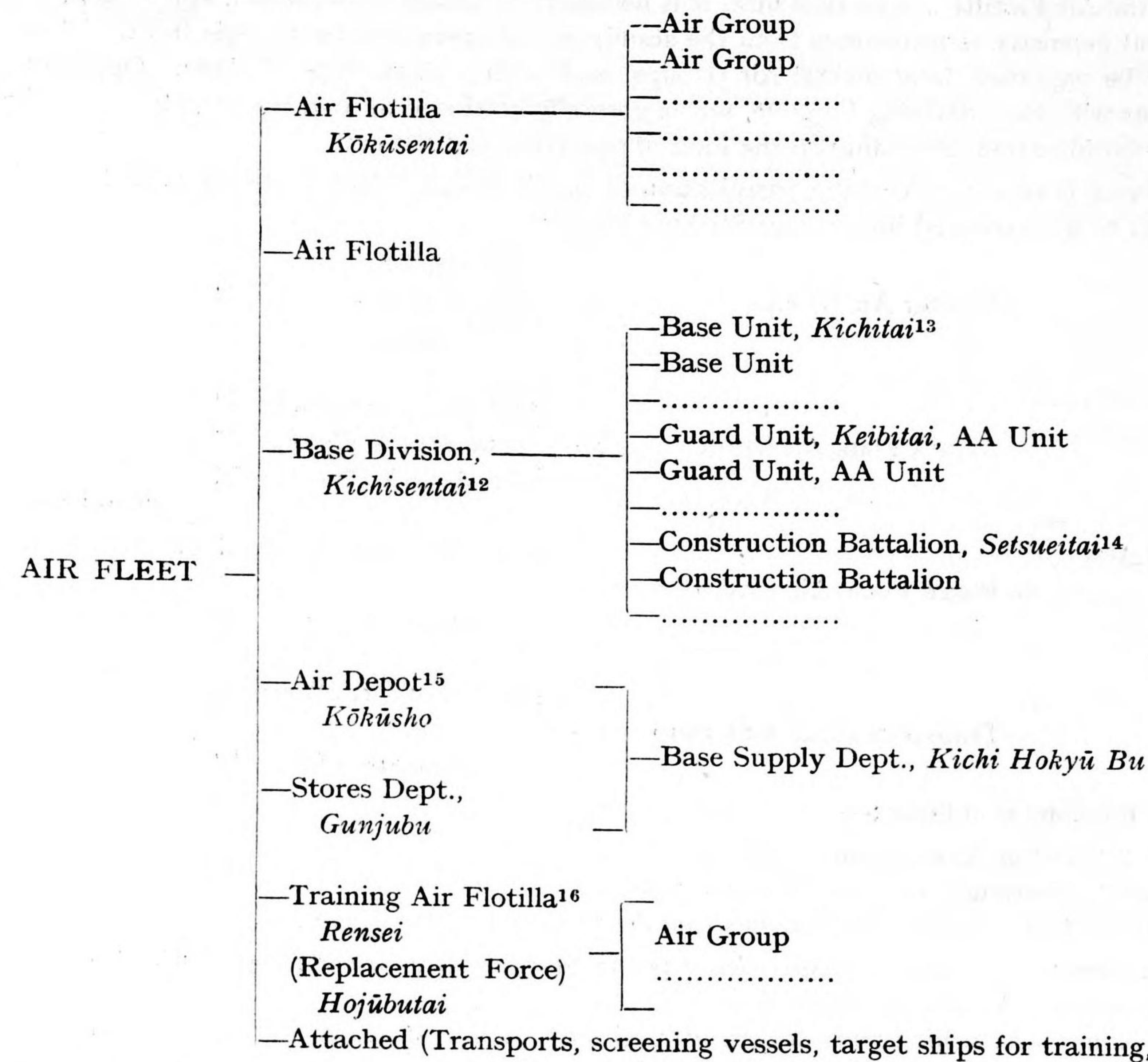
CHAPTER 2

Base Air Forces

SECTION A—AIR FLEETS

Because the Air Fleet acts independently as a single strategic unit under a single commander, in order to carry out operations and replenishment quickly and harmoniously throughout a single operational area, it is necessary that the organisation of the Air Fleet should be as follows :—

Note.—¹¹ *i.e.*, in addition to the Base Air Forces.



Construction, repair, and supply organisations such as those of the Air Depots and the Stores Departments are directly attached to the Fleet¹⁷. They must adapt themselves to operations, replenishment and overhauls for front-line operational bases, in addition to acting in close contact with the homeland.

Notes.—¹² This was the provisional name. The Base Division was never formed.

¹³ Few such Units were formed and these were under the Air Fleet.

¹⁴ Guard Units and Construction Battalions are generally part of the Base Force.

¹⁵ The Air Depot and Stores Department are subordinate to the Area Fleet not to the Air Fleet.

¹⁶ For a Training Air Flotilla, see page 97.

¹⁷ Air Fleet is evidently meant.

SECTION B—AIR FLOTILLAS

Because the Air Flotilla is a tactical unit, it is necessary to consider its control, application, and offensive and defensive requirements from the standpoint of operations on a single front. Therefore, it will be organised from several Air Groups, each with a single type of plane. Opportune combinations with Base Striking Forces¹⁸, forces normally stationed at area bases¹⁹, etc., must be taken into consideration depending on the kind of operation and the area.

The following is an example of the organisation of an Air Flotilla which is the nucleus of a Base Air Force to be incorporated into a Base Striking Force :—

AIR FLOTILLA ²⁰	— Fighter Air Groups	2	{	<i>Kō</i> Fighters	81	}	— Total 396			
				<i>Otsu</i> Fighters	54					
				<i>Hei</i> Fighters	27					
	— Attack Plane Air Groups	3	{	<i>Kō</i> Attack Planes	54	}		— Total 396		
				<i>Otsu</i> Attack Planes	54					
				<i>Hei</i> Attack Planes	54					
	— Recce Plane Air Group	1	{	<i>Kō</i> Recce Planes	27	}			— Total 396	
				<i>Otsu</i> Recce Planes	27					
	— Transport Plane Air Group	1	{	<i>Kō</i> Transport Planes	6	}				— Total 396
				<i>Otsu</i> Transport Planes	12					

Principal missions as follows :—

Kō Fighters : Shooting down enemy fighters.

Otsu Fighters : Shooting down enemy attack planes.

Hei Fighters : Night fighting, and also shooting down enemy patrol planes.

Kō Attack planes : Attacking strategic enemy positions, especially airfields and fortifications.

Otsu Attack planes : Attacking enemy ships.

Hei Attack planes : Attacking strategic enemy positions (grounded planes and defensive artillery forces) and ships (transports and small warships).

Kō Recce planes : Reconnaissance and surveillance of strategic enemy positions.

Otsu Recce planes : Night and day searching for and tracking the enemy at sea.

Kō Transport planes : Transporting personnel.

Otsu Transport planes : Transporting cargo.

The elements of this force, in addition to having the principal duty of destroying enemy air strength, are charged with annihilating the enemy fleet, destroying the enemy's rear, co-operation with ground forces, and so on. When annihilating enemy air strength, they have the primary objective of destroying the planes as well as the crews which they overtake in the air. They also have the objective of destroying grounded enemy planes and base installations, and of intercepting and destroying powerful enemy surface forces.

Notes.—¹⁸ This is the 1st Air Fleet. See note 6.

¹⁹ Base Air Forces of the Area Fleets.

²⁰ These a/c establishments were not adopted. See page 91.

SECTION C—AIR GROUPS

1. Organisation

The Air Group being a single tactical unit²¹, its control, tactical employment and training dictate that it be composed of a single type of plane. The organisation and number of planes of a single Air Group as shown below is judged suitable. The factors of concentrated offensive power, wastage, the number of planes which can be housed at a single base, and ability to transfer and change bases, etc., have been considered in the light of past battle experience and from the standpoint of developing both offensive and defensive combat strength.

(a) Fighter Air Group (81) (Divided into <i>Kō</i> , <i>Otsu</i> , and <i>Hei</i> fighters combined according to conditions)	{	Flying unit	27—	{	Flight squadron, <i>Hikōbuntai</i>
		<i>Hikōtai</i>			Flight squadron
		Flying unit	27		Flight squadron
		Flying unit ²²	27		Maintenance squadron
(b) Attack Plane Air Group (54) (Divided into <i>Kō</i> , <i>Otsu</i> and <i>Hei</i> attack planes)	{	Flying unit	18—	{	Flight squadron
		Flying unit	18		Flight squadron
		Flying unit	18		Maintenance squadron
		Flying unit	18		Maintenance squadron
(c) Recce Plane Air Group (54) (<i>Kō</i> and <i>Otsu</i> Recce planes used together)	{	Flying unit	27	{	Flight squadron
		<i>Kō</i> recce planes			Flight squadron
		Flying unit	27		Flight squadron
		(<i>Otsu</i> recce planes)			Maintenance squadron
(d) Seaplane Air Group (72) (Including fighter seaplanes, recce seaplanes, flying boats)	{	Flying unit	27	{	Flight squadron
		(Fighter seaplanes)			Flight squadron
		Flying unit	27		Flight squadron
		(Recce seaplanes)			Maintenance squadron
	{	Flying unit	18	{	Flight squadron
		(Flying boats)			Flight squadron
					Maintenance squadron

Notes.—²¹ Designed to fulfil one of the functions listed in the preceding paragraph.

²² See page 92. Air Groups were in the main composed of two *Hikōtai* after the reorganisation made in the Spring of 1944 evidently under the influence of this document.

(e) **Patrol Plane Air Group, Shokaiki Kōkūtai.**

Air Groups which have anti-submarine patrols as their main duty and which are assigned to a Base Force, Surface Escort Force or the *Naisenbutai* (Inner Combat Force) ²³ are to be organised according to circumstances, giving special consideration to their assigned duties and areas.

2. Personnel Required

It is considered best to make a twofold organisation of (a) the Air Group and (b) the Base Unit by revising the organisation of operational Air Groups in accordance with the principle of separation of ground and air units. This is done in order to facilitate and speed up transfer, concentration, and the changing of bases by developing to the utmost the manoeuvrability of the air force.

The Air Group will be organised as lightly as possible with the flying unit, *Hikōkitai*, as its main unit, and with headquarters and administrative personnel, and a minimum of maintenance personnel. The former maintenance, supply, communications, provisions and medical departments, etc., will all be the responsibility of the local Base Unit.²⁴

Advantages and disadvantages of separating the flying units from the ground units of the Air Group.

(a) **Advantages**

(1) Combat power can be developed to the full immediately after changing bases.

Under the existing organisation, there is a shortage of maintenance personnel at both the present and former bases, because the maintenance personnel are sent forward in instalments each time the base is changed, consequently there is a marked lowering of maintenance capacity. Even after the unit is reunited it is difficult to develop its full strength. This is specially so in cases where one Air Group is dispersed at several bases. However, if the Base Units are advanced,²⁵ maintenance facilities can be completely developed, and the advance of the flying units, *Hikōkitai*, and operations thereafter will not be hindered.

(2) The transportation required for changing the base may be efficiently controlled and applied.

Under present conditions, where ships are needed everywhere, in cases where forces are sent forward from various areas toward a single base, an extremely difficult situation is created from the standpoint of dispatching ships and convoying them.

When ground units have been established, however, the supply routes are simplified, and the economical application of available transport is easy.

(b) **Disadvantages**

(1) There is a risk that co-ordination of the air and ground units will be lacking.

There is some possibility that at times there will be disharmony among individuals and delay in work because joint enterprises are conducted by units whose duties and commands differ.²⁶

Notes.—²³ Unexplained.

²⁴ Except in some few instances these duties continued to be performed by the various sections, *buntai*, of the Air Group, which were reorganised as described in para. 15 on page 93.

²⁵ That is, if airfield staffs provided by Base Units are established at several airfields over the area of operations.

²⁶ This has however been the consistent practice in the J.A.A.F.

However, if these units are able to handle this situation effectively by an awareness and understanding of the mutual trust and responsibility required of units protecting each other, we feel there will be no important defects, especially when such are weighed against the absolute need for mobility of the air force.

(2) An increase in maintenance personnel will be necessary.

Increase in the required personnel will be unavoidable because of the nature of the²⁷ Base Unit (which involves the existence of) a number of necessary Reserve Units. Successive advances²⁸ will be provided for by permanently stationing the reserve units at a number of bases.

(3) There is some fear of a decrease in the technical skill of the maintenance personnel.

That is, because they are at a single base, they will service all types of planes, and an advancement in training in specialised technical matters will become difficult. However, it is felt that this will be taken care of if the organisation of the Base Unit to be stationed at the operational base and that of the Base Unit to be stationed at the maintenance base can be fitted in with the personnel assignments made from the basic maintenance personnel of the Air Group.²⁹

An outline of the personnel of an Air Group organisation according to the above-mentioned theory is as follows:—

(a) Headquarters:

Commanding Officer	...	...	...	...	...	...	...	...	...	...	1
Headquarters Staff	...	...	...	...	...	...	...	...	...	...	43

(b) Flying Crews.

Objective is to allot crews to operational planes on a 4-3 ratio, however, for flying boats and ship-borne reconnaissance planes, it is 2-1.

(c) Maintenance personnel.³⁰

(i) Plane Personnel.

Three men to each multi-engined plane, 1.5 men to each single-engined plane. These shall be organised from men who have special training on the special type of plane in question or from graduates of advanced maintenance courses who have the same degree of technical skill. Part will be assigned from graduates of ordinary maintenance courses.

(ii) Equipment Personnel.³¹

One man for 2 multi-engined planes, one for 3 single-engined planes. (However, one for 2 fighter planes.)

Even though, in cases of separating air and ground personnel,³² the determination of a ratio is very difficult, it is generally believed that there will be no difficulty with the above standard, in view of past experience and ability to transport by air, personnel other than plane crews.

Notes.—²⁷ i.e., the proposed Base Unit.

²⁸ Of the flying units.

²⁹ i.e., Base Unit personnel can work with the maintenance specialists belonging to the *Hikōtai*.

³⁰ per *Hikōtai*, see page 91.

³¹ per *Hikōtai*, see page 91.

³² i.e., in the *Hikōtai*.

SECTION D—BASE DIVISIONS

*Kichi Sentai*³³

These are composed of several Base Units, AA Units, Guard Units, *Keibitai*, and Construction Battalions, and have base duties in a single operational area.

SECTION E—BASE UNITS

1. Organisation

Bases having Base Units assigned to them are divided from the standpoint of maintenance into operational bases and maintenance bases. Their maintenance functions are defined as follows:—

(1) Operational bases (advance bases) and bases which take part in battle at the lines farthest front from main bases are responsible for flight operations. They will carry out maintenance duties to the extent of check-up maintenance, replacement of accessories, and emergency overhaul.

(2) Maintenance bases (rear bases). These are one hop farther to the rear than operational bases and consequently damage from enemy raids is comparatively small. In addition, they are in a favourable position for liaison with replacement bases and advanced major bases, *Konkyochi*. Therefore they will be responsible for adjustment maintenance, overhaul, and replenishment of supplies to operational bases.

At operational bases exposed to enemy air raids it is often impossible to carry out adjustment maintenance which requires precision work or to do overhauling which necessitates a sizeable number of maintenance and repair personnel. Therefore it is considered desirable to follow the organisation and assignment of personnel given above for Base Units by dividing responsibility within (the area of operations between two types of Base Units).

(1) BASE UNIT, *Kō*.

Will be responsible for the maintenance of planes attached to one Air Flotilla at a maintenance base.

(2) BASE UNIT, *Otsu*.

Will be responsible for the maintenance of planes attached to one Air Group at an operational base. However, provision will be made to assign enough personnel so that it will be flexible enough to accommodate two Air Groups for a short period of time.

The assigned personnel of a Base Unit, *Kō*, will be approximately 1,000.

The number of men assigned to a Base Unit, *Kō*, which is to maintain planes of an Air Flotilla, is very large taking the strength of an Air Flotilla as two fighter units (81 planes each), three attack units (54 planes each), and one recce unit (54 planes). However, considering the handling of the units and the present state of front-line Air Groups whose rate of plane wastage is high, it is estimated that about 1,000 men will be needed.

³³ See note 12.

2. Personnel

(a) Base Unit, *Kō*.

Here follows a detailed schedule of the establishment for an Air Flotilla of the type above specified and comprising the following, viz.

Officers	17
Special Duty Officers	12
Warrant Officers	12
Petty Officers	296
Men	634
Total	971

(b) Base Unit, *Otsu*.

Assigned Personnel	Fighter	Attack	Recce
Officers	12	12	12
Special Duty Officers	8	8	6
Warrant Officers	10	8	7
Petty Officers	129	147	89
Men	388	439	243
Total	547	614	357

A separate establishment for one Fighter Unit, one Attack Unit and one Reconnaissance Unit was set out summarised as above, but it was concluded that the Base Unit, OTSU, should be suitable for servicing each type of aircraft. As such it was to consist of about 800 men, plus about 180 seamen, and maintenance personnel (not specialists) for duties with the unit as reserves.

Since there will be a surplus or deficiency of personnel depending on the class of plane, it is necessary to provide for some elasticity by maintaining Replacement Units as reserve personnel at the Base Division, *Kichi Sentai*, headquarters.

SECTION F—Omitted

SECTION G—CONSTRUCTION BATTALIONS

The speed and suitability of base construction are factors which exert an important influence on the control of operations. In view of accumulated battle experience, the present Construction Battalions which have been organised by putting conscripted coolies under the command of a small staff from the Civil Engineering Department must be revised, together with their methods of maintenance and training.

They are to be militarised, with line officers as commanders. Although conscripted coolies will be the main component of the unit, the officers will assign petty officers and enlisted men who have had appropriate education and training to the construction staff.

SECTION H—AIR DEPOTS, STORES DEPARTMENT

1. Essentials of the Organisation

The main supply and overhaul agencies will be attached to the Air Fleet (Supply Base)³⁴ as indicated in the plan of the Fleet organisation.³⁵ By maintaining close contact with various institutions in the homeland, they will smoothly perform supply and overhaul duties adapted to the operations. In view of past battle experience, the machinery of the present Depots and the Stores Department is poor.

There has been a tendency for them, instead of fulfilling their function, to show a partiality with spare parts, etc., to those forces which could be supplied most conveniently. Because the direct negotiation with the homeland Air Depots, of all units subject to frequent moves, has been excessively complicated with red tape, and because the location and movements of the Air Groups requisitioning materials has not been clear to the homeland Depots, both forwarding and receipt of materials has not worked smoothly.

It is necessary not only to strengthen the present Fleet Supply Department, but also to move the homeland supply and overhaul facilities up to the Supply Bases and place them directly under the command of the Fleet.

2. Assignment of Duties

(a) Air Depots.

Responsible for supplying and overhauling aviation equipment in supply bases.

(b) Stores Department.

Responsible for supplying equipment, munitions, and fuel other than that for aircraft, at supply bases.

(c) Base Supply department (temporary name).

Responsible for plane supplies and maintenance at maintenance and operational bases.

SECTION I—TRANSPORTS AND PLANES

1. Transports

In order to speed up the advance and supplying of the air force the standard described below for a single Air Flotilla will be followed.

It is judged suitable to assign vessels to the Air Fleet. When necessary, part will be assigned to the Air Flotillas or the Base Divisions, *Kichi Sentai*.

Aircraft transports	...	...	...	...	5
Seatrucks	...	...	...	...	5
Store Ships	...	...	...	...	2
Combined oiler and water tankers...	...	...	...	...	2

In view of the results of present operations, it is necessary to provide the above vessels with the performance mentioned below.

It was proposed that these vessels should follow the specification afterwards set out.

Notes.—³⁴ See page 114.

³⁵ See note 15.

2. Transport Planes

Allocation of transport planes will be increased in order to facilitate and speed up advances and strikes, and to carry out replenishment and other important missions. It will generally be best to assign one transport plane Air Group (with standard equipment of six passenger transports and twelve cargo transports) to one Air Flotilla and to have them perform various missions for the Fleet.

CHAPTER 3

Carrier Air Forces

SECTION A—FLEET

With carrier air power as its main strength, the Fleet centring round the Carriers will from now on have the principal duty of patrolling, searching, and exploiting the results of battle.

The Fleet Commander will be in direct command of one of the Air Flotillas.³⁶

A plan for organisation of one Fleet³⁸ is as follows:—

FLEET	—Cardiv ³⁷	...	...	...	...	Carriers 2-3
	—Cardiv ³⁷	...	...	...	...	Carriers 2-3
	—Batdiv	...	...	...	...	Battleships 2-4
	—Crudiv	...	...	...	...	Cruisers 6-12
	—Desron	...	...	...	...	Destroyers 24-36
	—Subron	...	...	...	...	Submarines 6-12
	—Attached Base Units	...	...	...	...	4-6
	—Attached—a number of transports					
	—Training Air Flotillas	...	...	...	...	{ Air Group { Air Group { Air Group { Landing practice ships, target ships, { patrol vessels, etc.

Moreover, it is considered desirable to organise several fleets of approximately the same strength in accordance with the above organisation.³⁹

Notes.—³⁶ i.e., one of the Cardivs.

³⁷ The 1st Air Fleet is the land-based counterpart of the carrier air force as set out in this schedule.

³⁸ The organisation of the 1st Mobile Fleet which is a combination of the 2nd Fleet (composed of capital ships) and the 3rd Fleet (composed of carriers) closely followed this plan.

³⁹ So far the 1st Mobile Fleet is the only one so organised.

SECTION B—CARRIER DIVISIONS

1. Carrier Organisation

The planes carried by an aircraft carrier will leave the ship in two waves. In view of the requirements of fighter direction and of offence and defence, a combat unit should be made up of the strength launched in the first wave of planes from two or three carriers, and it is therefore considered desirable to organise one Cardiv from two or three carriers.

Moreover, considering mobility in assembling and scattering, it is desirable to make two or three Cardivs the nucleus of a single fleet. This depends upon an expansion in the number of carriers.

2. Organisation of Flying Units, *Hikōkitai*

In the light of such factors of aerial warfare as the changing of plane types according to operational needs, the command of flying units in battle areas, the general training of the crews which is linked with mental factors, the weakness of carriers, the varying uses of the units, and wastage and supply in flying units, it is desirable to pattern the units on the principle of separation of the functions of air and base forces in the Base Air Forces,⁴⁰ to regard the carriers as movable air bases, and to organise the units as fleet flying units.

Moreover, it is necessary to maintain as a standard for this force twice the number of planes normally carried by all the carriers of the fleet, to assign each flying unit, *Hikōtai*, a normal home base and a carrier to which it is attached, and to set up an organisation which will adapt itself to all types of uses and conditions it can expect as a fleet. It will be necessary to endeavour to develop its combat strength to the full by carrying out training and combat in accordance with this organisation.

Note.—⁴⁰ That is to separate the flying units of the carrier-borne air forces from the maintenance units as in the case of land-based air forces.

APPENDIX 2

EQUIVALENT RANKS

Designations of officers' ranks are the same in the J.A.A.F. and the J.N.A.F., although the prefixes indicating the service and branch differ.

In the designation of other ranks there are differences of terminology between the two services, and two separate tables of non-commissioned ranks are therefore appended.

So far as the non-commissioned ranks are concerned, the R.A.F. equivalents must be regarded as approximate only.

A. COMMISSIONED RANKS

Japanese Term	Naval Rank	Army Rank	R.A.F. Equivalent
<i>Gensui</i>	Admiral of the Fleet	Field Marshal	Marshal of the Royal Air Force
<i>Taishō</i>	Admiral	General	Air Chief Marshal
<i>Chūjō</i>	Vice-Admiral	Lieutenant-General	Air Marshal
<i>Shōshō</i>	Rear-Admiral	Major-General	Air Vice-Marshal
<i>Taisa</i>	Captain	Colonel	Group Captain
<i>Chūsa</i>	Commander	Lieutenant-Colonel	Wing Commander
<i>Shōsa</i>	Lieut.-Commander	Major	Squadron Leader
<i>Taii</i>	Lieutenant	Captain	Flight Lieutenant
<i>Chūi</i>	Sub-Lieutenant	Lieutenant	Flying Officer
<i>Shōi</i>	Acting Sub-Lieutenant	2nd Lieutenant	Pilot Officer

B. NON-COMMISSIONED RANKS

Japanese Naval Air Force

Japanese Term	Naval Rank	R.A.F. Equivalent
<i>Hikō Heisōchō</i>	Warrant Officer (Air)	Warrant Officer
<i>Jōtō Hikō Heisō</i>	Chief Petty Officer (Air)	Flight Sergeant
<i>Ittō Hikō Heisō</i>	First Class Petty Officer (Air)	Sergeant
<i>Nitō Hikō Heisō</i>	Second Class Petty Officer (Air)	Corporal
<i>Hikō Heichō</i>	Leading Airman	Leading Aircraftman
<i>Jōtō Hikōhei</i>	A.B. (Air)	Leading Aircraftman
<i>Itto Hikōhei</i>	O.S.1 (Air)	Aircraftman, First Class
<i>Nitō Hikōhei</i>	O.S.2 (Air)	Aircraftman, Second Class

The above terms apply to aircrews. In designating ground staff "*Hikō*" is replaced by "*Seibi*." The Japanese frequently use abbreviated versions of these terms.

NON-COMMISSIONED RANKS—(continued)

Japanese Army Air Force

Japanese Term	Army Rank	R.A.F. Equivalent
<i>Juni</i>	Warrant Officer	Warrant Officer
<i>Sōchō</i>	Sergeant Major	Flight Sergeant
<i>Gunsō</i>	Sergeant	Sergeant
<i>Gōchō</i>	Corporal	Corporal
<i>Heichō</i>	Lance-Corporal	Leading Aircraftman
<i>Jōtōhei</i>	Superior Private	Leading Aircraftman
<i>Ittōhei</i>	First Class Private	Aircraftman, First Class
<i>Nitōhei</i>	Second Class Private	Aircraftman, Second Class

APPENDIX 3

RANKS OF OFFICERS COMMANDING

JAPANESE ARMY AIR FORCE

<i>Unit</i>	<i>Rank of Officer Commanding</i>
Air Army	Lieutenant-General
Air Division	Lieutenant-General
Air Brigade	Major General or Colonel
Flying Regiment	Major (Fighter Regiments)
	Lieutenant-Colonel (Bomber Regiment)
Independent Flying Unit	Colonel
Independent Flying Squadron	Captain
Direct Co-operation Unit	Captain or 1st Lieutenant
Air Sector	Colonel or Lieutenant-Colonel
Airfield Battalion	Major or Captain
Airfield Company	Captain
J.A.A.F. Air Depot	Major-General or Colonel
J.A.A.F. Field Air Repair Depot	Colonel or Lieutenant-Colonel
J.A.A.F. Field Air Supply Depot	Colonel or Lieutenant-Colonel
Air Signals Regiment	Colonel
Air Intelligence Regiment	Lieutenant-Colonel

This list shows the normal establishment. There are many local variations.

JAPANESE NAVAL AIR FORCE

<i>Unit</i>	<i>Rank of Officer Commanding</i>
Air Fleet	Vice-Admiral
Air Flotilla	Rear-Admiral
Carrier Division	Rear-Admiral
Air Group	Captain or Commander

APPENDIX 4

APPROXIMATE PERSONNEL STRENGTHS OF UNITS

Japanese Army Air Force

Commands

Air Army Headquarters	...	...	...	...	...	...	...	...	...	450
Air Division Headquarters	...	...	...	...	...	...	...	...	...	250
Air Brigade Headquarters	...	...	...	...	...	...	...	...	...	50
Air Sector Headquarters	...	...	...	...	...	...	...	...	...	120

Flying Units

Flying Regiment

Fighter	...	...	...	...	...	...	...	...	...	400
Light Bomber	...	...	...	...	...	...	...	...	...	460
Medium Bomber	...	...	...	...	...	...	...	...	...	600
Reconnaissance	...	...	...	...	...	...	...	...	...	100-180
Independent Flying Squadron	...	...	...	...	...	...	...	...	...	100-180

Airfield Battalions, etc.

Airfield Battalion	...	...	...	...	...	...	...	...	...	600
Airfield Company	...	...	...	...	...	...	...	...	...	250

Airborne Units

Air Raiding Brigade Headquarters	...	...	...	...	...	...	...	...	...	50
Raiding Regiment	...	...	...	...	...	...	...	...	...	1,500
Air Raiding Regiment	...	...	...	...	...	...	...	...	...	350
Glider Regiment	...	...	...	...	...	...	...	...	...	100

Signals

Air Reporting Regiment	...	...	...	...	...	...	...	...	...	600-900
Navigational Aid Regiment	...	...	...	...	...	...	...	...	...	(450)
Air Signals Regiment	...	...	...	...	...	...	...	...	...	(1,300)

Supply

Field Air Supply Depot	...	...	...	...	...	...	...	...	...	(600)
Air Shipping Transport Depot	...	...	...	...	...	...	...	...	...	200
Independent M/T Battalion	...	...	...	...	...	...	...	...	...	700

Maintenance and Repair

Field Air Repair Depot	600
Independent Equipment/Maintenance Unit	170
Mobile Air Repair Platoon	(50)

Meteorological

Field Meteorological Unit	750
Meteorological Station on Airfield	10

Works

Airfield Construction Unit	100-200 Japanese and 500-1,000 or more labourers
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Japanese Naval Air Force

Air Fleet containing 2 Air Flotillas	8,000-20,000
Air Flotilla	3,000-10,000 or more, depending on the number of Air Groups in the Flotilla
Fighter <i>Hikōtai</i>	289
Carrier-based attack <i>Hikōtai</i>	389
Land-based bomber <i>Hikōtai</i>	549
Air Group, including	
Two fighter <i>Hikōtai</i>	1,100
Two carrier-borne Attack <i>Hikōtai</i>	1,400
Two land-based Bomber <i>Hikōtai</i>	2,125

APPENDIX 5

PRINCIPAL CURRENT JAPANESE AIRCRAFT TYPES

Based on information contained in publications of Technical Air Intelligence Center, Anacostia, D.C.

ARMY AIRCRAFT

Allied Code Name	Recognition Type	Japanese		Performance			Normal bomb-load lbs.	Maximum bomb-load lbs.
		Description	Model-Type symbols	Max. Speed/Altitude m.p.h./feet	Cruising Speed m.p.h.	Endurance at cruising speed, with normal bomb-load and normal fuel load hours		

ARMY FIGHTERS

OSCAR 2	IE-F	T.1 Fighter	Ki 432	341/19,500	145	8.1	Nil	440
TOJO 2	IE-F	T.2 Fighter	Ki 442	376/17,200	174	4.3	Nil	—
TONY 1	IE-F	T.3 Fighter	Ki 61	361/15,800	156	9.7	Nil	440
FRANK 1	IE-F	T.4 Fighter	Ki 84	422/21,000	176	6.4	Nil	—
NICK 1	2E-F	T.2 Heavy Fighter	Ki 45	346/21,000	152	5.5	Nil	No data

ARMY RECONNAISSANCE

SONIA 1	IE-R	T.99 Recce plane	Ki 51	255/12,000	205	3.2	Nil	Nil
DINAH 3	2E-R	T.100 H.Q. Recce plane	Ki 463	407/19,300	157	3.0	Nil	Nil

ARMY BOMBERS

LILY 2	2E-B	T.99 Light Bomber	Ki 482	312/20,000	138	10.9	440	880
SALLY 2	2E-B	T.97 Heavy Bomber	Ki 57	294/15,400	133	12.3	2,200	2,200
HELEN 2	2E-B	T.100 Heavy Bomber	Ki 402	312/16,900	145	11.0	2,200	2,200
PEGGY 1	2E-B	?	Ki 67	?350/18,000	?170	? 8.0	2,200	2,200

ARMY TRANSPORTS

THELMA 1	2E-Trans	T.O. Transport Plane	Ki-56	269/15,000	160	7.7	8,500 (cargo)	8,500 (cargo)
TOPSY 1	2E-Trans	T.100 Transport Plane	Ki 57	266/10,500	150	8.7	2,360 (cargo)	2,360 (cargo)
THORA 2	2E-Trans	T.97 Transport Plane	?	240/11,000	205	3.4	1,600? (cargo)	1,600? (cargo)
THERESA 1	2E-Trans	T.1 Transport Plane	Ki 59	No data	No data	No data	No data	No data

NAVAL AIRCRAFT

Allied Code Name	Recognition Type	Japanese Description	Performance			Normal bomb-load lbs.	Maximum bomb-load lbs.
			Max. Speed/Altitude m.p.h./feet	Cruising Speed m.p.h.	Endurance at cruising speed with normal bomb-load and normal fuel load hours		
NAVY FIGHTERS							
ZEKE 52	IE-F	T.O. Carrier-borne fighter	354/21,000	152	7.4	Nil	260
JACK 11	IE-F	" Raidan " Interceptor-fighter	407/17,400	165	3.9	Nil	150
GEORGE 11	IE-F	" Shiden " Interceptor-fighter	407/19,000	287	4.0	Nil	260
RUFÉ 11	IE-FFP	T.2 Fighter seaplane	273/14,700	166	3.8	Nil	260
NAVY RECONNAISSANCE							
MYRT 11	IE-R	" Saiun " Carrier-borne Reconnaissance a/c.	402/22,100	173	10.2	Nil	1,760
IRVING 11	2E-R/F	T.2 Land Reconnaissance a/c. or " Gekko " night-fighter	333/19,700	150	10.4	Nil	1,100
JAKE 11	IE-RFP	T.O. Reconnaissance seaplane	222/7,500	112	7.8	Nil	530
PAUL 11	IE-2S-RFP	" Zuiun " 2-seater reconnaissance seaplane	280/21,700	132	10.2	Nil	550
NAVY TORPEDO PLANES							
JILL 12	IE-TB	" Tenzan " Carrier-borne attack plane	310/19,500	142	9.0	1,320 (1 torpedo)	—
KATE 12	IE-TB	T.97 Carrier-borne attack plane	225/8,500	131	9.3	1,100 (1 torpedo)	—
NAVY DIVE BOMBERS							
VAL 22	IE-DB	T.99 Carrier-borne bomber	281/20,300	125	7.7	550	—
JUDY 11	IE-DB or R	" Suisei " Carrier-borne bomber or T.2 Carrier-borne Recce a/c.	332/16,700	161	10.0	Nil	550

NAVAL AIRCRAFT—Continued

Allied Code Name	Recognition Type	Japanese Description	Performance			Normal bomb-load lbs.	Maximum bomb-load lbs.
			Max. Speed/Altitude m.p.h./feet	Cruising Speed m.p.h.	Endurance at cruising speed, with normal bomb-load and normal fuel load hours		
NAVY BOMBERS							
BETTY 22	2E-B or Trans.	T.1 Land attack plane or Transport a/c.	330/16,700	163	17.0	2,200	2,200
FRANCES 11	2E-B	" Ginka " Land-based bomber	351/20,600	167	14.8	1,765	2,230
LIZ 11	4E-B or Trans.	T.2 Land attack plane or Transport a/c.	270/16,100	166	15.3	6,600 (3 torpedoes)	7,040
NAVY FLYING BOATS							
EMILY 12	4E-FB	T.2 Flying-boat	296/19,500	134	28.4	4,400 (2 torpedoes)	4,400 (2 torpedoes)
MAVIS 11	4E-FB	T.97 Flying-boat	217/8,200	198	30.3	3,520 (2 torpedoes)	3,520 (2 torpedoes)
NAVY TRANSPORTS							
TESS 11	2E-Trans.	T.O. Passenger Transport a/c.	240/8,000	210	4.5	3,000 (cargo)	3,000 (cargo)
TABBY 22	2E-Trans.	T.O. Cargo Plane	225/8,000	195	6.9	9,000 (cargo)	9,000 (cargo)
NELL 23	2E-Trans. or B.	T.96 Land transport a/c. (or land attack plane)	270/19,600	157	10.7	2,200 (cargo)	2,200 (cargo)

APPENDIX 6
SOME IMPORTANT DATES

1941

- Dec. 7 Japan launches air attacks on U.S. bases in Hawaii (great damage at Pearl Harbour), Manila, Shanghai, Hong-Kong, and points in Malaya and Thailand.
Japanese High Command declares war on Britain and U.S.
- Dec. 7-8 Japanese air raid on Singapore, and landings in Thailand and N.E. Malaya.
- Dec. 9 First Japanese landing in Philippines, on Luzon.
- Dec. 10 "Prince of Wales" and "Repulse" sunk by Japanese air attack off Malaya. Guam falls.
- Dec. 14 10-year alliance between Japan and Thailand.
- Dec. 17 Japanese land in N. Borneo. (British forces previously withdrawn.)
- Dec. 24 Japanese capture Wake Island.
- Dec. 25 Hong-Kong surrenders.

1942

- Jan. & Feb. Rapid Japanese advances in Malaya, Burma and Philippines.
- Jan. 10-11 Japanese begin invasion of Netherlands East Indies with landings at Terakan (Dutch Borneo) and on N.E. Celebes.
- Jan. 14 General Wavell, as Supreme Commander of British and U.S. forces in S.W. Pacific, establishes headquarters in Batavia. (On 2nd March, 1942, General Wavell's Command came to an end, and supreme Allied command in S.W. Pacific passed to the Dutch.)
- Jan. 22 Japanese land at Rabaul (Bismarck Archipelago).
- Jan. 30 British withdraw from Malaya.
- Feb. 15 Singapore falls.
- Feb. 28 Japanese land in Java.
- March 7 Japanese enter Rangoon.
- March 17 General MacArthur becomes Supreme Allied Commander, S.W. Pacific.
- April 9 U.S. forces in Bataan surrender: remnant escape to Corregidor.
- April 18 Tokyo, Kobe, Yokohama and Nagoya raided by U.S. carrier-borne bombers.
- May 4-9 Naval and air battle of the Coral Sea. Heavy Japanese losses.
- May 6 U.S. forces on Corregidor surrender.
- May 15 British Forces begin retreat across India-Burma frontier.
- June & July Japanese capture Kiska and Attu (Aleutians).
- June 4-7 Japanese naval attack on Midway I. beaten off with heavy losses to enemy fleet.
- August 7 U.S. forces land on Guadalcanal (Solomons).
- Sept.-Nov. Reconquest of most of Papua by Australian forces.
- Dec. 21 British and Indian forces advance across India-Burma frontier.

1943

- April, May & June Intense Allied air attacks on New Guinea and Solomons.
- May 23 Attu (Aleutians) recaptured by U.S. forces.

- July U.S. forces land on New Georgia group in Solomons.
- August 25 Lord Louis Mountbatten appointed Supreme Allied Commander, S.E. Asia.
- Sept. 4-5 Allied landings at Lae and Salamaua in British New Guinea, with powerful air support.
- Oct.-Nov. Heavy Allied air attacks on New Guinea harbours, Solomons, and Bismarck Archipelago, especially Rabaul.
U.S. troops land on Bougainville and Kolombangara Islands in the Solomons.
Japanese air attacks on parts of Guinea and the Solomons in Allied hands.
- Nov. U.S. forces capture Gilbert Islands.
- Nov. 22-25 Cairo conference between President Roosevelt, Mr. Churchill and General Chiang Kai-Shek.
- Dec. Allied landings in New Britain (Bismarck Archipelago) preceded by heavy air attacks.

1944

- Feb., March U.S. forces capture numerous islands in Marshalls, including Roi, Kwajalein and Eniwetok.
Remaining Japanese forces in Solomons and Bismarck Archipelago isolated.
- Feb. 16 U.S. naval task force, attacking Truk (Carolines), inflicts heavy losses on Japanese fleet and aircraft.
- March British airborne forces land in Central Burma.
Japanese cross Chindwin River and advance over India-Burma frontier.
- April 22 U.S. troops land near Hollandia—first Allied landing in Dutch New Guinea.
- July-August U.S. troops capture Guam, Saipan and Tinian (Marianas).
- Sept. 15 U.S. forces land on Peleliu (Palau Islands) and Morotai (Halmaheras).
- Oct. 20 U.S. forces land on Leyte (Philippines).
- Nov. 10 Japanese capture Kweilin.
- Dec. 3 British occupy Kalewa.
- Dec. 15 U.S. forces land on Mindoro (Philippines).

1945

- Jan. 3 British and Indian forces occupy Akyab.
- Jan. 9 U.S. forces land on Luzon.
- Jan. 10 British forces occupy Shwebo.

GLOSSARY

J.A.A.F.

<i>bunshō</i> ...	sub-depot, branch	<i>Kimmu chūtai</i> ...	Duty Company
<i>buntai</i> ...	section, squad	<i>Kishōhan</i> ...	Meteorological Platoon
<i>butai</i> ...	force(s)	<i>Kishōtai</i> ...	Meteorological Unit
<i>Chokkyō Hikōtai</i> ...	Direct Co-operation Flying Unit	<i>Kōkū Chiku</i> ...	Air Sector
<i>Chūi</i> ...	Lieutenant	<i>Kōkū Chiku butai</i> ...	Air Sector Forces
<i>Chūjō</i> ...	Lieutenant-General	<i>Kōkūgun</i> ...	Air Army
<i>Chūka Kōkū Kabushiki Kaisha</i> ...	China Air Lines Ltd.	<i>Kōkū Hombu</i> ...	Air Headquarters
<i>Chūsa</i> ...	Lieutenant-Colonel	<i>Kōkū Idō Shurihan</i> ...	Mobile Air Repair Platoons
<i>chūtai</i> ...	squadron or company	<i>Kōkū Jōhō Rentai</i> ...	Air Reporting Regiment
<i>Dai Nihon Kōkū Kabushiki Kaisha</i> ...	Japan Air Lines Ltd.	<i>Kōkū Kotei Tsūshintai</i> ...	Fixed Air Signals Unit
<i>daitai</i> ...	battalion	<i>Kōkū Kyōikudan</i> ...	Air Training Brigade
<i>Dokuritsu Hikōchūtai</i> ...	Independent Flying Squadron.	<i>Kōkū Kyōikutai</i> ...	Air Training Unit
<i>Dokuritsu Hikōtai</i> ...	Independent Flying Unit	<i>Kōkūro Rentai</i> ...	Air Route Regiment
<i>Dokuritsu Jidōshatai</i> ...	Independent M/T Unit	<i>Kōkū Shikan Gakkō</i> ...	Air Officers' School
<i>Dokuritsu Seibitai</i> ...	Independent Maintenance Unit	<i>Kōkū Shō</i> ...	Air Depot
<i>gakkō</i> ...	Training school	<i>Kōkū Sōkambu</i> ...	Inspectorate-General of Aviation Training
<i>Gensui</i> ...	Field Marshal	<i>Kōsoku Rentai</i> ...	Navigation Aid Regiment
<i>Gijutsu Gakkō</i> ...	Technical School	<i>Kōkū Tsūshin Hombu</i> ...	Directorate of Air Signals
<i>Gōchō</i> ...	Corporal	<i>Kōkū Tsūshin Rentai</i> ...	Air Signals Regiment
<i>Gunsō</i> ...	Sergeant	<i>Kōsokutai</i> ...	Navigational Aid Unit
<i>Heichō</i> ...	Lance Corporal	<i>Kyōdō</i> ...	Training, reserve
<i>Heiki Chōkambu</i> ...	Directorate-General of Ordnance	<i>Kyōdō Hikōshidan</i> ...	Training, reserve Flying Division
<i>Heitan Jidōshatai</i> ...	Line of Communications M/T Unit	<i>Kyōiku Hikōdan</i> ...	Flying Training Brigade
<i>hentai</i> ...	flight (of aircraft); group (of pilots)	<i>Kyōiku Hikōrentai</i> ...	Flying Training Regiment
<i>hikōbu</i> ...	Flight Department	<i>Kyōiku Hikōshidan</i> ...	Flying Training Division
<i>Hikōdan</i> ...	Air Brigade	<i>Kyōiku Hikōtai</i> ...	Flying Training Unit
<i>Hikō Gakkō</i> ...	Flying School	<i>Manshū Kōkū Kabushiki Kaisha</i> ...	Manchuria Air Lines Ltd.
<i>Hikōjō Chūtai</i> ...	Airfield Company	<i>Musen Chūtai</i> ...	Radio Communications Company
<i>Hikōjō Daitai</i> ...	Airfield Battalion	<i>Nampō Kōkū Kabushiki Kaisha</i> ...	Southern Air Lines Ltd.
<i>Hikōjō Settei Shireibu</i> ...	Airfield Construction Headquarters	<i>Nampō Kōkū Yusōbu</i> ...	Southern Air Transport Department
<i>Hikōjō Setteitai</i> ...	Airfield Construction Unit	<i>Nitōhei</i> ...	Second class Private
<i>Hikōjō Shireibu</i> ...	Airfield Headquarters (Staff)	<i>Renrakushō</i> ...	Liaison Office
<i>Hikōsentai</i> ...	Flying Regiment	<i>Rensei Hikōtai</i> ...	Specialist Advanced Flying Training Unit
<i>Hikōshidan</i> ...	Air Division	<i>Rikugun Chūō Kishōbu</i> ...	Army Central Meteorological Department
<i>Hoan Chūtai</i> ...	Safety Company	<i>Rikugun Kōkū Hombu</i> ...	Army Air Headquarters
<i>Idō Seizan Han</i> ...	Mobile Lumber Squad	<i>Rikugun Kōkū Shō</i> ...	Army Air Depot
<i>Itōhei</i> ...	First class Private	<i>Rikugun Kōkū Yusōbu</i> ...	Army Air Transport Department
<i>Jidōsha Shō</i> ...	M/T/Depot	<i>Rikugun Kōkū Yusō Hombu</i> ...	Army Air Transport Headquarters
<i>Jōtōhei</i> ...	Superior Private	<i>Rikugun Sempaku Kōkū Shō</i> ...	Army Shipping Depot
<i>Juni</i> ...	Warrant Officer	<i>Rikugun Yusō Sempaku Hombu</i> ...	Army Transport Shipping Directorate
<i>Kaijō Kimmu Chūtai</i> ...	Sea Duty Company	<i>Rikujo Kimmu Chūtai</i> ...	Land Duty Company
<i>Kakkū Rentai</i> ...	Glider Regiment		
<i>Keiribu</i> ...	Intendant's Department		
<i>Kenchiku Kimmu Chūtai</i> ...	Construction Duty Company		

<i>Rikujo Kimmutai</i> ...	Land Duty Unit	<i>Tokushu Keikai Chūtai</i> ...	Special Warning Company
<i>Sagyōtai</i> ...	Labour Unit	<i>Tsūshin Gakkō</i> ...	Signals School
<i>Seibi Gakkō</i> ...	Maintenance School (Ground)	<i>Tsūshin Rentai</i> ...	Air Signals Regiment
<i>Shibu</i> ...	branch, branch office	<i>Tsūshin Seibitai</i> ...	Signals Maintenance Unit
<i>shishō</i> ...	sub-depot, branch	<i>Yasen Hojū Hikōtai</i> ...	Field Air Replacement Unit
<i>Shōi</i> ...	2nd Lieutenant	<i>Yasen Jidōsha Shō</i> ...	Field M/T Depot
<i>Shōnen Hikōhei Gakkō</i> ...	Youth Aviation Cadet School	<i>Yasen Keiri Chōkambu</i> ...	Directorate of Field Intendance
<i>Shōsa</i> ...	Major	<i>Yasen Kōkū Heiki Chōkambu</i> ...	Directorate of Field Air Ordnance
<i>Shōshō</i> ...	Major-General	<i>Yasen Kōkū Hokyūshō</i> ...	Field Air Supply Depot
<i>shōtai</i> ...	platoon	<i>Yasen Kōkū Shō</i> ...	Field Air Depot
<i>Shutchōjo</i> ...	branch office	<i>Yasen Kōkū Shūrishō</i> ...	Field Air Repair Depot
<i>Sōchō</i> ...	Sergeant Major	<i>Yokashikan Gakkō</i> ...	Officer Cadet Preparatory School
<i>tai</i> ...	unit	<i>Yūsen Chūtai</i> ...	Land-line Company
<i>Taii</i> ...	Captain	<i>Yusō Hikōchūtai</i> ...	Transport Flying Squadron
<i>Taikū Musentai</i> ...	Air-ground Wireless Unit	<i>Yusō Hikōtai</i> ...	Transport Flying Unit
<i>Taisa</i> ...	Colonel	<i>Zai Ryō Han</i> ...	Materiel Squad
<i>Taishō</i> ...	General	<i>zanchitai</i> ...	rear detachment
<i>Teishin butai</i> ...	Raiding Forces		
<i>Teishin Dan</i> ...	Raiding Brigade		
<i>Teishin Hikōsentai</i> ...	Raiding (Flying) Regiment		
<i>Teishin Rentai</i> ...	Raiding Regiment		
<i>tokusetsu</i> ...	special, specially organised		

GLOSSARY

J.N.A.F.

<i>Bōkūtai</i> ...	A-A unit	<i>Kōkū Kūshū Butai</i> ...	Air Attack Force
<i>buntai</i> ...	Section(s)	<i>Kōkū Sentai</i> ...	Air Flotilla
<i>Chūi</i> ...	Sub-Lieutenant	<i>Kōkūsho</i> ...	Air Depot
<i>Chūjō</i> ...	Vice-Admiral	<i>Kōkūtai</i> ...	Air Group
<i>Chūsa</i> ...	Commander	<i>Konkyochitai</i> ...	Base Force
<i>Gensui</i> ...	Admiral of the Fleet	<i>Kyōiku Kyoku</i> ...	Bureau of Training
<i>Gijutsu</i> ...	Technical (Civil Engineering Branch)	<i>Kyokuchi Bōbi Butai</i> ...	Local Defence Forces
<i>Gunjubu</i> ...	Stores Department	<i>Naisen Butai</i> ...	Inner Combat Force
<i>Hei</i> ...	3rd	<i>Nitō Hikōhei</i> ...	O.S.2 (Air)
<i>Heiki</i> ...	Ordnance (Section)	<i>Nitō Hikō Heisō</i> ...	Second Class Petty Officer (Air)
<i>Hikō Heichō</i> ...	Leading Airman	<i>Otsu</i> ...	2nd
<i>Hikō Heisōchō</i> ...	Warrant Officer (Air)	<i>Rengō Kōkūtai</i> ...	Combined Air Group
<i>Hikō Buntai</i> ...	Flying Section(s)	<i>Rengō Kōkū Sōtai</i> ...	Combined Air Training Command
<i>Hikōkitai</i> ...	Flight Squadron	<i>Rensei</i> ...	Training
<i>Hikōka</i> ...	Flying Unit	<i>Sentōki</i> ...	Fighter
<i>Hikōtai</i> ...	Replacement force	<i>Setsuie Tai</i> ...	Construction Battalion or Pioneer Unit
<i>Hojūbutai</i> ...	Area Forces	<i>Shisetsu Hombu</i> ...	Works and Buildings Headquarters
<i>Hōmen Heiryō Ku</i> ...	Area Fleet	<i>Shōi</i> ...	Acting Sub-Lieutenant
<i>Hōmen Kantai</i> ...	O.S.I. (Air)	<i>Shokaiki Kōkūtai</i> ...	Patrol Plane Air Group
<i>Ittō Hikōhei</i> ...	First Class Petty Officer (Air)	<i>Shōsa</i> ...	Lieutenant Commander
<i>Ittō Hikō Heisō</i> ...	A.B. (Air)	<i>Shōshō</i> ...	Rear Admiral
<i>Jōtō Hikōhei</i> ...	Chief Petty Officer (Air)	<i>Suidotai</i> ...	Tunnelling Units
<i>Jōtō Hikō Heisō</i> ...	Guard Forces (Units)	<i>Tai</i> ...	Lieutenant
<i>Keibitai</i> ...	Base Supply Department	<i>Taisa</i> ...	Captain
<i>Kichi Hokyū Bu</i> ...	Base Air Force	<i>Taishō</i> ...	Admiral
<i>Kichi Kōkū Butai</i> ...	Base Division	<i>Teisatsu</i> ...	Reconnaissance
<i>Kichi sentai</i> ...	1st	<i>Tsūshintai</i> ...	Communications Unit
<i>Kō</i> ...	Attack	<i>Unsō</i> ...	Transport (Paratroop)
<i>Kōgeki</i> ...	Air Base Unit		
<i>Kōkū Kichi Tai</i> ...	Air Fleet		
<i>Kōkū Kantai</i> ...			

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