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U.S. WAR DEPARTMENT

TECHNICAL MANUAL

HANDBOOK ON JAPANESE MILITARY FORCES

May 14, 1941

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No. 30-480

WAR DEPARTMENT,
WASHINGTON, May 14, 1941.

HANDBOOK ON JAPANESE MILITARY FORCES

Prepared under direction of the
Chief of Staff

CHAPTER 1

RECRUITMENT AND MOBILIZATION

1. Recruitment.—*a. Officers.*—(1) *Classifications.*—There are three general classifications of officer personnel in the Japanese Army.

(*a*) Regular Army officers.

(*b*) Regular Army officers with limited promotion, who usually do not advance beyond the grade of captain.

(*c*) Reserve officers.

(2) *Sources.*—(*a*) *Regular Army officers.*—These are commissioned from among graduates of the Japanese Military Academy, technical

colleges, Intendance School, medical and veterinary colleges, and graduates of the Military Police School.

(*b*) *Regular Army officers with limited promotion.*—These are commissioned from selected warrant and noncommissioned officers who receive special courses at the Japanese Military Academy, Artificers School, Air Schools, and the Intendance School, Army Medical School, Army Veterinary School, and Military Police Schools.

(*c*) *Reserve officers.*—These are commissioned from the Class *A* conscripts (and volunteers, in the case of flying schools) who are graduates of the Reserve Military Academies at Morioka and Toyohashi for infantry (11 months), Toyohashi for artillery (11 months), Kurume for transport (11 months), branch schools (1 year), Mito and Kumagaya Flying Schools (1 year), and technical college graduates who complete the course at Artificers School or arsenals (1 year). All candidates for commissions, both regular and reserve, serve as probationary officers with their assigned units for a period of 2 to 6 months after completion of training. Technical college graduates (holding a degree) may be commissioned as first lieutenants initially. This is considered a temporary expedient during the present emergency.

b. Noncommissioned officers.—Regular noncommissioned officers are appointed from the apprentices and noncommissioned candidates who are graduates of courses at the noncommissioned officers' and branch schools, the duration of which is from 1 to 2 years. Reserve noncommissioned officers are appointed from the reserve candidates who have received training with units and graduates of special courses at flying and technical schools.

c. Conscript law.—(1) *General.*—The conscript law of Japan requires that all males between 17 and 40 years of age (except those disabled or those who have been imprisoned for 6 years or more) are required to serve in the military service. The service is divided as follows:

(*a*) *Jobi Hei-eki* (active service).
  1. Gen-eki (active service with colors), 2 years.
  2. Yobi-eki (1st Reserve), 15 years 4 months.

(*b*) *Hoju Hei-eki* (Conscript Reserve).
  1. 1st Conscript Reserve, 17 years 4 months.
  2. 2d Conscript Reserve, 17 years 4 months.

(*c*) *Kokumin Gun* (National Army).
  1. 1st National Army, until 40 years of age.
  2. 2d National Army, 20 years, or until 40 years of age.

(2) *Method of selection.*—(*a*) All males upon reaching the age of 20 years are subjected to a medical examination for conscription and as a result of this they are divided into classes for which the following are the specifications:

1. *Class A.*—Not less than 4 feet 10 inches in height and in good physical condition.
2. *Class B.*—Taller than 4 feet 10 inches and in poorer physical condition than those in Class *A*. Subheads, *B–1*, *B–2*, and *B–3*, cover grades in physical condition.
3. *Class C.*—Between 4 feet 8 inches and 4 feet 10 inches in height, and in poorer physical condition than those of Class *B*.
4. *Class D.*—Less than 4 feet 8 inches in height and suffering from certain specific physical ailments which are not readily improved by treatment.
5. *Class E.*—A temporary rating. This class includes men who are suffering from ailments at the time of the examination but who can very likely be cured by treatment and be passed the following year.

(*b*) According to the foregoing classification the men examined are available for the different components of the army as follows:

1. *Classes A and B–1.*—Available for active service.
2. *Class B–2.*—Available for 1st Conscript Reserve.
3. *Class B–3.*—Available for 2d Conscript Reserve.
4. *Class C.*—Available for service in the National Army.
5. *Class D.*—Rejected. Unfit for service.
6. *Class E.*—Reexamined the following year and if condition is improved, placed in appropriate class.

The quotas necessary to fill vacancies within the active army are selected from Classes *A* and *B–1* and enter into their active service for a period of 2 years (actually this period is slightly less than 2 years). Upon completion of active service, they automatically enter the 1st Reserve, where they remain for 15 years and 4 months. They then enter the 1st National Army and remain there until reaching 40 years of age.

(*c*) Left-overs from Classes *A* and *B–1*, who are not selected for active service, and Class *B–2* conscripts are placed in the 1st Conscript Reserve and are subject to call for a 3 months' training period yearly, but are ordinarily called up only once. At the end of a period covering 17 years and 4 months they enter the 1st National Army, where they remain until reaching the age of 40.

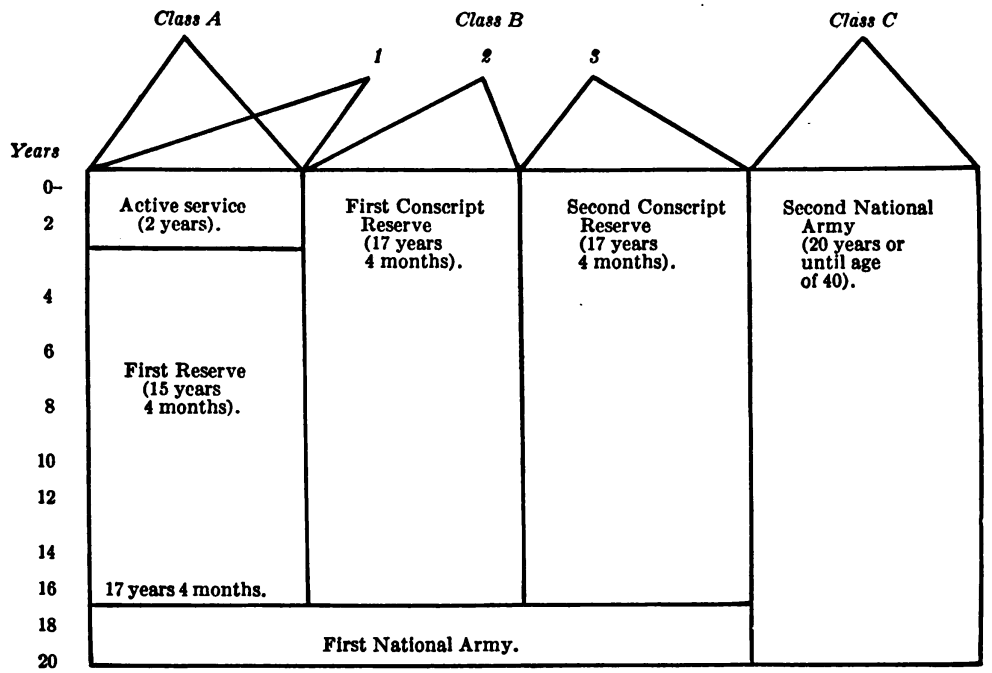
(*d*) Class *B-3* conscripts enter the 2d Conscript Reserve, where they remain for 17 years and 4 months, at the end of which time they enter the 1st National Army (Kokumin Gun) and remain until the age of 40.

(*e*) Class *C* conscripts automatically enter the 2d National Army and remain in this group until attaining 40 years of age.

(*f*) Classes *D* and *E* are self-explanatory under (*b*) above.

(*g*) The 1st National Army (Kokumin Gun) is composed of trained reservists of the active army or the 1st and 2d Conscript Reserve. The 2d National Army is made up of those who have had no training whatever in the army.

(*h*) The following chart (not drawn to scale except in length of service) indicates divisions of compulsory service covering the conscript's military career. All service ends at age of 40.



All service ends at age of 40.

2. Mobilization.—*a. Mobilization areas.*—For mobilization purposes Japan is divided into 14 territorial division areas and each of these is subdivided into regimental areas corresponding to the regiments of the infantry division or army troops allocated to that area. The Guards Division in Tokyo and the 19th and 20th Divisions draw their men from specified localities all over Japan. Mobilization is greatly decentralized, regimental and division headquarters being the control centers.

b. Expansion of existing units.—The 17 divisions and army troops of the standing army or proportionate parts thereof are normally brought to war strength by calling to the colors the necessary quota from the Conscript Reserve and the 1st Reserve. This was the procedure followed in 1931 and 1932 during the fighting in Manchuria and in the vicinity of Shanghai when only a part of the standing army was brought to war strength.

c. New units.—During the course of the war with China which broke out in July 1937 new units as well as those of the peacetime standing army were mobilized at war strength by calling to the colors necessary personnel from all classes of reserves. This will probably be the procedure in the future. It does not remove from civil life all the men in any particular class or age group, and consequently results in minimum disruption of industry, agriculture, etc.

d. Designation of units.—In designating divisions on mobilization the Japanese apparently use the following system:

(1) *Active army units.*—These retain their usual designation, that is, Imperial Guard, 1st, 2d, 3d, 4th . . . 20th.

(2) *First mobilization units.*—Numbers starting from 101, such as 101st, 102d, 104th, etc., are used.

(3) *Second mobilization units.*—Instead of starting their numbers from 201, as might be expected, the divisions are numbered from 31 upward, that is, the division that might be expected to be numbered 201 is numbered 31.

e. Probable rate of development of manpower.—In the period July 1937 to January 1939 Japan increased her army from 355,000 to 1,500,000. Mobilization was carried out in a very leisurely manner, however, to keep pace with changing conditions in China, whose army was held in contempt by the Japanese. In a serious emergency, confronted with a first-class power, when time is a vital factor, it is believed that manpower can be developed at the following rate:

(1) Peacetime standing army units mobilized at war strength, equipped, and ready to move to concentration areas on M-plus-6 day.

(2) Reserve divisions and reserve army troops commence mobilization in vacated mobilization areas on M-plus-7 day; ready to move at war strength to concentration areas on M-plus-21 day.

This process would continue until the army comprised about 60 divisions, or a total of 1,500,000 men, which, because of limitations imposed by shortage of organizational equipment (such as artillery, tanks, trucks, planes), is believed to be the maximum force Japan can maintain.

CHAPTER 2

ORGANIZATION

SECTION I

JAPANESE MILITARY SYSTEM AND TERRITORIAL ORGANIZATION

3. Japanese military system.—*a.* The Emperor of Japan is the supreme head of the army and navy. He appoints the members of the Board of Marshals and Admirals and of the Supreme Military Council from among the higher army and navy officers. These bodies are the Emperor's advisors and largely control the military policy of the Empire.

b. War Department.—The War Department consists of four coordinate agencies responsible only to the Emperor in the exercise of their functions.

(1) *Ministry of War.*—The Ministry of War is the administration, supply, and mobilization agency of the army. In the person of its chief, the Minister of War, who is a member of the Cabinet, it provides the necessary liaison between the army and the Diet. The Ministry of War includes the offices of the Chief of the Army Air Corps, Military Police Headquarters, and the Army Fortification Department. Intendance School, Army Medical School, Army Veterinary School, and Civil Engineering School are under appropriate offices of the Ministry of War. The Minister of War, by Imperial Ordinance, must be a general officer on the active list. He is appointed by the Emperor in person.

(2) *General Staff.*—The General Staff comprises war plans, operations, intelligence, transport, historical, and topographical sections. It is charged with the preparation of war plans, the direction of large maneuvers, the movement of troops, the compilation of field service regulations, maps and military histories, and with supervision of the General Staff College. The Chief of the General Staff is appointed by the Emperor and is usually a general. Training and employment of the combined arms are his principal responsibilities.

(3) *Inspectorate of Military Training.*—The Inspectorate of Military Training, reorganized to meet changed conditions brought about by the operations in China, consists of two departments which are divided into a general section and six numbered sections responsible in general for—

(*a*) The technical and tactical training of the separate arms, except the Air Corps, and of the services not under the War Ministry.

(*b*) Investigation, research, and the compilation of drill and training regulations.

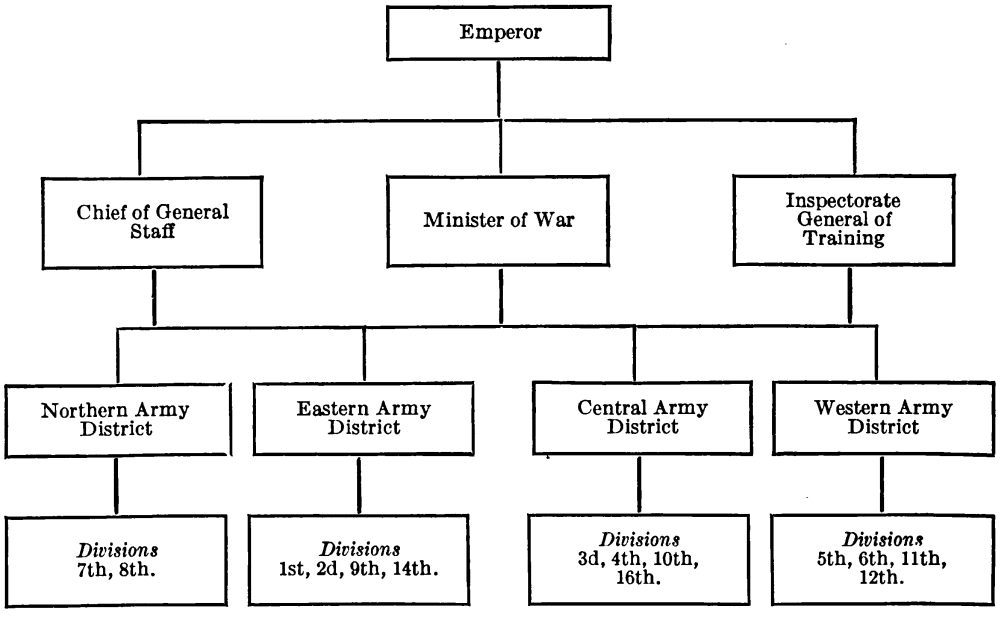
(*c*) Education in all military schools except those under the War Ministry, General Staff, or Inspectorate General of Aviation. The Inspector General is a lieutenant general or general appointed by the Emperor.

(4) *Aviation Inspectorate General.*—Was created by an ordinance issued December 7, 1938, to supervise Air Corps training. It comprises a General Affairs Department and a Training Department and is headed by a general or lieutenant general appointed by and responsible to the Emperor for all aviation training. Direct responsibility to the Throne is limited to aviation training matters; in others, the Aviation Inspector General is subordinate to the "Big Three" (War Minister, Chief of Staff, and Inspector General of Military Training). The Aviation Inspector General may be said to rank with but after the "Big Three." He has, however, more freedom in influencing the development of the Air Corps than the Chief of the Air Corps Headquarters has ever had. The establishment of this inspectorate represents a decided step in the trend toward increased prestige and greater independence for the Air Corps. The relation between these four agencies of the War Department is best shown in figure 5.

4. Ranks.—The following is a tabulation of the various grades in the Japanese Army together with their Japanese names, duties, and corresponding grades in the American Army:

Grade	Name	Duty	American equivalent
Field marshal	Gensui	Group of armies.	
General	Taishō	Army commander	General.
Lieutenant general	Chūjō	Division commander	Major general.
Major general	Shōshō	Brigade commander	Brigadier general.
Colonel	Taisa	Regimental commander.	Colonel.
Lieutenant colonel	Chūsa	Second in command of regiment.	Lieutenant colonel.
Major	Shōsa	Battalion commander.	Major.
Captain	Taii	Company commander	Captain.
First lieutenant	Chūi	Platoon commander	First lieutenant.
Second lieutenant	Shōi	Platoon commander	Second lieutenant.
Warrant officer	Junshikan	Administrative duties	Warrant officer.
Sergeant major	Tokumu-Sōchō	Regimental sergeant major.	Sergeant major.
Sergeant major	Sōchō	First sergeant	First sergeant.
Sergeant	Gunsō	Section commander	Sergeant.
Corporal	Gochō	Squad commander	Corporal.
Superior private	Jōtōhei	Acting corporal	Superior private.
First-class private	Ittōhei	----------	Private, first class.
Second-class private.	Nitōhei	----------	Private.

Army districts with reference to divisions and staff echelons of army



NOTE.—Other than divisions, troops under jurisdiction of army districts unknown.

FIGURE 1.—Defense districts.

5. Territorial organization.—*a. Army districts.*—Japan proper is divided geographically into four army districts—Northern, Eastern, Central, and Western. The divisional areas within the army districts are as follows:

Army district	Headquarters	Divisions
Northern	Asahigawa	7th and 8th.
Eastern	Tokyo	1st, 2d, 9th, and 14th.
Central	Osaka	3d, 4th, 10th and 16th.
Western	Kokura	5th, 6th, 11th, and 12th.

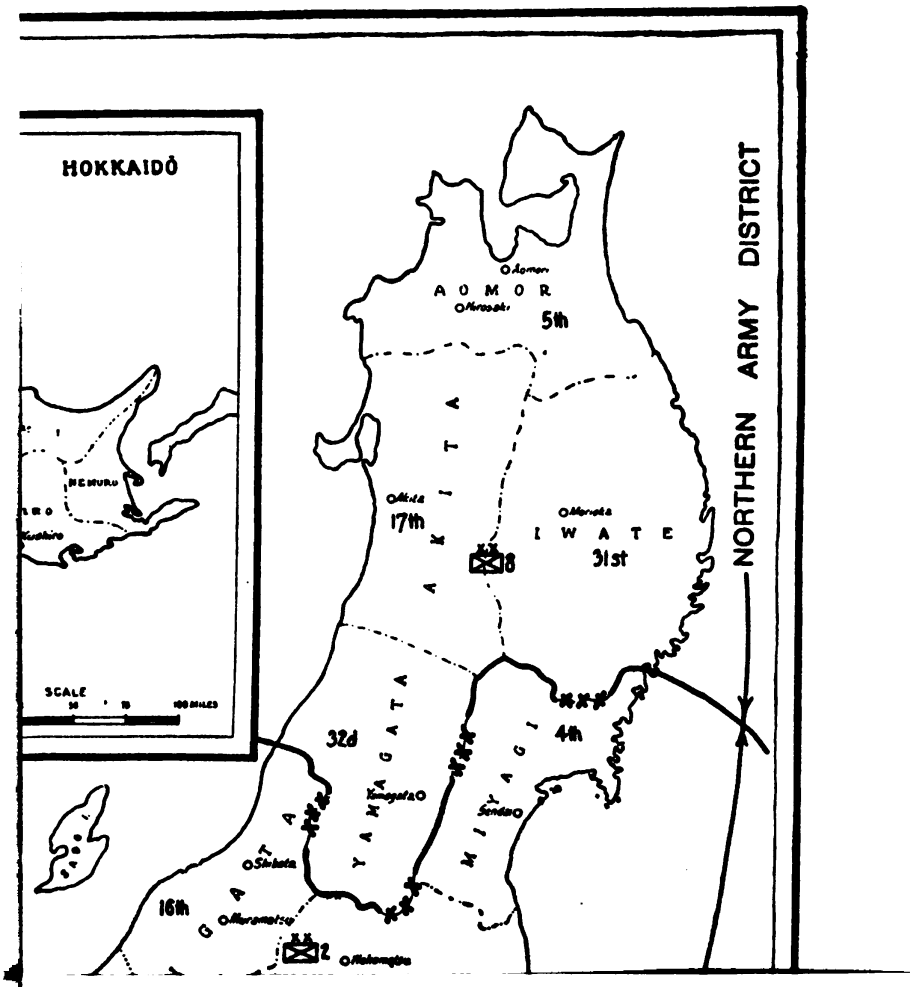
b. Divisional districts.—The divisional district is known by the name of the town or city in which the headquarters of the division is located, namely:

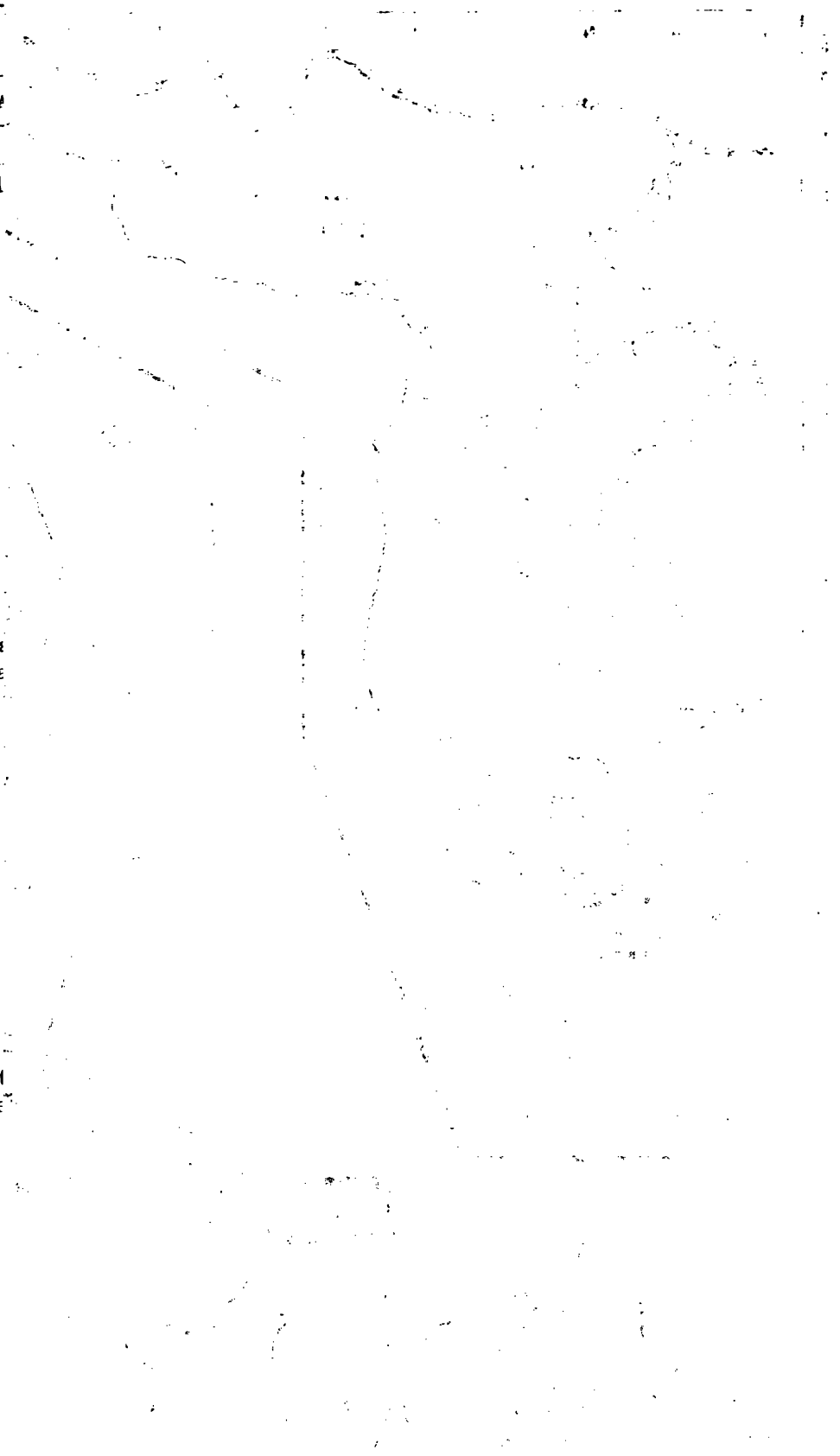
1st Division District—Tokyo Division District.
2d Division District—Sendai Division District.
3d Division District—Nagoya Division District.
4th Division District—Osaka Division District.
5th Division District—Hiroshima Division District.
6th Division District—Kumamoto Division District.
7th Division District—Asahigawa Division District.
8th Division District—Hirosaki Division District.
9th Division District—Kanazawa Division District.
10th Division District—Himeji Division District.
11th Division District—Zentsuji Division District.
12th Division District—Kurume Division District.
14th Division District—Utsunomiya Division District.
16th Division District—Kyoto Division District.
19th Division District—Ranan Division District.
20th Division District—Keijo Division District.

c. Regimental districts.—The infantry regimental districts are located as follows:

Army district	Divisional district	Regimental district
Northern (headquarters Asahigawa).	Asahigawa (7th).	Sapporo. Hakodate. Kushiro. Asahigawa. Toyohara (Karafuto).
	Hirosaki (8th).	Aomori. Morioka. Akita. Yamagata.

Army district	Divisional district	Regimental district
Eastern (headquarters Tokyo).	Tokyo (1st).	Azabu (Tokyo Prefecture.)
		Kofu.
		Hongo (Tokyo Prefecture).
		Chiba.
	Utsunomiya (14th).	Mito.
		Utsunomiya.
		Takasaki.
		Matsumoto.
	Sendai (2d).	Sendai.
		Fukushima.
		Shibata.
		Takata (Niigata Prefecture).
	Kanazawa (9th) (Until March 31, 1941, under Central Army. Thereafter under Eastern Army.)	Kanazawa.
		Toyama.
		Tsuruga.
		Fukui.
Central (headquarters Osaka).	Nagoya (3d).	Nagoya.
		Gifu.
		Toyohashi.
		Shizuoka.
	Kyoto (16th).	Kyoto.
		Fukuchiyama.
		Tsu.
		Nara.
	Osaka (4th).	Osaka.
		Kobe.
		Sakai.
		Wakayama.
	Himeji (10th).	Himeji.
		Tottori.
		Okayama.
		Matsue.
Western (headquarters Kokura).	Hiroshima (5th).	Hiroshima.
		Fukuyama.
		Hamada.
		Yamaguchi.
	Zentsuji (11th).	Marugame.
		Matsuyama.
		Tokushima.
		Kochi.
	Kumamoto (6th).	Kumamoto.
		Oita.
		Miyakonojo.
		Okinawa.
		Kagoshima.





Army district	Divisional district	Regimental district
Western—Continued	Kurume (12th).	Kokura. Fukuoka. Omura. Kurume.
Chosen (headquarters Keijo).	Ranan (19th). Keijo (20th).	There are no regimental districts in Chosen, and under normal conditions the troops in Taiwan, though designated as an army, are less than a division.
Taiwan (headquarters Taihoku).		

NOTE.—It is thought that in the future the regimental district may coincide with the prefectural area.

d. Station list.—The following is a list of cities and towns at which units are normally stationed. In this list are included only towns in Japan proper.

Place	Unit
Akita	16th Infantry Brigade headquarters.
	17th Infantry Regiment headquarters.
Aomori	5th Infantry Regiment.
Asahigawa	7th Division headquarters.
	13th Infantry Brigade headquarters.
	26th Infantry Regiment.
	14th Infantry Brigade headquarters.
	27th Infantry Regiment.
	28th Infantry Regiment.
	7th Cavalry Regiment.
	7th Field Artillery Regiment.
	7th Engineer Regiment.
	7th Transportation Regiment.
Chiba	1st Railway Regiment.
	Balloon Corps.
Fukuchiyama	20th Infantry Regiment.
Fukuoka	12th Infantry Brigade headquarters.
	24th Infantry Regiment.
Fukuyama	41st Infantry Regiment.
Gifu	68th Infantry Regiment.
Hakodate	Hakodate Heavy Artillery Regiment (Seacoast).

Place	Unit
Hamada	21st Infantry Regiment.
Hamamatsu	1st Antiaircraft Regiment.
	7th Air Regiment.
Himeji	10th Division headquarters.
	8th Infantry Brigade headquarters.
	39th Infantry Regiment.
	10th Cavalry Regiment.
	10th Field Artillery Regiment.
	10th Transportation Regiment.
Hirosaki	8th Division headquarters.
	4th Brigade headquarters.
	31st Infantry Regiment.
	8th Cavalry Regiment.
	8th Field Artillery Regiment.
	8th Transportation Regiment.
Hiroshima	5th Division headquarters.
	9th Infantry Brigade headquarters.
	11th Infantry Regiment.
	5th Cavalry Regiment.
	5th Field Artillery Regiment.
	5th Engineer Regiment.
	5th Transportation Regiment.
	2d Telegraph Regiment.
Imazu	13th Air Regiment.
Kagamigahara	1st Air Regiment.
	2d Air Regiment.
Kagoshima	36th Infantry Brigade headquarters.
	45th Infantry Regiment.
Kanazawa	9th Division headquarters.
	6th Infantry Brigade headquarters.
	7th Infantry Regiment.
	9th Cavalry Regiment.
	9th Mountain Artillery Regiment.
	9th Engineer Regiment.
	9th Transportation Regiment.
Keichi	Keichi Heavy Artillery Regiment (Seacoast).
Kochi	44th Infantry Regiment.
Kofu	49th Infantry Regiment.
Kokura	14th Infantry Regiment.
	2d Heavy Field Artillery Brigade headquarters.
	5th Heavy Field Artillery Regiment.
	6th Heavy Field Artillery Regiment.
Konodai	3d Heavy Field Artillery Brigade headquarters.
	1st Heavy Field Artillery Regiment.
	7th Heavy Field Artillery Regiment.
	Mounted Artillery Regiment.
	2d Antiaircraft Regiment.

Place	Unit
Kumamoto	6th Division headquarters.
	11th Infantry Brigade headquarters.
	13th Infantry Regiment.
	6th Cavalry Regiment.
	6th Field Artillery Regiment.
	6th Engineer Regiment.
	6th Transportation Regiment.
Kurume	12th Division headquarters.
	24th Infantry Brigade headquarters.
	48th Infantry Regiment.
	24th Field Artillery Regiment.
	12th Cavalry Regiment.
	18th Engineer Regiment.
	18th Transportation Regiment.
	3d Independent Mountain Artillery Regiment.
	1st Tank Regiment.
Kyoto	16th Division headquarters.
	19th Infantry Brigade headquarters.
	9th Infantry Regiment.
	20th Cavalry Regiment.
	22d Field Artillery Regiment.
	16th Engineer Regiment.
	16th Transportation Regiment.
Maizuru	Maizuru Heavy Artillery Battalion (Seacoast).
Matsumoto	50th Infantry Regiment.
Matsuyama	22d Infantry Regiment.
Matsue	63d Infantry Regiment.
Mishima	1st Heavy Field Artillery Brigade headquarters.
	2d Heavy Field Artillery Regiment.
	3d Heavy Field Artillery Regiment.
Mito	2d Infantry Regiment.
	14th Engineer Regiment.
Miyakonojo	23d Infantry Regiment.
Miyama	Miyama Heavy Artillery Regiment (Seacoast.)
Morioka	3d Cavalry Brigade headquarters.
	23d Cavalry Regiment.
	24th Cavalry Regiment.
	8th Engineer Regiment.
Muramatsu	3d Battalion.
	16th Infantry Regiment.
Nagashino	2d Railway Regiment.
Nagoya	3d Division headquarters.
	5th Infantry Brigade headquarters.
	6th Infantry Regiment.
	3d Cavalry Regiment.
	3d Field Artillery Regiment.
	3d Transportation Regiment.

Place	Unit
Nara	38th Infantry Regiment.
Narashino	1st Cavalry Brigade headquarters.
	13th Cavalry Regiment.
	14th Cavalry Regiment.
	2d Cavalry Brigade headquarters.
	15th Cavalry Regiment.
	16th Cavalry Regiment.
	2d Tank Regiment.
Oita	47th Infantry Regiment.
Okayama	33d Infantry Brigade headquarters.
	10th Infantry Regiment.
	10th Engineer Regiment.
Omura	46th Infantry Regiment.
Osaka	4th Division headquarters.
	7th Infantry Brigade headquarters.
	8th Infantry Regiment.
	37th Infantry Regiment.
	4th Cavalry Regiment.
	4th Transportation Regiment.
Otsu	3d Antiaircraft Regiment.
Sabae	36th Infantry Regiment.
Saga	4th Antiaircraft Regiment.
Sakura	57th Infantry Regiment.
Sapporo	25th Infantry Regiment.
Sasebo	Sasebo Heavy Artillery Regiment (Seacoast).
Sendai	2d Division headquarters.
	3d Infantry Brigade headquarters.
	4th Infantry Regiment.
	2d Cavalry Regiment.
	2d Field Artillery Regiment.
	2d Engineer Regiment.
	2d Transportation Regiment.
Shibata	1st and 2d Battalions.
	16th Infantry Regiment.
Shimonoseki	Shimonoseki Heavy Artillery Regiment (Seacoast).
Shimoshizu	4th Heavy Field Artillery Regiment.
Shinodayama	4th Field Artillery Regiment.
Shinoyama	70th Infantry Regiment.
Shizuoka	29th Infantry Brigade headquarters.
	34th Infantry Regiment.
Tachiarai	4th Air Regiment.
Tachikawa	5th Air Regiment.
Takasaki	28th Infantry Brigade headquarters.
	15th Infantry Regiment.
Takata	15th Infantry Brigade headquarters.
	30th Infantry Regiment.
	1st Independent Mountain Artillery Regiment.
Takatsuki	4th Engineer Regiment.

Place	Unit
Tokushima	22d Infantry Brigade headquarters.
	43d Infantry Regiment.
Tokyo	Guards Division (all units).
	1st Division headquarters.
	1st Infantry Brigade headquarters.
	1st Infantry.
	2d Infantry Brigade headquarters.
	3d Infantry Regiment.
	1st Field Artillery Regiment.
	1st Transportation Regiment.
	1st Engineer Regiment.
	1st Cavalry Regiment.
	1st Telegraph Regiment.
	4th Heavy Field Artillery Brigade headquarters.
	8th Heavy Field Artillery Regiment.
Tottori	40th Infantry Regiment.
Toyama	35th Infantry Regiment.
Toyohashi	4th Cavalry Brigade headquarters.
	25th Cavalry Regiment.
	26th Cavalry Regiment.
	18th Infantry Regiment.
	3d Engineer Regiment.
Tsu	30th Infantry Brigade headquarters.
	33d Infantry Regiment.
Tsuruga	18th Infantry Brigade headquarters.
	19th Infantry Regiment.
Utsunomiya	14th Division headquarters.
	27th Infantry Brigade headquarters.
	59th Infantry Regiment.
	18th Cavalry Regiment.
	20th Field Artillery Regiment.
	14th Transportation Regiment.
Wakamatsu	29th Infantry Regiment.
Wakayama	32d Infantry Brigade headquarters.
	61st Infantry Regiment.
Yamagata	32d Infantry Regiment.
Yamaguchi	21st Infantry Brigade headquarters.
	42d Infantry Regiment.
Yokkaichi	3d Air Regiment.
Yokosuka	Yokosuka Heavy Artillery Regiment (Seacoast).
Zentsuji	11th Division headquarters.
	10th Infantry Brigade headquarters.
	12th Infantry Regiment.
	11th Cavalry Regiment.
	11th Mountain Artillery Regiment.
	11th Engineer Regiment.
	11th Transportation Regiment.

SECTION II

TACTICAL ORGANIZATION

6. High commands in field.—In peacetime the Japanese Army is not organized into tactical units higher than the division. There is reason to believe, however, that higher units exist on paper and can be brought together readily in the event of hostilities. The Chief of Staff of the Army is responsible for the general direction of the forces in the field, while the Minister of War controls the administration of the forces at home, the raising of troops, the supply of matériel to depots, and the direction of ordnance and veterinary services at home and in the field.

7. Army (war).—It is estimated that in war the army as shown below will comprise from 110,000 to 135,000 officers and men, depending upon the strength of the infantry divisions, which vary from 11,530 to about 20,000.

a. Army headquarters.

5 infantry divisions (1 with pack transport).

b. Army tanks.

1 regiment of from 3 to 4 battalions.

c. Army cavalry.

1 brigade reinforced by 1 battalion of motorized infantry.
1 battalion of horse artillery.
1 heavy machine-gun troop.
1 company of mounted engineers.
1 armored car detachment.

d. Army artillery.

1 regiment of mountain artillery.
1 brigade of heavy field artillery.
1 artillery information detachment.
2 regiments antiaircraft artillery.

e. Army engineers.

1 regiment engineers.
10 brigade companies.

f. Army air force.

1 regiment of bombardment aviation.
1 regiment of pursuit aviation.
1 regiment of observation aviation.
1 balloon regiment.
1 air service signal detachment.

g. Army signal service.

1 telegraph regiment.
1 wireless detachment.
1 searchlight detachment.

h. Army line-of-communication service (headquarters).

10 depots.
15 transport detachments of 10 wagon companies each.
1 motor transport detachment of 12 companies.
4 reserve field hospitals.
4 evacuation hospitals.
1 line-of-communication hospital.
1 sick horse depot.
1 sanitary detachment.
5 battalions of 2d Reserve Infantry.
1 troop of 2d Reserve Cavalry.
1 battery of 2d Reserve Field Artillery.
1 railway regiment.
1 light railway regiment.
20 labor companies.

8. Army corps.—There is no corps organization.

9. Infantry division.—There are two general types of infantry divisions in use at the present time, the square or four-unit and the triangular or three-unit organization.

a. List of units.—The following is a list of the peacetime active divisions showing the units of which they are normally composed:*

(1) *Imperial Guards Division.*

1st Guard Brigade.
2d Guard Brigade.
3d Guard Infantry (E–6).
Guard Field Artillery Regiment (E–12).
Guard Engineer Regiment.
1st Guard Infantry (E–2).
2d Guard Infantry (E–3).
4th Guard Infantry (E–7).
Guard Cavalry Regiment (E–4).
Guard Transport Regiment (E–17).

(2) *First Division.*

1st Infantry Brigade.
1st Infantry (E–62).
3d Infantry.
1st Cavalry (E–10).
1st Engineers.
49th Infantry (E–63).
2d Infantry Brigade.
57th Infantry (E–64).
1st Field Artillery (E–13).
1st Transport Regiment.

(3) *Second Division.*

3d Infantry Brigade.
29th Infantry.
16th Infantry (E–23).
2d Field Artillery.
2d Engineers (E–67).
4th Infantry (E–22).
15th Infantry Brigade.
30th Infantry.
2d Cavalry (E–25).
2d Transport Regiment.

(4) *Third Division.*

5th Infantry Brigade.
68th Infantry (C–4).
18th Infantry.
3d Field Artillery.
3d Engineers.
6th Infantry (C–2).
29th Infantry Brigade.
34th Infantry (C–9).
3d Cavalry (C–6).
3d Transport Regiment (C–13).

(5) *Fourth Division.*

7th Infantry Brigade.
70th Infantry (C–68).
37th Infantry (C–22).
4th Field Artillery (C–27).
4th Engineers (C–29).
8th Infantry (C–23).
32d Infantry Brigade.
61st Infantry (C–24).
4th Cavalry (C–25).
4th Transport Regiment.

* Recent Army regulations abolished insignia of arm or service and the regular numbering of units was changed to a numbering of units within the army districts regardless of arm or service. For example, 1st Infantry of the 1st Division is now E–62 (unit number 62 of the Eastern Army District). The purpose of these changes is to make identification of units more difficult. It is thought to be experimental and will probably not be continued beyond the present Sino-Japanese emergency. Consequently, the old organizational numbers are retained and such new numbers as are known are placed after the old in parentheses.

(6) *Fifth Division.*

9th Infantry Brigade.
41st Infantry (W–60).
21st Infantry (W–3).
5th Field Artillery (W–10).
5th Engineers (W–7).
11th Infantry (W–2).
21st Infantry Brigade.
42d Infantry (W–4).
5th Cavalry (W–5).
5th Transport Regiment (W–6).

(7) *Sixth Division.*

11th Infantry Brigade.
47th Infantry.
23d Infantry.
6th Field Artillery.
6th Engineers.
13th Infantry.
36th Infantry Brigade.
45th Infantry (W–18).
6th Cavalry (W–19).
6th Transport Regiment.

(8) *Seventh Division.*

13th Infantry Brigade.
26th Infantry (N–2).
27th Infantry (N–4).
7th Field Artillery.
7th Engineers.
25th Infantry (N–63).
14th Infantry Brigade.
28th Infantry.
7th Cavalry (N–5).
7th Transport Regiment.

(9) *Eighth Division.*

4th Infantry Brigade (N–15).
31st Infantry.
17th Infantry.
8th Field Artillery (N–20).
8th Engineers (N–16).
5th Infantry (N–81).
16th Infantry Brigade.
32d Infantry.
8th Cavalry (N–19).
8th Transport Regiment (N–23).

(10) *Ninth Division (pack division).*

6th Infantry Brigade.
35th Infantry (E–48).
19th Infantry (E–47).
9th Mountain Artillery Regiment.
9th Engineers.
7th Infantry.
18th Infantry Brigade (E–36).
36th Infantry (E–64).
9th Cavalry.
9th Field Artillery (E–52).
9th Transport Regiment.

(11) *Tenth Division.*

8th Infantry Brigade (C–45).
40th Infantry.
10th Infantry (C–48).
10th Field Artillery.
10th Engineers (C–52).
39th Infantry Brigade (C–46).
33d Infantry Brigade.
63d Infantry.
10th Cavalry.
10th Transport Regiment.

(12) *Eleventh Division (pack division).*

10th Infantry Brigade.
22d Infantry (W–32).
43d Infantry (W–33).
11th Mountain Artillery Regiment.
11th Engineers (W–37).
12th Infantry.
22d Infantry Brigade.
44th Infantry (W–34).
11th Cavalry (W–36) (?).
11th Transport Regiment (W–39).
11th Field Artillery (W–36).

(13) *Twelfth Division.*

12th Infantry Brigade (W–45).
24th Infantry (W–24).
46th Infantry.
24th Field Artillery.
18th Engineers.
14th Infantry (W–71).
24th Infantry Brigade (W–46).
48th Infantry (W–49).
12th Cavalry.
18th Transport Regiment.
12th Transport (W–54).

(14) *Fourteenth Division.*

27th Infantry Brigade.
59th Infantry.
15th Infantry.
20th Field Artillery.
14th Engineers.
2d Infantry (E–37).
28th Infantry Brigade.
50th Infantry (E–50).
18th Cavalry.
14th Transport Regiment (E–42).

(15) *Sixteenth Division.*

19th Infantry Brigade.
20th Infantry (C–63).
33d Infantry (C–38).
22d Field Artillery (C–40).
16th Engineers (C–41).
9th Infantry (C–37).
30th Infantry Brigade.
38th Infantry (C–67).
20th Cavalry (C–39).
16th Transport Regiment (C–43).

(16) *Nineteenth Division (pack division).*

37th Infantry Brigade.
74th Infantry.
75th Infantry (K–3).
25th Mountain Artillery Regiment.
19th Engineers.
73d Infantry.
38th Infantry Brigade (K–1).
76th Infantry (K–4).
27th Cavalry.

(17) *Twentieth Division.*

39th Infantry Brigade.
78th Infantry.
79th Infantry.
26th Field Artillery (K–26).
20th Engineers (K–27).
77th Infantry.
40th Infantry Brigade.
80th Infantry.
28th Cavalry.
20th Transport.

b. Infantry division (war).—(1) Prior to 1937 the infantry division, war strength, was estimated to be as listed below (estimated organization with 3 battalions of 75-mm guns and 1 battalion of 105-mm howitzers):

	Division headquarters	Signal Company	2 infantry brigades	Field artillery regiment (3 battalions 75-mm, 1 battalion 105-mm)	Cavalry regiment	Engineer battalion	Division transport	Medical troops	Field hospitals	Horse depot	Total
Commissioned	17	4	358	110	18	14	27	22	100	3	673
Warrant and enlisted	91	195	14,780	2,612	400	361	2,744	909	2,880	44	25,016
Aggregate	108	199	15,138	2,722	418	375	2,771	931	2,980	47	25,689
Total horses	52	25	1,730	2,048	413	80	1,893	84	484	47	6,856
75-mm field guns	-----	-----	-----	36	-----	-----	-----	-----	-----	-----	36
75-mm ammunition	-----	-----	-----	10,896	-----	-----	9,600	-----	-----	-----	20,496
105-mm howitzers	-----	-----	-----	12	-----	-----	-----	-----	-----	-----	12
105-mm ammunition	-----	-----	-----	2,136	-----	-----	1,920	-----	-----	-----	4,056
75-mm mountain guns	-----	-----	16	-----	-----	-----	-----	-----	-----	-----	16
75-mm mountain-gun ammunition	-----	-----	2,496	-----	-----	-----	960	-----	-----	-----	3,456
70-mm infantry cannon	-----	-----	24	-----	-----	-----	-----	-----	-----	-----	24
70-mm ammunition	-----	-----	3,840	-----	-----	-----	1,920	-----	-----	-----	5,760
Heavy machine guns	-----	-----	96	-----	2	-----	-----	-----	-----	-----	98
Heavy machine-gun ammunition, 1,000's	-----	-----	921.6	-----	19	-----	576	-----	-----	-----	1,516.6
Light machine guns	-----	-----	288	138	8	-----	-----	-----	-----	-----	434
Rifles	41	71	11,606	296	264	246	145	-----	-----	-----	12,669
Light machine-gun and rifle ammunition, 1,000's	-----	-----	2,312.64	-----	-----	-----	829	-----	-----	-----	3,141.64
Pistols	39	25	2,172	361	81	53	73	-----	-----	-----	2,804
Sabers	45	5	608	152	353	25	-----	-----	-----	-----	1,188
Grenades	-----	-----	9,600	-----	-----	-----	9,600	-----	-----	-----	19,200
Caissons, 70-mm	-----	-----	72	-----	-----	-----	-----	-----	-----	-----	72
Caissons, 75-mm	-----	-----	-----	96	-----	-----	-----	-----	-----	-----	96
Caissons, 105-mm	-----	-----	-----	32	-----	-----	-----	-----	-----	-----	32
Limbers, 70-mm	-----	-----	96	-----	-----	-----	-----	-----	-----	-----	96
Limbers, 75-mm	-----	-----	-----	132	-----	-----	-----	-----	-----	-----	132
Carts, observation and communication equipment	-----	-----	-----	22	-----	-----	-----	-----	-----	-----	22
Limbers, 105-mm	-----	-----	-----	44	-----	-----	-----	-----	-----	-----	44
Wagons, spare parts	-----	-----	-----	17	-----	-----	-----	-----	-----	-----	17
Ambulances	-----	-----	-----	-----	-----	-----	-----	33	264	-----	297
Carts, transport corps	12	18	444	132	32	20	1,680	40	160	12	2,550
Road space, yards	200	255	14,600	7,760	950	575	10,500	880	1,750	145	37,615
Cargo load, tons	2.5	3.6	181.6	165	7.1	8	336	-----	-----	-----	703.8
Days of supply ration and forage	1	1	1	1	1	1	2	1	1	1	3

(2) It is known that the above organization was not adhered to by troops participating in the China campaign, in regard to the strength in personnel and weapons. The probable reasons were:

(*a*) Excessive strength in personnel compared to the automatic arms.

(*b*) Lack of mobility and flexibility of a unit of that type and strength.

(*c*) Lack of arms and equipment for many divisions of that size.

(*d*) Difficulties of supply.

(*e*) Lack of combat efficiency of the opposing force.

(*f*) No necessity for sustained attacks against the Chinese troops.

(*g*) General trend toward a small and three-unit division which had been adopted by all major powers except Japan and the United States.

c. Infantry division (war) (actual).—The abbreviated organization of the square division which has actually been used in China follows. The reduction in personnel, the proportional increase in automatic weapons, and decrease in rifle strength are to be noted.

(1) *Commander and staff.*—These consist of a major general assisted by a brigadier general second in command and a staff of general administrative and technical staff officers.

(2) *Composition.*—(*a*) Division headquarters and signal detachment.

(*b*) Two infantry brigades comprising a headquarters and signal detachment, and 2 regiments each.

(*c*) One field artillery regiment comprising a headquarters, 3 battalions of 3 batteries each of 75-mm guns, and 1 battalion of 3 batteries of 105-mm howitzers.

(*d*) One cavalry regiment comprising a headquarters, signal detachment, 37-mm gun section and train, 2 rifle troops, and 1 heavy machine-gun platoon.

(*e*) One engineer regiment comprising a headquarters, signal detachment and train, and 3 companies.

(*f*) One transport regiment comprising a headquarters (estimated), 3 wagon companies, and 3 truck companies.

(*g*) One tank company comprising a headquarters and 3 platoons.

(*h*) One medical regiment comprising a headquarters, 3 advance field hospitals, and 9 collecting companies.

(3) *Strength.*—(*a*) Strength in *personnel* varies with the type of division—pack divisions containing neither a tank company nor a battalion of 105-mm howitzers. The strength of the normal division with wheeled transport, it is believed, has been about 18,000 officers and men.

(*b*) Strength in *primary weapons* of the division organized as indicated in (2) above was as follows:

Rifles (infantry and cavalry)	7,464
Sabers (cavalry)	412
Light machine guns (116 in each infantry regiment, 8 in the cavalry regiment, 30 in the tank company)	502
Heavy machine guns (12 in each infantry regiment, 4 in the cavalry regiment)	52
Grenade throwers (85 in each infantry regiment)	340
37-mm R. F. antitank guns (3 in each infantry regiment, 1 in the cavalry regiment)	13
70-mm cannon (3 in each infantry regiment)	12
75-mm mountain guns (2 in each infantry regiment)	8
75-mm field guns (in the artillery regiment)	36
105-mm howitzers (in the artillery regiment)	12
Tanks (midget or type 92)	15

d. Infantry division (war) (proposed).—The triangular division was tentatively adopted in 1936 and has been used in the China campaign. It is thought that due to its mobility, flexibility, compactness, and relatively increased fire power, it will become the standard divisional organization of the Japanese Army.

	Division headquarters	Signal company	Infantry battalion	Infantry regiment	3 infantry regiments	Field artillery regiment	Cavalry regiment	Engineer regiment	Transportation regiments	Tank company	Medical regiment	Division machine gun battalion	Total
Total commissioned	16	4	23	78	234	105	27	17	24	6	31	14	478
Total enlisted	40	156	615	1,953	5,859	2,365	484	504	732	119	481	312	11,052
Aggregate	56	160	638	2,031	6,093	2,470	511	521	756	125	512	326	11,530
Horses, riding	10	9	11	41	123	566	550	15	-----	-----	-----	14	1,287
Horses, pack	----	14	23	93	279	10	57	45	-----	-----	-----	48	453
Horses, draft	----	-----	-----	16	48	1,340	-----	30	-----	-----	36	-----	1,454
Total horses	10	23	34	150	450	1,916	607	90	-----	-----	36	62	3,194
Rifles	16	124	472	1,485	4,455	-----	-----	453	681	48	-----	127	5,904
Carbines, cavalry	34	-----	-----	-----	-----	296	397	-----	-----	-----	-----	-----	727
Pistols	16	24	127	423	1,269	361	79	30	59	10	-----	68	1,916
Sabers	----	18	72	232	696	152	508	49	61	13	-----	25	1,522
Light machine guns	----	-----	27	81	243	72	12	18	18	16	-----	-----	379
Heavy machine guns	----	-----	6	18	54	-----	4	-----	-----	-----	-----	24	82
Guns, mounted, 75-mm	----	-----	-----	4	12	-----	-----	-----	-----	-----	-----	-----	12
Guns, 70-mm battalion	----	-----	2	6	18	-----	-----	-----	-----	-----	-----	-----	18
Guns, 37-mm antitank	----	-----	2	6	18	-----	2	-----	-----	-----	-----	-----	20
Guns, 75-mm 6-horse	----	-----	-----	-----	-----	36	-----	-----	-----	-----	-----	-----	36
Limbers, 75-mm	----	-----	-----	-----	-----	132	-----	-----	-----	-----	-----	-----	132
Caissons, 75-mm	----	-----	-----	-----	-----	96	-----	-----	-----	-----	-----	-----	96
Howitzers, 105-mm	----	-----	-----	-----	-----	12	-----	-----	-----	-----	-----	-----	12
Limbers, 105-mm	----	-----	-----	-----	-----	44	-----	-----	-----	-----	-----	-----	44
Caissons, 105-mm	----	-----	-----	-----	-----	32	-----	-----	-----	-----	-----	-----	32
Tanks, midget or 92 type	----	-----	-----	-----	-----	-----	-----	-----	-----	13	-----	-----	13
Carts, ammunition	----	-----	4	20	60	-----	-----	-----	-----	-----	-----	-----	60
Grenade dischargers	----	-----	32	96	288	-----	-----	-----	-----	-----	-----	9	297
Cars, motor	5	-----	-----	-----	-----	-----	-----	-----	16	2	-----	-----	23
Motorcycles	5	-----	-----	-----	-----	-----	-----	-----	27	8	-----	-----	40
Trucks	----	-----	-----	-----	-----	-----	-----	26	194	8	-----	-----	228
Radio sets	----	9	-----	(1)	(3)	2	3	-----	-----	-----	-----	-----	14
Dogs, military	----	50	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	50
Automobile radio trucks	----	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	2
Antiaircraft machine guns	----	-----	-----	-----	-----	-----	2	-----	-----	-----	-----	-----	2
Ambulances, 2-wheeled carts, horse-drawn	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	36	-----	36

e. Infantry division, pack (war).—The pack division differs from the infantry division (actual) in that the divisional artillery regiment consists of three battalions of pack (horse) 75-mm howitzers. The infantry regimental mountain gun companies pack their 75-mm ammunition the same as pack artillery and all trains throughout the division are pack (horse). There is no tank company in this type divison. There are at present three such divisions: the 9th at Kanazawa, the 11th at Zentsuji (Shikoku), and the 19th at Ranan. There are no light machine guns in the artillery of the pack division. The infantry of the pack division is equipped with 48 heavy machine guns as against the 52 guns of this type in the actual division.

10. Infantry.—The Infantry is the backbone of the Japanese Army.

a. Brigade.—The brigade is a tactical rather than an administrative unit. Infantry brigades are not of high relative importance in the organization, as is indicated by a small staff. The normal brigade consists of a headquarters and a signal detachment and two regiments of infantry.

b. Regiment.—The infantry regiment is both an important administrative and tactical unit.

(1) *Infantry regiment (war).*—Figure 3 is an outline of the organization.

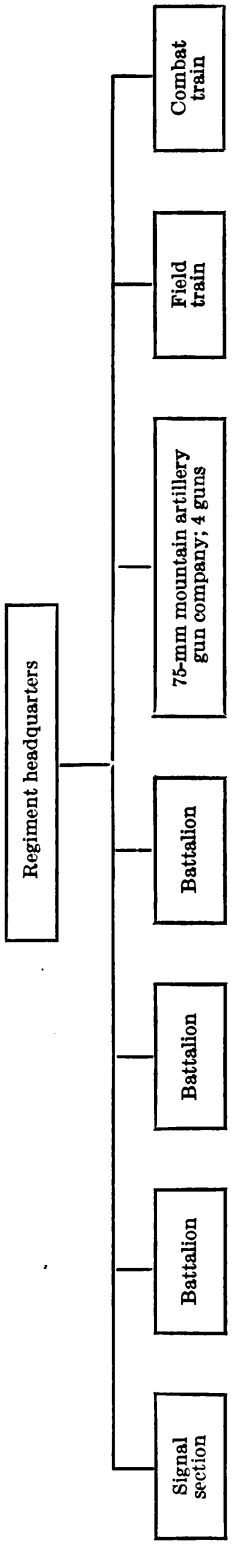


FIGURE 3.—Infantry regiment (war).

(2) *Infantry regiment, proposed infantry division (war).*—The following table shows the organization of the regiment and its component, the regimental gun company:

	Headquarters and signal section	Regimental gun company (75-mm)	3 infantry battalions	Total
Line officers	5	3	63	71
Medical intendance	1		6	7
Total commissioned	6	3	69	78
Total enlisted	36	72	1,845	1,953
Aggregate	42	75	1,914	2,031
Horses, riding, pack, and draft	5	43	102	150
Guns, 75-mm mountain		4		4
Guns, 70-mm battalion			6	6
Guns, 37-mm antitank			6	6
Heavy machine guns			18	18
Light machine guns			81	81
Rifles	28	41	1,416	1,485
Pistols	10	32	381	423
Grenade dischargers			96	96
Sabers	10	6	216	232
Carts, ammunition		8	12	20

c. Battalion.—The battalion is principally a tactical unit.

(1) *Infantry battalion (war).*—Figure 4 gives an outline of the organization.

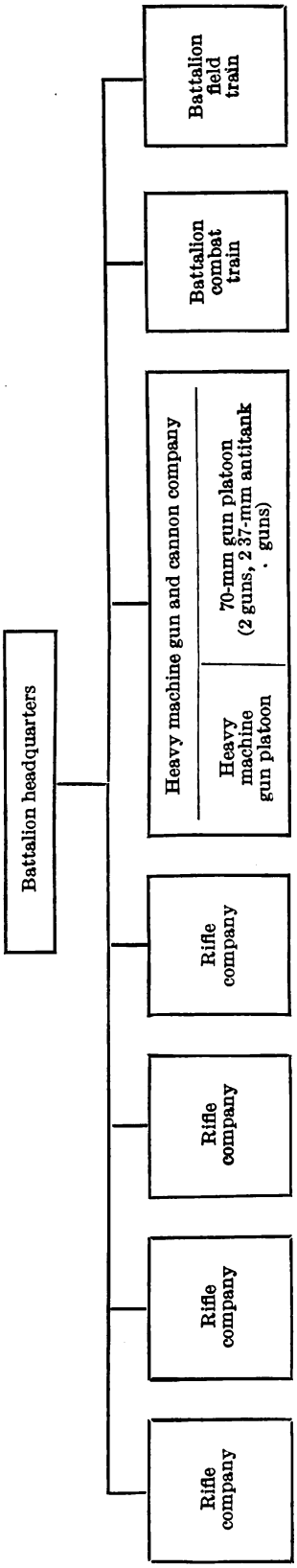


FIGURE 4.—Infantry battalion (war).

(2) *Infantry battalion, proposed infantry division (war).*

	Headquarters	3 rifle companies	Heavy machine gun company	Battalion and antitank gun company	Total
Total commissioned	4	12	4	3	23
Warrant officers and enlisted	5	462	78	70	615
Aggregate	9	474	82	73	638
Horses, riding and pack	5		16	13	34
Guns, 70-mm battalion				2	2
Guns, 37-mm antitank				2	2
Heavy machine guns			6		6
Light machine guns		27			27
Rifles	1	399	31	41	472
Pistols	6	51	35	35	127
Grenade dischargers		27	3	2	32
Sabers	6	51	8	7	72
Carts, ammunition				4	4

(3) *Heavy machine-gun battalion, proposed infantry division (war).*

	Headquarters	3 machine gun companies	Total
Total commissioned	2	12	14
Total enlisted	15	297	312
Aggregate	17	309	326
Horses, riding	2	12	14
Horses, pack		48	48
Heavy machine guns		24	24
Rifles	7	120	127
Grenade dischargers		9	9
Pistols	8	60	68
Sabers	4	21	25

d. Company.—The company is both a tactical and administrative unit.

(1) *Rifle company, proposed infantry division (war).*

	Company headquarters	3 rifle squads	1 grenade squad	Platoon headquarters	Platoon total	3 platoons	Total
Total commissioned	2			1	1	3	5
Warrant officers	1						1
Enlisted	7	15	13	1	59	177	184
Aggregate	10	15	13	2	60	180	190
Light machine guns		1			3	9	9
Rifles		13	13		52	156	156
Pistols	10	2		6	12	36	46
Ammunition, light machine gun		2,970			8,910	26,730	26,730
Ammunition, rifle		2,280	780		7,620	22,860	22,860
Grenades, rifle			108		108	324	324
Grenade dischargers			4		4	12	12

(2) *Heavy machine-gun company, proposed infantry battalion (war).*

	Headquarters	1 platoon	3 platoons	Total
Total commissioned	1	1	3	4
Warrant officers and enlisted	6	24	72	78
Aggregate	7	25	75	82
Horses, riding	1	1	3	4
Horses, pack		4	12	12
Heavy machine guns		2	6	6
Rifles	1	10	30	31
Grenade dischargers		1	3	3
Pistols	5	10	30	35
Sabers	5	1	3	8

NOTE.—A machine-gun section consists of 1 noncommissioned officer and 11 men.

(3) *Antitank and gun company, proposed infantry battalion (war).*

	Headquarters	70-mm (battalion gun) platoon	37-mm (antitank) platoon	Total
Total commissioned	1	1	1	3
Total enlisted	6	32	32	70
Aggregate	7	33	33	73
Horses, riding	1	1	1	3
Horses, pack		6	4	10
Total horses	1	7	5	13
Guns, 70-mm battalion		2		2
Guns, 37-mm antitank			2	2
Rifles	1	20	20	41
Pistols	4	15	15	34
Sabers	4	1	1	6
Grenade dischargers		1	1	2
Carts, ammunition		2	2	4

NOTE.—A section of 70-mm battalion guns or 37-mm antitank guns consists of 1 noncommissioned officer and 15 men.

(4) *75-mm gun company, proposed infantry regiment (war).*—See *b*(2) above.

e. Platoon and squad.—For details of the platoon and squad see *d* (1) above.

11. Artillery.—*a. General.*—At peace the Japanese maintained the following artillery organization:

(1) Fourteen regiments of divisional light artillery (1 regiment for each division except the 9th, 11th, and 19th).

Regiment	Division	Regiment	Division
Imperial guard	Imperial guard	7th	7th.
1st	1st	8th	8th.
2d	2d	10th	10th.
3d	3d	20th	14th.
4th	4th	22d	16th.
5th	5th	24th	12th.
6th	6th	26th	20th.

(2) Three regiments of divisional pack artillery (1 regiment each for the 9th, 11th, and 19th divisions).

Regiment	Division
9th	9th.
11th	11th.
25th	19th.

(3) Two independent regiments of pack artillery.

(4) One regiment of pack artillery (Formosa).

(5) One independent regiment of horse artillery.

(6) Eight regiments of medium field artillery (6 regiments of horse-drawn 155-mm howitzers, 2 regiments of tractor-drawn 105-mm guns, grouped into 4 so-called heavy field artillery brigades).

Heavy field artillery brigades	Regiments
1st	2d, 4th.
2d	5th, 6th.
3d	1st, 7th.[1]
4th	4th, 8th.[2]

[1] 105-mm guns.

[2] Originally 105-mm guns. In 1937 15-cm guns were issued but whether as replacement or simply additional matériel is not known.

(7) Eleven regiments of fortress artillery. (At Yokosuka, Miyama, Shimonoseki, Hakodate, Sasebo, Maizuru, Keichi (Tsushima Island), Masan (Korea), Ryojun (Port Arthur), Keelung (Formosa), and Mako (Formosa).)

(8) Six regiments of antiaircraft artillery.

b. Brigade organization.—The only artillery grouped into brigades is the so-called heavy artillery (see *a*(6) above). In peace no brigade headquarters company exists. In war a small permanent brigade headquarters company is organized.

c. Regimental organization, field artillery.—(1) *Divisional 75-mm field artillery regiment (horse-drawn), proposed infantry division (war).*—The regiment consists of a regimental headquarters and a headquarters battery, 3 battalions of 75-mm guns (each battalion having a battalion headquarters battery, 3 batteries, combat train, and field train), 1 battalion of 105-mm howitzers (composition same as for 75-mm gun battalion), and a regimental combat train, which includes a small field train section for the supply of the regimental headquarters battery.

	Total		Total
Officers	105	Light machine guns	72
Men	2,365	75-mm guns	36
		75-mm limbers	132
Aggregate	2,470	75-mm caissons	96
		105-mm howitzers	12
Horses	1,916	105-mm limbers	44
Pistols	365	105-mm caissons	32
Sabers	152	Radio sets	2

(2) *Divisional 75-mm field artillery regiment (horse-drawn) (war) (actual).*—The organization is approximately the same as in the proposed infantry division with 3 battalions of 75-mm guns and 1 battalion of 105-mm howitzers.

	Total
Officers	110
Men	2,612
75-mm guns	36
105-mm howitzers	12
Light machine guns	138

(3) *Divisional pack artillery regiment (war).*—The regiment consists of a regimental headquarters battery, 3 battalions of 75-mm howitzers (each battalion having a battalion headquarters battery, 3 batteries, combat train, and a field train), and a regimental combat train (which includes a small field train section for the supply of the regimental headquarters battery). All transport is pack, using horses.

(4) *Independent regiment, pack artillery (war).*—The regiment differs from the divisional pack artillery regiment in that it has only 2 battalions.

(5) *Regiment, 155-mm howitzers (war) (horse-drawn).*—The regiment consists of a regimental headquarters battery, 2 battalions (each battalion having a battalion headquarters battery, 3 batteries, combat train, and field train), and a regimental combat train, which includes a small field train section for the supply of the regimental headquarters battery.

(6) *Regiment, 105-mm guns (war) (tractor-drawn).*—The regiment consists of a regimental headquarters battery, 2 battalions (having a battalion headquarters battery, 2 batteries, combat train, and field train) and a regimental combat train. All trains have trucks for cargo transport.

d. Battalion organization (field artillery).—(1) *75-mm gun battalion (war) (horse-drawn).*—The battalion consists of a battalion headquarters battery, 3 batteries (having a headquarters detail, 2 platoons of 2 sections each, and a combat train), a combat train, and a field train. All combat trains are wheeled (limbers and caissons). The field train employs the standard small two-wheeled transport cart.

(2) *105-mm howitzer battalion (war) (horse-drawn).*—The organization is exactly the same as for the 75-mm gun battalion. Ammunition carried is less, being 432 rounds in the battery and 540 in the battalion combat train, a total of 1,836 rounds within the battalion.

(3) *105-mm gun battalion (war) (tractor-drawn).*—The battalion is composed of a battalion headquarters battery, 2 batteries (having a headquarters detail, 2 gun platoons of 2 sections each, an ammunition platoon, and a combat train), a combat train, and a field train. All trains have trucks for cargo.

(4) *155-mm howitzer battalion (war) (horse-drawn).*—The battalion consists of a battalion headquarters battery, 3 batteries (having 2 howitzer platoons of 2 sections each, an ammunition platoon, and a combat train), a combat train, and a field train. The combat trains are all limbers and caissons; the field train employs the small standard two-wheeled transport cart.

e. Battery organization (field artillery).—(1) *Battery 75-mm gun or 105-mm howitzer (war) (horse-drawn).*—The battery consists of a headquarters detail, 2 platoons of 2 gun sections each, and a combat train.

(2) *Battery 75-mm howitzer (war) (pack).*—The battery consists of a headquarters detail, 2 platoons of 2 howitzer sections each, and a combat train. Horses are used as pack animals.

(3) *Battery 155-mm howitzer (war) (horse-drawn).*—The battery consists of a headquarters detail, 2 howitzer platoons of 2 howitzer sections each, an ammunition platoon, and a combat train.

(4) *Battery 105-mm guns (war) (tractor-drawn).*—The battery consists of a headquarters detail, 2 gun platoons of 2 gun sections each, an ammunition platoon, and a combat train.

12. Coast artillery (fortress) organization.—The internal organization of the regiments at Yokosuka, Miyama (near Osaka), Shimonoseki, Hakodate, Maizuru, Keichi (Tsushima Island), Sasebo, Masan (Korea), Ryojun (Port Arthur), Keelung (Formosa), and Mako (Formosa) is not known. It undoubtedly varies with the fixed armament of the fortresses garrisoned by the organizations. While

the organizations are said to have, in addition to the permanently emplaced seacoast artillery, a certain amount of more or less obsolete portable siege artillery, these guns will seldom be encountered in the field.

13. Corps of Engineers.—*a. Strength.*—The engineer corps of the Japanese Army consists of 2 communication (wire and radio) regiments, 2 railway regiments, and 18 engineer regiments normally of 3 field companies each. The 18 regiments are assigned to the 17 divisions as divisional engineer troops and to the Engineer School. Really battalion organizations, they were elevated to the status of regiments in 1939 by War Office orders but the number of units, officers, and enlisted men remains substantially as before.

b. (1) *Engineer regiment, infantry division (actual).*—The organization of the 17 divisions of the Japanese Army each includes a headquarters signal detachment, an engineer regiment of 3 field companies, and train. Normally the engineer regiment takes the serial number of the division, except in the case of the 18th Regiment, which is part of the 12th Division.

(2) *Engineer regiment, proposed infantry division (war).*

	Headquarters	3 companies	Total
Total commissioned	5	12	17
Total enlisted	6	498	504
Aggregate	11	510	521
Horses, riding, pack, and draft	3	87	90
Rifles	3	450	453
Pistols	6	24	30
Sabers	7	42	49
Light machine guns		18	18
Trucks	2	24	26

NOTES

1. At the Engineer School there is also an engineer regiment organized somewhat along the lines of the divisional engineer regiments. A small detachment of engineer troops is on duty at the Engineer-Artillery School.

2. The bridging train of a division carries enough equipment to construct 480 feet of light bridge, reduced to 394 feet if pontoons only are used, or to construct 300 feet of heavy bridge, reduced to 245 feet if pontoons only are used.

c. Engineer regiment communications.—(1) There are 2 communication engineer regiments: 1st Regiment (Tokyo), 1st and 2d Battalions of which are wire units, while the 3d Battalion is a radio organization; 2d Regiment (Hiroshima) has 2 battalions. Both

battalions are wire except 1 company of the 2d Battalion, which is radio.

(2) The regimental organization is a peacetime grouping of battalions convenient for administrative purposes. These 2 regiments and the Communication School approximate the United States Army Signal Corps. In time of war the regiments as such cease to exist and are broken up to furnish key communication personnel of division and larger units.

d. Railway regiments.—There are 2 railway regiments: 1st Regiment at Chiba and 2d at Tsudanuma.

14. Cavalry.—*a. Strength.*—(1) *Nondivisional cavalry (8 regiments).*—Nondivisional cavalry is organized into brigades.

Regiment	Brigade	Regiment	Brigade
13th	1st.	23d	3d.
14th	1st.	24th	3d.
15th	2d.	25th	4th.
16th	2d.	26th	4th.

(2) *Divisional cavalry (17 regiments).*

Regiment	Division	Regiment	Division
Guard	Guard.	9th	9th.
1st	1st.	10th	10th.
2d	2d.	11th	11th.
3d	3d.	12th	12th.
4th	4th.	18th	14th.
5th	5th.	20th	16th.
6th	6th.	27th	19th.
7th	7th.	28th	20th.
8th	8th.		

b. Divisional cavalry.—(1) *Cavalry regiment infantry division (war) (actual).*—It consists of a headquarters and a signal detachment, 2 rifle troops, 1 heavy machine gun platoon, train, and probably a 2-gun section of 37-mm rapid fire antitank guns.

(2) *Cavalry regiment infantry division, proposed infantry division (war).*—The following table shows the estimated organization:

	Headquarters	1 squadron			1 squadron		Total
		Communication	Antiaircraft machine gun-antitank	Heavy machine gun	1 troop	3 troops	
Total commissioned	7	2	3	3	4	12	27
Total enlisted	8	64	66	49	99	297	484
Aggregate	15	66	69	52	103	309	511
Horses, riding and pack	13	66	76	56	110	330	541
Light machine guns					4	12	12
Heavy machine guns				4			4
Antiaircraft machine guns			2				2
Carbines, cavalry		40	40	20	99	297	397
Sabers	12	66	69	52	103	309	508
Pistols	6	20	22	10	7	21	79
Guns, 37-mm antitank			2				2
Radios		3					3

NOTES

1. Weapons of some cavalry regiments include 12 grenade dischargers.
2. Japanese are discussing the inclusion of a reconnaissance troop in the organization of the divisional cavalry regiment.

(3) *Cavalry regiment, pack division (war).*—This organization differs from the cavalry regiment, infantry division, only in its field train, which consists of the following:

	Total		Total
Enlisted	115	Cargo load	6.5
Horses, pack and riding	79	Days ration and forage	1
Road space	350		

c. Nondivisional cavalry.—The nondivisional cavalry regiment consists of a headquarters, 4 troops, and a machine gun troop.

	Total		Total
Officers and men	788	Light machine guns	6
Horses, riding and pack	884	Heavy machine guns	8
Carbines	680	Road space	1,635

This type of regiment is found in the four independent cavalry brigades. Independent cavalry brigades include a brigade headquarters, 1 battery horse or pack artillery, armored car troop, and a detachment of engineers.

15. Tanks.—*a. Regiment.*—(1) There are 4 tank regiments normally located as follows:

Unit	Place
1st Tank Regiment	Kurume, Kyushu.
2d Tank Regiment	Narashino, Chiba.
3d Tank Regiment	Manchoukuo.
4th Tank Regiment	Manchoukuo.

The 1st and 2d Regiments, in Japan proper, have functioned more as schools than as tactical units, organizing and training units to send to the 3d and 4th Regiments, which are now said to be complete. With the completion of the Tank School, Light Tank Training School, Himeji, and the incorporation in the Infantry and Cavalry Schools of tank courses in 1937, probably covering light tanks only, it appears likely that the 1st and 2d Regiments will assume the normal role of tactical units and be expanded considerably as equipment and trained personnel become available.

(2) *Organization.*—(*a*) *The light tank company.*—The company consists of 13 fighting tanks divided into 4 platoons of 3 tanks each and the company commander's command tank. Mention is made of an extra command tank, but nothing is known of its use. The company also has motorcycles and one work tank as part of its organizational equipment. The company and platoon commander's tanks are equipped with radios.

(*b*) *The medium tank company.*—The company has 4 platoons of 3 tanks each. Each tank carries 4 men, tank commander, machine gunner, tank cannon gunner, and driver. The company also has 5 tankettes, motorcycles, and light passenger cars or armored cars. There is also a supply train of unknown composition, but which definitely includes a repair, supply, and salvage section.

b. Divisional tank company (*name sensha tai*).—(1) The organization of tank companies in divisions in Japan proper has been progressing for some time. It is not known how many companies have been completed, but it is probable that the necessary equipment has become available for the organization of these new units. It is also probable that divisions in Manchuria already have war strength tank companies.

c. Tank strength.—Indications are that tank units are formed as fast as matériel becomes available and there is no surplus of tanks not in the hands of organizations to form a reserve. There is a tank company consisting of 13 tankettes or light tanks plus reserve tanks in the proposed infantry division. One can assume that the tanks are now available for the 17 regular divisions in addition to the 4 tank regiments, the tank companies of the 4 cavalry brigades, and 1 company each at the Tank School, Light Tank Training School at Himeji, Infantry School, and Cavalry Schools.

16. Transport troops.—Each division, except the 19th and 20th, has a transport regiment taking the same serial number as the division with the exception of the 18th, which is assigned to the 12th Division.

a. Division transport regiment, infantry division (war) (actual).—This consists of a headquarters and probably 3 trucks and 3 wagon companies. Four-wheeled wagons have been seen in use in the China campaign as well as carts and motors. It is believed that trucks will replace the animal-drawn transport when the trucks become available and the roads permit their use.

b. Transport regiment, proposed infantry division (war).

	Headquarters	3 motor companies	Total		Headquarters	3 motor companies	Total
Total commissioned	6	18	24	Pistols	5	54	59
Total enlisted	6	726	732	Sabers	7	54	61
				Light machine guns		18	18
Aggregate	12	744	756	Automobiles	7	9	16
				Motorcycles	3	24	27
Rifles	3	678	681	Trucks, motor	2	192	194

c. Transport regiment, pack division (war).—This organization differs from that of the normal infantry division in the following points:

(1) All companies consist of 3 platoons of 3 sections of 5 squads of 10 pack horses each, or a total of 450 pack horses.

(2) Estimated loading of artillery ammunition company, 450 horses carrying 2 boxes each of 4 rounds.

(3) Estimated loading of infantry ammunition company:

60 horses carrying 2 boxes each of 8 rounds 70-mm ammunition.

60 horses carrying 2 boxes each of 4 rounds 75-mm ammunition.

130 horses carrying 4 boxes each of 600 rounds heavy machine gun ammunition.

150 horses carrying 2 boxes each of 1,440 rounds rifle and light machine gun ammunition.
50 horses carrying 2 boxes each of 50 grenades.

17. Intendance.—*a. General.*—The intendance service is a separate organization combining the functions of the American Quartermaster Corps and Finance Department. It is under the direction and control of the Intendance Bureau of the War Ministry. This bureau, headed by a major general or lieutenant general, comprises four sections: accounts, audit, clothing and subsistence, and construction.

b. Personnel.—In July 1937 the Intendance Service comprised about 1,191 officers and 3,665 enlisted men. Some 35 to 40 officers serve in the Intendance Bureau in the War Ministry, 20 to 30 at each army headquarters, 15 to 20 at each division headquarters, 1 to 3 with each regiment. The others are on duty at depots, factories, on the General Staff, etc.

18. Ordnance Service (Gijutsubu).—*a. General.*—Prior to the organization of the Ordnance Service in 1941, the duties of that service were performed by personnel detailed from the various branches (usually Artillery and Engineers) and functioned under supervision of the Ordnance Bureau of the War Ministry.

b. Personnel.—Technical officers and enlisted specialists who were detailed with the Ordnance have been transferred, and the higher technical college graduates are given commissions in the Ordnance. Prior to the present emergency there were about 500 officers on duty with the Ordnance.

c. Functions.—The Ordnance is responsible for providing arms, ammunition, engineer stores, etc., which are not provided by the Intendance Services. Each division has it own mobilization store. These stores hold the equipment for divisional headquarters, for units formed on mobilization, and for reserve formations. All units hold sufficient ordnance stores to equip themselves on mobilization.

19. Medical service.—*a. General.**—(1) The medical service is a separate organization functioning under the Medical Bureau of the War Ministry. It includes medical officers, apothecary officers, nurse officers, and enlisted men. It does *not* include veterinarians, dentists, or female nurses.

(2) The veterinary service is a separate organization functioning under the Horse Administration Section, Military Administration Bureau of the War Ministry.

*The existence of bacterial warfare battalions has been reported but the strength and organization are unknown. It is believed that yellow fever would be the most likely virus that may be used.

(3) There are no dental surgeons in the Japanese Army. Certain officers and noncommissioned officers of the Medical Service receive some training in dentistry at the Army Medical School, but they attempt only the simplest emergency work. All other dentistry must be done by a civilian dentist at the expense of the patient.

(4) Normally there are no female nurses in the Medical Service. In time of war, however, the War Ministry has the power to order Red Cross nurses to duty with troops.

b. Personnel.—On July 1, 1937, there were about 2,350 officers and 3,894 enlisted men in the medical service.

c. Division hospital (peace).—In each division district there is a division hospital which maintains a sufficient number of branch hospitals to meet the medical requirements of the stations of the various units in the area. These hospitals and their branches are complete establishments, equipped not only to handle all the medical and surgical requirements of the active components of the division, but to afford the medical service to which certain groups, such as retired personnel, reserves, and others are entitled. Each division hospital, in addition to the above duties, is responsible for the organization and training of one or more reserve medical regiments which are made up of reserve members of the medical or pharmacist professions who are assembled once a year for a 3-week period of active duty military training. It is believed that these reserve units are the only peacetime medical regiments included in the organization of the Japanese Army, and that they are organized in the same manner as that of the war organization medical regiment.

d. Regimental medical detachment.—During peacetime, in each infantry regiment, and probably in regiments of other branches, there is a regimental medical detachment which, in the infantry, is composed as follows:

1 lieutenant colonel or major, in command.
1 to 2 officer surgeons.
1 to 2 candidate officer surgeons.
15 medical corps privates and noncommissioned officers.

This medical personnel maintains an examination room, operating room, prophylaxis room, pharmacy, dispensary, and a light-case ward of about six beds. They conduct regimental sick call, sanitary inspections, and other medical routine duties, performing the diagnosis as well as the light treatment required by the personnel of the regiment. This group takes a position in reference to the regiment similar to that of the family doctor in a community, in that they diagnose and treat some patients, but evacuate all cases of a serious nature to

the division hospital or to one of its branches. Also, the group is an integral part of the organization to which it is assigned, and even in cases where regiments are stationed alongside one another and in the proximity of a division hospital, each regimental medical detachment maintains its own identity and restricts its activities to those duties pertaining to its own regiment.

e. Attached medical personnel.—In addition to the personnel of the regimental medical detachment, 11 medical privates are assigned, one each, to the companies of the regiment, and act as the first-aid men and sanitary supervisors of the organizations to which they are assigned.

f. Base and field hospitals (war).—(1) *Base hospital.*—During wartime the division hospital becomes the base hospital for the troops dispatched by the division, and it establishes the field hospitals necessary to meet the medical needs of the war organization troops.

(2) *Medical regiment.*—In addition, the division hospital mobilizes and dispatches a medical regiment for each war organization division or group generally corresponding in strength. This medical regiment has a total strength of approximately 1,000 men and is composed as follows:

Regimental headquarters

1 colonel, commanding.
1 lieutenant colonel, second in command.
1 major, adjutant.
1 first lieutenant or captain, assistant adjutant.
Several warrant officers and staff sergeants, clerks.
Three advance field hospitals.
Nine collecting companies.

(3) *Advance field hospital.*—The advance field hospital is estimated as having a total strength of about 20 medical officers, 4 warrant officers, and 65 men divided as follows:

1 headquarters.
1 hospital platoon, wound.
1 hospital platoon, gas.
1 ambulance platoon.

When set up in the field the hospital also includes a supply section, a disinfectant section, a medical camp, and the ambulance pool. The platoon for the treatment of wounded patients is divided into a section for diagnosis and classification, a section for minor treatments and the preparation of patients for treatment, a severe-wound oper-

ation and treatment section, a rest ward, and a section wherein patients await their turn for further evacuation. The platoon for the treatment of gas patients is divided into a section for preparing patients for treatment, a rest section wherein diagnosis is accomplished, a treatment section, and a section for gas patients awaiting evacuation. The ambulance platoon consists of 12 two-wheeled cart single-horse ambulances with the personnel necessary for their operation. The group form a pool of ambulances to evacuate patients from the advance field hospital to the nearest collecting point where the motor ambulances of the division field hospital can pick them up. The ambulances of the advance field hospital are each capable of carrying three stretcher patients when the stretchers are hung one above the other, but as a rule, only two stretchers are carried at a time.

(4) *Collecting companies.*—The collecting companies are made up of a company headquarters and 3 collecting platoons, each of which is commanded by a medical lieutenant, and each of which contains 6 stretcher groups. The stretcher groups are comprised of a leader and 4 stretcher bearers who carry an ordinary roll-type canvas stretcher.

g. Medical regiment, proposed infantry division (war).—The division hospital mobilizes and dispatches a medical regiment for each war organization, division, or group generally corresponding in strength. The following table shows the estimated organization of the medical regiment:

	Headquarters	Advance field hospital [a]	3 advance field hospitals	Collecting company [b]	9 collecting companies	Total
Total commissioned	4	6	18	1	9	31
Total enlisted	7	65	195	31	279	481
Aggregate	11	71	213	32	288	512
Ambulances, two-wheeled carts, horse-drawn	----	12	36	----	----	36
Horses, draft	----	12	36	----	----	36

[a] An advance hospital consists of a headquarters, hospital platoon (wound), hospital platoon (gas), and ambulance platoon.

1st hospital platoon (wound).
- Diagnosis and classification section.
- Minor treatment section.
- Severe wound section.
- Evacuation section.

2d hospital platoon (gas).
- Preparation for treatment.
- Rest and diagnosis.
- Treatment.
- Evacuation.

Ambulance platoon.
- Twelve 2-wheeled carts drawn by one horse.

[b] Collecting companies consist of company headquarters and 3 collecting platoons, each containing 6 stretcher groups.

h. Medical troops, pack division (war).—The organization differs in that it has 4 litter companies for each field hospital and its field train is pack instead of cart.

20. Signal corps.—*a. Functions.*—There is no signal corps in the Japanese Army. The functions of the signal corps are performed by communication units of the corps of engineers.

b. Signal company, proposed infantry division (war).—The following table shows the estimated organization:

	Headquarters	Runner, panel, and dog sections	Radio platoon	Wire platoon	Total
Total commissioned	1	1	1	1	4
Total enlisted	8	36	46	66	156
Aggregate	9	37	47	67	160
Horses, riding and pack	1	2	9	11	23
Dogs		[a] 50			50
Radio sets			[b] 9		9
Rifles	3	33	30	58	124
Pistols	5	4	8	7	24
Sabers	6	4	1	7	18
Auto radio trucks			2		2

[a] Military dogs trained in carrying messages are cared for and trained by division signal company. Infantry units are furnished numbers of these animals for liaison purposes.

[b] Three No. 3 type radios are carried by 2 pack horses each, for infantry, artillery, cavalry, and special nets. Two 87 type radios are for air and higher headquarters communication. Other small types and key personnel are sent from division signal company to each infantry regiment.

c. Signal company, pack infantry division (war).—The organization of the signal company, pack infantry division (war) differs from the signal company, infantry division, only in its transport, which is all pack.

21. Chemical warfare service.—*a.* In July 1937 no separate chemical warfare service had been organized. A modern chemical warfare research establishment was in existence, however, staffed and operated by some 80 officers, 50 enlisted men, and 60 civilians. There were also a chemical warfare manufacturing plant and a Chemical Warfare School for the training of selected officers of all arms except military police. Graduates of this school gave chemical warfare training throughout the army. A gas mask was part of the individual equipment of combat troops. In January 1939 a small chemical corps had come into existence in the Japanese Army. Its organization and equipment are as yet unknown. In 1941 the

existence of the 5th and 6th chemical warfare regiments was reported. A bacterial warfare battalion was attached to each chemical warfare regiment.

b. According to reliable reports the Japanese, during the course of the war in China have used tear and sneeze gases against the Chinese.

22. Veterinary service.—This is a separate service which functions under the Horse Administration Section, Military Administration Bureau of the War Ministry. In July 1937 there were about 300 regular veterinary officers and 1,381 reserve veterinary officers. Detachments operate with all units having animal elements.

23. Aviation.—*a. General.*—The Japanese Army air force expansion and modernization program has made rapid progress within recent years. The Japanese, significantly, have sent to China only the older planes, meanwhile re-equipping the home and colonial units, especially in Manchuria, with the newest type planes available in Japan. This is reasonable, in view of the Japanese recognition of Soviet Russia as their chief potential enemy and the lack of Chinese opposition which the army is meeting.

b. GHQ air force.—In 1936 the GHQ air force was created, with wing headquarters located as follows: 1st Wing, Kagamigahara, Japan; 2d Wing, Kainei, Korea; 3d Wing, Kagi, Formosa. The GHQ air force commander, a lieutenant general or general, has duties not dissimilar to ours.

c. Air division.—It has been fairly well established that the air division exists as a component part of the GHQ air force. The air division does not replace the wing and appears to be both an administrative and tactical unit by means of which regiments may be grouped on the basis of geographical proximity and similarity of mission.

d. Estimated organization of squadrons.—The following tables show the estimated organization of pursuit, observation, and light and heavy bombardment squadrons. The one interceptor regiment has the same organization as pursuit aviation.

Note.—Rations, clothing, hospitalization, finance, etc., for air regiments are provided through the headquarters of the division in whose area the unit is stationed. Air Corps units in Manchoukuo are under control of the Kwangtung Army commander.

FIGURE 5.—Army Air Corps organization.

(1) *Pursuit squadron, air corps.*

	Headquarters section	Operations section	Flight A	Flight B	Flight C	Total
Major or captain	[a] 1					1
Lieutenants		[a] 1	[a] 1	[a] 1	[a] 1	4
Total commissioned	1	1	1	1	1	5
Warrant officers	[b] 2	1				[c] 3
Sergeants	1	1	[d] 3	[d] 3	[d] 3	[c] 11
Corporals or acting corporals	1	1	[e] 2	[e] 2	[e] 2	[e] 8
Privates	2	2	7	7	7	25
Total enlisted	6	5	12	12	12	47
Aggregate	7	6	13	13	13	52
Airplanes	1		3	3	3	10
Guns, machine, fixed aircraft, caliber, 303149	2		6	6	6	20

[a] Pilot. Total pilots, 14 (see note [c]).
[b] 1 line chief and 1 administrative warrant officer.
[c] Noncommissioned officer pilots may be either warrant officers, sergeants, or corporals. Total noncommissioned officer pilots, 9.
[d] 1 chief mechanic (section chief) and 2 pilots.
[e] 1 armorer and 1 pilot.

(2) *Observation squadron, air corps.*

	Headquarters section	Operations section	Flight A	Flight B	Flight C	Total
Major or captain	[a] 1					1
Lieutenants	[b] 1	[b] 1	[a] 1	[a] 1	[a] 1	5
Total commissioned	2	1	1	1	1	6
Warrant officers	[c] 2	1				[d] 3
Sergeants	1	1	[e] 3	[e] 3	[e] 3	[d] 11
Corporals or acting corporals	1	1	[f] 2	[f] 2	[f] 2	[d] 8
Privates	2	2	[g] 9	[g] 9	[g] 9	31
Total enlisted	6	5	14	14	14	53
Aggregate	8	6	15	15	15	59
Airplanes			3	3	3	9
Guns, machine, aircraft, fixed, caliber .303149			6	6	6	18
Guns, machine, aircraft, caliber .303149, flexible			3	3	3	9

[a] Pilot. Total pilots, 13 (see note [d]).
[b] Observer. In peace extra officer observers are on special duty at regimental headquarters; in war additional observers, principally field artillery officers, furnished as required.
[c] 1 line chief and 1 administrative warrant officer.
[d] Noncommissioned officer pilots may be either warrant officers, sergeants, or corporals. Total noncommissioned officer pilots, 9.
[e] 1 chief mechanic (section chief) and 2 pilots.
[f] 1 armorer and 1 pilot.
[g] Includes 1 signalman and 3 gunners per flight.

(3) *Light bombardment squadron, air corps.*

	Headquarters section	Operations section	Flight A	Flight B	Flight C	Total
Major or captain	[a] 1					1
Lieutenants	[b] 1	[b] 1	[a] 1	[a] 1	[a] 1	5
Total commissioned	2	1	1	1	1	6
Warrant officers	[c] 2	1				[d] 3
Sergeants	1	1	[e] 3	[e] 3	[e] 3	[d] 11
Corporals or acting corporals	1	1	[f] 2	[f] 2	[f] 2	[d] 8
Privates	2	2	[g] 9	[g] 9	[g] 9	31
Total enlisted	6	5	14	14	14	53
Aggregate	8	6	15	15	15	59
Airplanes			3	3	3	9
Guns, machine, aircraft, fixed, caliber .303149			6	6	6	18
Guns, machine, aircraft, caliber .303149, flexible			3	3	3	9

[a] Pilot. Total pilots, 13 (see note [d]).

[b] Observer. In peace extra officer observers are on special duty at regimental headquarters; in war additional observers, principally field artillery officers, furnished as required.

[c] 1 line chief and 1 administrative warrant officer.

[d] Noncommissioned officer pilots may be either warrant officers, sergeants, or corporals. Total noncommissioned officer pilots, 9.

[e] 1 chief mechanic (section chief) and 2 pilots.

[f] 1 armorer and 1 pilot.

[g] Includes 1 signalman and 3 gunners per flight.

(4) *Heavy bombardment squadron, air corps.*

	Headquarters section	Operations section	Flight A [a]	Flight B [a]	Flight C [a]	Total
Major	[b] 1					1
Captains	[c] 1	[c] 1	[b] 1	[b] 1	[b] 1	5
Lieutenants	[d] 1		[c] 1	[c] 1	[c] 1	4
Total commissioned	3	1	2	2	2	10
Warrant officers	[e] 2	1	[b] 1	[b] 1	[b] 1	6
Sergeants	2 ([b] 1)	1	[f] 3	[f] 3	[f] 3	12
Corporals or acting corporals	2	1	[g] 3	[g] 3	[g] 3	12
Privates	[g] 5	2	15	15	15	52
Total enlisted	11	5	22	22	22	82
Aggregate	14	6	24	24	24	92
Airplanes	1		3	3	3	10
Guns, machine, aircraft, caliber .303149, flexible	6		18	18	18	60

[a] Each flight usually has 2 officers, one a pilot and one an observer. Sometimes the two are both pilots and observers.

[b] Pilot. Total pilots, 13 to 16.

[c] Observer. Total observers, 5 to 8. In war, the number of observers (principally field artillery officers) increased as required.

[d] Armament officer.

[e] 1 line chief and 1 administrative warrant officer.

[f] 2 pilots and 1 chief mechanic (section chief).

[g] 1 signalman, 1 gunner, and 1 radioman.

(5) *Service squadron.*—The following is estimated to be the organization of the service squadron of the Japanese Army Air Corps for all classes of aviation:

	Headquarters section	Equipment section	Armament section	Stores section	Maintenance section				Total
					Engine repairs	Aircraft	Instrument	Motor transport	
Lieutenant colonel or major	1								1
Captains		1			1				2
Lieutenants			1	1		1	(1)	(1)	3
Total commissioned	1	1	1	1	1	1	(1)	(1)	6
War officers	1			1	1	1	1	1	6
Sergeants	1	1	1		3	3	1	2	12
Corporals or acting corporals	1				4	4	2	3	14
Privates	2	2	1	2	40	30	20	20	117
Total enlisted	5	3	2	3	48	38	24	26	149
Aggregate	6	4	3	4	49	39	24	26	155
Civilian employees (mechanics, etc.)	2	4	4	2	10	10	2	6	40

NOTE.—A service squadron is assigned, in addition to tactical units, to all regiments and is responsible for supply, storage, maintenance, and minor repairs of equipment. Major overhaul is done at air depots. The Japanese system of maintenance concentrates all work on aircraft in the service squadron except daily inspections and minor adjustments.

e. Estimated strength of army and navy air services (as of July 1, 1940).—(1) *Personnel.*

Air personnel	Regular			Inactive army reserves [a]	Total air establishment		
	Army	Navy	Total		Estimated Army	Navy	Total
Officers, including	2,900	1,465	4,365	200	3,100	1,465	4,565
Pilots	(1,600)	(755)	(2,355)	(50)	(1,650)	(755)	(2,405)
Combat crews other than pilots	----------	(260)	(260)	----------	----------	(260)	(260)
Student pilots	(50)	(50)	(100)	----------	(50)	(50)	(100)
Students for nonpilot combat crew duty	(175)	----------	(175)	----------	(175)	----------	(175)
All others	(1,075)	(400)	(1,475)	(150)	(1,225)	(400)	(1,625)
Cadets, including	1,350	----------	1,350	----------	1,350	----------	1,350
Student pilots	(900)	----------	(900)	----------	(900)	----------	(900)
Students for nonpilot combat crew duty	(50)	----------	(50)	----------	(50)	----------	(50)
All other cadets	(400)	----------	(400)	----------	(400)	----------	(400)
Enlisted men, including	28,700	18,545	47,245	15,800	44,500	18,545	63,045
Pilots	(1,500)	(1,795)	(3,295)	----------	(1,500)	(1,795)	(3,295)
Combat crew members other than pilots	(1,750)	(3,400)	(5,150)	----------	(1,750)	(3,400)	(5,150)
Student pilots	(400)	(550)	(950)	----------	(400)	(550)	(950)
Students for nonpilot combat crew duty	(675)	----------	(675)	----------	(675)	----------	(675)
Student specialists (nonflying)	(650)	----------	(650)	----------	(650)	----------	(650)
All other enlisted men	(23,725)	(12,800)	(36,525)	(15,800)	(39,525)	(12,800)	(52,325)
Boys and apprentices	2,550	----------	2,550	----------	2,550	----------	2,550
Total military	35,500	20,010	55,510	16,000	51,500	20,010	71,510
Civilian employees	5,000	2,700	7,700	----------	5,000	2,700	7,700
Aggregate	40,500	22,710	63,210	16,000	56,500	22,710	79,210
Summary:							
Total pilots	3,100	2,850	5,950	----------	3,100	2,850	5,950
Total student pilots	1,350	600	1,950	----------	1,350	600	1,950
Total combat crew personnel except pilots	1,750	3,660	5,410	----------	1,750	3,660	5,410
Total students for nonpilot combat crew duty	900	400	1,300	----------	900	400	1,300

[a] Naval reserve insignificant now that Japanese Navy is fully mobilized.

(2) *Airplanes and squadrons.*

1	1	2			3			4			5			6			7		
	Types	Standard airplanes			Obsolescent			Total airplanes			Airplanes under contract not yet delivered			Number of active squadrons (at home)			Airplanes per squadron (at home)		
		Army	Navy	Total	Army	Navy	Total	Army	Navy	Total	Army	Navy	Total	Army	Navy	Total	Active	Reserves	Total
2	Fighter, including	558	395	953	------	35	35	558	430	988	400	150	550	9	20	29	------	------	------
3	95	------	(35)	(35)	------	(35)	(35)	------	(70)	(70)	------	------	------	------	(6)	(6)	(12)	------	(12)
4	97	(480)	(300)	(780)	------	------	------	(480)	(300)	(780)	(200)	(50)	(250)	(9)	(10)	(19)	{[b]10A, [b]12N}	(3N)	{10A, 15N}
5	98 (2-place)	(78)	------	(78)	------	------	------	(78)	------	(78)	(200)	------	(200)	------	------	------	------	------	------
6	99	------	(60)	(60)	------	------	------	------	(60)	(60)	------	(100)	(100)	------	([b] 4)	(4)	(12)	([b] 3)	([b] 15)
7	Light bomber, including	376	420	796	------	30	30	376	450	826	200	150	350	5	23	28	------	------	------
8	94	------	(120)	(120)	------	(30)	(30)	------	(150)	(150)	------	------	------	------	(12)	(12)	(8)	([c] 2)	([c] 10)
9	96	------	(240)	(240)	------	------	------	------	(240)	(240)	------	------	------	------	(5)	(5)	(12)	([d] 3)	([d] 15)
10	97	(188)	------	(188)	------	------	------	(188)	------	(188)	(50)	------	(50)	(3)	------	(3)	(9)	------	(9)
11	98	(188)	------	(188)	------	------	------	(188)	------	(188)	(150)	------	(150)	(2)	------	(2)	(9)	------	(9)
12	99	------	(60)	(60)	------	------	------	------	(60)	(60)	------	(150)	(150)	------	(6)	(6)	(12)	([d] 3)	([d] 15)
13	Heavy bomber, including	293	260	553	------	------	------	293	260	553	100	150	250	3	3	6	------	------	------
14	96 and later models	------	(260)	(260)	------	------	------	------	(260)	(260)	------	(150)	(150)	------	(3)	(3)	(12)	(3)	(15)
15	97	(240)	------	(240)	------	------	------	(240)	------	(240)	(100)	------	(100)	(3)	------	(3)	(10)	------	(10)
16	98 (Fiat BR-20)	(53)	------	(53)	------	------	------	(53)	------	(53)	------	------	------	------	------	------	------	------	------
17	Observation, including	166	228	394	227	------	227	393	228	621	150	30	180	6	13	19	------	------	------
18	94	------	------	------	(227)	------	(227)	(227)	------	(227)	------	------	------	(4)	------	(4)	(9)	------	(9)
19	Seaplanes (ship based)	------	(228)	(228)	------	------	------	------	(228)	(228)	------	(30)	(30)	------	(13)	(13)	(10)	------	(10)
20	97	(166)	------	(166)	------	------	------	(166)	------	(166)	(150)	------	(150)	(2)	------	(2)	(9)	------	(9)
21	Patrol, 97	------	68	68	------	------	------	------	68	68	------	50	50	------	2	2	6	2	8
22	Torpedo, 98	------	147	147	------	------	------	------	147	147	------	60	60	------	10	10	12	3	15
23	Training, including	390	------	390	------	447	447	390	447	837	70	------	70	------	------	------	------	------	------
24	95 and miscellaneous	------	------	------	------	(447)	(447)	------	(447)	(447)	------	------	------	------	------	------	------	------	------
25	95-I	(210)	------	(210)	------	------	------	(210)	------	(210)	(40)	------	(40)	------	------	------	------	------	------
26	95-II	(30)	------	(30)	------	------	------	(30)	------	(30)	------	------	------	------	------	------	------	------	------
27	95-III	(150)	------	(150)	------	------	------	(150)	------	(150)	(30)	------	(30)	------	------	------	------	------	------
28	Total	1,783	1,518	3,301	227	512	739	2,010	2,030	4,040	920	590	1,510	23	71	94	------	------	------

1	8	9			10			11	12			13			14	
Types	Total airplanes in squadron	Active squadron (foreign possessions)			Airplanes per squadron (foreign possessions)			Total airplanes in squadron	Total combat squadron			Production during past 12 months			Maximum monthly production of airplanes by M-day plus [a]	
		Army	Navy	Total	Active	Reserves	Total		Army	Navy	Total	Army	Navy	Total	1 month	6 months	12 months
Fighter, including	339	30	10	40				435	39	30	69	389	181	570	30A, 18N	45A, 25N	30A, 18N
95	(60)									(6)	(6)						
97	{[b]90A, [b]135N}	(25)	(10)	(35)	(10)		(10)	(385)	(34)	(20)	(54)	(250)	(130)	(380)			
98 (2-place)	(5)			(5)	(10)		(10)	(50)	(5)		(5)	(139)		(139)			
99	[b] 54)									(4)	(4)		(51)	(51)			
Light bomber, including	303	23	11	34				357	28	34	62	185	104	289	20A, 10N	30A, 15N	20A, 10N
94	[c] 138)									(12)	(12)						
96	[b] 66)		(11)	(11)	(12)	(3)	(15)	(150)		(16)	(16)		(36)	(36)			
97	(27)	(11)		(11)	(9)		(9)	(99)	(14)		(14)	(60)		(60)			
98	(18)	(12)		(12)	(9)		(9)	(108)	(14)		(14)	(125)		(125)			
99	[d] 54)									(6)	(6)		(68)	(68)			
Heavy bomber, including	239	19	15	34				399	22	18	40	83	164	247	10A, 18N	15A, 25N	10A, 18N
96 and later models	[c] 209)	(15)		(15)	(12)	(3)	(15)	(209)		(18)	(18)		(164)	(164)			
97	(30)	(14)		(14)	(10)		(10)	(140)	(17)		(17)	(83)		(83)			
98 (Fiat BR–20)		(5)		(5)	(10)		(10)	(50)	(5)		(5)						
Observation, including	170	19	10	29				261	25	23	48	155	120	275	15A, 12N	20A, 20N	15A, 12N
94	(36)	(9)		(9)	(9)		(9)	(81)	(13)		(13)						
Seaplanes (ship based)	(116)		(10)	(10)	(12)		(12)	(90)		(23)	(23)		(120)	(120)			
97	(18)	(10)		(10)	(9)		(9)	(90)	(12)		(12)	(155)		(155)			
Patrol, 97	[f] 53		7	7	9		9	53		9	9		36	36	4N	6N	4N
Torpedo, 98	[c] 132									10	10		90	90	8N	12N	8N
Training, including												73	150	223	10A, 15N	15A, 22N	10A, 15N
95 and miscellaneous													(150)	(150)			
95–I												(39)		(39)			
95–II												(6)		(6)			
95–III												(28)		(28)			
Total	1,236	91	53	144				1,505	114	124	238	885	845	1,730	85A, 85N	125A, 125N	85A, 85N

Of the above airplanes it is estimated that 550 army and 402 navy airplanes are assigned to Government schools; 373 army and 188 navy airplanes are under repair, and 50 army airplanes are in storage.

All ship based airplanes are listed as "at home." Total ship based airplanes—615.

[a] Production drop during second 6 months due to shortage of raw materials and machine tool replacements.

[b] Carrier VF's (fighter).
[c] Carrier and land VB's (bomber).
[d] Carrier VB's.
[e] Land-based 2-engine monoplanes.
[f] 4-Engine VP's, mainly (patrol boat).

(3) *Airplane engines.*—Nakajima has partially retooled and has begun production of a new "105" type 1,000 horsepower radial engine.

Maximum monthly production by M-day plus [a]			Service type (in storage) [b]					Training type	Aggregate
			Liquid-cooled		Air-cooled		Total service type		
1 month	6 months	12 months	Army	Navy	Army	Navy			
370	550	370	94	275	744	1,090	2,203	964	3,167

[a] Production drop during second 6 months due to shortage of raw materials and machine tool replacements.
[b] Figures include Juisei of 700 horsepower used in observation type 97.

f. Distribution.—The estimated air strength of Japan is:

Army: 114 squadrons; 23 stationed in Japan and 91 in foreign possessions.

Navy: 124 squadrons; 71 squadrons at home and 53 in foreign possessions.

Reliable foreign sources (whose estimates of Japanese airplane types and number of squadrons differ slightly from ours, but whose estimate of the total number of Japanese airplanes approximates our estimates) give the distribution of airplanes, squadrons, and regiments as follows:

(1) *Army aircraft.*—Known distribution July 31, 1940:

Station	Unit	Number of squadrons	Type	Function	Single seat fighter	Light bomber	Heavy bomber	Reconnaissance	Totals	
Japan:										
Kakogawa	13th Air Regiment.	2	95	Single seat fighter	24	----	----	1		
		2	97	Reconnaissance	----	----	----	18	43	43
Korea:										
Heijo	6th Air Regiment.[1]	1	95	Single seat fighter	12					
		1	98	Single engine light bomber	----	12				
		1	97	Reconnaissance	----	----	----	9	33	
Kainei	9th Air Regiment.[1]	2	95	Single seat fighter	24					
		1	98	Single engine light bomber	----	12				
		1	97	Reconnaissance	----	----	----	9	45	78
North China	1st Air Regiment.[1]	1	95	Single seat fighter	12					
		1	97	Heavy bomber	----	----	10			
		1	97	Reconnaissance	----	----	----	9	31	

[1] 6th and 9th Air Regiments comprise 2d Air Brigade and may be operating in Manchuria.

Station	Unit	Number of squadrons	Type	Function	Single seat fighter	Light bomber	Heavy bomber	Reconnaissance
North China—Continued.	2d Air Regiment.[2]	1	98	Single engine light bomber		12		
		1	97	Reconnaissance				9
	3d Air Regiment.[2]	1	98	Single engine light bomber.		12		
		1	94	Reconnaissance				9
	4th Air Regiment.	2	97	Single seat fighter	24			
		1	98	Single engine light bomber		12		
		1	97	Reconnaissance				9
	5th Air Regiment.	1	97	Single seat fighter	12			
		1	98	Single engine light bomber		12		
		1	97	Reconnaissance				9
	7th Air Regiment.	2	97	Heavy bomber			20	
Central China	8th Air Regiment.[3]	1	95	Single seat fighter	12			
		2	97	Single seat fighter	24			
		2	97	Heavy bomber			20	
		1	97	Reconnaissance				9
	Unidentified	3	97	Single engine light bomber		36		
		1	98	Single engine light bomber		12		
		5	97	Reconnaissance				45
South China: Hainan (Sama)	14th Air Regiment.[4]	2	97	Single seat fighter	24			
		2	97	Heavy bomber			20	
	Unidentified	2	97	Single seat fighter	24			
		3	98	Single engine light bomber		36		
		1	98 Fiat / BR 20	Heavy bomber			10	
		2	97	Reconnaissance				18
	Unidentified	1	97	Heavy bomber			10	
Manchuria: Tsitsihar	10th Air Regiment.	2	97	Single seat fighter	24			
		2	94	Reconnaissance				18
Harbin	11th Air Regiment.	2	97	Single seat fighter	24			
		2	97	Reconnaissance				18
Hsinking	12th Air Regiment.	2	97	Single seat fighters	24			
		2	97	Reconnaissance				18
Kunchuling	15th Air Regiment.	4	98	Single engine light bomber		48		
Mutanchiang	16th Air Regiment.	4	98 Fiat / BR 20	Heavy bomber			30	

[2] 1st, 2d, 3d, and 7th Air Regiments comprise 1st Air Brigade.
[3] 8th Air Regiment has detachment at Formosan base, Heito.
[4] 14th Air Regiment has detachment at Formosan base, Kagi.

Station	Unit	Number of squadrons	Type	Function	Single seat fighter	Light bomber	Heavy bomber	Reconnaissance	Totals	
Chinchow	17th Air Regiment.	4	98	Single engine light bomber	....	48	....	....	48	
Hailar	18th Air Regiment.	2	95	Single seat fighter	24	....	....	....	....	
		2	94	Reconnaissance	....	....	....	18	42	
	Unidentified	2	ME 109	Single seat fighter	24	....	....	....	....	
		1	97	Heavy bomber	....	....	10	....	34	328
Total		86			312	252	130	226	920	920

Information regarding the strength and distribution of army air service units is uncertain. The above table should be treated with reserve. Air units in Manchuria were probably strengthened from May to July 1939, but no specific details are available. It is believed that probably more than 100 aircraft were sent from the general reserve in Japan, mostly fighters. The Manchurian order of battle, however, has not been amended as a result of the Russo-Japanese truce in Outer Mongolia on September 16, 1939, making it uncertain how far this reinforcement has been maintained. It is unlikely that any appreciable withdrawal has taken place, and the above figure must therefore be regarded as a minimum.

The Japanese are believed to have formed new units from the cadres of Nos. 1, 2, 3, 4, 5, and 7 Air Regiments after they were sent to China in 1937. The units in Japan supply replacements of men and material for their opposite numbers abroad and in addition form a general reserve. It is from this general reserve that the reinforcement of Manchurian air units has been made.

(2) *Naval aircraft.—(a) Japan, shore based.*

Station	Number of squadrons	Type	Function	Single seat fighter	Two seat fighter	Torpedo bomber	Dive bomber	Heavy bomber	Reconnaissance float airplane	Flying boat	Totals	
Karafuto:												
Odomari	¼	95	Reconnaissance float airplane						3		3	3
Honshu:												
Kisarazu	1	96	Torpedo bomber			12						
	1	96	Heavy bomber					12			24	
Kure	1	96	Single seat fighter	12								
	1	95	Reconnaissance float airplane						12		24	
Maisuru	½	95	Reconnaissance float airplane						6		6	
Ominato	½	95	Single seat fighter	6								
	½	96	Torpedo bomber			6						
	½	94	Reconnaissance float airplane						6		18	
Otsu	½	95	Reconnaissance float airplane						6		6	
Oura	½	94	Reconnaissance float airplane						6		6	
Tateyama	1	97	Single seat fighter	12								
	1½	97	Torpedo bomber			18						
	1½	95	Reconnaissance float airplane						18			
	½	90–2	Flying boat							4		
	1	97	Flying boat							8	60	
Tomioka	1	91	Flying boat							8	8	
Yokosuka	2	96	Single seat fighter	24								
	2	96	Torpedo bomber			24						
	1	96	Heavy bomber					12				
	2	95	Reconnaissance float airplane						24		84	236
Kyushu:												
Kanoya	2	95	Single seat fighter	24								
	1	(1)	Two seat fighter		12							
	½	96	Heavy bomber					6	3		42	
Omura	1½	95	Single seat fighter	18								
	1	97	Single seat fighter	12								
	2	97	Torpedo bomber			24					54	
Saeki	1	97	Single seat fighter	12								
	1	97	Torpedo bomber			12						
	1	96	Dive bomber				12					
	½	91	Flying boat							4	40	
Sasebo	1	96	Torpedo bomber			12						
	1	97	Torpedo bomber			12						
	1	97	Reconnaissance float airplane						12			
	1	97	Flying boat							8	44	
Usa	½	94	Reconnaissance float airplane						6		6	186
Total	36¾			120	12	120	12	30	99	32	425	425

[1] Seversky.

(b) *Japanese home waters, ship based (combined fleet).*

Unit	Type	Function	Single seat fighter	Torpedo bomber	Dive bomber	Reconnaissance float airplane	Totals	
Battleships, 9	94	Reconnaissance float airplane	----	----	----	11		
	95	Reconnaissance float airplane	----	----	----	16	27	27
Cruisers:								
Myoko	95	Reconnaissance float airplane	----	----	----	5		
Nagara	94	Reconnaissance float airplane	----	----	----	2		
27 others	94	Reconnaissance float airplane	----	----	----	18		
	95	Reconnaissance float airplane	----	----	----	44	69	69
Aircraft carriers: [1]								
Akagi	96	Single seat fighter	12					
	96	Torpedo bomber	----	24				
	97	Torpedo bomber	----	12	----	----	48	
Hiryu	96	Single seat fighter	12					
	96	Torpedo bomber	----	12				
	96	Dive bomber	----	----	18	----	42	
Hosho	96	Single seat fighter	12					
	97	Torpedo bomber	----	8	----	----	20	
Ryujo	96	Single seat fighter	6					
	96	Torpedo bomber	----	12				
	96	Dive bomber	----	----	12	----	30	
Koryu	96	Single seat fighter	12					
	97	Torpedo bomber	----	12				
	96	Dive bomber	----	----	18	----	42	182
Seaplane carriers:								
Kamoi	94 and 95	Reconnaissance float airplane	----	----	----	9	9	
Mizuo	94 and 95	Reconnaissance float airplane	----	----	----	20	20	
Notoro	94 and 95	Reconnaissance float airplane	----	----	----	9	9	38
Miscellaneous vessels:								
Chogei	95	Reconnaissance float airplane	----	----	----	1	1	
Iwate	95	Reconnaissance float airplane	----	----	----	1	1	
Taigei	94	Reconnaissance float airplane	----	----	----	3	3	
2 submarines	Uncertain	Float airplanes	----	----	----	2	2	7
Total			54	80	48	141	323	323

[1] The *Shokaku*, planned to carry 60 aircraft, was launched June 1, 1939. She should now be in commission, though as yet there is no information of this.

(c) *Foreign possessions (Korea, China, Formosa, and mandated islands), shore based.*

Station	Unit	Number of squadrons	Type	Function	Two seat fighter	Single seat fighter	Torpedo bomber Light bomber	Heavy bomber	Reconnaissance float airplane	Flying boat	Totals	
Korea:												
Chinkai		½	95	Reconnaissance float airplane.					6		6	6
North China:												
Tsingtao	Tsingtao Air Force	½	95	Single seat fighter		6						
		½	96	Torpedo bomber			6					
		½	95	Reconnaissance float airplane.					6		18	18
Central China:												
Hankow	12th Air Squadron	1	Sever-sky.	Two seat fighter	12							
		2	97	Single seat fighter		24						
		½	96	Torpedo bomber			6					
		1	Kami kazi.	Light bomber			12					
		2	96	Heavy bomber				24			78	
Hankow	Kanoya	1	97	Single seat fighter		12						
		1½	96	Heavy bomber				18			30	
Kiukiang	Detachment of 12th Air Squadron.	1	97	Torpedo bomber			12					
		1	97	Reconnaissance float airplane.					12		24	
Shanghai	13th Air Squadron	1	Kami-kazi.	Light bomber			12					
		3	96	Heavy bomber				36			48	
Shanghai (?)	Takao	2	96	Heavy bomber				24			24	204
Formosa:												
Takao	Unidentified	1	96	Single seat fighter		12						
	Cadre of Takao, unidentified.	1	96	Heavy bomber				12				
	Unidentified	½	95	Reconnaissance float airplane.					6			
Taihoku	Unidentified	1	96	Heavy bomber				12			42	42
South China:												
Canton	Detachment of 14th Air Squadron.	1	97	Single seat fighter		12						
		1	Kami-kazi.	Light bomber			12					
		½	96	Heavy bomber				6			30	
Samchow (Number 6 base).	Detachment of 14th Air Squadron.	1	97	Torpedo bomber			12				12	
Yamchow (Number 12 base).	Unidentified	1	97	Single seat fighter		12					12	
Nanning	Detachment of 14th Air Squadron.	1	97	Single seat fighter		12						
		1	97	Torpedo bomber			12					
		1	96	Heavy bomber				12			36	

Station	Unit	Number of squadrons	Type	Function	Two seat fighter	Single seat fighter	Torpedo bomber	Light bomber	Heavy bomber	Reconnaissance float airplane	Flying boat	Totals	
South China—Continued.													
Weichow	Unidentified	¼	96	Single seat fighter	--	3							
(Number 11 base).		½	97	Torpedo bomber	--	--	6						
		¾	96	Heavy bomber	--	--	--	--	9				
		¾	95	Reconnaissance float airplane.	--	--	--	--	--	9	--	27	117
Hainan:													
Kiungshan	Unidentified	1	97	Single seat fighter	--	12							
(Number 7 base).		1	97	Torpedo bomber	--	--	12						
		1	Kamikazi.	Light bomber	--	--	--	12					
		1	96	Heavy bomber	--	--	--	--	12	--	--	48	
Sama	14th Air Squadron	2	97	Single seat fighter	--	24							
(Number 9 base).		2	Kamikazi.	Light bomber	--	--	--	24					
		5	96	Heavy bomber	--	--	--	--	60	--	--	108	
Tangkui	15th Air Squadron	2	96	Heavy bomber	--	--	--	--	24	--	--	24	180
(Number 10 base).													
Pescadores:													
Bako	Unidentified	½	96	Single seat fighter	--	6							
		½	95	Reconnaissance float airplane.	--	--	--	--	--	6			
		½	91–2	Flying boat	--	--	--	--	--	--	4	16	16
Marshall Islands:													
Jaluit	Unidentified	1	95	Reconnaissance float airplane.	--	--	--	--	--	12			
	Unidentified	1	91–2	Flying boat	--	--	--	--	--	--	8	20	20
Caroline Islands:													
Palau	Yokohama Squadron	1¼	97	Flying boat	--	--	--	--	--	--	12	12	12
Total		52			12	135	66	72	249	57	24	615	615

(d) Foreign, China waters, ship based.

Station	Unit	Type	Function	Single seat fighter	Torpedo bomber	Dive bomber	Reconnaissance float airplane	Totals		Remarks
North China	Fourth fleet, cruisers:									
	Kuma	95	Reconnaissance float airplane.	--	--	--	2			
	Sendai	95	Reconnaissance float airplane.	--	--	--	1	3	3	
Yangtze	Third fleet:									
	Seaplane tender:									
	Kinugasa Maru	94	Reconnaissance float airplane.	--	--	--	5			
		95	Reconnaissance float airplane.	--	--	--	5	10		Converted merchantmen.
	Miscellaneous vessels:									
	Idzumo	95	Reconnaissance float airplane.	--	--	--	1			
	Okinoshima	95	Reconnaissance float airplane.	--	--	--	1	2	12	
South China	Fifth fleet:									
	Cruisers:									
	Atago (?)	95	Reconnaissance float airplane.	--	--	--	3			
	Natori	95	Reconnaissance float airplane.	-	--	--	1			
	1 other	95	Reconnaissance float airplane.	--	--	--	1	5		
	Aircraft carriers:									
	Kaga	96	Single seat fighter.	12						The *Kaga* may be in Japanese waters.
		96	Torpedo bomber	--	12					
		97	Torpedo bomber	--	18					
		96	Dive bomber	--	--	18	----	60		
	Seaplane carriers:									
	Chitose	94	Reconnaissance float airplane.							
		95	Reconnaissance float airplane.	--	--	--	16			
		94	Reconnaissance float airplane.							
		95	Reconnaissance float airplane.	--	--	--	16			
		94	Reconnaissance float airplane.	--	--	--	16		24	Reconnaissance float airplanes carried by this ship belong to 16th Air Squadron.
		95	Reconnaissance float airplane.	--	--	--	8	56		
	Miscellaneous vessels:									
	Jingei	95	Reconnaissance float airplane.	--	--	--	1	1	122	
Total				12	30	18	77	137	137	

g. Identification of Japanese aircraft.—For airplane types, specifications, and silhouettes, see FM 30–38.

CHAPTER 3

UNIFORMS, INSIGNIA, AND PERSONAL EQUIPMENT

24. Uniform.—The Japanese Army service uniform is olive drab in color and is made of cotton or woolen material, depending on the season. The enlisted man's uniform is usually ill-fitting but serviceable.

a. Coat.—(1) The sack coat is single-breasted with five buttons in front, a turndown collar and four outside pockets with flaps. The

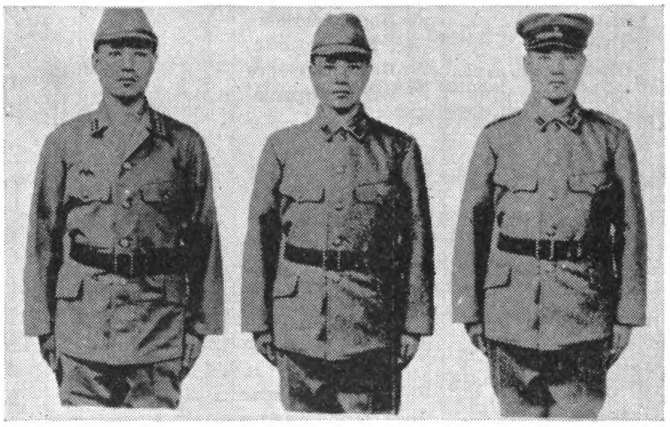


FIGURE 6.—Enlisted men's coats and caps.

breast pockets have buttons, but the lower pockets do not. The insignia of rank and organization numbers are placed on the front edges of the collar. The zigzag colored chevrons indicating the branch of service are worn just above the flap of the right pocket. Occasionally the collar is worn opened to the second button.

(2) The officer's coat has a slightly higher collar than that of the enlisted man and has a stripe of dark brown braid on the cuff. It is shorter than the enlisted man's coat.

(3) The Preparatory Military Academy students and the cadets at the Signal School, Kumagaya Air School, Air Technical School, Engineer School, and Toyama Physical Training School wear coats of the same general appearance except that the pockets are all outside patch pockets with buttons. The upper pockets have box pleats down the center. The pocket pleats in the case of the Preparatory Military

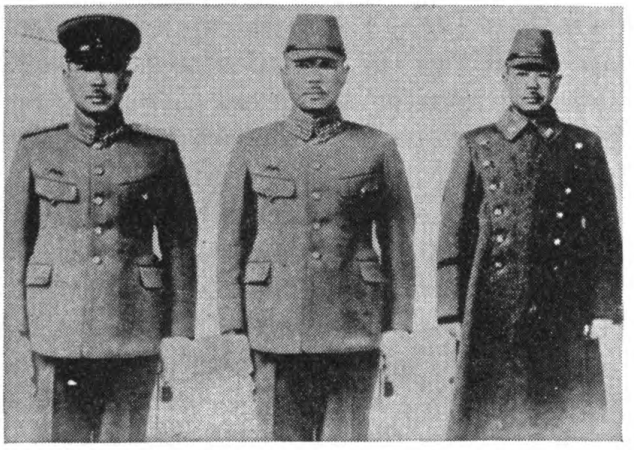


FIGURE 7.—Officer's coat, overcoat, and caps.

School uniforms are not so wide as those of the other schools. The sleeve bands in the case of the Intendance School and other school uniforms are parallel to the cuff, but the sleeve band of the Preparatory Military School is slightly chevron-shaped.

b. Trousers and breeches.—Officers and warrant officers wear trousers of standard pattern usually cut very high at the waist and without cuffs. Spiral puttees are often worn in the field with trousers

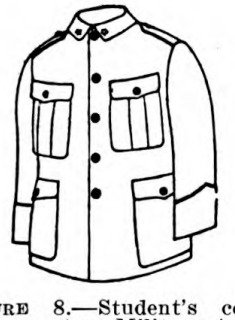


FIGURE 8.—Student's coat, Preparatory Military Academy.

FIGURE 9.—Student's coat, Intendance School and Junior Military Academy.

FIGURE 10.—Student's coat, air and special schools.

by officers. Mounted officers wear the standard type of breeches when mounted or wearing boots. Men wear breeches and spiral puttees.

NOTE.—On very formal occasions in time of peace the officers wear a blue full dress uniform with French style cap and pompon.

c. Footwear.—(1) *Enlisted men.*—The infantry soldier wears a heavy, rough, but serviceable russet shoe. Men of the mounted services wear a German type russet boot.

(2) *Officers.*—Officers' boots and shoes are usually black in color and of various patterns.

(3) *Puttees.*—The standard type olive-drab woolen spiral puttees are worn by the dismounted men at all times, and may be worn by officers in the field.

d. Caps.—(1) *Dress cap.*—The dress cap is olive drab in color and similar in shape to that of the United States Army, except that the crown is smaller and the visor is shorter. A red piping is inserted at the outer edge of the crown and the headband is encircled with a strip of red felt about 1½ inches wide. At the front of the headband is a star, silver for officers and gold for enlisted men. For officers and men of the Guards Division, a semicircular wreath of leaves is fastened just below the star. The visor and chin strap are of black leather in standard military design.

(2) *Field cap.*—This is made of olive-drab cloth and is generally the shape of the head with a narrow visor of the same material and a leather chin strap. It has three ventilating holes on each side near the top of the crown and a slit in the rear for adjusting the size. It

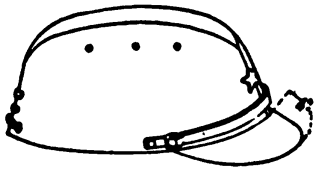


FIGURE 11.—Field cap.

has a star along the vertical front seam. This cap may be worn under the helmet.

e. Overcoat.—The overcoat is of olive-drab woolen material, double-breasted, with turndown collar and two rows of six metal buttons on each side in front. The sleeve insignia consist of one, two, or three bars of brown braid to indicate company, field, and general officers' ranks, respectively. It has a detachable hood.

f. Cape.—The cape is of olive-drab woolen cloth of the usual design. One, two, and three bars of brown braid on the throat piece of the hood indicate the rank, as on the overcoat sleeve.

25. Insignia.—Insignia of the Japanese forces may be divided as follows:

Insignia of grade.
Marking of arm or service.
Insignia designating unit.
Special devices.
Flags and guidons.

a. (1) *Insignia of grade.*—Grades in the Japanese Army are divided into five classes, namely, privates, noncommissioned officers, company officers, field officers, and general officers. These classes and various grades within each are designated by a cloth patch 1.8 by 0.72 inches in size which is worn on both collar flaps of the coat, overcoat, and cape as follows:

Class	Stars	Grade	Collar patch
Privates	1	Second class private	Plain red cloth with stars of yellow cloth sewed on center line.
	2	First class private.	
	3	Superior private.	
Noncommissioned officers.	1	Corporal	Plain red cloth with one gold band lengthwise through center. Stars sewed on this gold band.
	2	Sergeant.	
	3	Sergeant major or first sergeant.	
Company officers	1	Second lieutenant	Red cloth with gold braid border and gold band lengthwise through center. Yellow metal stars on band.
	2	First lieutenant.	
	3	Captain.	
Field officers	1	Major	Red cloth with gold braid border and two gold bands lengthwise of strap. Yellow metal stars between bands.
	2	Lieutenant colonel.	
	3	Colonel.	
General officers	1	Major general	All gold metallic cloth with gold braid borders. Yellow metal stars on center line.
	2	Lieutenant general.	
	3	General.	

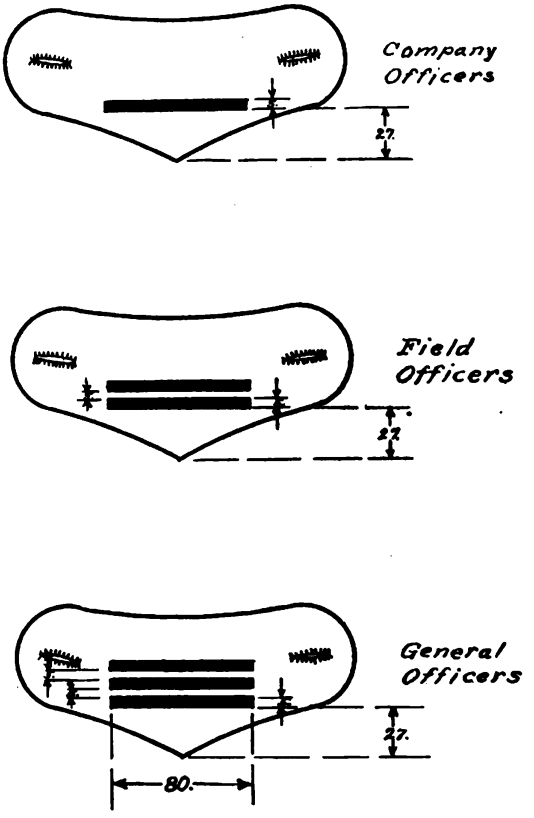


FIGURE 12.—Grade insignia on throat piece of cape.

One-year volunteers have a star on a metal disk attached to the collar. Officer candidates have second lieutenant straps with buttons instead of stars. Chevrons of various designs are worn by noncommissioned officers.

(2) *New grade insignia.*—An epaulet has been adopted for use by individuals when out of barracks or for units taking part in ceremonies. This is made of twisted gold cords, in the case of officers

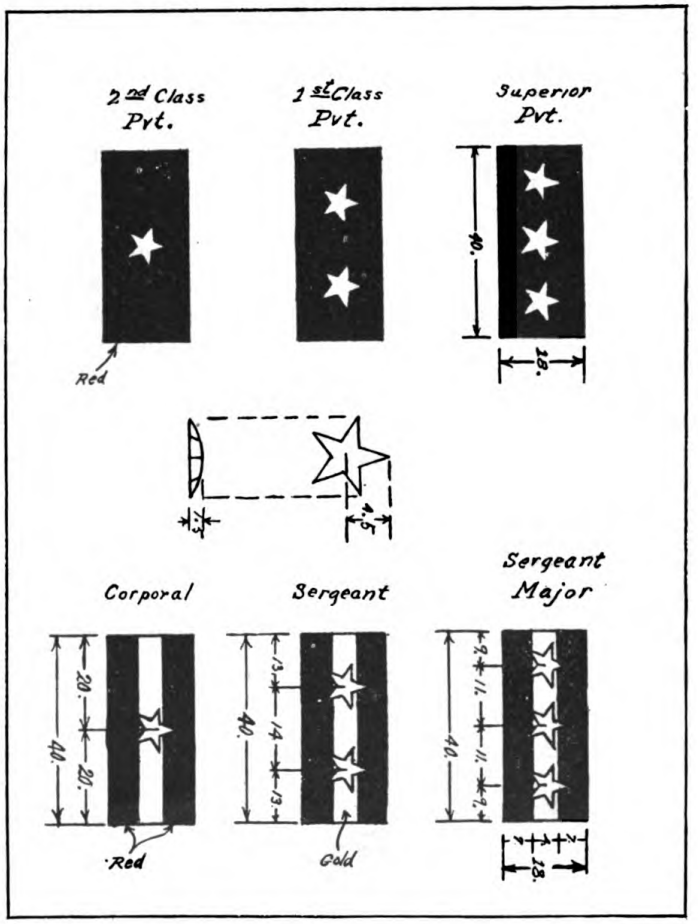


FIGURE 13.—Enlisted men's grade insignia.

and warrant officers and is of varying widths, depending upon the grade. The company officer has one star, field officer two stars, and the general officer three stars on the epaulet. The warrant officer's epaulet has no star. Noncommissioned officers have a red epaulet with a yellow stripe across the outer end, while that of privates is plain. The epaulets of second class, first class, and superior privates have one, two, and three stars, respectively. Those of corporals have one, sergeants two, and sergeants major three stars in addition to the yellow band.

b. Marking of branch of service.—(1) Zigzag chevrons worn over the right pocket indicate the arm or service according to colors as stated below:

(*a*) *Red.*—Infantry, including tanks.
(*b*) *Yellow.*—Artillery of all types.
(*c*) *Green.*—Cavalry.
(*d*) *Maroon.*—Engineers, including railroad and telegraph troops.

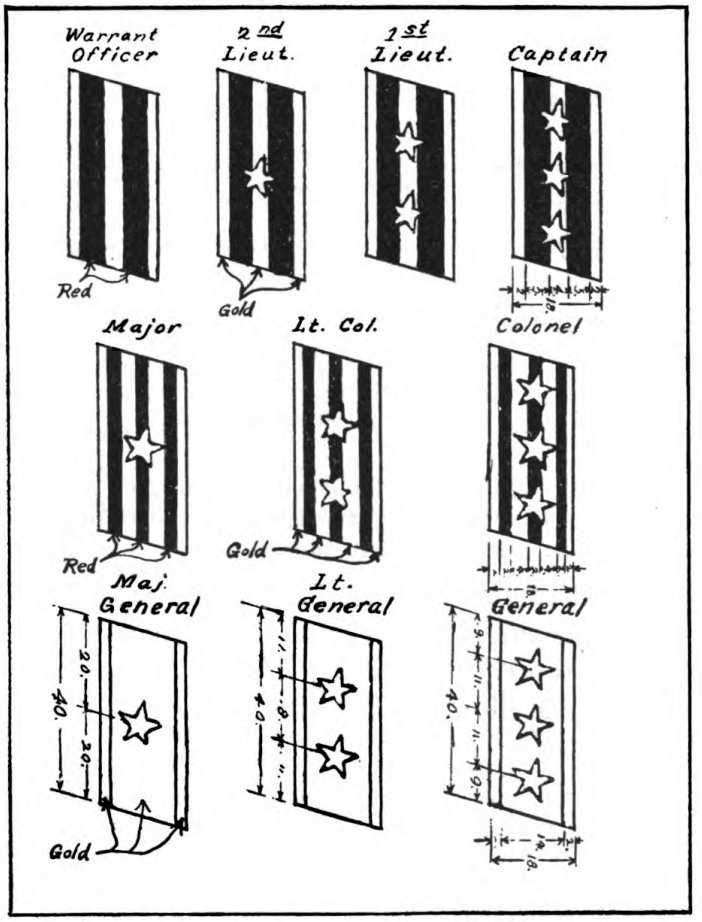


FIGURE 14.—Officers' and warrant officers' grade insignia.

(*e*) *Sky blue.*—Aviation.
(*f*) *Navy blue.*—Band.
(*g*) *Blue-black.*—Transport.
(*h*) *Warm gray (slightly rose-tinted).*—Intendance.
(*i*) *Dark green.*—Medical.
(*j*) *Purple.*—Veterinary.
(*k*) *Black.*—Military police.
(*l*) *White.*—Judge advocate general's department.

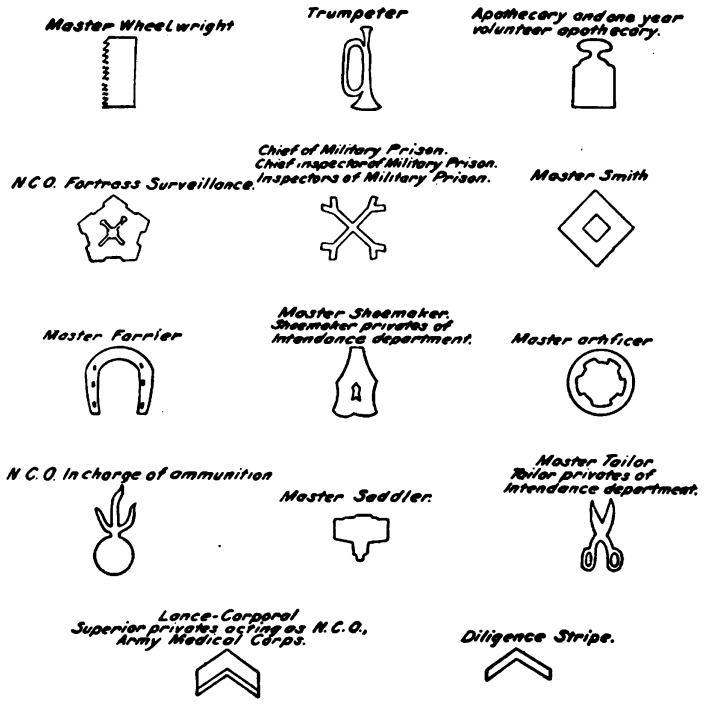


FIGURE 15.—Chevrons.

NOTE.—Recent army regulations abolished the insignia of arm or service. This is thought to be experimental; consequently, the information concerning insignia of arm or service is retained in this manual.

(2) In addition to the colored chevron indicating the branch of service, in many instances the branch is designated by an ornament which is worn on the right collar back of the patch in case the unit numeral is worn. Following is a list of ornaments as described above:

Tank troops	Tank conventionalized.
Formosan (Taiwan infantry)	Cherry flower.
Independent infantry battalion	Crossed rifles and I.
Heavy artillery	Mortar.
Mountain artillery	Crossed guns.
Formosan mountain artillery	Cherry flower above crossed guns.
Railway troops	Crossed axes, over rail section.
Telegraph troops	Conventionalized telegraph key.
Aviation troops	Air propeller blades.
Antiaircraft	Gun and propeller blades.

Automobile corps	Conventionalized automobile.
Imperial guards (cap insignia)	Star with wreath.
Band	Harp.
Officer candidates	Star.
Ordinary infantry	None.
Ordinary field artillery	None.
Ordinary cavalry	None.
Ordinary engineers	None.
Ordinary transport troops	None.

NOTE.—See note, paragraph 9, in regard to temporary abolition of insignia of arms or services and insignia of number designating units.

c. Uniform insignia designating unit.—(1) In time of peace, with a few exceptions all Japanese field and company officers and enlisted men wear arabic numerals on their collar flaps to designate their regiment (see *b*(2) above). The exceptions are instances where but one detachment exists of a particular branch of the service, such as the automobile corps. Officers and men of such a unit wear the branch of service ornament on both collar flaps with no numeral. Ordinary infantry, field artillery, cavalry, etc., wear the regimental number on both sides of the collar. In the case of the other branches of artillery, the regimental number is worn on the left and the special ornament, such as a mortar, is worn on the right side of the collar. In some instances Roman numerals are worn on the left collar patch to indicate the battalion number, but these instances occur only in special services or independent regiments.

(2) In the aviation uniform regulations it is provided that the aviation badge or ornament shall be worn on the left collar flap of the roll collar coat and the regimental numerals on the right.

(3) All numerals and usually all branch of service ornaments are removed when troops go on field service.

d. Special devices.—The special field marshal's medal consists of crossed Japanese and Imperial flags on an oval disk worn on the right breast. General Staff officers wear aiguillettes of gold or yellow braid on the right shoulder. Military decorations are given high importance. The principal orders are the Order of the Chrysanthemum, limited to persons of very high rank, Order of the Golden Kite, in seven classes, Order of the Rising Sun, in eight classes, and Order of the Sacred Treasure in eight classes.

e. Flags and guidons.—While the ordinary Japanese flag is a red ball on a white field, the military and naval flag is represented by a

FIGURE 16.—Collar ornaments.

white field, red sun, and red rays from the center. In army units this latter flag has a purple border. Members of the Imperial family have small flags with a conventionalized chrysanthemum. Each infantry battalion has a guidon. The guidon has a white field and jagged lines running at right angles to the pile, as follows:

1 red line	1st battalion, active army.
1 black line	1st battalion, reserves.
1 purple line	1st battalion, national army.
2 lines, the upper red and lower black.	2d battalion, active army.
2 lines, black over red	2d battalion, reserves.
2 lines, purple	2d battalion, national army.
3 lines, red, black and red	3d battalion, active army.
3 lines, black, red and black	3d battalion, reserves.

Guidon with crossed rifles is borne by the company of the infantry regiment most proficient in rifle target practice.

f. Identification tags, pay books, and other means of identification.—(1) Weapons are marked with model and serial number. Company equipment is marked with company and regimental numbers and some of the individual equipment by name, company, and regiment. Overcoats, coats, trousers, caps, underclothes, and knapsacks bear two stenciled marks on the lining. One stencil shows the place and date of manufacture, the date of first issue, and the dates of repairs. The other stencil shows the organization in which used and the names of wearers. A small wooden disk bearing the man's name is attached by a string to these otherwise unmarked articles when in the field.

(2) Noncommissioned officers and privates generally carry a "military note book" containing the Imperial Rescripts, the man's name, home address, and military record to date, including all organizations to which he has belonged. (In war these books are generally not taken into the field.)

(3) Metal identification tags (ninshikihyo) are worn in the field by Japanese soldiers. These tags, in the case of an enlisted man, give his regiment and his serial number in his company. Officers wear similar tags which give only the name and rank without designation of the unit. Japanese soldiers are accustomed to carry personal seals of bone, but these do not mention the man's unit.

26. Reserve clothing.—A reserve war set of clothing and personal equipment is provided in each company, and reserve uniforms and shoes are also provided for each man in the regimental storehouse.

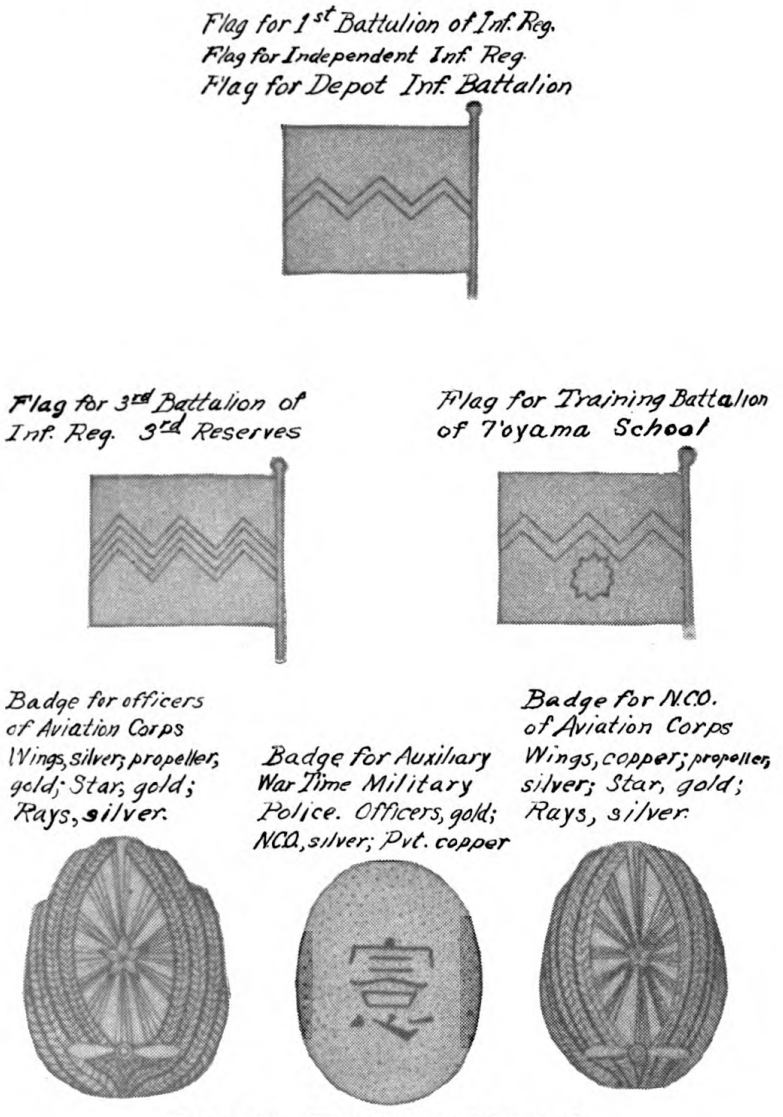


FIGURE 17.—Flags and special insignia.

27. Personal equipment.—The ordinary Japanese field equipment weighs about 70 pounds in winter and 56 pounds in summer, exclusive of arms and ammunition, and includes the following:

a. Knapsack (*haino*).—Cowhide with hair outside, about 14 inches square and 5 inches deep.

b. Haversack (*zatsuno*).—Khaki canvas.

c. Canteen (*suito*).—Aluminum, oval, covered with khaki, capacity 1 pint.

d. Hold-all (*zatsugu-bukuro*).—Canvas sack or roll, used for carrying surplus ammunition and provisions.

e. Shelter tent (half) (hansetsu temmaku).—Khaki, adapted to button to others and make tent of desired size. Tent pins and pole are carried by some men.

f. Mess tin (hango).—Aluminum, much like American canteen cup.

g. Entrenching tool (doko kigu).—Small shovels and picks are carried, the ratio being 2 shovels to 1 pick.

h. Wire cutters (tessen-basami).—About 30 wire cutters are carried by each company.

i. Clothing, etc. (hifuku).—Extra underwear, socks, boots, shirt, 1 housewife, 1 overcoat, 1 blanket, 1 first-aid dressing, leather grease, and emergency ration for 2 days.

j. Trench helmet (tetsu kabuto).—Trench helmets have been adopted, the design having a narrower brim than the American helmet.

k. Fur-lined cap.—In Manchuria and North China fur-lined headgear is issued for use during the winter. It consists of a close-fitting helmet type cloth cap with fur-lined ear flaps which fasten under the chin or tie on the top of the crown. It has a short fur-lined visor also. Fur-lined overcoats are issued for wear in the more severe climates.

Chapter 4

ARMAMENT AND EQUIPMENT

Section I

INFANTRY

28. Rifle.—The Infantry carry the Arisaka rifle, pattern 38, model 1905. It has been repeatedly announced that this model will be displaced by a 1919 model (7.7-mm), a few of which have been issued.

a. Arisaka rifle, model 1905.—This is a Mauser type, 5-shot military rifle with characteristic Mauser bolt action. Caliber is 6.5-mm, cartridge case of brass, pointed lead bullet with nickel-steel jacket. The projectile weighs 0.019 pound and the charge is 0.0047 pound of smokeless rifle powder, giving a velocity of 2,510 foot-seconds. The piece itself weighs 8.69 pounds and is 1.3 yards in length. The rifle is fitted with a sling, but this is not used in firing. The rear sight is a knock-down leaf sight, graduated from 550 to 2,600 yards. Extreme range of 4,375 yards is claimed. There is no windage scale or allowance for drift, and it is only fairly accurate beyond 500 yards.

b. 7.7-mm model 1919.—In this the bolt is modified and the stock shortened in order better to meet the requirements of the Japanese

physique. The trigger guard is changed in order to permit firing with a gloved finger. The muzzle velocity is 875 yards per second; weight of bullet, 0.003 pound. It is not felt that the 1919 model can have been issued to the service inasmuch as at the present time the

FIGURE 18.—7.7-mm model 1919.

light machine gun and the heavy machine gun are both of the same caliber as the model 1905 weapon.

c. Bayonet.—A dagger-bayonet is provided with the rifle, about 16 inches in length and weighing 0.8 pounds. Due to certain national historical considerations, the use of the bayonet is given exceptional prominence in training and in the field.

d. Ammunition.—Rifle ammunition is carried and used in clips of five rounds. Three leather ammunition boxes, holding in all 120 rounds, are attached to the belt. A further 60 rounds per man is carried in the battalion reserve and 150 rounds per man in the divisional ammunition train.

29. Pistol.—The Pattern 26 (1893) (Smith and Wesson type) revolver is carried by all officers and most noncommissioned officers. This is a double-action weapon, caliber 9-mm, having a 6-round cylinder.

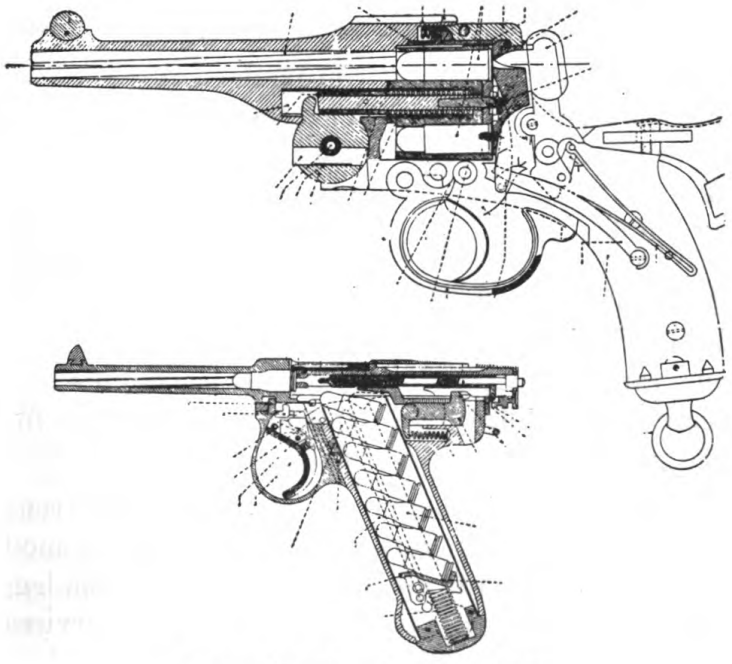


FIGURE 19.—Revolver and pistol.

Cartridge case is of brass and the projectile is a slightly-rounded bullet of lead, weighing 0.002 pounds. Muzzle velocity is 1,050 feet per second.

30. Machine guns.—*a. Light machine gun.*—(1) The Nambu light machine gun, model 1922 (Juichinen Shiki Kei Kikanju), is a gas-operated, air-cooled, hopper-fed gun with a bipod support permanently fixed to the piece near the muzzle. It is normally fired from the prone position at ground targets. The hopper has a capacity of 30 rounds, which are loaded by placing in the hopper, one on top of the other, six 5-round clips of rifle ammunition. These are forced into the

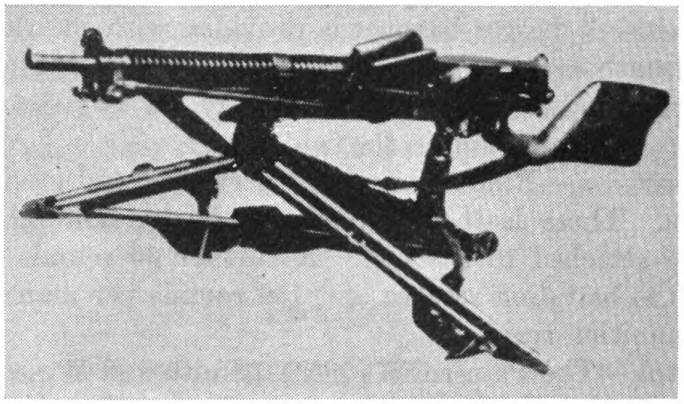


FIGURE 20.—Nambu light machine gun, model 1922, with new tripod.

feed mechanism by a follower pressing down from above. The principal measurements and characteristics of this gun are as follows:

Weight	22.44 pounds.
Length, over-all	43.5 inches.
Caliber	0.256 inches (6.5-mm).
Rifling	4 grooves, right twist.
Rear sight	Graduated from 328 to 1,640 yards. No windage or drift corrector.
Muzzle velocity	2,375 feet per second.
Maximum range	4,374.4 yards.
Cyclic rate of fire	500 rounds per minute.
Effective rate of fire	150 rounds per minute in bursts of five.

(2) Although the light machine gun is usually fired from the prone position supported by its bipod mount, a tripod mount, model 1922, is carried by the gun squad for use as desired. When the legs are fully extended and the tripod is raised to its maximum serviceable elevation, the gun is about 4 feet from the ground. The tripod contains

both traversing and elevating devices, but when the piece is to be used against aircraft the elevating device is unfastened so that the weapon may be moved freely, both vertically and horizontally. When the piece is mounted on this tripod the legs of the bipod are folded back along the barrel. The weapon is essentially a machine rifle when the bipod is used and a light machine gun when mounted on the new tripod.

b. Heavy machine gun.—(1) *Model 3 (1914) (sannen shiki kikanju).*—Japanese infantry is now equipped with this heavy machine gun, a modified Hotchkiss, gas-operated, air-cooled, and strip-fed, fired from a tripod mount. Pasteboard strips are loaded at the factory with 30 rounds each of regular rifle ammunition (caliber 0.256 in.). The principal measurements and characteristics of the gun are as follows:

Weight, gun	58.7 pounds.
Weight, tripod	60.3 pounds.
Length of gun	47.6 inches.
Length of bore	26.5 inches.
Caliber	0.256 inch (6.5-mm).
Rifling	4 grooves, right twist, one turn in 7.8 inches.
Life of barrel	40,000 rounds.
Traversing angle	33.3°.
Maximum angle of elevation	9°.
Maximum angle of depression	15°.
Ground clearance of barrel:	
Low firing position	15.8 inches.
High firing position	23.7 inches.
Rear sight	Graduated from 328 to 2,405.9 yards. No correction for windage or drift.
Cyclic rate of fire	500 rounds per minute.
Maximum effective rate of fire	About 200 rounds per minute.
Muzzle velocity	2,437 feet per second.
Maximum range	4,374.4 yards.
Transportation	Pack; gun and tripod on one horse. Ammunition horses carry four boxes of 600 rounds.

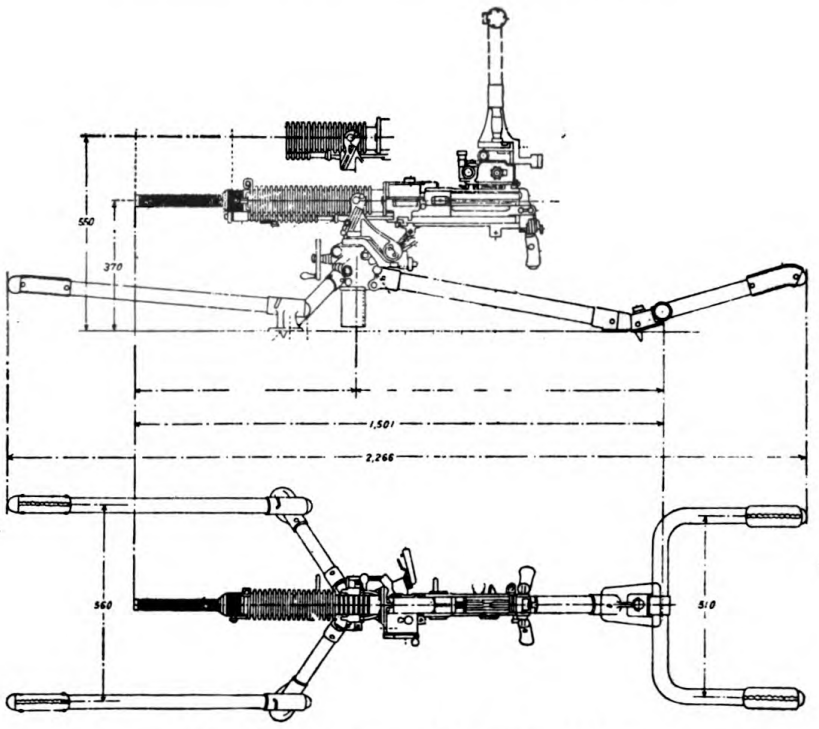


FIGURE 21.—Heavy machine gun, model 92.

(2) *Machine-gun antiaircraft adapter.*—Some machine-gun companies are equipped with an antiaircraft adapter giving a maximum angle of elevation of 80° and a vertical range of 1,100 yards.

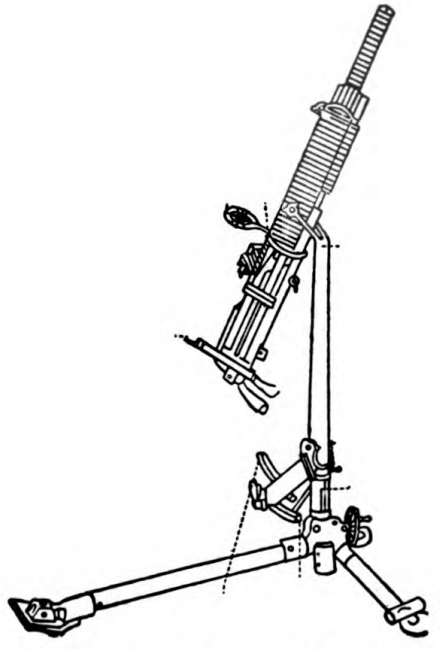


FIGURE 22.—Heavy machine gun, antiaircraft adapter.

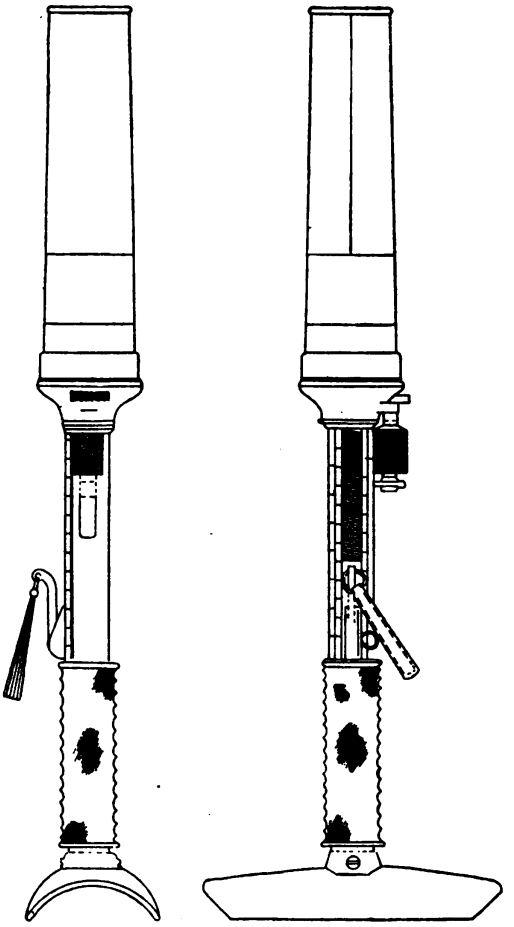


FIGURE 23.—Heavy grenade thrower, model 89.

31. Heavy grenade thrower, model 89.—Characteristics are as follows:

Weight (total)	10.5 pounds.
Length	20 inches.
Length of tube	10 inches.
Caliber	50-mm (about 2 in.).
Ammunition used	Model 89 shell. Time fuze hand grenade. Signal grenade. Smoke grenade. Practice grenade.
Range for model 89 shell	140 to 700 yards.
Range for other ammunition	40 to 200 yards.
Signal, vertical	100 yards.

Time of fuze	7.5 seconds after discharge or on impact.
Rate of fire	One man—10 shots per minute; two men—20 shots per minute.
Effective area of burst, model 89 shell	50-yard radius.
Time fuze hand grenade	25-yard radius.

32. Japanese hand grenade.—This is used as a hand grenade or shell for the model 89 hand grenade thrower.

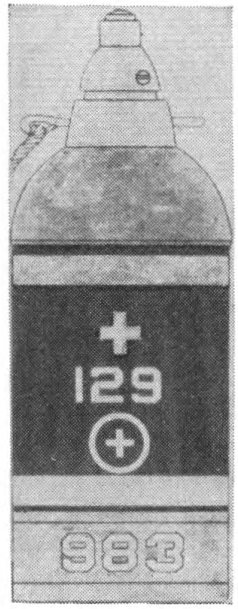


FIGURE 24.—Japanese hand grenade.

33. Infantry guns.—*a. Infantry rapid fire gun, model 94.*—(1) *General.*—The infantry rapid fire gun, model 94 is a small caliber (37-mm or less) long rifle. Its characteristics are as follows:

Weight	120 pounds, approximately.
Over-all length	14 feet, approximately.
Length of barrel, including breech	6 feet.
Length of trail and extension	5 feet each.
Height	3 feet.
Height of cradle	8 inches.
Tread	3 feet.
Width of trail opened for action	8 feet.
Muzzle velocity	2,300 feet per second.
Maximum effective range	2,500 yards.

(2) *Breechblock.*—The gun has a full automatic rotating breechblock. When the shell is loaded the rear of the cartridge case, as it

takes its place in the breech, trips a small catch that releases a spring which automatically closes the breech. Recoil action of firing opens the breech.

(3) *Carriage.*—(*a*) *Recoil mechanism.*—Length of recoil cylinder, 3 feet; caliber of recoil cylinder about 3 inches. Short recoil for about 6 or 8 inches is controlled by a recoil cylinder under the barrel, probably filled with oil.

(*b*) *Traversing and elevating mechanism.*—The gunner, while aiming through the sight, operates the traversing handwheel with his left hand, the elevating handwheel with his right, and fires by pulling the latter to the rear as the gun is properly laid. The assistant gunner prepares the ammunition and loads.

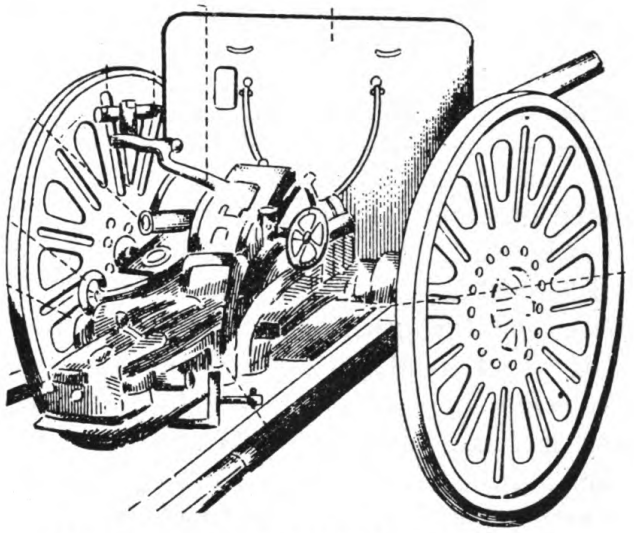


FIGURE 25.—Infantry rapid fire gun, model 94.

(*c*) *Shield.*—The shield is of about 1-centimeter steel plate; its top is 1.09 yards above the ground. There is an aperture in the upper left-hand corner for sighting.

(*d*) *Trail.*—It has a split trail which, when opened, forms a **V** with a base of 5 yards. To the end of the trail is attached a pointed 8-inch spade. To the left side of the gun is attached a small 8-power telescopic sight. Upon the horizontal hair on each side of the vertical hair there are five 10 mil graduations.

(*e*) *Ammunition.*—The shell fired is a small caliber 37-mm shell, weighing less than 1 pound and fixed to a rather unproportionately large cartridge case. It leaves the gun with an extremely high muzzle velocity, which is estimated to be about 2,300 feet per second. The shell is provided with a small, short-delay nose fuze. The burst is very small and not estimated as dangerous except at the actual point of strike or in a small enclosure directly penetrated. The gun has an

exceptionally loud sharp report, a strong muzzle blast, and little smoke during fire. The gun horse is capable of carrying three boxes of ammunition.

(*f*) *Caisson.*—The ammunition caisson normally accompanying the gun is a simple box drawn by one horse and carrying 6 to 8 boxes of 12 rounds each. The gun is transported on its wheels with trails in the closed position. To the trails are attached extensions which are connected to the pack saddle of the animal drawing the gun.

NOTE.—The main purpose of the rapid fire gun is to provide the first line infantry troops, both in attack and defense, with direct, close protection from attack by hostile tanks and armored cars.

b. Infantry battalion gun, model 92 (kyunishiki hoheiho).—(1) *General.*—The infantry battalion gun is a 70 mm rifled gun capable of delivering fire from range of 200 to 2,800 yards. Its characteristics are—

Weight:	
Gun	101 pounds.
Mount	77 pounds.
Mounted gun and caisson	420 pounds.
Length of bore	30 inches, approximately.
Over-all length	27 inches.
Mounted over-all length	5 feet, approximately.
Width of wheel tread	27 inches, approximately.
Effective range	300 to 1,500 yards.
Traverse	45°.
Elevation	−10° to +50°.
Danger area of burst	40 yards, approximately.

(2) *Breechblock.*—Two threaded segments, rotating and opening downward.

(3) *Carriage.*—(*a*) *Recoil mechanism.*—Length of recoil, about 4 inches.

(*b*) *Traversing and elevating mechanism.*—Traversing handwheel on the left of the barrel and elevating handwheel on the right. Both handwheels are operated by the gunner, who lays first for direction, then for elevation. Elevating mechanism is similar to that of our old pack howitzer. Traverse is about a heavy pintle mounted on the axle.

(*c*) *Shield.*—Armor plate about one-eighth of an inch thick.

(*d*) *Trail.*—Split 5 feet long, welded except where riveted to spade.

(*e*) *Panoramic sight (same as field artillery).*—Mounted on the sight bracket on the left side of the piece. The sight bracket includes a range drum with four divisions marked in mils, an elevat-

ing bubble, and a cross bubble for correcting for difference in level of wheels.

(4) *Ammunition.*—Semifixed with brass case. High explosive shrapnel and smoke shells are used. The range is extended by increasing the powder charge. At maximum range the time of flight for the different powder charges is—

Charge No. 1	30 seconds (3,075 yards).
Charge No. 2	25 seconds (1,975 yards).
Charge No. 3	20 seconds (1,300 yards).
Charge No. 4	15 seconds (985 yards).

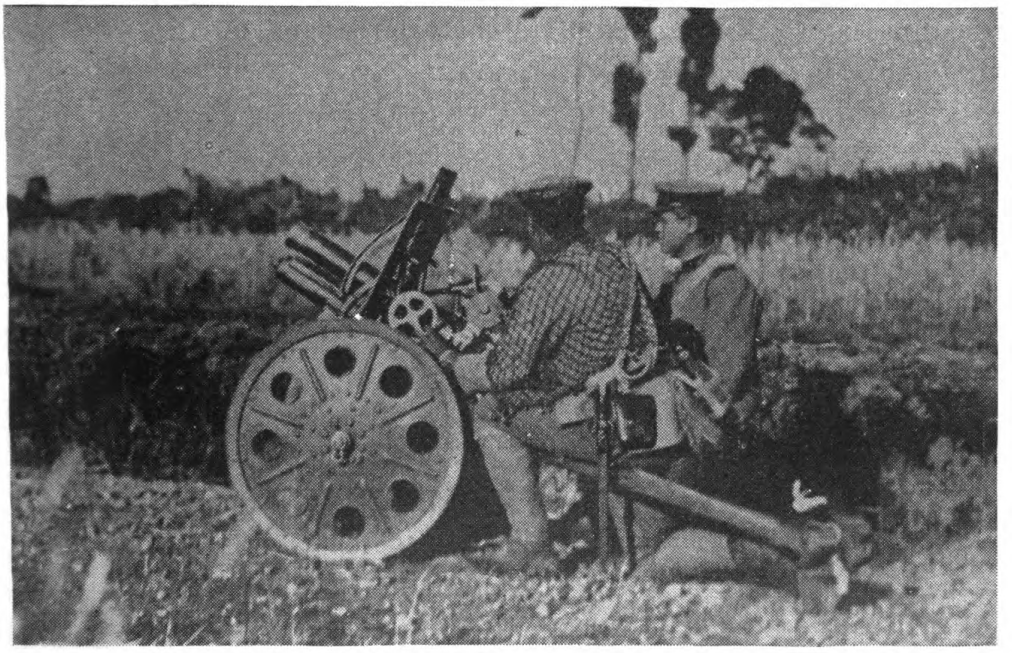


FIGURE 26.—Infantry battalion gun, model 92.

Minimum permissible ranges with instantaneous fuzes employing low-angle fire varies with the powder charge, elevation of gun, and target. With ground level ranges are—

Charge No. 1	1,100 yards.
Charge No. 2	660 yards.
Charge No. 3	225 yards.
Charge No. 4	110 yards.

Minimum ranges with delayed action fuzes ground level are—

Charge No. 1	660 yards.
Charge No. 2	330 yards.
Charge No. 3	330 yards.
Charge No. 4	330 yards.

Rate of fire: 10 rounds per minute, 5 rounds per box.

(5) *Other vehicles.*—(*a*) *Limber.*—This is a simple box mounted on an axle. Shafts are solidly attached to limber chest and to breast collar of the draft horse. Two boxes of ammunition, sights, and accessories are carried in the limber chest.

(*b*) *Caisson.*—Similar in construction to the limber and contains three boxes of ammunition.

(6) *Transport.*—The gun and ammunition caisson in tandem are pulled by a single horse.

c. 75-mm mountain gun, model 14 (1908) (regimental gun).—(1) *General.*—The infantry regimental gun is a mountain field artillery piece of the breech-loading, oil-cylinder, recoil type. Manufactured at Osaka Arsenal. Its characteristics are—

Weight:	
Gun	220 pounds.
Mount	200 pounds.
Length of bore	50 inches, approximately.
Over-all length	13½ feet, approximately.
Width of heel tread	1 yard.
Maximum range:	
With long pointed shell	7,675 yards, approximately.
Otherwise	6,575 yards.
Effective range	2,100 yards.
Rate of fire	10 shots per minute.

(2) *Breechblock.*—Interrupted thread swinging block.

(3) *Carriage.*—(*a*) *Recoil mechanism.*—Length of recoil, about 17 inches.

(*b*) *Traversing and elevating mechanism.*—Carriage type, 3° each side from center.

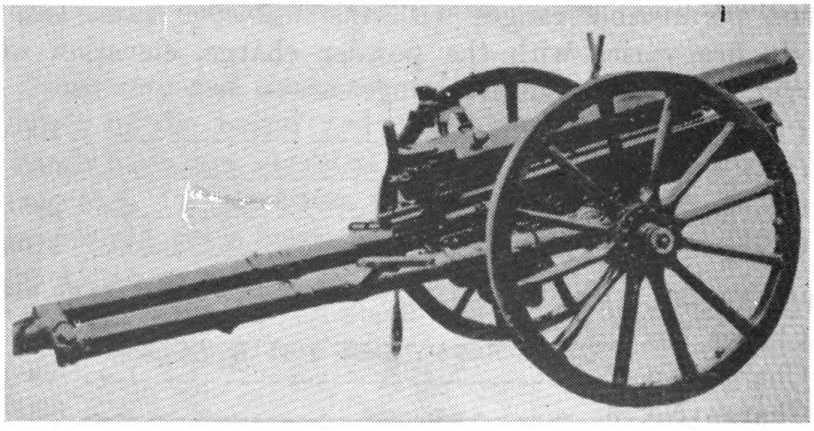


FIGURE 27.—75-mm mountain gun, model 41 (1908) (regimental gun).

(*c*) *Shield.*—It has a rather large shield the thickness of which is unknown.

(*d*) *Trail.*—It is provided with a box trail fitted to a single tailpiece to which is attached the trail shoe.

(*e*) *Sighting equipment.*—Panoramic sight.

(4) *Ammunition.*—The projectiles are the same as in the field artillery ammunition except that the powder charge is smaller and the carriage case shorter.

(5) *Other vehicles.*—There are two ammunition carts, each containing six boxes of ammunition and one box of spare parts.

(6) *Transport.*—Normally drawn by two horses in tandem with rear half of trail removed and replaced by shafts. It can be maneuvered by six men or taken down and carried by hand.

d. 37-mm gun, model 11 (1922) (obsolete).—This gun is similar in appearance to our obsolete 1-pounder. Even though it has been replaced, it may be used again in the event of large-scale operations.

e. Camouflage net—infantry.—(1) *Individual.*—The individual camouflage equipment as used by personnel in the Japanese infantry consists of a body net and a head net. The former consists of a net of approximately 1 by 1.5 yards in size, made of a greenish-colored straw-fiber cord or ordinary twine, with a square mesh something under 2 inches in size. The head net is of a size which will allow it to fit snugly over a helmet or cap, and is of the same material, mesh, and color as the body net.

(2) *Other nets.*—In addition to these pieces of individual equipment for personnel, there is a net for horses as well as one for use in camouflaging machine-gun positions. The horse net is large enough to hang over the back of the animal, from the head to the tail, to a point slightly below the girth. The machine-gun net is something over 2 yards square, of the same color as the nets already described, and of slightly larger mesh and heavier material.

SECTION II

FIELD ARTILLERY

34. Light artillery.—The gun used is a 75-mm gun, model 1906 (Meiji 38), improved.

a. General.—Krupp type, rapid fire gun, manufactured and modified at the Osaka Arsenal. Weight of gun and loaded limber, about 4,500 pounds.

b. Tube and breechblock.—Horizontal sliding breechblock.

c. Carriage.—(1) *Recoil system.*—Hydro-spring.

(2) *Traversing and elevating mechanism.*—Top carriage traverse, 60 mils each side of center. The modifications of the original 1906 carriage consisted of trunnioning the tube farther back, replacing the old box trail by a longer open box type through which the tube can recoil at high elevations, and adding two spring and cable equilibrator cylinders to compensate for the muzzle overhang. The modifications increased the range from 7,200 yards to 9,000 yards for shrapnel, to 9,300 yards for common shell, and to 11,800 yards for long pointed shell.

(3) *Shield.*—Armor plate, about three-sixteenths of an inch.

(4) *Trail.*—Open box.

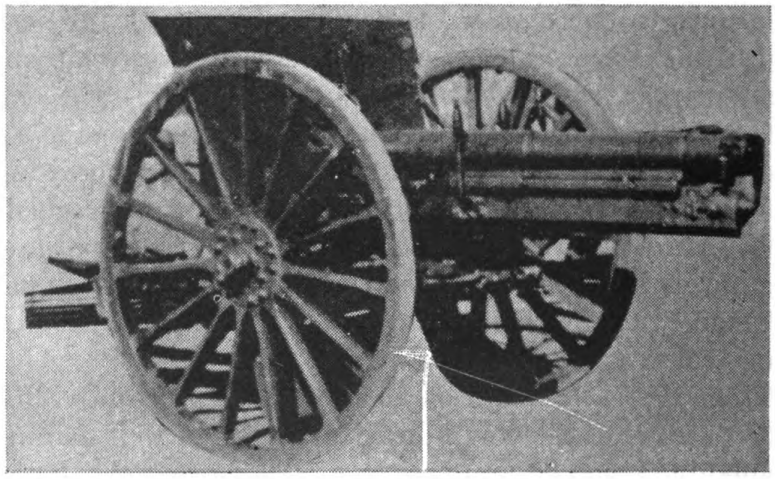


FIGURE 28.—75-mm gun, model 1906 (Meiji 38) improved.

(5) *Sighting equipment.*—Excellent panoramic sight of Japanese manufacture.

d. Ammunition.—Shrapnel, ordinary shell, long pointed shell.

e. Other vehicles.—(1) *Battery wagon.*—This is a two-wheeled open-top steel wagon used with six-horse limber and employed to carry tools, spare parts, and accessories not carried on guns or limbers.

(2) *Communication wagon.*—This is a large two-wheeled closed-top steel wagon similar in appearance to our battery wagon and designed to carry the observation and communication equipment not carried by personnel. There is one communication wagon in each regiment.

(3) *Caisson.*—The caisson is similar in appearance to our own and has a rear, dropping, chest door and no apron. The interior is

divided by steel straps into five tiers of three receptacles each for removable ammunition trays. Each tray holds four rounds of fixed ammunition, giving a capacity of 60 rounds. Each battery has six caissons.

(4) *Limbers.*—All limbers are the same and are similar to our own in general appearance. The chest is similar to the caisson chest as regards doors and ammunition tray receptacles, except that there are only four tiers and the center recesses of the two top tiers have been made into one large recess for a combination sight and accessory box. The remaining 10 ammunition tray recesses hold 40 rounds of fixed ammunition. Each battery has 15 limbers.

f. Transport.—Horse-drawn, six horses.

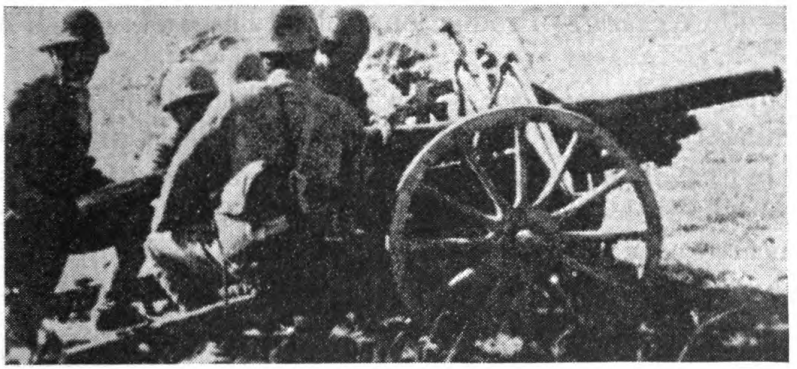


FIGURE 29.—75-mm mountain gun, model 94 (1934).

35. Pack artillery.—The gun used is a 75-mm mountain gun, model 94 (1934).

a. General.—During 1936 and the early part of 1937, mountain artillery units were issued the new mountain gun, model 1934 in lieu of the model 1908 gun. The former are manufactured at the Osaka Arsenal.

b. Tube and breechblock.—Total length of tube, 5½ feet; breech and rifled portion jointed by interrupted screw with three threaded and slotted segments. Rifling, 24 grooves, 7° uniform pitch. Horizontal sliding breechblock.

c. Carriage.—(1) *Recoil.*—Hydro-spring, fixed, necessitating digging of breech pit at higher elevations.

(2) *Traversing and elevating mechanism.*—Total traverse of 700 mils; maximum elevation between 40° and 45°; range scales graduated to 7,675 yards for shrapnel and common shell and to 8,750 yards for long pointed shell. Maximum range, using quadrant, is probably 11,000 yards.

(3) *Shield.*—Armor plate, about one-eighth of an inch.

(4) *Trail.*—Split. Vertical spades.

(5) *Sighting equipment.*—Excellent 6,400 mil panoramic sight. Adjustment for difference in level of wheels.

d. Ammunition.—Fixed. Shrapnel, ordinary shell, long pointed shell.

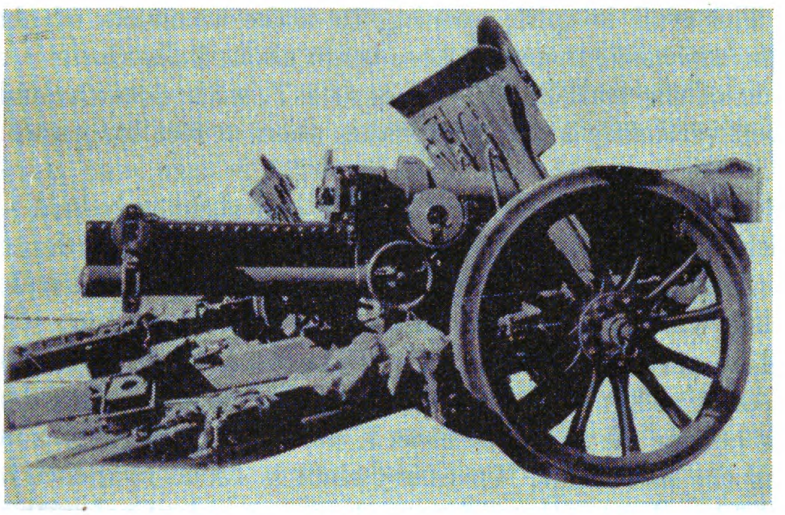
e. Transport.—For pack transport the gun and its equipment are divided into the following loads, the heaviest of which weighs 340 pounds, including the pack saddle: rifled portion of tube; breech, breechblock, and wheels; cradle, including recoil mechanism; axle assembly and elevating and traversing mechanism; trail legs and shield (latter in two parts); two equipment boxes for sights, fuze setters, and tools. Horses are used as pack animals.

36. Medium artillery.—*a. 105-mm gun, model 1932 (tractor-drawn).*—(1) *General.*—Production probably began at Osaka Arsenal in 1932.

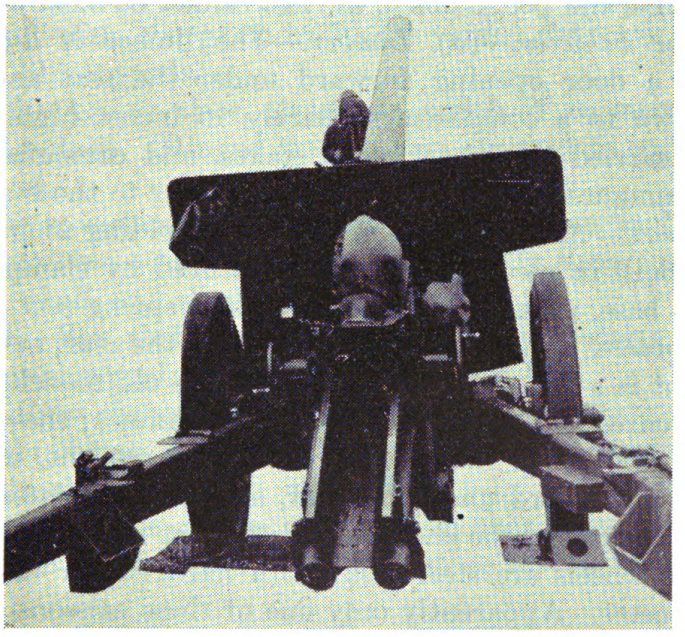
(2) *Tube and breechblock.*—The gun is about 45 calibers, with a long slender tube and a single heavy jacket. It is pivoted well to the rear but has no equilibrator. Rifling consists of 32 grooves about one-tenth of an inch deep, with lands of equal width. The breechblock is a truncated cone, swinging horizontally and closing with a single motion, by a three-step interrupted thread.

(3) *Carriage.*—(*a*) *Recoil system.*—Hydro-pneumatic. The gun recoils in a cradle which is trunnioned to a top carriage and is elevated by a single elevating segment cut with substantial teeth of herring-bone pattern on the outside of the arc. The recoil mechanism comprises two cylinders about 4 inches in diameter running the length of the cradle, with a third cylinder through which the gun pulls a piston; it is said to be hydro-pneumatic and presumably the two long cylinders are recuperator and the third is recoil.

(*b*) *Traversing and elevating mechanism.*—The top carriage traverses on a pintle, about 15° each way from center, with a pointer indicating the amount in mils on a scale on the undercarriage. The large radius of the elevating segment, with the elevating gear beneath it, brings the bottom of the top carriage down to within 14 or 15 inches of the road. The top carriage carries the sight, elevating mechanism, and range drum. The range drum is fixed to the right side and geared to the cradle trunnion. It is a disc about 8 inches in diameter and has four circular scales, the outer one in mils of elevation, the others in meters, with maximum ranges of 20,122.6 yards, 13,939.1 yards, and 11,701.5 yards, respectively, for pointed shell with zone I, and shell and shrapnel with zone II. Smoke shell and probably gas shell are also provided, the difference of trajectories being corrected from the range



① Side view.



② Rear view.

FIGURE 30.—105-mm gun, model 1932.

table. The index of the range scale is provided with a bubble by which it is zeroed at horizontal, and also permits the application of angle of site corrections.

(*c*) *Shield.*—Fixed to the undercarriage is a shield of ¼-inch steel.

(*d*) *Wheels and trails.*—The wheels are artillery type wooden wheels with solid rubber tires, about 4 feet in diameter, with a 5-inch

tread. The trail is split, opening to make an angle of about 30°. No spades are used; instead a base beam about 2 feet long is attached to the end of the trail like the cross of a T, with slots through which are driven vertically 3 flat steel stakes about 3 feet long and 5 inches wide.

(*e*) *Sighting equipment.*—The sight and sight standard are identical with those used on the 155-mm howitzer, and the sight mount, fixed to the left side, apparently differs only in the range scales of the mechanism which corrects for inclination of the axle.

(4) *Ammunition.*—Ammunition is semifixed with the propelling charge contained in a 2-foot brass case and held in place by a fiber cap; the charge as issued is zone I, and is converted to zone II by removing the increment. Ordinary shell is about 15 inches high and shrapnel 12 inches, without fuzes. Fuzes are identical with those of the 155-mm howitzer; namely, instantaneous, short-delay, and combination (time and percussion); the last cannot be fixed to shell.

(5) *Other vehicles.*—(*a*) *Limber.*—The limber is a small steel chest with a door opening forward under the seat and the back stepped down to a compartment barely 10 inches high, on top of which are carried the wheel mats, stakes, and camouflage net. It carries no ammunition. The wheels are similar to those of the guns.

(*b*) *Caisson.*—A new caisson is provided, holding 24 projectiles in 3 tiers of built-in receptacles; each is secured by clamps tightened against the base, pressing the nose against a spring seat at the back of the receptacle. The compartment opens to the rear, and the whole arrangement is a great improvement over the old model. Cartridge cases are secured in pairs in metal carrying frames; these are thrust lengthwise as drawers into the forward compartment, which has a door opening forward under the seat, and accommodates 12 frames in 3 tiers. On top of the chest behind the seat is a compartment for fuzes. The wheels are steel disks with hard rubber tires, about 4 feet in diameter. Apparently only one of these caissons per battery has been supplied as yet.

(6) *Transport.*—Tractor-drawn. The tractor is type 92 (1932) Ishikawajima, recently adopted in place of the American Holt tractors formerly used. The weight is probably a little more than that of the 5-ton Holt. The motor is said to be approximately 50 horsepower. The drive and truck arrangement is quite similar to the old Holt 5-ton tractor, with the driving sprocket, three top rollers, a large end idler, eight lower rollers in two groups of four, and a ninth pilot roller in front of the two groups; all-metal track about 9 inches wide. The control arrangement consists of a central gear-shift lever with

three forward and one reverse speeds, and two clutch control levers. There is no armor plate of any kind. Ordinary march speed is stated to be about 7 miles per hour, with a maximum speed around 10 miles. There are two transverse seats accommodating three men each.

b. 105-mm gun, model 1925 (Taisho 14) (tractor-drawn).—(1) *General.*—Manufactured at the Osaka Arsenal. Rate of fire: one round per minute for sustained fire; two rounds per minute for short periods; three rounds per minute maximum.

(2) *Tube and breechblock.*—Single motion, swinging type, interrupted thread, truncated conical breechblock.

(3) *Carriage.*—(*a*) *Recoil mechanism.*—Hydro-pneumatic, using glycerine. Recoil variable, from a maximum of 5 feet to a minimum which permits fire at maximum elevation without digging trail pit.

(*b*) *Traversing and elevating mechanism.*—Traverse 15° each way from center. Maximum elevation 35°. Range drum has four scales: elevation in degrees (5 to 35); long pointed shell, to 13,950 yards; ordinary shell with charge 1, to 10,900 yards; ordinary shell with charge 2, to 12,000 yards.

(*c*) *Shield.*—Armor plate, about one-eighth of an inch thick.

(*d*) *Trail.*—Split. Hinged trail spades are said to be inadequate in soft ground.

(*e*) *Sighting equipment.*—Panoramic sight of excellent quality.

(4) *Ammunition.*—(*a*) *Projectiles.*—There are three types: Shell, long pointed shell, and shrapnel.

(*b*) *Fuzes.*—For shell, instantaneous and short-delay fuzes are provided; for shrapnel, 36-second combination fuze.

(*c*) *Propelling charges.*—There are two charges: charge 1 for shell and shrapnel; charge 2 for shell. The propelling charge as issued is charge 1, and is converted into charge 2 by withdrawing a bag containing part of the charge. Propelling charge is contained in a brass case with fixed primer, accommodating the full length of the charge.

(5) *Transport.*—Tractor-drawn, by type 92 (1932) tractor. (For details see par. 36*a*.)

(6) *Other vehicles.*—(*a*) *Limber.*—The limber is a small steel chest fitted with a compartment for sight and spare parts, but no capacity for ammunition. Underneath the chest is an open compartment carrying two heavy rattan wheel mats to be placed under the gun wheels in firing position. The limber has two wooden artillery type wheels with hard rubber tires of about 3½-inch tread.

(*b*) *Caisson.*—The caisson is a steel chest divided into two parts. The front part opens forward and has eight ammunition drawers

each carrying three brass cartridge cases with propelling charges, and a similar drawer for fuze setters and spare parts; the rear compartment opens from the top and has space for 24 projectiles, simply piled in and protected from damage by individual rope nets, which are slung over the shoulder for carrying. The caisson has two artillery type wooden wheels with hard rubber tires; three caissons are coupled to a tractor.

(7) *Fire control and communication equipment.*—All fire control equipment is the same as that used by the light artillery with the exception of a high-powered monocular telescope set on a transit body, which is said to be used for long-range observation and location of distant targets by the same intersection methods employed by the light field artillery.

c. 105-mm light howitzer, model 91 (1931).—(1) *General.*—This weapon has, after lengthy tests, apparently been adopted for the 105-mm howitzer battalion of the divisional artillery regiment. It is a compact, efficient-looking weapon, and is probably not much heavier than the 75-mm gun.

(2) *Tube and breechblock.*—Tube is about 25 calibers in length, thick at the breech, with a pronounced taper toward the muzzle. Swinging interrupted thread breechblock.

(3) *Carriage.*—(*a*) *Recoil mechanism.*—Hydro-spring, using a mixture of glycerine and water.

(*b*) *Traversing and elevating mechanism.*—Elevating mechanism is of the spur gear type, yielding a reported maximum range of about 11,500 yards. Sleigh extends about 2 feet to the rear of the breech, which would seem to indicate that a trail pit will be necessary at higher elevations. Traverse reported to be 400 mils each side of center.

(*c*) *Shield.*—Armor plate, about one-eighth of an inch.

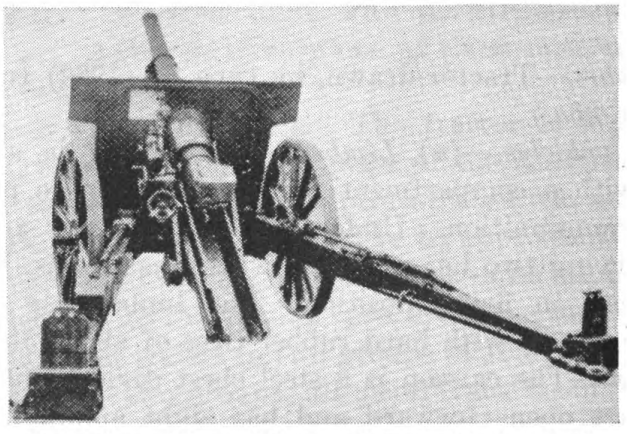


FIGURE 31.—105-mm light howitzer, model 91 (1931).

(*d*) *Trail.*—Split. Not equipped with spades, but anchored by driving flat metal stakes through slots near the ends of the trail legs.

(*e*) *Sighting equipment.*—Panoramic sight.

(4) *Ammunition.*—Probably includes shrapnel, ordinary shell, and long pointed shell.

(5) *Transport.*—Horse-drawn. Six horses.

d. 155-mm howitzer, model 1915.—(1) *General.*—This model is a modification of the 1905 gun to secure greater mobility. In redesigning, the trail was lengthened about 4½ feet, and the load was split into two loads, each with its own limber. Sustained rate of fire, 1 round per minute; maximum rate, 6 to 8 rounds per minute.

(2) *Tube and breechblock.*—The rifled portion of the tube is 15 calibers in length. The breechblock is of the vertical sliding type, with a coiled spring compensator.

(3) *Carriage.*—(*a*) *Recoil mechanism.*—Hydro-pneumatic, with recoil varying from a minimum of about 2½ feet to a maximum of 5½ feet.

(*b*) *Traversing and elevating mechanism.*—Axle traverse, with 3° each side of center. Elevation from minus 5° to plus 65°, through a double spur segment gear. Spring and cable equilibrators.

(*c*) *Shield.*—Armor plate about one-eighth of an inch.

(*d*) *Trail.*—Jointed, with forward section of the open box type, and the rear sections of the box girder type. The rear section has a platform for carrying the type when in traveling position.

(*e*) *Sighting equipment.*—All-round panoramic sight.

(4) *Ammunition.*—Separate loading, with a shallow brass case, having a fiber cover for the powder charge, which is variable from zone 1 through zone 5. Includes shrapnel, common shell, armor-piercing shell, fragmentation shell, smoke shell, and gas shell. Fuzes include combination (for shrapnel and smoke), instantaneous, short-delay, and (for the armor-piercing projectile) a delayed-action base fuze.

(5) *Other vehicles.*—(*a*) *Limbers.*—The tube and carriage limbers are identical, consisting of a steel chest with compartments for four complete rounds of ammunition, sights, tools, and accessories. Set on an axle supported by wooden wheels with steel rims. Similar limbers, but not carrying ammunition, are provided for the observation cart and the store cart.

(*b*) *Caissons.*—Steel chest type, carrying 12 complete rounds each. Caissons are coupled in pairs, the forward caisson acting as a limber.

(*c*) *Light observation cart.*—Two-wheeled steel wagon, with a large unpartitioned compartment for instruments and smaller com-

partments for the small stock of wine used. Coupled to a two-wheeled limber.

(*d*) *Store cart.*—Steel cart with open cargo body. Coupled to a two-wheeled limber.

(6) *Transport.*—For travel a pair of wheels is run under the rear section of the trail onto which the tube is then retracted and the rear section of the trail uncoupled from the front section. Each section is then linked to a two wheeled limber, making two 6-horse teams instead of the one 8-horse team formerly used with the old 1905 model.

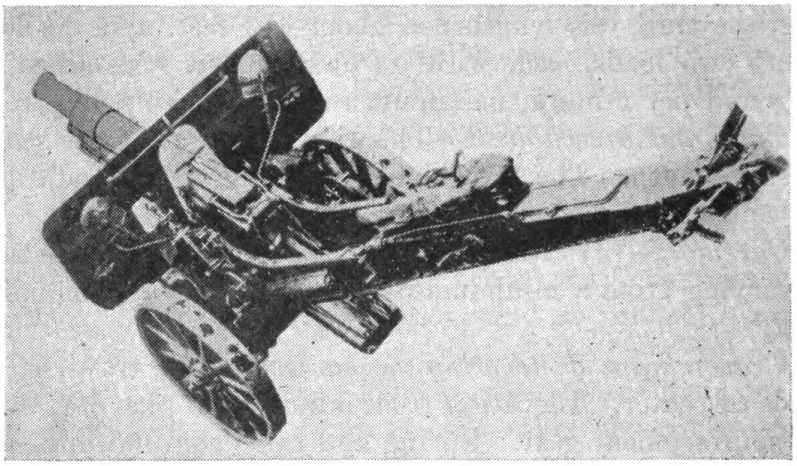


FIGURE 32.—155-mm howitzer, model 1915 (side rear view).

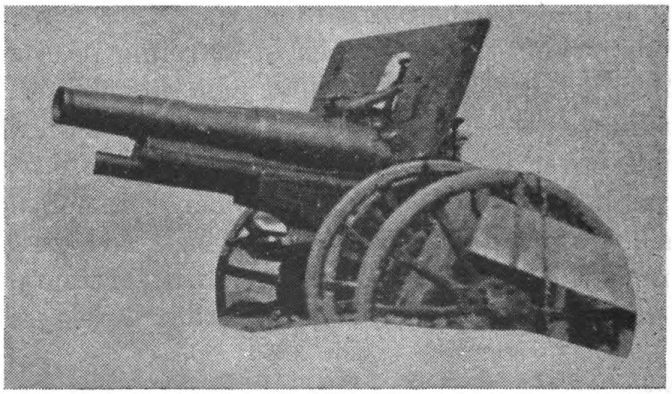


FIGURE 33.—155-mm howitzer, model 1915 (side front view).

37. Heavy field artillery.—The gun used is a 15-cm gun, model 1929.

a. General.—The 15-cm gun, model 1929, is supplied to mobile artillery units and designated as "heavy field artillery" in the Japanese

Army. Although manufacture was begun in 1929, issue was not completed until 1937. The arsenal of manufacture is unknown, but is probably either Kokura or Osaka.

b. Tube and breechblock.—Continuous, horizontal, swinging, interrupted-thread breechblock.

c. Carriage.—(1) *Recoil mechanism.*—Probably hydropneumatic.

(2) *Traversing and elevating mechanism.*—Circular rack elevating mechanism. Top carriage traverse, probably about 400 mils each side

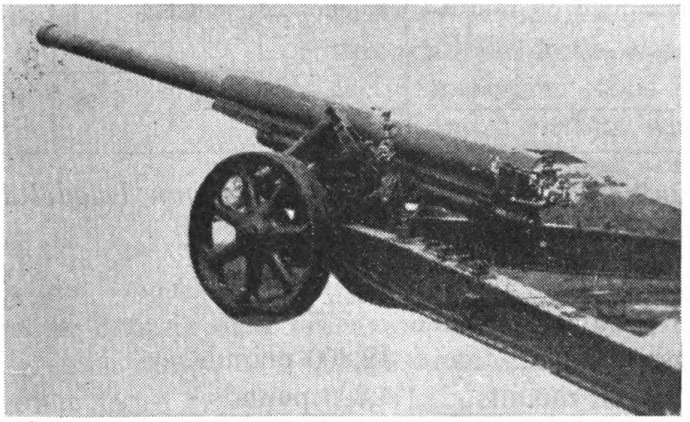


FIGURE 34.—15-cm gun, model 1929.

of center. Spring equilibrators. Maximum range probably about 27,340 yards.

d. Shield.—None.

e. Trail.—Split type.

f. Transport.—Tractor-drawn. The barrel retracts onto a separate 4-wheeled carriage.

SECTION III

RAILROAD ARTILLERY, ANTIAIRCRAFT ARTILLERY, AND MACHINE GUNS

38. Railroad artillery.—The following is an estimate of the railroad artillery in the hands of troops and in storage in Japan and Manchoukuo:

Type	Caliber	In hands of troops		In storage, Japan and Manchoukuo	Total
		Japan	Manchoukuo		
(?,	20-cm	8	4	4	16
Schneider railroad 9-inch Japanese Army, 1928 model.	24-cm	12	12	6	30
Naval guns mounted on railroad trucks.	30-cm	4	8	4	16
Naval guns mounted on railroad trucks.	35-cm	4	4	2	10
Totals		28	28	16	72

39. Antiaircraft artillery.—*a. 75-mm gun (model 1922) (mobile).*—Characteristics are as follows:

Weight:	
Gun and prime mover	12,800 pounds.
Gun and mount	4,800 pounds.
Elevation	+10° to +85°.
Traverse	360°.
Maximum horizontal range	11,000 yards.
Maximum vertical range	6,575 yards.
Rate of fire	15 to 20 rounds per minute claimed. Estimated, 12 rounds per minute.
Breechblock	Lateral sliding plug. Closes by hand but opens automatically upon firing, ejecting cartridge case.
Fuze setter	Continuous, automatic, by means of linkage between fuze setter and fuze range disk pointer. Fuze setter scale correction graduated in seconds and fifths. Correction of 15 seconds plus or minus permissible on corrector scale which must be set by hand.
Lighting equipment	Small shaded lights attached to sight and sighting equipment. Current supplied by 4-volt flashlight batteries good for 2 hours.

Emplacing---------- The outriggers are opened out, two on each side of the gun. Large jacks are placed under these and the gun lifted. Wheels are then removed and the gun lowered to the ground by means of the jacks. Coupling removed and placed in a slot 180° from original position, forming fifth outrigger. Iron-ringed wooden stakes are driven into the ground through holes in the cleats at end of each outrigger, thus preventing jump and twisting when gun is fired. Ten minutes are ample for emplacing. Removal requires about 6 minutes.

b. 75-mm gun (model 1928) (mobile).—This is a relatively new weapon and no definite data are available. It is reported to have a slightly greater range, to be more mobile, and capable of being fired somewhat more rapidly than the gun described in *a* above (model 1922).

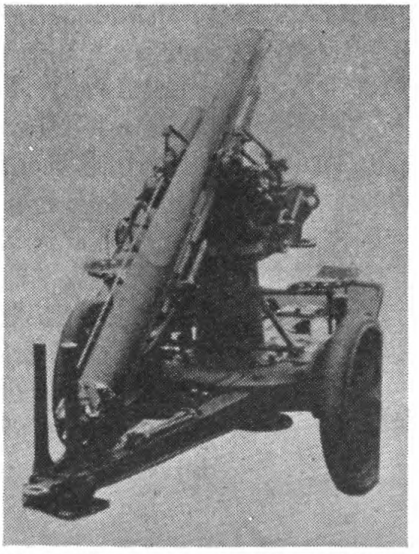


FIGURE 35.—75-mm gun model 88 (1928) (mobile).

c. 105-mm antiaircraft gun (mobile).—Characteristics are as follows:

Weight:
Gun and prime mover---------- 13 tons.
Gun and mount----- 7 tons.

Elevation	0° to 85°.
Traverse	360°.
Maximum horizontal range	19,400 yards.
Maximum vertical range	12,000 yards.
Rate of fire	12 rounds per minute claimed; 10 rounds more nearly correct.
Breechblock	Lateral sliding plug. Closed by hand, opens automatically after firing, ejecting empty cartridge case. Reported as not working satisfactorily and subject to jams.
Fuze setter	Continuous, automatic by means of linkage between fuze setter and fuze range disc pointer. Fuze setter scale and correction graduated in seconds and fifths. Correction of 15 seconds plus or minus permissible on corrector scale which must be set by hand.
Lighting equipment	Small shaded lights attached to sight and sighting equipment. Current supplied by 4-volt flashlight batteries good for 2 hours.
Emplacing	Detachable from pedestal, six legs. Each leg has two sections. One end of the inner section is inserted in the base of the pedestal and the other end is fitted with a recess to receive the outer section. The outer section has two jacks with base plates through which stakes are driven. About 1 hour required for emplacing. Ground must be levelled as jacks are short. To withdraw the gun from position 30 to 45 minutes are required. Difficult to move by hand.

d. Antiaircraft fire control equipment.—(1) *Position finding.*—The Japanese system of antiaircraft position finding is an application of the linear speed method. Only altitude, real speed, and

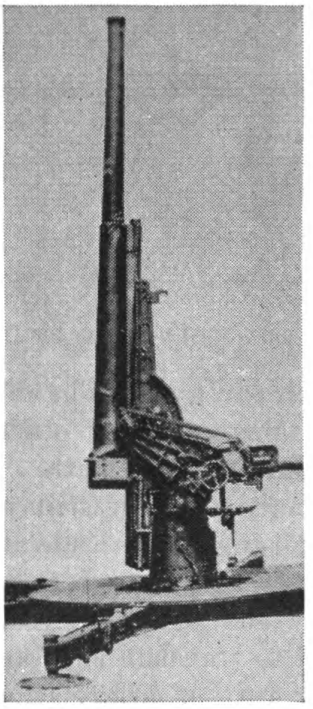


FIGURE 36.—105-mm antiaircraft gun.

angle of the path of the target are supplied to the guns for firing data. The range section instruments include a self-contained base height finder, *B′* and *B″* altimeters, a speed and angle-of-path instrument, and an altimeter deviation instrument. These instruments are all of conventional type, being copies or adaptations of existing models.

(2) *Three-meter height finder.*—This is a stereoscopic instrument of foreign manufacture. A stereoscopic trainer of conventional type is used for selecting and training observers.

(3) *Data computor, model 1930.*—This computor has two sights which are kept trained on the target. The elevation and azimuth computed are transmitted by electric cables through two distribu-

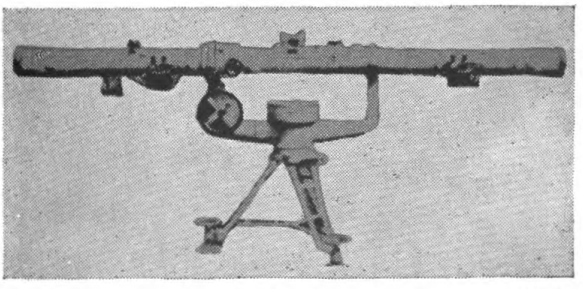


FIGURE 37.—Three-meter height finder (model 1930?).

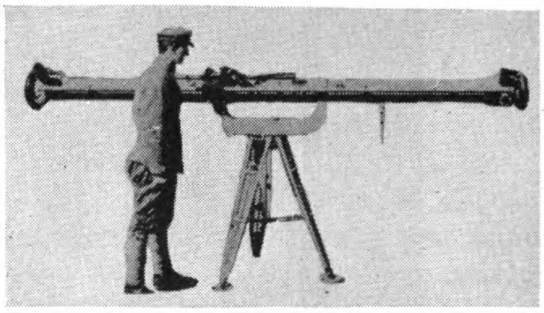


FIGURE 38.—Unidentified height finder (model 1930?).

tion boxes to receivers on the guns. The data which are sent in to the instrument are the same as would otherwise go to each gun—namely, altitude, speed, and angle of path. The computor has nothing to do with fuze range, which is still worked out on the computing sight of the gun, using the altitude announced by the battery commander. Such an instrument is not a director in the sense made familiar by the Vickers and other directors, and accordingly the term "computor" is used to translate the Japanese designation "shojun santeigu." Lacking further information on this instrument it is impossible to guess its details, but it is obviously based on the linear speed principle, apparently has no speedometer or rate-measuring element, and the inference is strong that it is little more than a collection within a box of those elements of the gun computing sight which have to do with elevation and azimuth. Use of this computor would save eight cannoneers in a 4-gun battery, and should give a closer sheaf of fire by substituting a single computing crew remote from the gun for four crews setting sights on the

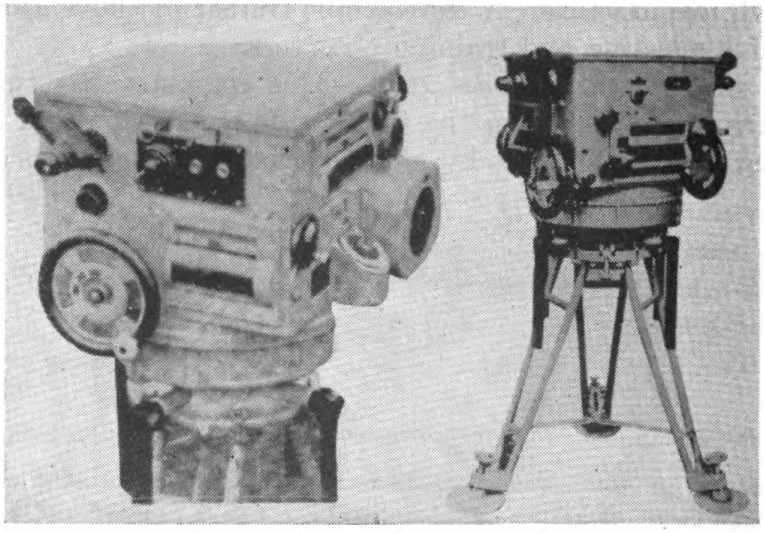


FIGURE 39.—Data computor, model 1930.

jolting gun carriage itself; but it is a very limited application of the idea of mechanical computation and electrical transmission, and the accuracy of the basic data supplied by the other instruments is still open to question.

(4) *Fire control equipment installed on gun.*—The general arrangement of the computing apparatus on the 1928 model 75-mm gun is unchanged except that at the interior left front of the new carriage, beside the vertical deflection cylinder, and set at an angle to it, there has been added a small circular disk crossed by a vertical scale. It is called simply a "correction disk", and from the brief mention of it in the 1933 Japanese Antiaircraft Manual "C" it seems to have two functions: first, to indicate a correction to be applied to the angle-of-path pointer on the movable azimuth circle; second, to indicate a supplementary vertical correction which is set back into the apparatus by setting a pointer to the curves on the disk. Both of these corrections appear to be connected with the future angular height, and probably the disk is shafted in some way to the vertical deflection cylinder. This refinement calls for an extra cannoneer, making 12 in all. Graduations on the movable azimuth circle have been made easier to read, and have been freed from interference by a cross-shaft as on the old gun. The gun has installed a junction box to receive the data transmission cable from the computor via the distribution box. This is the oblong box at the top front of the pedestal. The end of the cable is inserted into a receptacle at the bottom; the cover swings back and reveals plug receptacles for the short cables to the two data receivers. The receivers suggest an electric meter rather than a dial graduated in degrees, and the gun is laid by turning the handwheel to bring the pointer of the receiver back to zero. In turning on the power a switch is set first to 1/5 and then to 1; similarly at the distribution box a switch is set first to 1/10 then to 1. As already mentioned, these receivers concern only elevation and azimuth. Fuze range is still computed on the sight and set continuously on the fuze setter by a chain of shafting. The fuze setter is apparently unchanged.

(5) *Sound locater, 1930 model.*—In the center is a circular disk fixed to the head of the tripod with the rest of the apparatus revolving around in azimuth. At each side is a housing containing a long roller rotated by the elevating handwheel and intergeared with the roller on the opposite side so that both have the same motion. Thus they impart a parallel motion, perpendicular to its edge, to a ruler which lies flat on the circular disk and has a lug at each end engaging a spiral groove in the roller. At the center of one edge of the ruler is a small ink reservoir with a pen which traces a broad line on the

surface of the disk. Thus, if the horns are elevated without traversing, a radial line is traced on the disk; while, if they be traversed without elevating, there results a circle with its center at the center of the disk and its radius corresponding to the vertical setting. Such radial lines and circles are engraved on the disk and are assumed to

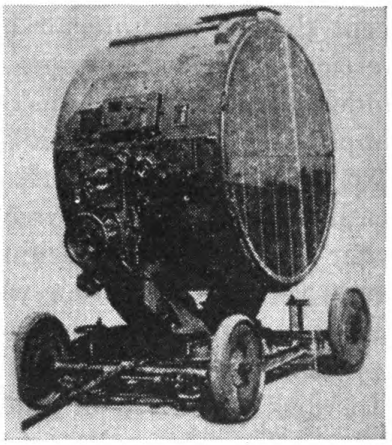


FIGURE 40.—150-cm searchlight, model 1933.

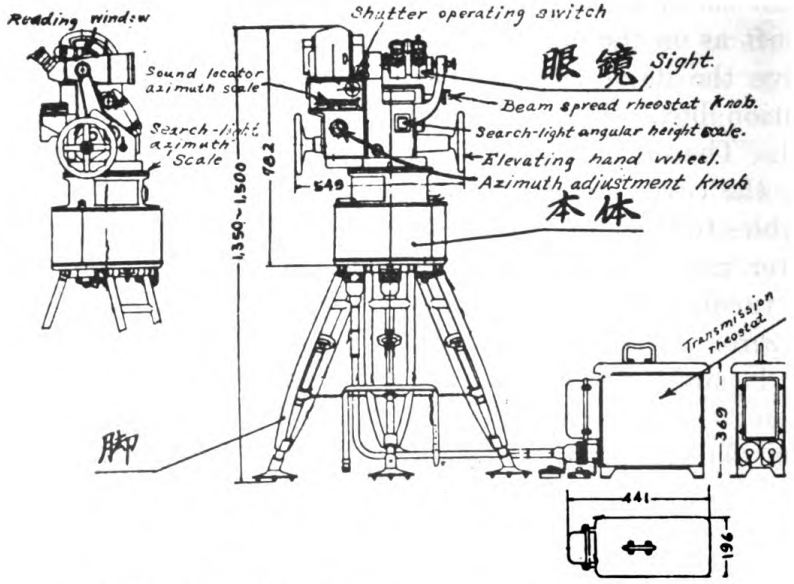


FIGURE 41.—150-cm searchlight comparator, model 1933.

be graduations of azimuth and angular height or some function thereof.

(6) *Searchlights.*—There are several models in use: the Sperry, copies of the Sperry, and later modifications. The 150-cm, model 1933 is provided with a telescope which evidently has a large objective for night use. It is not apparent whether it functions also as a

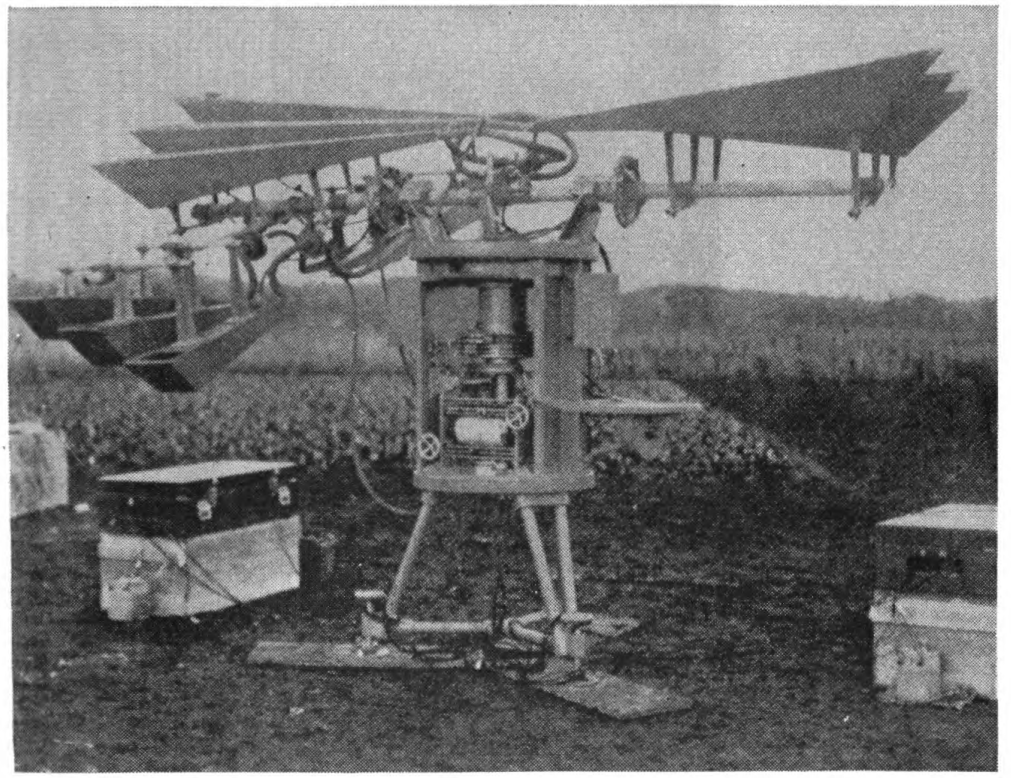


FIGURE 42.—Sound locator.

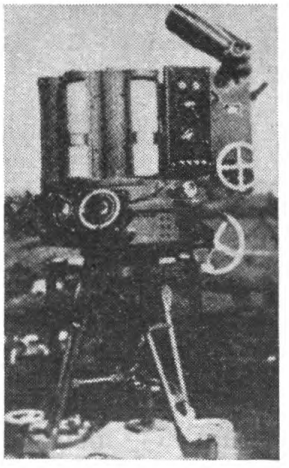


FIGURE 43.—Central command instrument.

comparator, although the number of cables led into it would so indicate.

(7) *Miscellaneous.*—Figures 42 to 45 show various other types of antiaircraft equipment in use in the Japanese Army in 1936.

FIGURE 44.—10-cm antiaircraft binocular, model 1929.

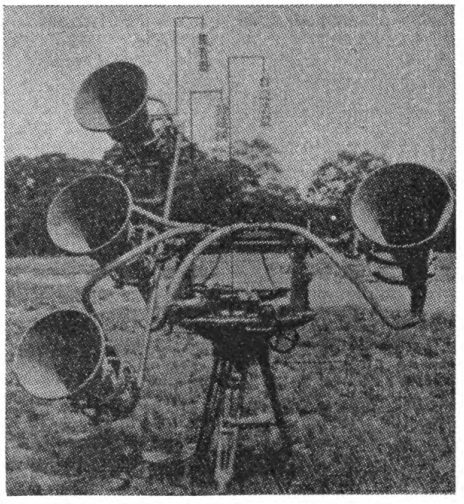


FIGURE 45.—Model 1930 small sound locator.

e. Machine guns.—(1) *13-mm Vickers type machine gun.*—The 1933 Japanese Antiaircraft Manual "C" mentions a two-gun antiaircraft mount with two 13-mm machine guns. This gun is believed to be a modification of the Vickers machine gun.

(2) *Antiaircraft adapter 7.7-mm heavy machine gun.*—See paragraph 44*a*(2).

(3) *Antiaircraft sights.*—See paragraph 44*a*(3).

(4) *Caliber .50 machine gun.*—It is reported that the Japanese Navy (and probably Army) is replacing the 6.5-mm and 7.7-mm ma-

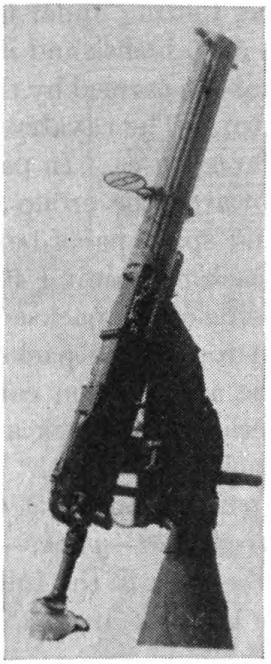


FIGURE 46.—13-mm Vickers type machine gun.

chine guns in their aircraft with a caliber .50 Czechoslovakian "Bren" machine gun purchased from the Germans. This will be used as an aircraft weapon and for antiaircraft defense.

f. Transportation.—Both the 75-mm and the 105-mm guns are drawn by cargo body trucks known as "4-ton trucks" of Japanese make.

SECTION IV

CAVALRY

40. Saber.—The saber is a slightly curved weapon about 36 inches over all. It is carried by the cavalry and officers and most noncommissioned officers of other arms.

41. Lance.—The lance is used only for ceremonies and is carried only by the guards cavalry regiment.

42. Carbine and bayonet.—The cavalry carbine is model 1911 and differs from the infantry rifle only in having a shorter barrel. The weight is about 8 pounds. A double-edged bayonet is perma-

nently attached to the rifle, folding under the barrel when not in use. Its total length over all is 51½ inches and it is sighted to 2,000 meters (2,187.2 yards). Side arms are carried by the cavalry also.

43. Light machine gun.—The cavalry uses the same model light machine gun that the infantry uses. In pack, the gun is slung horizontally with the butt towards the croup well up on the near side of the pack. The tool and spare parts box is slung below the gun. Two ammunition boxes, each containing 400 rounds, are loaded one above the other on the off-side of the packsaddle. The encased, folded tripod is either packed on top of the packsaddle or suspended from the shoulder of one of the ammunition carriers. About 45 seconds are required to go into action from pack and about the same length of time is necessary to repack.

44. Heavy machine gun, model 92 (1932) (also used by infantry).—*a. Methods of transport—pack.*—(1) The gun and certain accessories are carried on the pack in the following manner: the gun is slung horizontally, muzzle to the rear on the near side; two boxes of

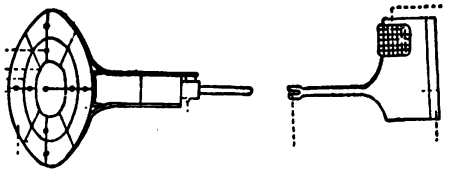


FIGURE 47.—Heavy machine gun antiaircraft sight.

ammunition, each containing 15 clips of 30 rounds each (450 rounds), are loaded on each side of the packsaddle of the ammunition pack horse; spare parts and the tool box are carried below the tripod on the off side of the gun pack.

(2) An antiaircraft adapter, about 24 inches long and weighing less than 10 pounds is inserted between the gun and bipod, when the gun is to be used against hostile aircraft. At other times one of the ammunition carriers slings it from his shoulder in a case.

(3) Antiaircraft sights are carried in a box by the squad and attached to the gun.

b. Other transport methods.—(1) The periscopic sight is carried by the squad leader. It can be attached to the gun for direct aiming, used attached to the panoramic sight, or used as a periscopic field glass when detached. It is a 6-power glass and has a 100-mil horizontal scale and a 70-mil vertical scale, both graduated into 5-mil units.

(2) The panoramic sight is carried by one of the ammunition carriers. It is equipped with range, traversing, and site scales, and leveling bubbles.

(3) The flash hider is carried in the spare parts box.

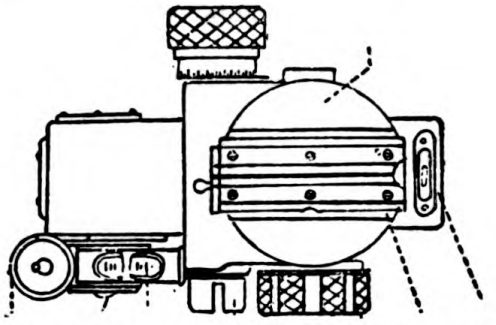


FIGURE 48.—Heavy machine gun, panoramic sight, model 94 (1934).

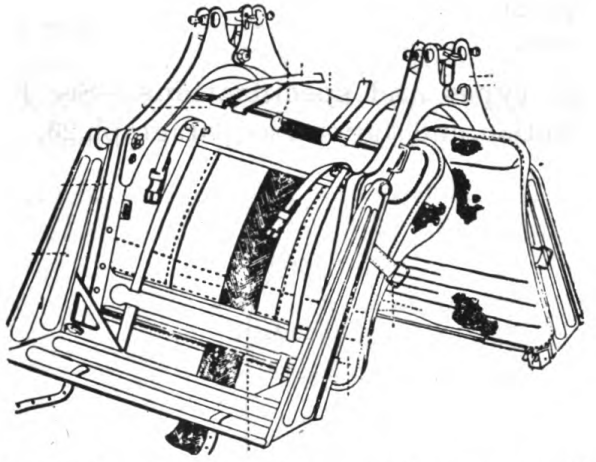


FIGURE 49.—Cavalry pack saddle (heavy machine-gun ammunition pack).

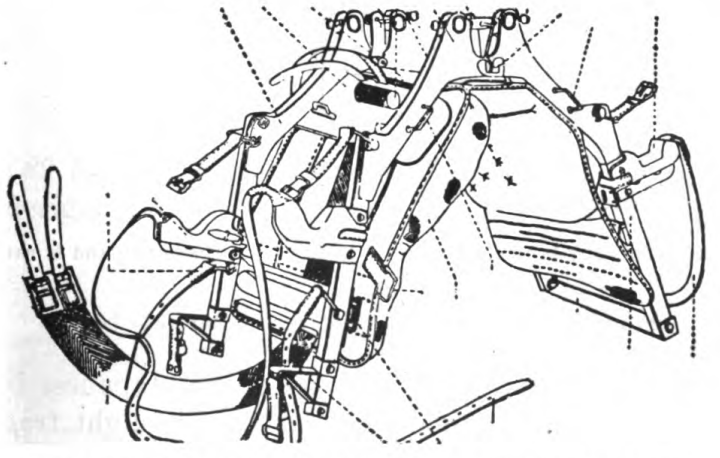


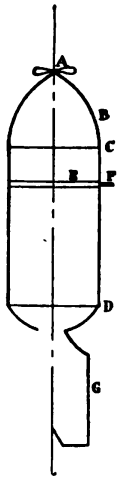
FIGURE 50.—Cavalry pack saddle (heavy machine-gun pack).

45. Cavalry packsaddle.—The packsaddle used by the Japanese cavalry is similar in basic design to the Phillips packsaddle used in our service, and consists of a steel frame to which the necessary pads and hangers are attached. Hangers are adapted to the load intended to be packed.

SECTION V

AIR CORPS

46. Aircraft types and specifications.—See FM 30–38. For numbers, distribution, and stations, see paragraph 23.



A Nose fuze and arming vane.
B Ogive.
C–D Cylindrical section.
E Strap, steel.
F Hook-on lug. This lug projects at least 3 inches from the bomb, and is rather wide.
G Four-way vanes.

FIGURE 51.—15-kilogram bomb (typical Japanese bomb).

47. Bombs.—During the China campaign, Japanese bombs have varied in weight from 25 to 1,000 pounds. The light fragmentation type bombs have been used against personnel. High explosive bombs weighing less than 500 pounds have been effective against matériel. Picric acid has been used as the principal explosive and the percentage of duds has been estimated from 10 to 40 percent. Small white phosphorous incendiary bombs have been used on many occasions.

48. Bomb racks.—In 1938 the Japanese Air Corps was reported to have had an ingenious arrangement of bomb racks consisting of three interchangeable longitudinal rails which permit easy shifting of bomb load.

49. Bomb sights.—The bomb sights known to be in use are—

a. A simple drift sight of no particular interest.

b. A course-setting bomb sight as used in the British Air Force but without the fourth vector.

c. A course-setting bomb sight with the fourth vector.

d. An automatic sight believed to be a copy of the German Goertz sight and made in Japan.

50. Aircraft machine guns.—*a. 20-mm Oerlikon automatic aircraft cannon (probably type FF).*—This type gun and antiaircraft cannon are produced in large quantities in Japan under a license sold by the Oerlikon Company (Swiss). Characteristics:

Muzzle velocity	100 yards per second.
Rate of fire	450 rounds per minute.
Barrel length	40 millimeters.
Drum feed	1 drum contains 60 rounds.
Ammunition	*FF explosive type.*—Weight, 0.423 pounds; length, 5.59 millimeters; charge in grains, 20.060; burster, 9 grains trotyl.
	Explosive type with tracer (visible for 1,640 yards).—Four grains trotyl.
	Explosive type with incendiary.—Four grains trotyl and 3 grains of white phosphorus.

b. Type 89 7.7-mm machine gun.—This is a Vickers type gun of Japanese design.

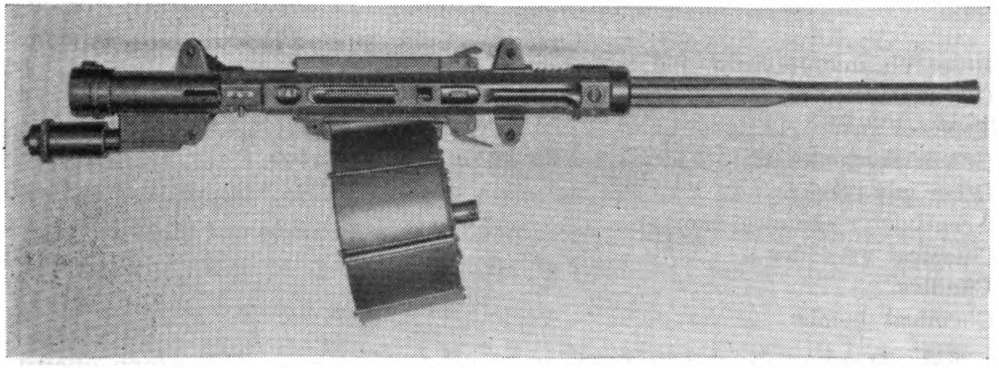


FIGURE 52.—20-mm wing gun Oerlikon, type *FF* with electric control.

c. Caliber .50 Bren machine gun.—See paragraph 39*e*(4).

d. Gun sights.—The Aldis or the ring and bead for fixed guns, and the Norman vane type sight for free guns are in use.

e. Gun mountings.—Scarf ring type mountings with both single and twin installation are used for observer's guns.

51. Aerial cameras.—Japanese copies of Fairchild 30 K-8's and German Goertz cameras are used in the Air Corps.

52. Radio.—See paragraph 72.

53. Parachutes.—Both seat and detachable breast types of Japanese manufacture are replacing the imported Irving seat-type parachutes.

54. Night-flying equipment.—*a. On airplanes.*—All regiments and stations have some airplanes equipped with running light and wing tip flares. Light and bombing planes have landing lights.

b. On ground.—All airdromes are equipped with two searchlights of French or Sperry type and a revolving beacon of Japanese design and manufacture. No border lights or other regular night lighting had been seen up to October 1938.

55. Marking of airplanes.—Sun is red at both ends of the upper surface of upper wing and lower surface of lower wing of biplanes or on both the upper and lower surfaces of the wing of monoplanes. Also in, or near, the center of each side of the fuselage or diametrically opposite in case of a balloon. The sun is followed by the ordinal number. The name of the airplane is written sideways on each side of the rudder and above the center of airplanes and on the lower surface of the envelope of a balloon. The name of the engine and its ordinal number are stamped on the crankcase. The name and ordinal number of a propellor are stamped on the drum surface of the hub.

SECTION VI

CHEMICAL WARFARE SERVICE

56. Research, manufacture, and training.—A modern chemical warfare research establishment exists in the vicinity of Tokyo and

is staffed by 80 officers, 50 enlisted men, and 60 civilians. There are also a chemical manufacturing plant and a chemical warfare school for the training of selected officers of all arms except military police. Graduates of this school give chemical warfare training throughout the army. It is definitely known that mustard gas, lewisite, phosgene, chloracetophenone and certain of the smoke materials are being manufactured at army laboratories and arsenals. Commercial plants are known to have manufactured phosgene and to be engaged in making raw materials for the production of mustard and tear gas.

57. Gas and smoke shells.—Artillery of all types employs smoke and gas-filled shells which are marked as follows: smoke, white band; incendiary, yellow band; star, yellow band; tracer, white band; gas, no marking prescribed, probably varies with type of gas. Aircraft employ both smoke and gas bombs and smoke screen and curtain apparatus. No use of smoke or gas by tanks has been undertaken as yet, but it is strongly believed that such use is now under investigation. Grenade tubes have been used for smoke, also for illuminating and signal shells.

58. Types of gas.—In this connection it is well to note that Japan has procured many German military secrets and the assistance of German technical experts so that surprises in this line might be expected. Sectionalized 75-mm shells displayed at army maneuvers were labeled yperite (mustard), adamsite, chlorpierin, and phosgene. Whether these four agents constitute all the agents of the Japanese Army was not stated, but it is believed that only these four were displayed to show one agent in each of the four principal classes of gas—namely, vesicant, sternutory, lachrymatory, and lung irritant.

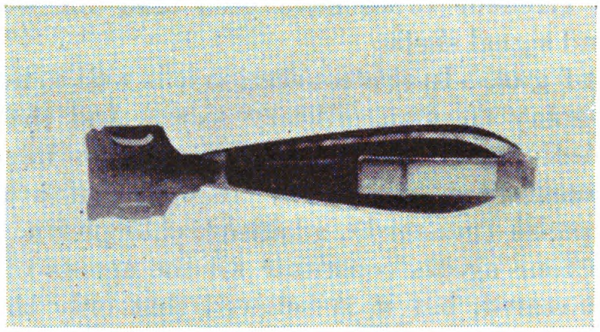
59. Gas mask, model 92.—In appearance it greatly resembles our early model mask. It weighs about 2 pounds and is carried in a canvas carrier under the arm when not in use and on the chest when in use. The facepiece is made of thin vulcanized stockinette and rubber with deflector. The harness is spider-type with adjustable but not elastic straps. The eye pieces are somewhat small and detachable. The exhalator is inclosed in a small perforated metal box. The tube is similar to ours except that it screws on to the facepiece and canister. The canister is of corrugated metal and slightly smaller than ours. The bottom is perforated over a circular area of about 2 inches. A rubber shoe is fastened over the bottom to protect the contents of the canister when not in use. The filler is probably soda-lime and it is not believed to contain a very serviceable filter.

60. Other gas masks.—There are also in existence in the Japanese Army several other types of gas masks, notably the German, with the canister attached to the facepiece.

61. 9-centimeter chemical morear.—*a. Characteristics.*

Caliber	9.05 centimeters.
Length of barrel	1.38 yards.
Length of recoil	0.14 yards to 0.22 yards.
Elevation	800 to 1,512 mils.
Weight of barrel	75.2 pounds.
Weight of mount	106 pounds.
Weight of base plate	90.2 pounds.
Weight of sight	2.97 pounds.
Weight of complete mortar	349.8 pounds.
Weight of projectile	11 to 57 pounds.
Diameter	8.98 centimeters.
Fuze	M93 combination.

b. Ammunition.—The shell in figure 53 is the type used in the 9-centimeter mortar.



Fillings	*Marking*
Lung irritant	Yellow band.
Sneezing agent	Red band.

FIGURE 53.—9-centimeter mortar shell.

62. Chemical grenades.—This consists of a thin-walled cylinder with rounded ends about 2½ inches in diameter and 7 inches long with a 6-inch wooden handle. A time fuze and narrow burster tube are placed in the nose. The type of filling is unknown.

63. Candles.—Some of the chemical candles in use are described as follows:

a. Type 89, large.—CN and smoke mixture. Weight, 0.53 pounds.

b. Type 89, small.—CN in granular form or in a plastic bottle. Weight, 0.36 pounds.

c. Type.—Diphenylcyanarsine (CDA). Weight, 1.7 pounds.

64. Chemical bombs.—*a. 50-kilogram chemical bomb.*—Figure 54 is an example of the type of 50-kilogram (110-pound) bomb in use.

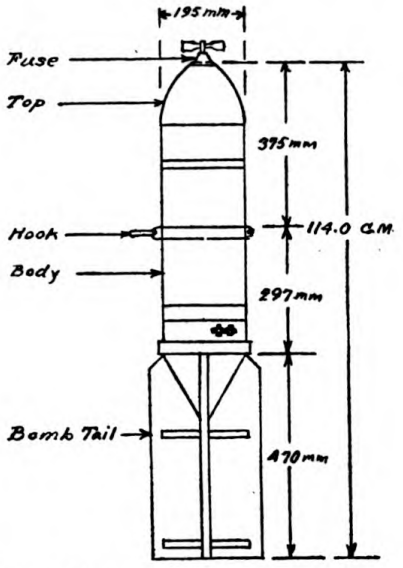


FIGURE 54.—50-kilogram chemical bomb.

b. Incendiary bombs.—These are reported to weigh 33 and 132 pounds, respectively, and the filling is principally thermite or white phosphorus with a black powder bursting charge.

SECTION VII

ENGINEER ARMS AND EQUIPMENT

65. Arms.—Engineers carry the same arms as infantry.

66. Engineer equipment.—There are several types of ponton and raft equipment in use in the army. Some are shown below:

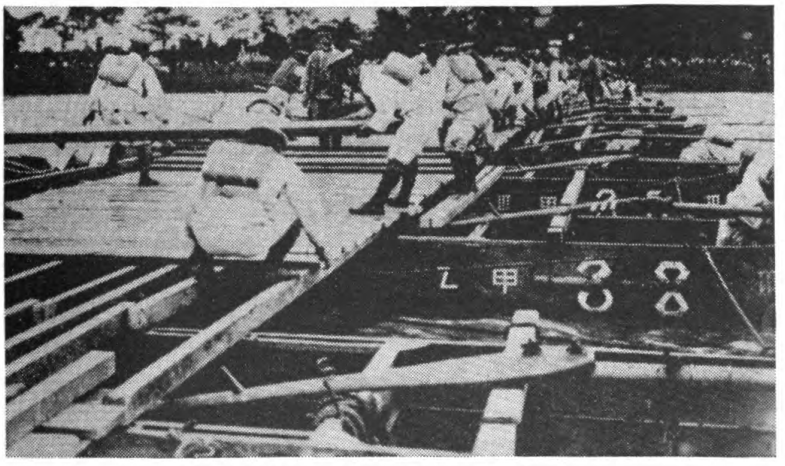


FIGURE 55.—Ponton bridge.

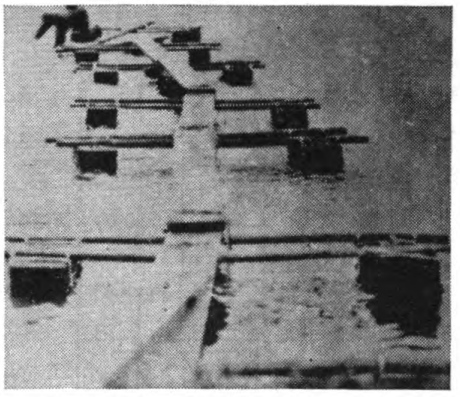


FIGURE 56.—Engineer light bridge.

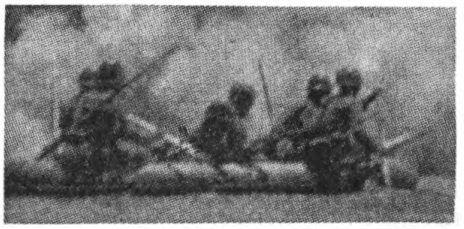


FIGURE 57.—Raft.

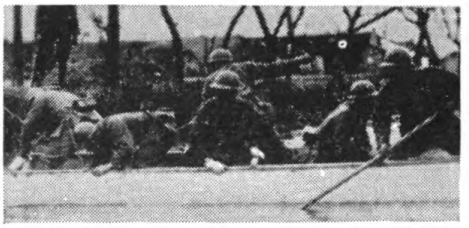


FIGURE 58.—Engineer light boat.

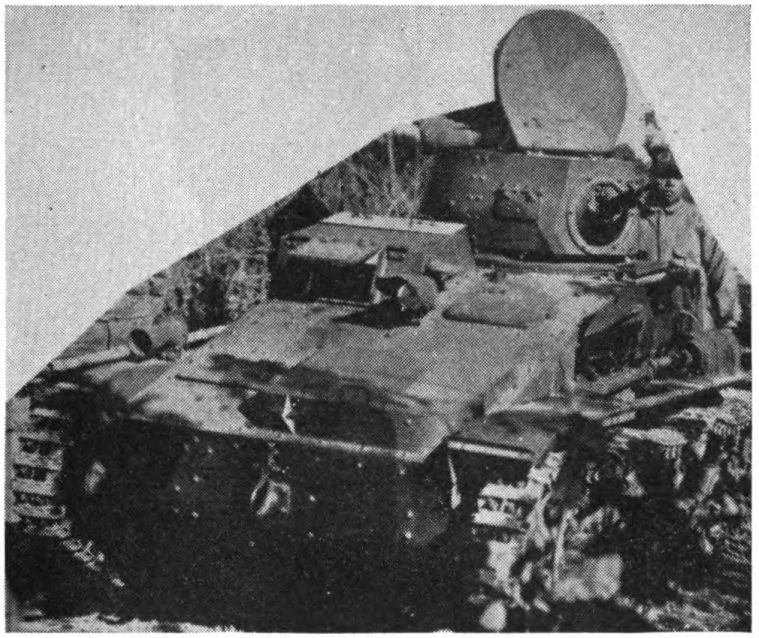
67. Japanese landing boats.—There are several types of landing boats furnished by the navy which vary in size from 50 feet by 13 feet to 30 feet by 10 feet. The shapes vary from the conventional type lifeboat to the flat-bottomed steel scow. They are propelled by low-powered gasoline or Diesel motors with speeds from 11 to 19 miles per hour. The estimated troop capacity is from 110 to 120 men fully equipped. Some boats are armed and partially armored.

SECTION VIII

TANKS, TRACTORS, TRUCKS, MOTORCARS, MOTORCYCLES, AND BICYCYLES

68. Tanks.—There are 15 or more known models of tanks in the Japanese Army. It will be noted that the basic types are few and a slight modification is given a new designation. For convenience, the tanks are classified according to weight as tankettes, light, medium, and heavy tanks.

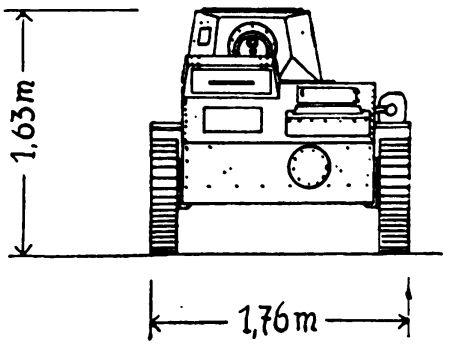
a. Ishikawajima tankette M2592 (1932).



1. Crew: 2 (1 driver and 1 gunner).
2. Armament: 1 machine gun in turret.
3. Ammunition:
4. Armor, thickness: 0.31 to 0.55 inch.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications: Flag.
9. Dimensions:
   Length: 10 feet 2 inches.
   Width: 5 feet 9 inches.
   Height: 5 feet 4 inches.
10. Weight: 3 tons.
11. Motor:
    Type: 4-cylinder.
    Cooling system: Air-cooled.
    Horsepower: 45 horsepower.
    Horsepower per ton: 15 horsepower.
12. Steering, brake or controlled differential:
    Front sprocket.
13. Speed:
    Cross-country:
    Road:
    Maximum: 30 miles per hour.
14. Cruising radius, at ------ speed ------ miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 4 bogie wheels. 2 bogies, Carden-Lloyd system.
19. Performance:
    Ground clearance: 1 foot 1 inch.
    Climbs ____° slopes.
    Negotiates vertical obstacle _____ high.
    Crosses trenches _____ wide.
    Fords streams _____ deep.
20. Remarks: Known as light armored vehicle. Used with armored trailer for supply and intercommunication. Based on Carden-Lloyd.

FIGURE 59.—Ishikawajima tankette M2592 (1932).

Top



Front Rear

FIGURE 59.—Ishikawajima tankette M2592 (1932)—Continued.

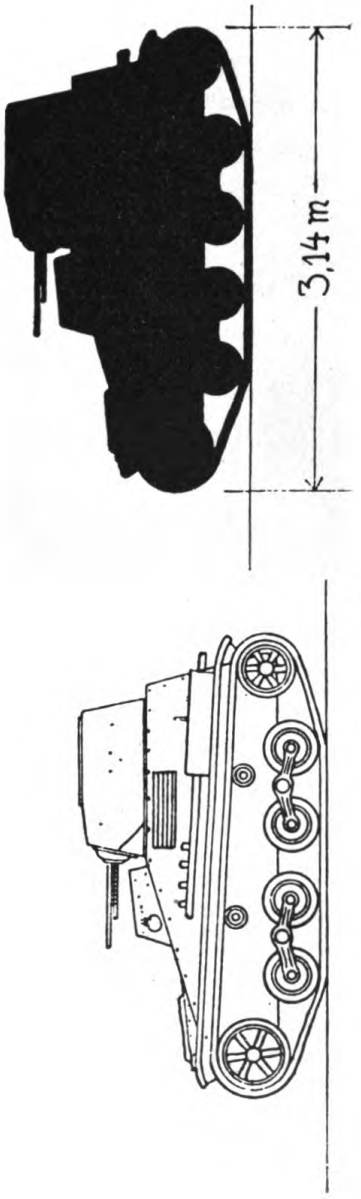


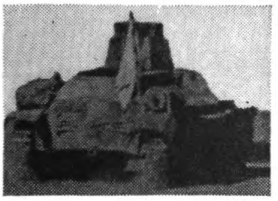
FIGURE 59.—Ishikawajima tankette M2592 (1932)—Continued.

b. Tankette M2595 (1935).

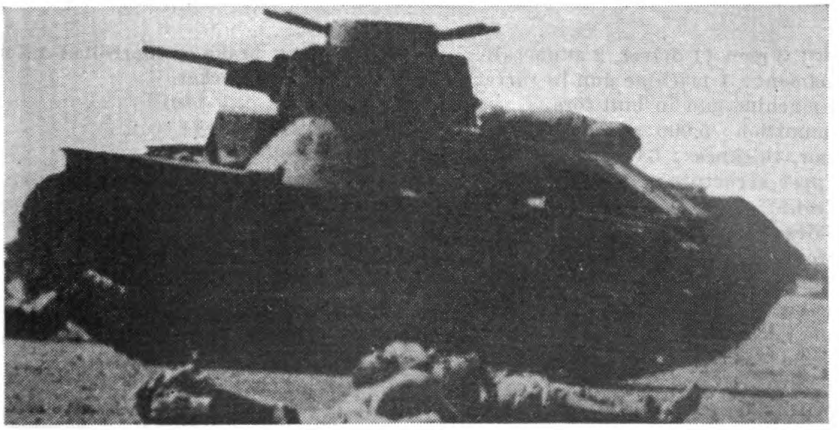
1. Crew: 2 men (1 driver and 1 gunner).
2. Armament: 1 37-mm gun in turret and 2 machine guns in hull fore.
3. Ammunition:
4. Armor thickness: 47 inches.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications: Flag.
9. Dimensions:
   Length: 13 feet.
   Width: 4 feet 9 inches.
   Height: 6 feet 5 inches.
10. Weight: 4 tons.
11. Motor:
    Type:
    Cooling system: Air-cooled.
    Horsepower: 70 horsepower.
    Horsepower per ton: 17.5 horsepower.
12. Steering, brake or controlled differential:
13. Speed:
    Cross-country:
    Road:
    Maximum: 22 miles per hour.
14. Cruising radius, at ------ speed ------ miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 4 bogie wheels, 2 bogies.
19. Performance:
    Ground clearance:
    Climbs ----° slopes.
    Negotiates vertical obstacle -------- high.
    Crosses trenches -------- wide
    Fords streams -------- deep.
20. Remarks:

FIGURE 60.—Tankette M2595 (1935).

Top



Front Rear



Side

FIGURE 60.—Tankette M2595 (1935)—Continued.

c. Ishikawajima tankette M2598 (1938).

1. Crew: 3 men (1 driver, 2 gunners).
2. Armament: 1 machine gun in turret and 1 machine gun in hull fore.
3. Ammunition: 5,000 rounds small arms.
4. Armor, thickness: 0.55 inch.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications:
9. Dimensions:
   Length: 10 feet 3 inches.
   Width: 5 feet 9 inches.
   Height: 5 feet 4 inches.
10. Weight: 3 tons.
11. Motor:
    Type:
    Cooling system: Water- and air-cooled.
    Horsepower: 55 horsepower.
    Horsepower per ton: 18.3 horsepower.
12. Steering, brake or controlled differential:
    Front sprocket.
13. Speed:
    Cross-country:
    Road:
    Maximum: 33 miles per hour.
14. Cruising radius, at _____ speed 61 miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 4 bogie wheels, 2 bogies.
19. Performance:
    Ground clearance:
    Climbs 34° slopes.
    Negotiates vertical obstacle 2 feet 1 inch high.
    Crosses trenches 4 feet 9 inches wide.
    Fords streams 2 feet 9 inches deep.
20. Remarks: In use in Manchuria.

FIGURE 61.—Ishikawajima tankette M2598 (1938).

Top

Front Rear

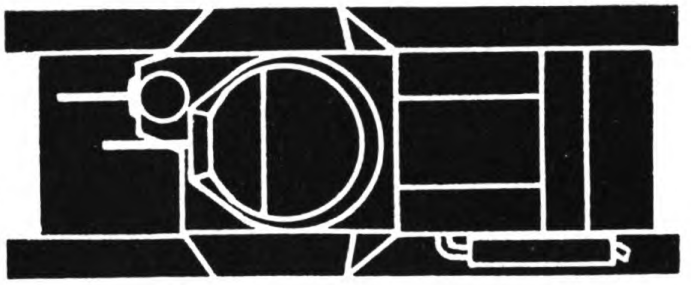
Side

FIGURE 61.—Ishikawajima tankette M2598 (1938)—Continued.

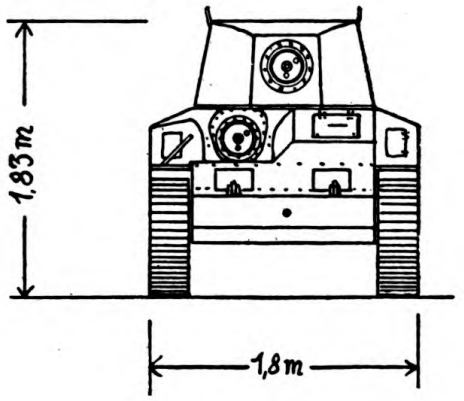
e. Light tank M2593 (1933).

1. Crew: 3 men (1 driver and 2 gunners).
2. Armament: 1 machine gun in turret, 1 machine gun in hull fore.
3. Ammunition:
4. Armor, thickness: 0.86 inch.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications: Flag.
9. Dimensions:
   Length: 14 feet 8 inches.
   Width: 5 feet 11 inches.
   Height: 6 feet.
10. Weight: 7 tons.
11. Motor: 6-cylinder.
    Type: Mitsubishi.
    Cooling system: Air-cooled.
    Horsepower: 85 horsepower.
    Horsepower per ton: 12.1 horsepower.
12. Steering, brake or controlled differential: Front sprocket.
13. Speed:
    Cross-country:
    Road:
    Maximum: 28 miles per hour.
14. Cruising radius, at ------ speed ------ miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 6 bogie wheels, 3 bogies.
19. Performance:
    Ground clearance: 1 foot 3 inches.
    Climbs 42° slopes.
    Negotiates vertical obstacle 1 foot 8 inches high.
    Crosses trenches 5 feet 8 inches wide.
    Fords streams 2 feet 8 inches deep.
20. Remarks: Trials have been made with experimental amphibious model of this tank.

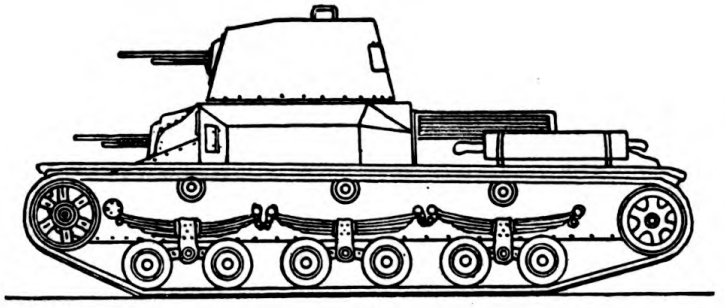
FIGURE 63.—Light tank M2593 (1933).



Top



Front Rear



Side

Side.

FIGURE 63.—Light tank M2593 (1933).

f. Light tank M2595 (1935).

1. Crew: 3 men (1 driver and 2 gunners).
2. Armament: 1 47-mm gun in turret, 2 7.7-mm machine guns in hull fore.
3. Ammunition: 120 rounds 47-mm; 1,350 rounds machine gun.
4. Armor, thickness: 0.47 inch.
   Upper structure: 0.47 inch.
   Front: 0.47 inch.
   Sides: 0.39 to 0.47 inch.
5. Turret: Single.
6. Vision: Telescopic sight and glass protected slits.
7. Ventilation: Louver.
8. Communications: Radio.
9. Dimensions:
   Length: 14 feet 9 inches.
   Width: 6 feet 6 inches.
   Height: 6 feet 6 inches.
10. Weight: 7.7 tons.
11. Motor:
    Type:
    Cooling system: Air-cooled.
    Horsepower: 110 horsepower at 1,400 revolutions per minute.
    Horsepower per ton: 14.2 horsepower.
12. Steering, brake or controlled differential:
13. Speed:
    Cross-country:
    Road:
    Maximum: 22 miles per hour.
14. Cruising radius, at ------ speed ------ miles.
15. Operating distance without refill: 120 miles.
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 8 bogie wheels, 4 bogies.
19. Performance:
    Ground clearance: 1.2 feet.
    Climbs 40° slopes.
    Negotiates vertical obstacle 2.6 feet high.
    Crosses trenches -------- wide.
    Fords streams 3.2 feet deep.
20. Remarks:

①

FIGURE 64.—Light tank M2595 (1935).

Top

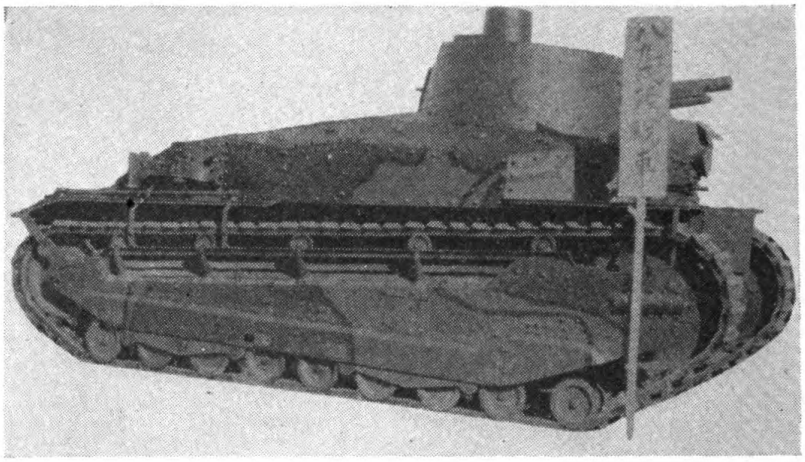
Front

Rear

Side

FIGURE 66.—Light tank M2599 (1939)—Continued.

i. Medium tank M2589 (1929).

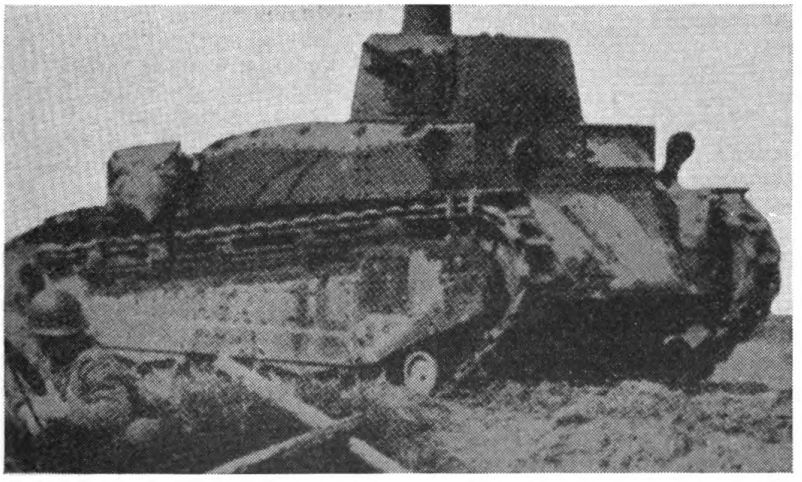


1. Crew: 5 men (1 driver, 1 commander, and 3 gunners).
2. Armament: 1 37-mm gun in turret, 1 machine gun in turret (rear), 1 machine gun in hull fore.
3. Ammunition: 4,000 rounds small arms and 200 rounds 37-mm.
4. Armor, thickness: 0.43 to 0.67 inch.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications: Flag.
9. Dimensions:
   Length: 17 feet 6 inches.
   Width: 8 feet 4 inches.
   Height: 8 feet 6 inches.
10. Weight: 11.5 tons.
11. Motor:
    Type: Mitsubishi.
    Cooling system: Air- or water-cooled.
    Horsepower: 100 horsepower.
    Horsepower per ton: 8.7 horsepower.
12. Steering, brake or controlled differential: Front sprocket.
13. Speed:
    Cross-country:
    Road:
    Maximum: 20 miles per hour.
14. Cruising radius, at _____ speed 150 miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 9 bogie wheels, 4 bogies, 1 independent bogie-skirting.
19. Performance:
    Ground clearance: 1 foot 6 inches.
    Climbs 35° slopes.
    Negotiates vertical obstacle _____ high.
    Crosses trenches 8 feet 6 inches wide.
    Fords streams 3 feet deep.
20. Remarks: Based on Vickers Mark *C*. Several variants of this type. 57-mm gun may be alternative to 37-mm.

FIGURE 67.—Medium tank M2589 (1929).

Top

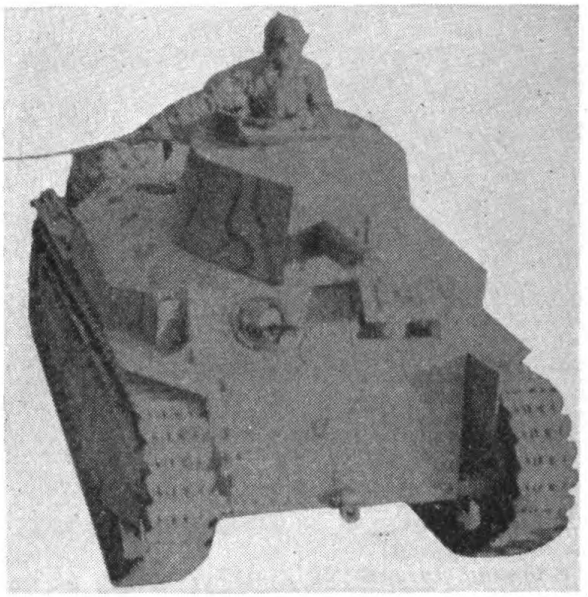
Front Rear



Side

FIGURE 67.—Medium tank M2589 (1929)—Continued.

j. Medium tank M2590 (1930) (or 92 (1932)).

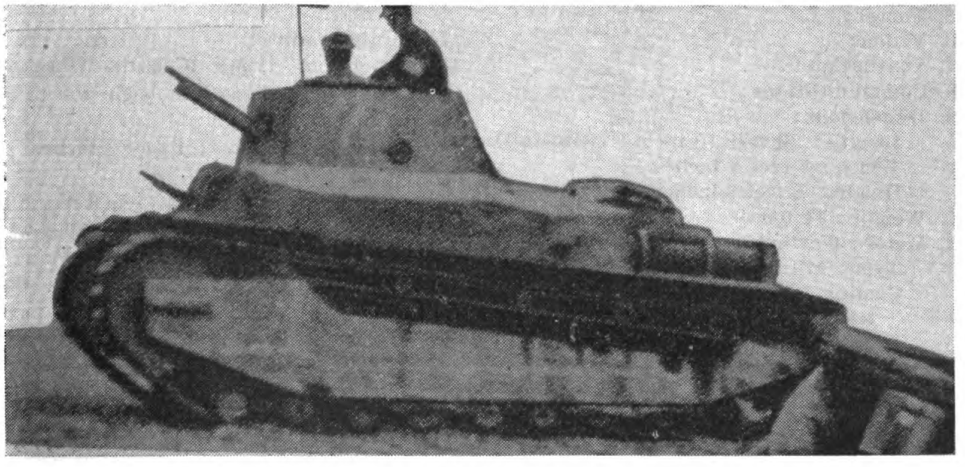


1. Crew: 5 men (1 driver, 1 commander, and 3 gunners).
2. Armament: 1 gun, 1 machine gun in turret, and 1 machine gun in hull fore.
3. Ammunition: 5,000 rounds small arms and 300 rounds 37-mm.
4. Armor, thickness: 0.23 to 0.67 inch.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications: Flag.
9. Dimensions:
   Length: 17 feet 6 inches.
   Width: 8 feet 4 inches.
   Height: 8 feet 6 inches.
10. Weight: 11.31 tons.
11. Motor: 6-cylinder.
    Type: Osaka Kikasi.
    Cooling system: Air-cooled.
    Horsepower: 120 horsepower.
    Horsepower per ton: 10.6 horsepower.
12. Steering, brake or controlled differential:
13. Speed:
    Cross-country:
    Road:
    Maximum: 27 miles per hour.
14. Cruising radius, at _____ speed 147 miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 9 bogie wheels, 4 bogies, 1 independent bogie wheel, protective skirting.
19. Performance:
    Ground clearance:
    Climbs 38° slopes.
    Negotiates vertical obstacle _____ high.
    Crosses trenches _____ wide.
    Fords streams _____ deep.
20. Remarks: Used by naval landing party.

FIGURE 68.—Medium tank M2590 (1930) (or 92 (1932)).

Top

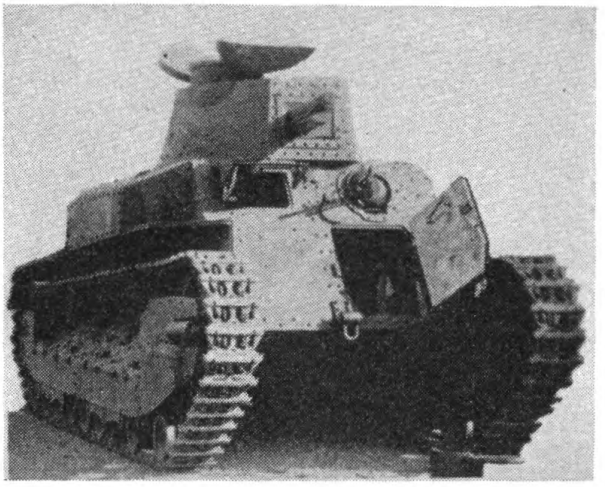
Front Rear



Side

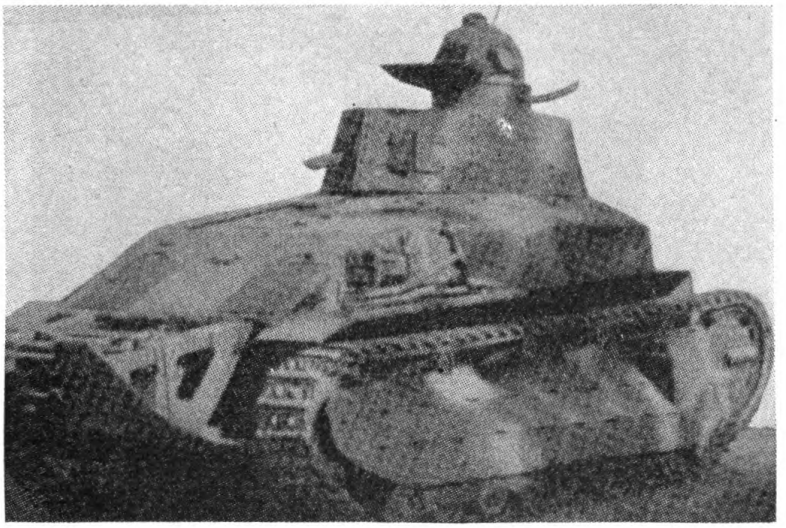
FIGURE 68.—Medium tank M2590 (1930) (or 92 (1932))—Continued.

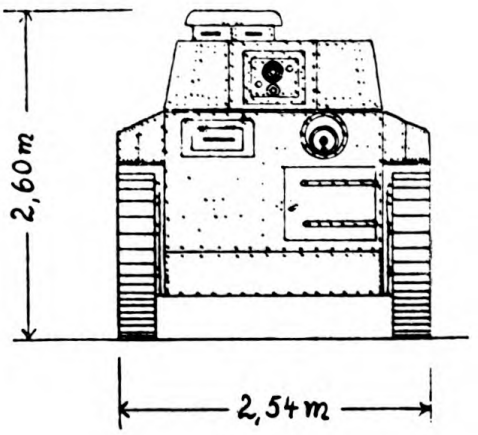
k. Medium tank M2594 (1934).



1. Crew: 5 men.
2. Armament: 1 37-mm gun and 1 machine gun in turret, 1 machine gun and 1 bomb in hull fore. Mortar inside.
3. Ammunition: 6,000 rounds small arms, 120 rounds 37-mm, 100 bombs.
4. Armor, thickness: 0.67 inch.
   Upper structure: 0.67 inch.
   Front: 0.67 inch.
   Sides: Top and rear 0.43 inch.
   Floor: 6 millimeters.
5. Turret:
6. Vision:
7. Ventilation:
8. Communications:
9. Dimensions:
   Length: 20 feet 10 inches (with tail).
   Width: 8 feet 4 inches.
   Height: 8 feet 6 inches.
10. Weight: 14 tons.
11. Motor: 6-cylinder.
    Type: Mitsubishi airplane.
    Cooling system: Air-cooled, louver at rear.
    Horsepower: 160 horsepower.
    Horsepower per ton: 11.4 horsepower.
12. Steering, brake or controlled differential: Front sprocket.
13. Speed:
    Cross-country:
    Road:
    Maximum: 28 miles per hour.
14. Cruising radius, at _____ speed 157 miles.
15. Operating distance without refill: 210 gallons, 124 miles.
16. Gear speeds and ratios: 8 forward and 2 rear.
17. Turning radius:
18. Suspension, type: 9 bogie wheels, 4 bogies, 1 independent bogie wheel.
19. Performance:
    Ground clearance: 1 foot 6 inches.
    Climbs 46° slopes.
    Negotiates vertical obstacle 3 feet high.
    Crosses trenches 10 feet 6 inches wide.
    Fords streams 3 feet deep.
20. Remarks: Different models exist. Used by army and navy landing party. Army model may have only 1 gun in turret. Gun may be 47-mm.

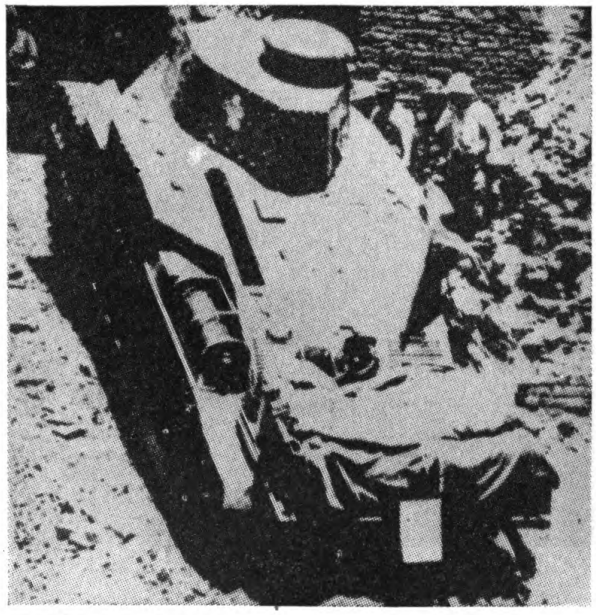
FIGURE 69.—Medium tank M2594 (1934).



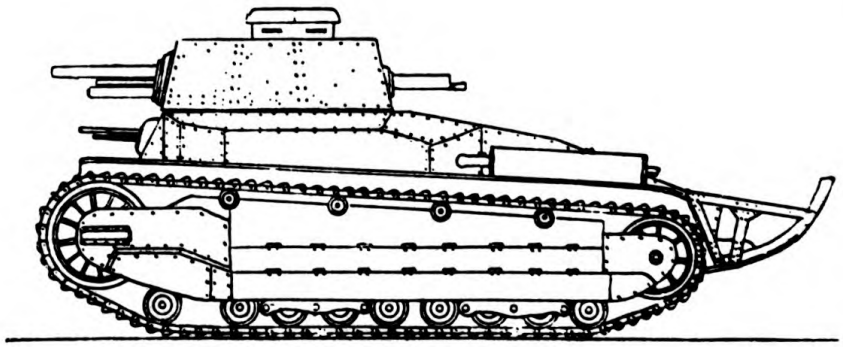


Front

FIGURE 69.—Medium tank M2594 (1934)—Continued.



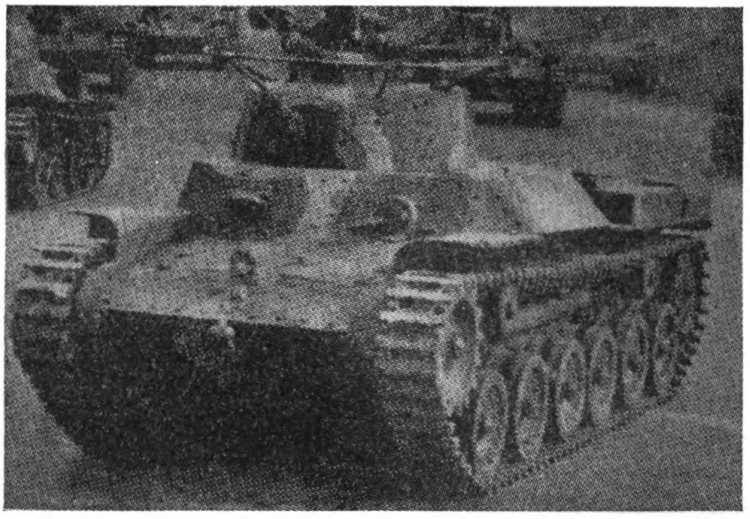
Rear



Side

FIGURE 69.—Medium tank M2594 (1934)—Continued.

l. Medium tank type 97 (1937).



1. Crew: 4.
2. Armament: 2 7.7-mm machine guns, 1 47-mm gun.
3. Ammunition:
4. Armor, thickness:
   Upper structure: 0.58 inch.
   Front: 4.95 inch.
   Sides: 0.58 inch.
5. Turret: Single, 360° traverse.
6. Vision:
7. Ventilation:
8. Communications: Radio.
9. Dimensions:
   Length: 22.3 feet.
   Width: 8.2 feet.
   Height: 9.8 feet.
10. Weight: 14 to 15 tons.
11. Motor:
    Type:
    Cooling system: Water.
    Horsepower:
    Horsepower per ton:
12. Steering, brake or controlled differential:
13. Speed:
    Cross-country: 6 to 9 miles per hour.
    Road: 25 to 28 miles per hour.
    Maximum:
14. Cruising radius, at ------ speed ------ miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 3 bogie, 2-wheeled, 2 track support wheels.
19. Performance:
    Ground clearance: 1.2 feet.
    Climbs 40° slopes.
    Negotiates vertical obstacle 3.28 feet high.
    Crosses trenches 9.5 feet wide.
    Fords streams 3.2 feet deep.
20. Remarks: Gun also reported as 70-mm.

FIGURE 70.—Medium tank type 97 (1937).

Top

Front Rear

Side

FIGURE 70.—Medium tank type 97 (1937)—Continued.

m. Medium tank type 2599 (1939).

1. Crew: 5 men (1 driver, 1 commander, and 3 gunners).
2. Armament: 1 37-mm gun in turret, 2 machine guns in turret, 1 machine gun in hull fore.
3. Ammunition: 2,500 rounds small arms, 250 rounds 37-mm.
4. Armor, thickness: 0.67 inch.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications:
9. Dimensions:
   Length: 18 feet 4 inches.
   Width: 8 feet 4 inches.
   Height: 9 feet 2 inches.
10. Weight: 12 tons.
11. Motor: 6-cylinder.
    Type: Aichi.
    Cooling system: Water-cooled.
    Horsepower: 110 horsepower.
    Horsepower per ton: 9.16 horsepower.
12. Steering, brake or controlled differential:
13. Speed:
    Cross-country:
    Road:
    Maximum: 25 miles per hour.
14. Cruising radius at _____ speed 160 miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type: 9 bogie wheels, 4 bogies, 1 independent bogie with skirting.
19. Performance:
    Ground clearance:
    Climbs 40° slopes.
    Negotiates vertical obstacle 2 feet 9 inches high.
    Crosses trenches 7 feet 11 inches wide.
    Fords streams 3 feet 3 inches deep.
20. Remarks:

FIGURE 71.—Medium tank type 2599 (1939).

Top

Front

Rear

Side

FIGURE 71.—Medium tank type 2599 (1939)—Continued.

n. Aichi heavy tank type 2596 (1936).

1. Crew: 10 (1 driver, 1 commander, 5 gunners, 2 loaders, 1 wireless).
2. Armament: 1 75-mm, 1 35-mm gun in turret and 2 machine guns in hull fore.
3. Ammunition: 5,000 rounds small arms and 500 rounds of HE.
4. Armor, thickness: 1.38 inches.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications: Radio.
9. Dimensions:
   Length: 31 feet.
   Width: 10 feet 8 inches.
   Height: 9 feet 2 inches.
10. Weight: 36 tons.
11. Motor:
    Type:
    Cooling system: Water-cooled.
    Horsepower: 350 horsepower.
    Horsepower per ton: 9.72 horsepower.
12. Steering, brake or controlled differential:
    Front sprocket.
13. Speed:
    Cross-country:
    Road:
    Maximum: 36 miles per hour.
14. Cruising radius, at ------ speed ------ miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension type: 6 large bogie wheels.
19. Performance:
    Ground clearance:
    Climbs 40° slopes.
    Negotiates vertical obstacle 2 feet 9 inches high.
    Crosses trenches 15 feet wide.
    Fords streams 4 feet 2 inches deep.
20. Remarks: Modified forms of Russian Tank 32–5.

FIGURE 72.—Aichi heavy tank type 2596 (1936).

Top

Front

Rear

Side

FIGURE 72.—Aichi heavy tank type 2596 (1936)—Continued.

o. Heavy tank M2597 (1937).

1. Crew: 6 (1 driver, 1 commander, and 4 gunners).
2. Armament: 2 37-mm in turret and 2 machine guns in hull fore.
3. Ammunition: 2,000 rounds small arms and 120 rounds 37-mm.
4. Armor, thickness: 1.38 inches.
   Upper structure:
   Front:
   Sides:
5. Turret:
6. Vision:
7. Ventilation:
8. Communications:
9. Dimensions:
   Length: 24 feet 5 inches.
   Width: 9 feet 10 inches.
   Height: 9 feet 6 inches.
10. Weight: 35 tons.
11. Motor: 12-cylinder.
    Type: Mitsubishi.
    Cooling system: Water-cooled.
    Horsepower: 250 horsepower.
    Horsepower per ton: 7.8 horsepower.
12. Steering, brake or controlled differential:
13. Speed:
    Cross-country:
    Road:
    Maximum: 28 miles per hour.
14. Cruising radius, at -------- speed 128 miles.
15. Operating distance without refill:
16. Gear speeds and ratios:
17. Turning radius:
18. Suspension, type:
19. Performance:
    Ground clearance:
    Climbs 45° slopes.
    Negotiates vertical obstacle 3 feet 6 inches high.
    Crosses trenches 7 feet wide.
    Fords streams 4 feet 2 inches deep.
20. Remarks: Modified form of Russian T28.

FIGURE 73.—Heavy tank M2597 (1937).

Top

Front

Rear

Side

FIGURE 73.—Heavy tank M2597 (1937)—Continued.

69. Tractors.—In addition to locally made tractors, the Japanese have purchased several hundred foreign, and more especially American-made Holt and Fordson tractors, principally for use in drawing the 105-mm gun.

70. Trucks and motorcars.—*a. Trucks.*—(1) The Japanese Army possesses a few hundred foreign trucks. Some of the locally made trucks are: Chiyoda, Sumida, Toyoda, Nissan, Isusu, Dowa (made in Mukden), and the Hitachi Diesel. The first three are patterned after the Wolseley (British) model. Some of these are 6-wheel trucks.

NOTE.—Diesel motors are made by the Ikegai Iron Works, Mitsubishi Co., and Niigata Iron Works also.

(2) *Charcoal-burning truck.*—This type of truck has a restricted local use.

b. Motorcars.—Motorcars in use in Japan are mostly of foreign make, principally American. There is, however, a standard size of automobile manufactured in Japan, the Nissan, which is a reproduction of the 1927 Graham Page engine and 1934 body and chassis. The other models are midgets and of no military value.

71. Motorcycles and bicycles.—*a. Motorcycles.*—The Harley-Davidson (Japanese made) and the Kurogani are the types of motorcycles mostly used. The latter is a heavy, powerful machine, but is poorly built.

b. Bicycles.—Bicycles are extremely common, both in and out of the service. In 1928 there were almost 5,000,000 bicycles in Japan.

SECTION IX

SIGNAL COMMUNICATION

72. Radio.—*a. No. 3.*—Made in Japan and closely resembles the English Marconi set. Its range is about 12.5 miles, and it is packed

in two boxes carried by one pack animal. This radio is distributed to infantry, cavalry, and field artillery units from the brigade down to the infantry battalion.

b. No. 5.—This is a 4-tube set with a small generator operated by two 6-volt wet batteries. Wave length from 984 feet to 1,870 feet. It is a receiving and sending set and the latter range is 3.7 miles. It is used for communication between the artillery battalion, regimental and brigade headquarters, and with infantry regimental and brigade headquarters.

c. No. 6.—This is a 7-tube voice set used principally for air-ground communication. It is similar in appearance to No. 5 radio.

d. (1) *87 type radio No. 1.*—This is a large ground set similar to 87 type No. 2 and is powered by a gasoline motor.

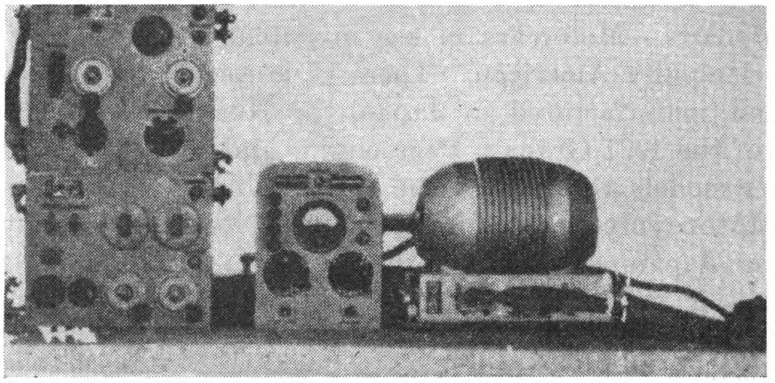


FIGURE 74.—NA 3 air radio.

(2) *87 type radio No. 2.*—This is an air-ground set. The ground transmitter set is said to contain four tubes and to be used for either code or telephone. Range with the telephone varies considerably with a maximum of 190 miles under ideal conditions. The airplane transmitting and receiving set is contained in a box 10 by 18 inches by 8 inches deep, and is said to receive voice communication to the full range of the ground set.

e. NA 3 air radio.—Twenty-watt short-wave radio telegraph set. Total weight 30.2 pounds; effective distance 1,240 miles.

(1) *Transmitting equipment.*

20 watts---------- CW telegraph
15 watts---------- Tone telegraph
Frequency: 5,000 kc, 6,590 kc } On CW telegraph and tone telegraph, crystal controlled.

Keying on continuous wave (CW) telegraph is obtained by positive keying in the amplifier circuits. Tone telegraph is obtained by grid modulation. A maximum of 20 watts output may be obtained over short periods of time after a forced landing.

(2) *Receiving equipment.*

Tubes---------- 4

Frequency---------- 2,000 to 20,000 kc / 300 to 2,500 kc

The engine has ignition shielding to eliminate interference.

(3) *Source of power.*—(*a*) *Receiving and sending.*—Primary, 24 volts, 15 amperes. Secondary, 700 volts, 150 milliamperes.

(*b*) *Low tension.*—Connected to lighting circuit. Storage battery, 24 volts, 15 amperes. Charged by a generator connected direct to the motor and equipped with tension stabilizer. Twenty-five volts, 14 amperes at 2,800 to 4,800 revolutions per minute.

(4) *Aerial.*—Fixed, inverted L; 22.9 feet long. Grounded to fuselage. Because of the air resistance caused by windmill generators, the generator is often hitched directly to the motor.

73. Telephone.—It is a buzzer-type telephone encased in a wood and aluminum box about 12 inches long, 5 inches wide, and 7 inches high. Directly beneath the aluminum cover are a transmitter, hand-set receiver, a single earphone head set, and a buzzer key. Permanent 2-foot lead-in wires are attached to the telephone and carry on the free ends female fittings into which male contacts attached to the field wire are fitted. Besides the ringing circuit there is a buzzer circuit by which messages may be sent in code. The field artillery battery has six telephones, the field artillery battalion eight telephones.

74. Reels.—Reels are designed for carrying 1,640 feet of wire. The side plates are made of perforated steel plate and the spindle of brass-reinforced wood. The field artillery battery carries 22 reels of wire, the field artillery battalion 26.

75. Signal lamp.—This is mounted on tripod and operated by dry cells. It is provided with red, white, and green bulbs.

76. Signal flags.—Semaphore is used principally.

77. Airplane panels.—These consist of a regimental (or battalion) identification panel and three signal panels which may be attached to the identifying panels in any of nine different positions. The signal panels have differentiating markings and are read in a predetermined order based on these markings. The code is numerical and runs from 1 to 999 and is alleged to be easily read by supporting aircraft.

FIGURE 75.—Japanese military dog.

78. Military dogs.—The Japanese Army uses trained dogs for carrying messages. The message case is attached to the collar.

79. Pigeons.—Pigeons are used extensively for carrying messages. These birds are well trained and will return to their loft even if it has been in a new locality only a short time.

CHAPTER 5

AMMUNITION

SECTION I

INFANTRY

80. Rifle ammunition.—The rifleman usually carries 120 rounds in clips of five on his person, but bandoleers may be added before going into action. In addition, 60 rounds are carried on the battalion wagons and 150 rounds per man in the division train (horse-drawn trains).

81. Light machine-gun ammunition.—Like ammunition for the rifle, this is packed in clips of five and carried in four steel boxes by a pack horse of the section. Each box contains 540 rounds. The squad alone can carry 960 rounds.

82. Heavy machine-gun ammunition.—This comes in boxes of 48 pounds—600 rounds in 20 pasteboard strips of 30 pounds each ready for serving from the strip. Each gun squad carries four boxes of ammunition—two boxes on each side of ammunition pack horse.

83. 70-mm battalion gun, model 92 (1932), ammunition.—*a.* Semifixed, brass case. Packed in boxes of five rounds each. There are 25 rounds with each piece, 10 in the limber and 15 in the caisson.

b. Instantaneous and short-delay fuzes are used. With instantaneous fuze the maximum effective radius of fragments is about 22 yards.

84. 75-mm regimental mountain gun, model 41 (1908), ammunition.—The types are fixed shrapnel, high explosive, and smoke. These are identical with projectiles fired by light artillery except that the powder charge is lighter and the fixed round shorter.

The ammunition is carried in boxes of six rounds each—seven boxes per gun section. There are eight boxes in each of five ammunition sections, or a total of 408 rounds in the company and 102 rounds per gun. Time, instantaneous, and short-delay fuzes are employed.

85. 37-mm infantry rapid fire gun, model 94, ammunition.—The types are shell, armor piercing, and shell, regular. The ammunition is carried in split metal boxes containing 12 rounds each. The caisson will hold six to eight boxes. In addition to the ammunition in the caisson, three boxes can be carried on the packsaddle.

SECTION II

ARTILLERY AMMUNITION

86. 75-mm gun ammunition.—*a. General.*

Type specifications	Weight	Range
Long pointed shell + HE	13 pounds	11,800 yards.
Shrapnel	14 pounds	6,300 yards.

b. 75-mm gun ammunition carried with organizations (horse-drawn wheel transport).

Organization	Rounds carried	Rounds per gun	Day of fire	Shell	Shrapnel
Firing battery	544	136	0. 45	0. 0	1. 0
Battery combat train	200	50	0. 17	0. 0	1. 0
Total battery	744	186	0. 62	0. 0	1. 0
Battalion combat train	900	75	0. 25	0. 44	0. 56
Total battalion	3, 132	261	0. 87	0. 2	0. 8
Regimental combat train	1, 500	42	0. 14	0. 6	0. 4
Total regiment	10, 896	303	1. 01	0. 3	0. 7
Division trains	10, 000	277	0. 92	0. 6	0. 4
Total division	20, 896	580	1. 93	0. 55	0. 45

NOTES

1. Battalion and regimental ammunition trains are not organized in time of peace.
2. Ordinarily only shrapnel and common shell are carred within the regiment.

87. 105-mm gun ammunition.—*a. General.*

Name	Type	Length without fuze (inches)	Specifications			Tail (inches)	Range (yards)
			Body (inches)	Ogive (inches)	Band		
Shell, long	HE	20	6	9	Copper, 1 inch in 3 seconds.	3	9,000 to 20,000.
Shell, short	HE	16	6	6½	1 inch	1½	0 to 14,600.
Shell	Shrapnel, smoke.	12	6	3½	Copper, 1 inch	1½	Air: 11,000. Ground: 14,600.

b. 105-mm gun ammunition, battalion combat train (truck-drawn).—Number of rounds carried (estimated)—1,280.

88. 155-mm howiter ammunition.

Type	Range
Shell, common, + HE	8,750 yards.
Long pointed shell, + HE	10,500 yards.

89. Fuzes.—*a. Instantaneous percussion.*—Point-detonating, 2½ inches long (external length); 1-inch thread. Used for high explosive shells.

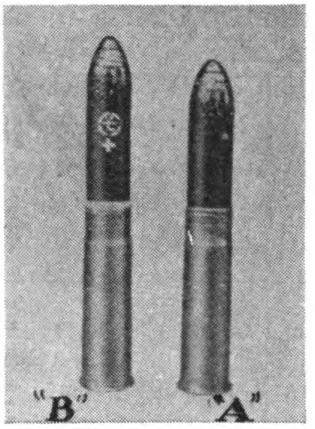
b. Short-delay percussion.—Point-detonating, 1 inch long; 1-inch thread. Used for high explosive shells.

c. Combination.—Standard powder train; external height, 2½ inches; thread, 2 inches; time train, 0 to 36 seconds; set by hand fuze setter. Used for shrapnel and smoke shells.

SECTION III

ANTIAIRCRAFT AMMUNITION

90. 75-mm shell.—*a.* Two types of 75-mm antiaircraft ammunition are shown in figure 76.



A—Ordinary HE. *B*—Segmented shell.

FIGURE 76.—75-mm antiaircraft ammunition.

b. Figure 77 shows a cross section of the 75-mm antiaircraft segmented shell.

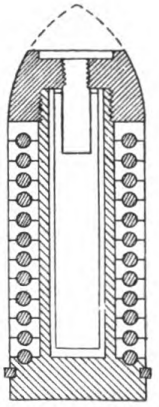


FIGURE 77.—Cross section of 75-mm antiaircraft segmented shell.

CHAPTER 6

SUPPLY AND EVACUATION

SECTION I

SUPPLY

91. General.—Without doubt, the Japanese system of supply has undergone many changes due to operations in China and Manchuria during recent years. In the past the system was based upon the exclusive use of animal transport except for rail and water facilities. Lately, however, motors have played a prominent role in supplying the numerous units in China and Manchuria. In view of the lack of definite information concerning the use of motors in the Japanese supply system, we may assume that their supply system functions, in general, like that of the German Army, where many Japanese Army officers go for military study.

92. Division transport regiment.—The division transport unit carries the rolling reserve of the division. For its organization, see "Transport Regiment, Proposed Infantry Division (War)" (par. 16).

93. Ammunition supply.—*a.* Each unit, infantry and artillery, has its own combat and field trains and operates them to obtain its own supplies. The division transport, carrying the rolling reserve of the division, is commanded and operated by officers and men from the Japanese Transport Corps. It performs the same functions as our division ammunition train.

b. Unit trains and division transport must at all times keep in touch with the organizations they serve and be prepared to fill their requirements. Infantry battalion combat trains (pack), infantry regimental gun company and battalion gun company ammunition platoons (pack), and regimental combat trains go to the advance points of issue of the division transport on the order of the battalion or higher com-

mander and exchange empty ammunition boxes for full ones. Regimental and battalion combat trains of the divisional artillery go to the position of the division transport to refill. Regimental combat trains of heavy artillery are usually supplied direct from the line of communication.

94. Organization and operation of line of communication (Heitansen).—*a. General.*—The line of communication is a series of supply and evacuation establishments along a main supply line (road, railroad, or waterway), extending from the communication zone or from the base ports of an oversea force forward into the areas of the front line divisions. It has length without distribution in depth in contrast to the conception of zones of supply establishments in vogue in our logistical organization. A large force of several divisions will be served, however, by several such parallel lines of communication which give a certain lateral disposition to the supply establishments.

b. Functions of line of communication.—The line of communication is an organ of the army commander who exercises his authority through a line-of-communication commander. The functions of the line of communication are—

(1) To receive, billet, ration, and forward men and animal replacements.

(2) To receive, shelter, and forward supplies.

(3) To evacuate men and animal casualties, prisoners of war, unneeded supplies, salvage, and captured equipment.

(4) To provide medical service for men and animals in transit to and from the front.

(5) To investigate the supply resources of the area and requisition them as needed.

(6) To operate depots for all classes of supplies and to displace the depots forward as needed.

(7) To organize and operate wagon trains (juretsu) formed from locally commandeered equipment.

(8) To provide local defense for all line-of-communication establishments.

c. Line-of-communication troops and local levies.—To operate the line of communication, the army receives the following units, attached in number consistent with its size, its location with reference to its supply base, the terrain, and the military situation:

(1) Headquarters, line-of-communication.

(2) Signal detachment of two or more companies.

(3) Line-of-communication wagon transport companies. Each company is made up of animal-drawn wagons and carts with a total carry-

ing capacity of about 60 tons, organized generally in the same way as the wagon transport company of the division transport regiment. Strength, about 250 men per company. Companies are attached to the army at the approximate rate of four per division and four per army troops.

(4) Line-of-communication truck companies. These have the same cargo capacity as the wagon companies. Attachment rate is about a fourth of the number of wagon companies.

(5) Transport supervision detachments. These are small detachments of infantry reservists who supervise the organization and operation of locally organized transport companies. The number attached depends on the number of such companies (juretsu) which it is planned to organize locally.

(6) Line-of-communication hospital. Attached at the rate of one per division. Capacity can be varied with the situation.

(7) Reserve infantry battalions and cavalry troops. Variable number attached for the protection of the line of communication.

(8) Reserve engineer detachment. For road work and construction.

(9) Light railway (keiben). Detachment with 62 miles (or less) of track for use in the depot area of the base terminal of the line of communication.

(10) Labor troops. For loading and unloading the supplies and for construction at depots, hospitals, and relay posts.

The number of troops on a line of communication will plainly vary between wide limits.

d. Installations of line of communication.—(1) *Route of line of communication.*—In selecting the route the desiderata are the same as we look for in choosing the main supply road except that the Japanese do not plan on having a hard-surfaced road. Under ideal conditions one line of communication may supply two divisions, but it is always desirable to have a ratio of one line of communication per division if the force expects to get as far as 125 miles from its base.

(2) *Terminals of the line of communication.*—The base terminal (heitan shuchi) is the area of the base depots where the supply columns (juretsu) are organized, loaded, and dispatched. Because of the difficulty of displacing the depots, the base terminal is seldom moved. The forward terminal or line-of-communication head (heitan suichi) is the point where the line of communication transfers its supplies to the divisional transport regiments. The point is kept close up to the front line divisions and when possible it is near the center of the division bivouac areas. The maximum distance that it is allowed to fall behind the bivouacs of the field trains is 30 miles, a distance which

corresponds to a half day's march of the field trains plus a day's march of the division transport regiments. As the latter have two ration-carrying companies each capable of carrying 1 day of Class I supplies, these can take turns in transporting supplies between the line-of-communication head and the field trains and thus are capable of displacing the rations received of a full day's march. The field trains, however, with the capacity of a single day's ration, must make a round trip between the division train and the consuming troops every day; consequently, their forward location cannot exceed a half day's march from the transfer point with the division transport regiment.

(3) *Posts on the line of communication (heitanchi).*—Relay posts are set up along the line of communication at points about a half day's march (10 miles) apart. Shelter, bivouac, and loading facilities are needed; hence, towns appropriately located are desirable points. The area needed is considerable, for the post may be called upon to handle daily as many as 11 wagon companies of 100 to 150 carts each and, in addition, animal and personnel replacements and evacuees and prisoners of war in accordance with the situation. In forwarding supplies, one wagon company per hour can be loaded and dispatched. As the commandeered wagon company personnel will generally be hostile to the Japanese, it is considered essential that the loading of supplies at one post and their transport and unloading at the next be done in the hours of daylight to facilitate supervision. Thus the number of transport companies that can be dispatched daily from a line of communication varies from 7 to 11, depending on the season of the year. This number becomes a controlling factor in determining the supply capacity of the line of communication.

(4) *Depots and hospitals.*—Depots for all types of supplies are located at the base terminal of the line of communication and advance field depots are set up as needed along the line of communication as the army advances. Thus, in advance of an attack, field depots for ammunition, engineer, and Class I supplies are set up within 15 to 20 miles of the front and stocked with supplies estimated as needed for the attack. In the area of the field depots the line of communication sets up its line-of-communication hospitals to receive evacuees from the field hospitals of the divisions. Depots and hospitals are under the command of the line-of-communication commander. They receive labor troops (yusetsutai) for the physical handling of supplies, etc.

e. Operation of line of communication.—(1) In case the force to be supplied is stationary, the required number of posts established depends upon the distance of the force from the base. To decentralize administration of the line of communication, the commander divides

it into subsections (kanku) in accordance with the following considerations:

(*a*) The subsection boundaries should follow along local administrative lines.

(*b*) The local subsections should be about equal in resources and important engineering works (bridges, railways, tunnels, etc.).

(*c*) Each subsection is provided with a headquarters.

(2) Supplies are shuttled between relay or intermediate post of line of communication in one of three ways:

(*a*) A loaded supply company moves forward from *A* post to *B* post (½-day's march apart), transfers its supplies at *B*, and returns empty to *A*, where it bivouacs at night.

(*b*) A supply company goes back empty from *B* to *A*, picks up supplies, and returns loaded to *B*, where it bivouacs for the night.

(*c*) A loaded supply company moves from *A* to *C* (1 day's march), transfers its supplies, and bivouacs. On the following day it returns empty to *A*, where it receives a new load. When the army is not advancing, the third method is most advantageous, as it reduces the number of transfer points and avoids the unnecessary loading and unloading of supplies.

(3) With no large consumption of Class II, III, and IV supplies taking place, the supplies forwarded along the line of communication are principally the daily ration and forage. This quantity of supplies requires the cargo capacity of one transport company per division, one per army troops, and, as the line of communication becomes long, one for the personnel of the line of communication.

(4) In case the force is advancing at a normal daily rate of 15 miles the line of communication is either extended by setting up successive new line-of-communication posts behind the advance or extended prior to the advance under cover of an advance detachment along the line to be followed by the army. The latter method is desirable when it can be applied safely but must be regarded as exceptional.

f. Handling of Class I supplies by the division transport regiment.— A front line division in the advance bivouacs in an area about 10 miles deep. The two ration companies of the transport regiment (each with a capacity of 1 day's Class I) bivouac near the division rear boundary. Each night the line of communication is pushed up to a point near this rear boundary. Assuming Company No. 1 to be loaded and No. 2 to be empty, the division companies operate as follows: At daylight Company 1 advances in the wake of the army 20 miles to the center of the next night bivouac area, delivers to the field trains, and returns 5 miles to bivouac at the division rear boundary. Meanwhile, Company

No. 2 loads from supplies delivered by the line-of-communication transport, moves forward 15 miles to the rear boundary of the new division bivouac area, and bivouacs near Company No. 1. The following day the operations of the two companies are reversed.

g. Comments.—(1) The organization and operation as outlined of the line of communication was in effect in 1932. Nothing is known of modifications in the system brought about by the experience in Manchuria and China since that time. It is believed to be basically unchanged, however, except as modified in detailed application by increased use of motor transport.

(2) The Japanese line of communication impresses by its fragility, intricacy, and dependence on improvisation. The maximum output of the line in summer (longest period of daylight) is 11 transport companies daily, or 660 tons. Any variation in the normal rate of consumption of supplies must be anticipated days in advance in order to start the extra supplies forward in the slow-moving shuttle from relay posts. The large number of supply trains involved makes for great difficulty in maintaining the complicated schedule of interlocking movements which may be further disturbed by adverse weather or intervention by the enemy. The regular transport units assigned the line of communication are insufficient to furnish more than a small fraction of the cargo capacity needed for the army so that a large amount of equipment must be obtained locally. While it may be assumed that the Japanese would first be sure that the needed equipment was in the area before basing plans on its use in their supply organization, nevertheless, the resulting patch-work organization does not inspire confidence in the ability of the system to assure a smooth and efficient movement of supplies.

(3) It is interesting to note the dependency on employing locally commandeered or requisitioned transportation—a practice used extensively in China. While such a system lacks efficiency, it denotes flexibility in the supply system by which almost anything which will roll is made to serve some purpose.

(4) The above system is based on an operation in which there are no rail facilities or motors involved. Due allowance must be made for the fact that the use of motors will greatly modify many of the distances, numbers of vehicles, and installations pictured herein, though there are undoubtedly sectors or forces in China which are being supplied by the methods described. Such sectors are those wherein the terrain is such as to render the use of motors impractical and to which the small cart is peculiarly adapted.

SECTION II

EVACUATION

95. General.—Although Japanese organization is somewhat elastic, and in many instances a group of troops corresponding to a division would either lack a medical regiment or have but a part of it attached, for general purposes we may say that a medical regiment accompanies the division into the field. The regiment operates in conjunction with either a division base hospital or division field hospital, and establishes its three advance field hospitals in such places as will best serve the front line combatant regiments. From each advance field hospital collecting companies are sent forward to operate with the troops engaged in combat. Usually the tactical deployment makes it possible for one collecting company to work with each front line infantry battalion, and this company assigns one of its platoons to work with each advance infantry company. Further division would result in the attachment of two stretcher groups per infantry platoon, but it is believed that, as a rule, distribution is made more in accord with the particular situation than by straight attachment of units to various organizations.

96. Detailed actions.—When a soldier is wounded in action, his companions call for the medical man who is permanently assigned to the company, and this medical man, with as little delay as possible, comes to render first aid. If necessary, the medical man directs the companions of the wounded soldier to move him to a place where he can be found by the members of the collecting companies. Often, at this stage, the services of the battalion medical officer who is supervising the activities are solicited. The patient is given first-aid treatment and tagged with a description of his wound which tells where and when it occurred, and what first-aid treatment was applied. Next the company medical man calls for one of the collecting company stretcher groups, who carry the casualty to the forward collecting station where the patient is put under shelter and given whatever supplementary first-aid treatment examination shows he requires. In some cases there are both forward collecting stations and second line collecting stations, and in such instances the forward stations are no more than relay points for the gathering of patients when dispersion is great. In each case the patients are gathered at one or other of

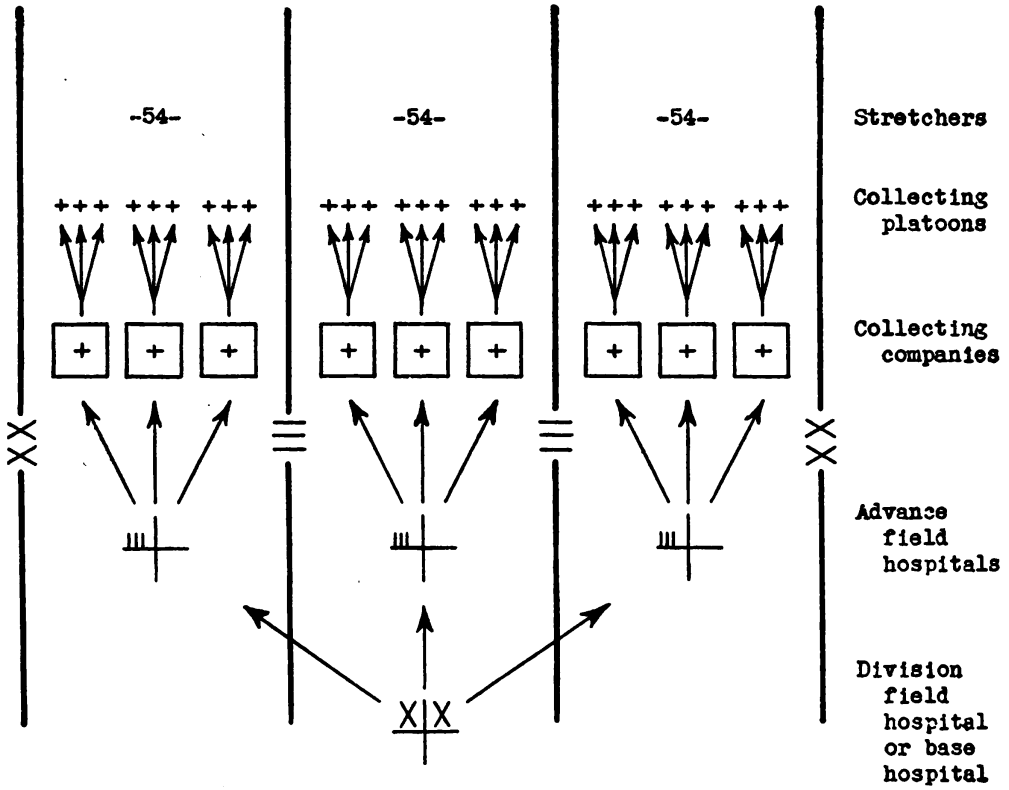
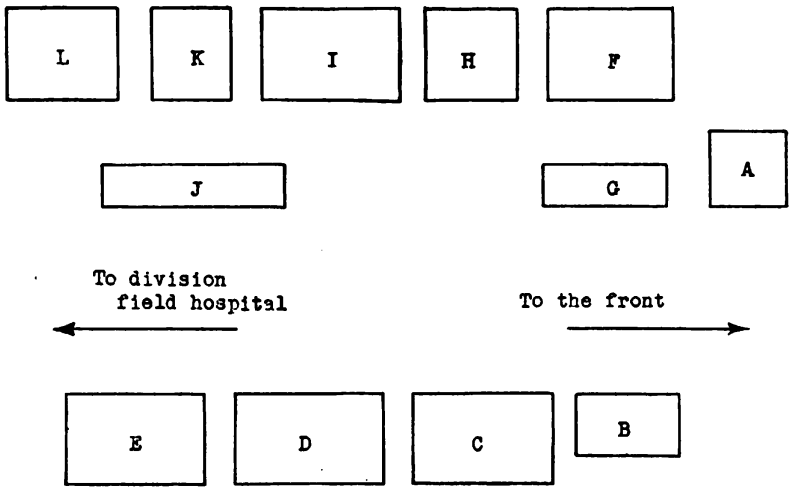


FIGURE 78.—Deployment of medical regiment.

the collection stations, classified as to their condition and the gravity of their cases, and evacuated to the advance field hospital, where they are registered, entered into the proper section, and given appropriate treatment. As soon as possible, they are evacuated to the division field hospital.

97. Medical regiment with division.—*a.* Figure 78 illustrates the deployment of the medical regiment when functioning with the division in combat.

b. Figure 79 illustrates the organization of the advance field hospital with the division.



A. Classification section.
B. Gas patients preparation section.
C. Gas patients treatment section.
D. Gas patients rest.
E. Gas patients evacuation.
F. Operation and treatment of severe wounds.
G. Dressing light wounds.
H. Rest after operation or treatment.
I. Disinfectant and supply sections.
J. Evacuation section.
K. Headquarters and medical camp.
L. Ambulance pool.

FIGURE 79.—Organization of advance field hospital.

CHAPTER 7

TRAINING, EFFICIENCY, DISCIPLINE, AND MORALE

98. Training.—*a. Principal military schools.*

(1) *Superior schools.*
General Staff College.

(2) *Technical and special service schools.*
Artillery and Engineer School.
Medical School.
Automobile School.
Intendance School.
Communications School.
Chemical Warfare School.
Land Survey Department School.
Veterinary School.
Military Police Training School.
Physical Training (Toyama) School.
Artificers School.

(3) *Schools of the arms (except Air Corps).*
Infantry Schools.
Tank School.
Field Artillery School.
Heavy Artillery School.
Air Defense School.
Balloon School.
Cavalry School.
Engineer School.

(4) *Air Corps schools.**
Tokyo Air School (primary).
Kumagaya Air School (basic, pilotage, meteorology, navigation).

**Parachute troops.*—It has been reported from usually reliable sources that the Japanese Army is initiating parachute training under the supervision of German officers.

Utsuno Miya Army Flying School (basic, pilotage, navigation, meteorology).
Tokorozawa Air Technical School (engineering, maintenance, repair).
Tachi Arai Flying School (basic, pilotage, navigation, meteorology).
Aviation Branch, Military Academy (basic, pilotage, meteorology, navigation).
Akeno Air School (air combat, gunnery).
Mito Flying School (aircraft weapons and ground duties).
Hamamatsu Air School (bombing).
Shimoshizu Air School (observation).
Air Maintenance School (maintenance, repair).
Army Air Signal School (communications).

(5) *Cadet schools.*
Junior Military Academy.
Military Academy.

(6) *Noncommissioned officer schools.*
Toyohashi Noncommissioned Officer Training School.
Sendai Noncommissioned Officer Training Schoool.
Kumamoto Noncommissioned Officer Training School.

b. Nature and objective of training for officers.—The training of Japanese officers is somewhat narrow and arbitrary in its methodical and inflexible system of indoctrination. There is a rigidity about it which mitigates against originality in thought or deed. Training, nevertheless, is progressive, thorough, and along modern military lines. It has produced a corps of officers aggressive, courageous, and thoroughly competent to train and lead the conscript forces against Japan's potential enemies. Higher commanders and staff officers compare very favorably in knowledge and ability with those of the armies of other first-class powers.

c. Nature and objective of training for men.—The training of conscripts is progressive, systematic, and thorough, and includes both theoretical and practical instruction. Great stress is placed upon physical training, upon the cultivation of loyalty, obedience, patriotism, and the offensive spirit. The system produces hardy, well-trained, well-disciplined, and fanatically courageous soldiers.

d. Unit and combined training.—The training year begins in January with the arrival of the new conscript class. Training starts with the smallest units, progresses steadily through all the units of each arm and culminates in November with combined maneuvers of all arms involving from one to three or four divisions. The careful, pro-

gressive unit training followed by extensive combined exercises produces organizations which are accustomed to work in combination with the other arms and services in large commands. Training is especially thorough in landing operations and in night operations.

99. System of promotion.—In peacetime the promotion system is a combination of seniority and selection; in wartime largely by selection. In peacetime regulations provide for retirement for age in grade. In wartime these regulations are suspended.

100. Efficiency.—Officers are well qualified to perform their various duties in peace and war. Enlisted men, while lacking in initiative, are well-trained, well-disciplined, courageous, and aggressive fighters. Considering combat efficiency and value as a whole, the Japanese Army is a powerful and efficient striking force specially trained and equipped to combat its potential enemies on the mainland of Asia.

101. Discipline.—*a.* Discipline in the Japanese Army is excellent. Contributing factors to this splendid training are—

(1) The family system in which each member has a definite place of subordination which is unquestionably accepted. This results in a disciplined individual who is easily molded into a disciplined soldier.

(2) Military traditions which have helped to make the Japanese an essentially military people. The feats and exploits of the Samurai are kept before the nation through school texts, novels, and classical drama. Fencing with the sword begins in middle school and continues throughout military service.

(3) Regimentation by which the individual is under very rigid control of the agencies of the national and local governments. In the family, the home, and army, the individual is inculcated with the spirit of military discipline and loyalty to the Emperor and other constituted authority.

(4) Hard work and spartan living to which the conscripts, the vast majority of whom are from agricultural districts, are already accustomed. On entering the army they find the rigors of army life do not far exceed those of civil life.

b. Instances in which there is a complete breakdown of discipline, such as the revolt in Tokyo in February 1936 and the unbridled actions of officers and men following the capture of Nanking, China, in December 1937 are rare. The Tokyo incident was motivated by a fanatic nationalism which transcended all else in the minds of the insurrectionists.

102. Morale.—Morale in the army is excellent. Japanese morale is engendered by—

a. Training in spiritual loyalty to the Emperor, who is the titular head of the state religion (Shintoism) as well as the reigning monarch.

The Shinto religion is based on a mythology which teaches that the Emperor is a descendant of the Sun Goddess and the Japanese people are a superior race. The Japanese also believe their culture is of such a high type that it sets them apart from the rest of the world and gives them a manifest "divine mission" (the latter is but another term for an insatiable ambition for territorial and economic expansion).

b. Self-esteem, traditional prowess with the sword in combat, and Japan's success in the wars with China in 1894 and Russia in 1904–05, and the present Chinese conflict. These have instilled a confidence and bravado which is conducive to high morale, regardless of the lack of combat efficiency of the opposing armies.

c. Sufferings from many natural calamities such as earthquakes, floods, hurricanes, and fires. These adversities have induced in the people remarkable recuperative capabilities and an indomitable tenacity of purpose. It is believed, however, a crushing defeat in battle will totally destroy their belief in their invincibility and "divine mission."

CHAPTER 8

TACTICS OF THE JAPANESE ARMY

SECTION I

GENERAL

103. General.—A study of Japanese tactics causes many adverse criticisms to arise in the mind, criticisms which are frequently voiced throughout these pages. It is well to remember, however, that the Japanese Army is designed to fight in Asia against China or Russia. The tactical methods described in this chapter are those considered suitable to a Russian war whereas, against Chinese troops, greater boldness is felt to be justified. Before indulging in immoderate condemnation of Japanese tactics, one should bear in mind that Japanese tactics have just received the confirmation of success in battle against the lesser enemy, China. Japan understands war in Asia, and, thus far, has always chosen methods leading to success. It behooves the doctrinaire tactician not to be too hard on a regular winner.

SECTION II

OFFENSIVE TACTICS

104. General.—Japanese tactical doctrine insists vigorously on the inherent superiority of the offensive. The object of all maneuver is to close quickly with the enemy where the assumed superiority of the Japanese in close combat can be realized to the utmost. Like the French Army at the outbreak of the first World War, the Japanese seem to feel that in the attack there is some mystic virtue which can overcome material weapons in profane hands; that it is more important to have spirit (seishin) than men or weapons. The corollary to this fetish of the offensive is the rejection of defensive combat as a negative form of action unworthy of the Imperial Army. Trained in the faith of this offensive doctrine, Japanese officers reach attack decisions in map and field maneuvers where, by all orthodox tactics, the situation patently requires some form of defensive action. What elements there are of strength and of weakness in this type of training will be a matter of subsequent comment.

105. Forms of attack.—*a. Envelopment.*—(1) In keeping with usual military theory, the Japanese consider the envelopment, single or double, as the preferred offensive maneuver. Envelopment implies frontal, direct pressure to hold the enemy while the attacker maneuvers to strike a flank. In ascending order of effectiveness, the envelopment may be single, double, or a complete encirclement (kanzen hōi). In conflict with tactical teachings elsewhere, the Japanese are willing to try a double envelopment without any considerable numerical superiority and regard it as sometimes possible even by an inferior force. The Japanese commander may seek to obtain envelopment in one of several ways.

(*a*) The force advances in several parallel columns one or more of which are directed against the enemy flank and rear during the advance to contact.

(*b*) The force advances with certain units in second echelon which can later be displaced to a flank to execute the envelopment.

(*c*) After the force has encountered the enemy and partially deployed, some units may be moved laterally for envelopment if covered by night or fog.

(2) The procedure of (1)(*a*) above is considered the normal one for units of the size of a division; (1)(*b*) is especially applicable to small units, while (1)(*c*) is feasible only in certain favorable situations. The frontal pressure force of a division will also often execute

a close-in envelopment in performing its fixing mission whereas small units such as squads and platoons always seek to obtain the effect of flanking fire (shageki hōi).

(3) The troublesome question of which flank to envelop is decided in accordance with the same considerations we employ.

(4) To intensify the effect of the envelopment they often consider it desirable to combine it with a turning movement (ukai). When such a movement is tried, the force sent around by a division in the attack is relatively weak, about a battalion reinforced by a light battery and a squad of engineers. This is the only time that the Japanese maneuver suggests a wide envelopment and, in this case, the unit sent wide is not the main effort of the attack. The mission of such a turning force is usually similar to that of a pursuit detachment; indeed, it will become a pursuit detachment if the main attack succeeds.

b. Frontal attack.—(1) Japanese regulations contain the usual admonitions against a frontal attack yet, in practice, treat it with more favor than is customary elsewhere. The feeling is that, by virtue of the increased offensive power of tanks, artillery, and air force, the offensive is now at least as strong with relation to the defensive as in the first World War. Hence, the frontal attack should be about as practicable now as in 1918. The Japanese, however, do not proceed logically from this premise and assemble a 1918 superiority of matériel before embarking on a frontal attack.

(2) Situations which may give rise to a frontal attack are those to which we are accustomed. These situations, being standard ones, can hardly be made the basis of criticism. In observed practice, however, the time element or the fear of allowing the enemy leisure to improve his position is often allowed to justify a very questionable decision to make a frontal attack.

(3) The main effort of a frontal attack is made against a weak point in the enemy line leading in a decisive direction into the enemy rear areas. Other considerations in making the main effort of a frontal are identical with those taught in our service schools. The artillery supporting the division seldom exceeds three battalions of 75's, one battalion of 105's and one of 155 howitzers. This artillery is capable of covering with a simultaneous, effective concentration a front of 550 yards (about 115 yards per battalion). This allocation of artillery is obviously inadequate to permit more than a shallow penetration on a narrow front if World War conditions are approximated.

c. Comments.—The impressions gained from a study of Japanese teachings on the offensive and their application in practice may be summarized in the following statements:

(1) The Japanese will attack in many cases where the orthodox decision is some less positive action. The attack may be rash and costly but will never lack vigor and determination.

(2) Where the attack is an envelopment it is likely to be of a shallow close-in type obtained by an overlapping of the hostile flank by parallel columns. It is characterized by speed and energy rather than by intricacy of maneuver and careful coordination of arms.

(3) The frontal attack, often with inadequate means, is common and will remain so until corrected on the battlefield.

106. Meeting engagement.—*a.* The meeting engagement as defined in Japanese military writings is the collision either of two hostile forces in motion or of a force in motion and one which has halted but has not had time to organize a detailed position. The training of the Japanese Army strongly emphasizes this form of combat, for it is felt that the meeting engagement allows an optimum development of the alleged Japanese aptitude for swift and decisive offensive action. In contrast to the doctrine of Western armies, which tends to regard the meeting engagement as a dangerous gamble, the Japanese seek it deliberately. Aside from the question of the assumed superiority of Japanese fighting spirit, the meeting engagement offers to them the added advantage of minimizing the deficiency in matériel, especially in artillery, of the Japanese division, a deficiency which is necessarily felt more acutely in the case of the deliberate attack of a position. Also, the objection that the meeting engagement disrupts the coordinated control of the several arms is not felt to be particularly valid, for the combined use of the arms has never been a strong point of the Japanese, whereas their rugged infantry can look after itself where the fighting becomes a matter only of the rifle and bayonet. In spite of the progress of aviation which tends to eliminate surprise from the battlefield, Japanese commentators feel that meeting engagements will continue to be of frequent occurrence since fog, night, etc., will often blind observation from the air. The meeting engagement is thus made the basis of Japanese combat training, the official regulations giving much more space to it than to any other form of combat. In the words of one Japanese writer, "The Imperial Army seeks to wage a short war to a quick and decisive conclusion. The meeting engagement conforms to this spirit and is to be sought whenever possible."

b. The fundamentals of success in the meeting engagement are taught to be—

(1) The seizure and retention of the initiative.

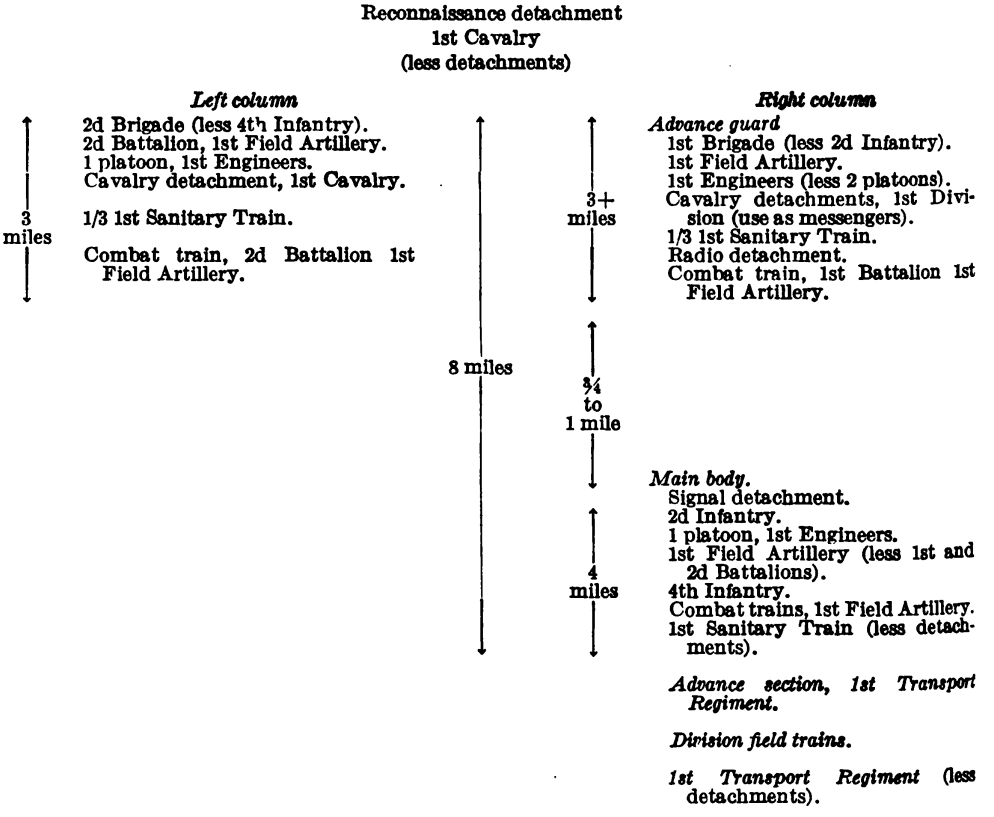
(2) Bold, independent action by subordinate commanders.

(3) Prompt occupation of important terrain features.

(4) Energetic leadership during combat.

107. Advance.—*a. General.*—Considerations governing the formations in the advance and day or night movement are similar to those found in our texts. When the division is to advance at night, the division commander often sends forward in daylight a mixed detachment of cavalry and motorized infantry to seize important terrain features and to cover the movement at night. As a meeting engagement becomes likely, the division commander modifies the formation as needed to facilitate the entry of the division into action with a view to enveloping one or both flanks of the enemy.

b. Advance in two columns.—(1) In the tactical problems consulted there are examples of the division advancing in one, two, and three columns. The two-column formation is used, however, in the vast majority of cases, other dispositions being rare exceptions. In this two-column formation the essential components of the division are disposed as shown in figure 80.



With the above formation, the division commander expects, if anticipatory plans have been correct, to execute an envelopment of the hostile left flank, using three regiments in the initial attack, with the 4th Infantry becoming the division reserve.

FIGURE 80.—Advance in two columns.

(2) This manner of indicating the composition of the march columns is that of a Japanese division field order. It is noteworthy that an advance guard is designated by the division commander for the right column only, whereas the left column receives merely an indication of the units to compose it. This results from the curious system of command which the Japanese use to control this march formation. The division commander commands concurrently the division and the right column. In the latter capacity, he prescribes the detailed organization of that column, making the major general of the 1st Brigade the commander of the advance guard. The detailed organization of the left column falls to the major general of the 2d Brigade, who designates an advance guard for the protection of his column, one which is not an instrumentality for the protection of the division as a whole and which is not directly under the control of the division commander. Thus, as a meeting engagement becomes imminent, the immediate subordinates of the division commander to whom he issues orders directly are the colonel of the 1st Cavalry (commanding the reconnaissance detachment), advance guard commander (right column), colonels of the 2d Infantry, 4th Infantry, 1st Field Artillery, etc. (commanding components of the right column), and column commander (left column). It is not clear how the division commander plans to coordinate the action of his right column advance guard and the one which the major general of the 2d Brigade will organize. The term advance guard, as used subsequently, applies only to that which the division commander directly controls.

(3) In the above formation, the infantry strength in the advance guards of the two columns amounts to about four battalions, or one-third of the infantry of the division. Where there is a greater number of columns, the advance guards sometimes reach half the infantry strength of the division. *Strong advance guards in approaching a meeting engagement are a Japanese characteristic.*

c. Advance in other than two columns.—(1) An advance in one column is avoided because of the delay incident to developing the division for an attack. Whenever that formation is adopted it is imposed by the road net. An advance in three columns has been rarely observed. In this case, the main column of the usual two-column formation (described in *b* above) is reduced by one infantry regiment which, with a platoon of cavalry attached, becomes the third column. The division commander remains the commander of the strongest of the three columns. An advance in a greater number of columns than three, while recommended in the new Combat Regulations, has been exceptional in past practice.

(2) As a Japanese division prior to the North China incident had little organic motor equipment, it has not been usual in the past to organize a special motor column on the march. The new regulations, however, anticipate the presence of motorized units which will ordinarily be serialized on roads not used by foot and animal-drawn units.

d. Attachments.—Frequently attached to a division in the advance are a battalion of medium artillery, a flight of observation aviation, and a battalion of antiaircraft artillery (two gun batteries and a searchlight battery).

e. Trains.—The division trains normally follow the main column of the division under division control in the order: advance section transport regiment, field trains, remainder of the transport regiment. Distances between these units are normally from 1 to 2.5 miles. The massed field trains are under a field train commander, usually a captain designated by the division. The advance section of the transport regiment consists of two field hospitals (there are four in the division), an infantry ammunition section, two artillery ammunition sections, and a horse depot.

f. Antiaircraft protection on the march.—Each front line division usually has attached to it for the advance a motorized antiaircraft detachment (yasen kōshahōtai). This detachment which includes two motorized gun batteries moves by leap-frogging from critical point to critical point along the axis of the division's advance. The guns go into position during the noon-day halt, while passing defiles, while in bivouac, etc. If possible, the batteries displace forward by roads not used by the other elements of the division; otherwise they must double the marching columns. The average march rate for the detachment is 6.2 miles per hour. The effective radius of action of one battery is considered to be 6,800 yards.

g. Advance detachments.—There is a notable tendency for the division commander to send forward a mobile detachment in advance of the division for one of the following purposes:

(1) To cover a night march to the probable battlefield where the division expects to be committed to action shortly after daylight.

(2) To secure a vital terrain feature on the front of the division.

(3) To execute demolitions of the road net and hamper the advance of the enemy.

(4) To execute surprise attacks on the enemy while in march formation.

These detachments consist generally of the division cavalry, some infantry and engineers in trucks, and a battery of light artillery. The infantry strength will ordinarily not exceed a regiment. An

exception to this latter statement has been noted in the case where the division plans to make an active defense. In this case, as much as half of the division may be pushed forward by forced marches to occupy a defensive position, while the remainder of the division follows more slowly with the intention of launching a counter-offensive against an enemy flank.

108. Division commander in approaching a meeting engagement.—*a.* The march disposition of the division contains in it the germ of the maneuver which, from a prior study of the terrain and the enemy situation, the division commander expects to adopt if he encounters the enemy on the march. When the latter is reported approaching from a considerable distance, the division commander estimates where the battle will occur and communicates to his subordinate in a general form the plan of maneuver which he expects to adopt. He energizes his reconnaissance agencies (observation aviation if attached, cavalry, advance guard, and march column patrols) which are operating on reconnaissance missions assigned from the start of the advance. He indicates time and place for the delivery of reports and a dropping ground for the air service. His artillery and engineer commanders receive technical information from their own patrols marching with the advance guard and reconnaissance detachment. As contact becomes imminent the division commander, who has been marching at the head of the main body of the principal column, moves forward on personal reconnaissance accompanied by appropriate staff officers. An advance message center may be designated behind the advance guard to facilitate the collection and dissemination of enemy information.

b. As the result of his personal reconnaissance and the reports of his reconnaissance agencies, the division commander determines the area in which the division will make its decisive effort, his plan of maneuver, and the location of his command post. He then issues fragmentary orders to initiate the deployment of his division.

c. Combat Regulations warn against waiting for over-detailed information before reaching a decision. This injunction seems to authorize a very short reconnaissance phase in map problems.

109. Deployment of division.—*a. Advance guard.*—(1) The prescribed actions of the advance guard in the meeting engagement are normal. Left to his own devices, however, the advance guard commander usually elects to drive headlong into the advancing enemy unless specifically restrained by division order.

(2) The advance guard artillery, as the advance guard closes to contact, prepares to furnish continuous support by leap-frogging batteries from position to position in rear of the infantry. Normal

missions are to interdict the movement of enemy columns, to support the action of the advance guard infantry, and to perform limited counterbattery. Extreme ranges for interdiction by the 75's are 7,600 yards to 9,000 yards but, in practice, missions are seldom fired at over 5,500 yards. Positions are chosen with a view to supporting the attack of the main body without change of position. The advance guard artillery may be reinforced from that of the main body, but the paucity of divisional artillery often makes this impossible. The advance guard artillery reverts to the control of the artillery regimental commander at the time of the attack of the main body.

(3) It must be emphasized that the advance guard discussed is that of the column directly commanded by the division commander. The security detachments in advance of other columns are for local protection only and are not agencies of the division and the latter makes no effort to coordinate their action.

b. Main body.—(1) *Deployment.*—In his basic decision for the deployment of his division, the division commander decides whether it will be coordinated or piecemeal. The basis for this decision is found in Combat Regulations (par. 74) which says:

> The division commander in order to profit by or to extend an advantage won by the advance guard may have to commit to combat each march column and each element of the main body successively upon arrival. However, if the situation permits, the division commander should seek the coordinated entry into action of his units, in which case he orders the deployment of each unit, establishes close cooperation between infantry and artillery, and coordinates the time of the infantry attack.

Thus the question of whether to make a piecemeal attack appears to be decided largely by the success of the advance guard action. In map problems, however, the piecemeal engagement of all or part of a force was often justified by the necessity of seizing some prominent terrain feature before the enemy or of getting out of a defile. The object of the piecemeal attack is to take advantage of a sudden opportunity, while the coordinated attack aims at securing effective use of the combined arms at the expense of time.

(2) *Coordinated deployment.*—(*a*) As indicated above, the Japanese prefer a coordinated development "if the situation permits." The measures taken by the division commander to secure this coordination are:

1. Assignment of a line of departure (tenkaisen) behind which the major units of his command are to deploy for the attack.

2. Detailed arrangements to assure coordination between the artillery and the infantry.

3. Announcement of an hour for crossing the line of departure.

The line of departure is usually in extension of the line held by the advance guard. If the enemy has secured the advantage of priority in deployment, however, the main body of the division may deploy along a line behind or to the flank and rear of the advance guard in order to escape a threatened envelopment or premature engagement with superior numbers. In the latter case the advance guard supported by all the division artillery, covers the deployment and delays the advance of the enemy.

(*b*) If the enemy, anticipating collision with the Japanese troops, assumes the defensive, the deployment is modified to resemble the relatively cautious procedure of the attack of a position. In this case also, the division commander tries to develop and attack in the same day to avoid giving the enemy time to improve his position.

(*c*) The phases of the passage from march column to complete deployment are indicated by the following nomenclature used in Japanese regulations:

1. *Bunshin.*—Breaking from march columns into smaller ones out of hostile artillery range at the beginning of the approach march.
2. *Tenkai.*—Deployment along a line of departure (tenkaisen) with a view to performing an assigned combat mission.
3. *Sokai.*—Advance from the tenkaisen in small (squad or section) columns.
4. *Sankai.*—Final deployment of front line units to permit firing during the last few hundred yards of the assault.

These phases are shown diagramatically in figure 81.

(*d*) It is important to note that the coordinated attack from the Japanese point of view does not imply passing into division assembly areas, hence is not truly coordinated in the American sense of the term. This passage into assembly areas, called *kaishin*, is observed only in the attack of a position. In the coordinated meeting engagement columns develop directly behind the *tenkaisen* without halting prior to arriving on it. No special time is allotted for issuing ammunition and final reconnaissance.

(3) *Piecemeal attack.*—(*a*) In the piecemeal attack the troops are committed to action in order of arrival on the field. The division commander, decentralizing control to his column commanders, limits himself to a designation of routes of advance with a view to sub-

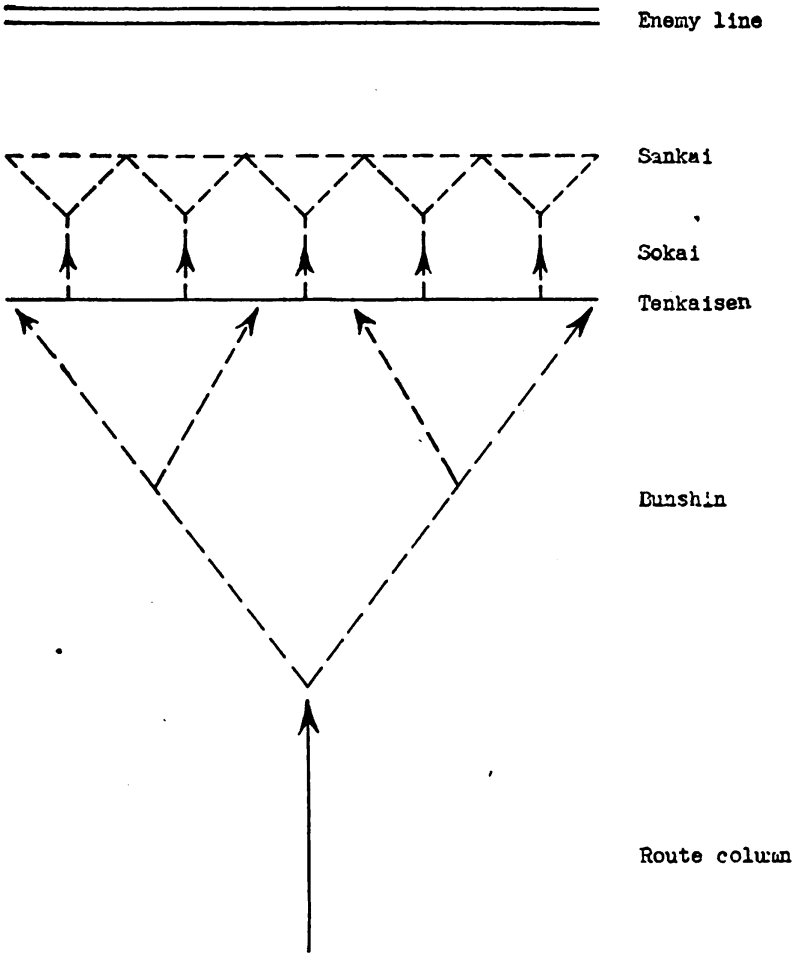


FIGURE 81.—Passage from march column to complete deployment.

sequent attack in the desired directions. There is no division *tenkaisen* and no common hour of attack. There are no detailed plans for coordination between the various arms.

(*b*) Despite the lip service rendered in regulations to the coordinated deployment and attack, the piecemeal method is very common on the map and on the maneuver ground. Often this is the result of the precipitate action of the advance guard commander who gets himself seriously engaged on his own initiative. In such a case, a sort of hybrid development is sometimes executed with a part of the main body going in piecemeal to help the advance guard while the remainder makes an orderly development. Occasionally, a column commander has been known to stage a piecemeal attack all of his own in a situation where the prompt seizure of a terrain feature on his front seemed essential to the subsequent success of the division.

Such action was taken without waiting for orders or authorization from the division commander.

(4) *Rates of march during approach march.*—The march rate of the infantry as it enters the zone of effective hostile artillery fire is reduced to about 1.2 miles per hour. In this zone the artillery displaces by bounds of battalions while furnishing continuous support to the infantry. The theoretical rate of displacement for this artillery is 2.5 miles per hour, although this may increase to about 5 miles per hour if a battalion is allotted a road for its exclusive use. The range limit of effective fire support is about 5,500 yards. As this limit is reached the battalion prepares to displace forward making a bound of about 5 miles.

(5) *Trains.*—As contact becomes imminent the transport regiment and the field trains are halted in a sheltered location. The advance section of the transport regiment will often be as close as 2.5 miles to the line of anticipated contact while the field trains are normally about 5 to 6 miles in the rear of that line. The remainder of the transport regiment will be behind the field trains.

110. Division attack order.—*a. Development order.*—The division development order gives a combat mission to the advance guard and march directions to the several columns with a view to executing a preconceived maneuver. While the elements of his command are carrying out these orders, the division commander watches the development of the advance guard action, matures his plan, and, with a minimum of delay (1 to 2 hours), issues a verbal attack order to his principal subordinates.

b. Attack order.—The division attack order differs from ours only in the organization of the front line infantry into "wings." It is generally issued in fragmentary form to the commanders concerned.

c. Orders to the infantry.—In the organization of the infantry for combat, the brigade (less a regiment) which has been the division advance guard normally becomes one "wing" and executes the holding attack. The other brigade executes the main attack (frontal or slightly enveloping) after deploying as the other "wing" along a line of departure (tenkaisen) generally in prolongation of the advance guard position. About one regiment is held in division reserve. This attack order is issued when the enemy is fixed in a given area where contact is expected. It is often prior to making actual contact and before the advance guard has developed the situation. Depending on the clarity of the situation, the order assigns to the infantry wing specific objectives (such as "to attack the hostile forces on X ridge") or a very general attack mission (such as "to advance in the direction

of *Y*, locate and attack the enemy's right flank"). This latter type of objective is appropriate to an obscure situation when the plan of maneuver is predicated largely on a study of the terrain. In this case the attack direction given is one which will certainly take in flank any formation or position which the enemy may reasonably assume. In an extreme case, the attack order was issued 7.4 miles from the expected point of contact of the advance guards.

d. Orders to the artillery.—(1) The artillery paragraph indicates the location of the positions in general terms. Detailed reconnaissance is made by artillery commanders to determine the final locations. Attachment of artillery to infantry is considered to be justified under the following conditions:

(*a*) The front of attack is very wide.
(*b*) Liaison with the infantry is difficult.
(*c*) Combat begins unexpectedly.
(*d*) The terrain is broken and wooded.

(2) In the normal case the division retains control of the artillery and coordinates its action. Typical missions during the successive phases of the combat are as follows:

(*a*) *Phase I.*—During the approach march and deployment.
1. *Objectives in order of importance.*—Hostile artillery, enemy machine guns firing at extreme ranges.
2. *Purpose.*—To cover the deployment of the infantry.

(*b*) *Phase II.*—During the attack.
1. *Objectives in order of importance.*—Hostile infantry, artillery, reserves.
2. *Purpose.*—Close support of infantry.

(*c*) *Phase III.*—During final assault.
1. *Objectives in order of importance.*—The area of the decisive attack; the enemy reserves.
2. *Purpose.*—Neutralization and interdiction of movement of reinforcements.

e. Orders for piecemeal attack.—The division attack order described in the foregoing applies to the coordinated attack. In the piecemeal engagement columns are organized into "wings" and receive attack directions and the attachment of the proper auxiliary arms. There is no coordinated deployment of any units larger than a battalion. The artillery, less detachments, is kept under division control. The maneuver takes the form of a frontal collision without any effort made at the echelon of the division to obtain the effect of envelopment.

111. Frontages and distances.—*a. Frontages.*—The following frontages are averages from several problems:

Battalion of a covering detachment: 1,600 yards.
Regiment in a holding attack: 3,300 to 4,400 yards.
Regiment in the decisive attack: 1,600 to 2,200 yards.
Interval between frontal and enveloping attacks: 1,600 yards.

b. Distances.—Distances from the line of departure:

Division command post: 2,200 to 3,300 yards.
Brigade command post: 1,100 to 1,600 yards.
Artillery positions: 550 to 1,100 yards.
Division reserve: 1,100 to 2,700 yards.
Advance echelon, division transport: 4,400 to 6,600 yards.
Field trains: 8,800 to 11,000 yards.
Remainder of division transport: 11,000 to 13,000 yards.
Line of departure from enemy positions: 1,100 to 2,200 yards.

c. Assault.—Attacking units do not try to retain alinement. Where the going is easy, they press ahead. When gassed areas may be encountered, the leading wave includes gas-disinfection squads. A gassed area is avoided when possible; if it must be traversed, the local gas squads use their light disinfecting equipment to neutralize it. Where this equipment is insufficient or absent, the troops resolutely cross the gas at an increased gait. The artillery leap-frogs batteries forward close behind the infantry. Its forward observers advance with the infantry. Victory is won by closing with the bayonet. At this moment infantry and artillery fire is increased and reserve units are brought up. The cavalry closes in on the enemy flank and rear. The division reserve is used to extend and exploit an advantage gained, to meet a counterattack, or to extend the flank of the enveloping force. If darkness interrupts the attack it will be continued at night or renewed at dawn.

112. Comments.—*a.* In the Japanese meeting engagement there is a praiseworthy boldness and vigor in the behavior of all echelons of the division. Speed in decision and execution is stressed in regulations and carried out in application. A hostile force encountering a Japanese division may expect to receive a quick and energetic attack and unless the covering forces are solidly deployed on their position, the Japanese attack is likely to upset the plans for a coordinated attack of the opposing commander.

b. Regulations and their application suggest, however, an overwillingness to engage in piecemeal action. Contrast paragraph 74

of Combat Regulations cited previously with our own Field Service Regulations (par. 447):

"In offensive operations against an unshaken enemy, deployment for attack directly from march columns without organizing the attack in an assembly position runs great risk of loss of control of troops and of deficient support of the attacking echelon by artillery, cavalry, tanks, and heavy infantry weapons."

Again, paragraph 458:

"The division commander develops the infantry of the main body by assigning march objectives to the larger infantry units. Such objectives are usually the sections of the assembly position to be occupied by the units concerned."

Plainly our regulations are strongly for the coordinated attack as against the piecemeal. The latter is generally said to be justifiable only if time is pressing, if there is a limited objective, and if combat superiority is on our side. If these criteria are applied to the situations in which the Japanese commander has decided to make a piecemeal attack, we find that time is pressing and there is usually a limited objective, but there is never combat superiority. As for the latter element, the enemy is always superior, and is in at least an equal state of readiness for combat. (In one map problem, the Japanese division was marching in one column while the enemy was in two.) In short, the only combat superiority is in the mind of the Japanese commander. It is believed that such a doctrine taught in peace will make wasteful piecemeal action the rule rather than the exception in war and develops a dangerous overconfidence unjustified when faced with first-class troops.

c. The march formation with the division commander a column commander is an awkward one which burdens the division commander needlessly with the details of organizing and commanding a column. It complicates the handling of the advance guards which are usually not coordinated under division control. In fact, the advance guards of columns adjacent to the one commanded by the division commander are generally ignored in the division plan of maneuver. As a result the division does not appear to develop behind solidly organized covering forces which can assure an uninterrupted deployment through coordinated defensive action even though the numerical infantry strength of the advance guards is unusually large, averaging from a third to a half of the infantry of the division.

d. The attack itself tends to be frontal or a very flat, close-in envelopment. The frequent use of the advance guard reinforced to make a holding attack is open to criticism as it is always deployed on such a wide front that control is difficult and the organization of

an effective attack unlikely. The cramped style of envelopment often employed arises out of the desire to get the attack off quickly and from the weakness of the organic artillery of the division. The Japanese try to keep the latter in a central location where their fire can be maneuvered over most of the front of both holding and enveloping attacks. This restricts the scope of the possible attack directions.

e. Map problems and terrain exercises show an insufficient time for reconnaissance and organization of the attack. The non-use of division assembly areas has already been commented on. In one map problem only 1½ hours elapsed between the decision of the division commander to attack and the jump-off of the so-called coordinated attack. While this is an extreme case, the impression of insufficiency of time for preparation is general.

f. In summary, the characteristics of the Japanese division in the meeting engagement are—

(1) Rapid, aggressive offensive action by all echelons.
(2) A tendency to uncoordinated, piecemeal action.
(3) Development behind weakly articulated covering forces.
(4) Frontal or restricted close-in envelopments.
(5) Inadequate artillery support.
(6) Sacrifice of proper reconnaissance and organization to obtain speed in attack.

113. Attack of position.—*a. General.*—When the enemy has had time to occupy and organize a position, the Japanese commander endeavors to fight the decisive action outside of the organized area by turning the position. The character of the terrain, however, or the presence of other Japanese units on the flanks, will often limit the possible maneuver area and will impose the attack of the position. The technique of such an attack resembles the coordinated meeting engagement in the approach march and the development of the situation by the use of the advance guards; it differs in the amount of time necessary for reconnaissance and attack preparations. These latter, while carefully executed, should not in the judgment of Japanese commentators be made the excuse for allowing the enemy undue time to strengthen his position. According to teachings as exemplified in map problems, when a commander encounters a position which has been strengthened during a period of several days, he ordinarily drives in the covering forces and reconnoiters during all or part of one day and launches his main attack on the following morning. He is quite capable, nevertheless, of doing all of this in one day, if anything in the problem can be construed as indicating that time is pressing.

b. Development.—(1) The hostile position will normally be covered by security detachments which will vary in strength from patrols to a relatively strong force supported by artillery and deployed on an outpost line of resistance. As the Japanese advance guards approach contact with these security forces and before the main body comes under long-range artillery fire, the division commander orders his columns into assembly.

(2) It is to be noted that this going into assembly areas is a phase of the attack of a position not present in the meeting engagement. In problems consulted, these areas are from 2,200 to 4,400 yards from the hostile outpost line and thus 4,000 to 6,000 yards from the hostile artillery. In the typical case of the division advancing in two columns three assembly areas are designated, one for a brigade (the main attack), one for a brigade less a regiment (the secondary effort), and one for a regiment (the division reserve). As shown on a situation map, a brigade area is about 1,600 by 1,600 yards. Security detachments cover the assembly from positions about 1,100 to 1,600 yards in advance.

114. Driving in covering forces.—*a.* In order to obtain adequate information of the main defensive position, the Japanese division ordinarily first drives in the hostile covering forces, then executes the necessary reconnaissance for the main attack. If these covering forces are weak and do not form a continuous front, the advance guard commander drives them in on his own initiative; otherwise, the division commander organizes the operation under the cover of strong artillery support. In the typical case, this attack takes place on the afternoon of one day, followed by the attack of the main position at daylight or shortly thereafter. When the two forces occupy positions very close together, two nights may be necessary to get the attacking forces and matériel into position.

b. This procedure of successive attacks, while designated as orthodox in Combat Regulations, is often replaced in practice by a continuous attack of both outpost and main position. It is not clear when this variation is considered justified, but apparently the deciding factor is whether or not the artillery can support the attack through both positions without displacement and whether the time element is pressing. When the continuous attack is made, that of the outpost line becomes a phase of the main attack and the attacking infantry usually pauses to re-form on the captured outpost position, which becomes a sort of secondary line of departure (tenkaisen). In about half of the map problems consulted the continuous method was adopted, although there was no apparent need for especial haste in getting off the attack.

115. Attack order—general.—The division commander having completed his plan of attack based on reconnaissance reports received while his infantry is developing in assembly areas (kaishin haichi) and the advance guard is driving in the covering forces, now issues his order for the final deployment of the division and the subsequent attack. The order includes familiar elements, except that the infantry of the assault echelon is divided into right and left wings (occasionally into a right wing, left wing, and center) in accordance with the scheme of maneuver.

116. Technique of attack.—*a. General.*—The normal enemy situation in peacetime exercises is that of an enemy force of all arms of a numerical strength one-half to two-thirds that of the Japanese which has been occupying a position for a period of from 1 to 4 days. The position is normally covered by a weak outpost position and by a limited amount of wire. The terrain and other factors are such that the Japanese commander is forced or considers himself forced to make a penetration or a close-in envelopment. The division attack order is usually a complete, formal field order.

b. Infantry.—(1) Eight to nine battalions of infantry are normally in the assault echelon attacking on a front of 3,300 to 5,500 yards. The typical disposition is into "wings" with one brigade as the right (left) wing to make the main effort while one brigade (less one regiment) as the left (right) wing makes the holding attack. These infantry units, in accordance with the plan of deployment, advance from the assembly areas (tenkai haichi) to their assigned positions along the line of departure, where they make final attack preparations. Where the attack is to jump off about dawn, the advance to the line of departure is made under cover of the darkness of the preceding night; if in daylight, every effort is make to conceal and protect the movement. The line of departure is chosen so as to be protected from effective small arms fire and varies in problems from 550 to 2,000 yards from the enemy main position. When the attack of the main line of resistance and the outpost line of resistance is continuous, a pause and a realinement take place along the rear edge of the outpost position which becomes a phase line in the course of the attack. Attack objectives (terrain features) or attack directions are given the front line infantry units according to the detail with which the enemy position is known. Normally the line to be reached by the attack is deep in the zone of the hostile artillery. The hour of attack is usually about an hour or two after daylight, as the Japanese have little confidence in the ability of their artillery to adjust and fire a preparation at night. In the case of an attack entirely

in daylight, a minimum of 4 hours is allowed between the time of issuing the attack order and the assault, to allow for the distribution of the order and the artillery preparation.

(2) On the front of the decisive effort the following frontages of attack are average:

Company	225 yards.
Battalion	440 to 600 yards (two or three companies in line, two or one in reserve).
Regiment	1,100 yards (two battalions in line, one in reserve).
Brigade	2,200 yards (regiments abreast).

Frontages of units making a secondary attack are 20 to 25 percent greater.

(3) The division reserve consists of from two to four battalions of infantry assembled under cover in the zone of the main effort from 1½ to 2 miles from the line of departure. The attachment of motors to the reserve was never observed. Neither was the assembling and use of the division engineers as an emergency reserve.

c. Tanks.—Tanks are not ordinarily considered to be available to a division making the attack of a position. When present they consist of a company of accompanying tanks. These are brought up with great secrecy to assault positions, where they are attached to front-line battalions and jump off at the same time as the front-line infantry. The latter are warned not to stop if the tanks are destroyed but to keep going by virtue of their own organic weapons. Tank missions are the destruction or neutralization of hostile elements most dangerous to the infantry and the opening or completion of breaches in the enemy's wire.

d. Artillery.—(1) The division artillery (three battalions of horse-drawn 75's plus one battalion of 105-mm howitzers) is frequently not reinforced. If reinforcement is made, it is by the addition of a 155-mm howitzer or a mountain artillery battalion. The organization for combat usually provides for a direct support group of from one to two battalions for each "wing" without any artillery being held in general support. If a fourth battalion is attached, it may be reserved as a counterbattery group in a relation similar to general support. Fire missions are varied according to the phases of the proposed action, a typical assignment where there is no reinforcing artillery being the following:

(*a*) *Phase I.*—Attack of the outpost position. Missions: counter-battery by one battalion, direct support fire by two battalions, with especial attention to the troops of the main effort.

(*b*) *Phase II.*—From the occupation of the outpost line of resistance to the opening of the artillery preparation. Missions: counter-battery, harassing, and interdiction fires.

(*c*) *Phase III.*—The artillery preparation.

1. Duration: 1 to 2 hours.

2. Subdivisions:

½ to 1 hour of fire for adjustment in daylight.

½ hour for wire-cutting accompanied by slight counter-battery.

½ hour of fire on infantry position.

(*d*) *Phase IV.*—The attack. Mission: direct support fires with particular attention to the main effort.

(2) All the division artillery deploys for the attack of the outpost line of resistance. The artillery positions are pushed forward to within 550 to 880 yards of the infantry line of departure so as to be able to support the attack of the principal position without displacement. At the time of the latter attack, one or two batteries are often attached to the main effort as accompanying artillery.

(3) The ammunition allowance for the light artillery in an attack of a position is usually 3 to 3½ days of fire (1 day of fire 75-mm equals 300 rounds).

(4) Two to three airplanes are normally attached to the artillery for observation and command purposes.

(5) No provisions are ever made for firing unobserved fires. There are no indications of an intention to use airplane photos. Gunnery methods implied are elementary with main reliance on axial, ground observation with observation posts close to the guns. The new Combat Regulations imply, however, that the artillery is capable of registering at night and of opening fire promptly at dawn.

e. Antiaircraft artillery.—The normal attachment of antiaircraft artillery appears to be a battalion which is believed to consist of two gun batteries and a searchlight battery. Such machine guns as are in this battalion are for its own local defense. In the attack of a position, the gun batteries are both put in the zone of the main effort in initial positions about 2,700 to 3,300 yards from the line of departure of the infantry. The effective radius of an antiaircraft battery is considered to be 6,600 yards.

f. Cavalry.—About one platoon is normally attached to each "wing" for duty as messengers and orderlies. The remainder is divided for flank protection with the bulk on the decisive flank. As there are only two troops in the division regiment, the combat value of the cavalry is negligible.

g. Engineers.—Engineer missions in the typical case are: maintenance of communications, assistance to the artillery and tanks; wire-cutting, and the removal of obstacles.

h. Command posts.—The average distances of command posts from the line of departure for the attack of the main position are:

Infantry regiment	1,100 yards.
Infantry brigade	1,600 to 2,200 yards.
Division and artillery regiment	2,700 yards.

i. Destruction of obstacles.—The Japanese normally assume there is some wire in front of the hostile position. An attack order includes provisions for cutting the wire in one of the following ways:

(1) By detailed destruction fires by the artillery.

(2) By artillery fire in the most important places supplemented by hand cutting by infantry, tanks, and engineers elsewhere.

(3) By the artillery cutting the wire imperfectly at all points; to be completed in detail by infantry, tanks, and engineers.

Where there are several bands of wire, it is normal to make the destruction of the first band the exclusive duty of the infantry and engineers.

j. Sanitary troops.—One-third of the sanitary train is assigned to support each wing. These detachments set up and operate division collecting (dressing) stations at the rate of one per brigade behind the regimental dressing stations. Locations are from 1,600 to 2,200 yards behind the line of departure. The remaining third of the sanitary train is held in reserve. Two field hospitals are set up about 2,500 to 4,000 yards from the line of departure. The division is capable of setting up two other hospitals which are held initially in reserve.

k. Ammunition supply.—The advance echelon of the transport regiment (senshin shicho) ordinarily opens an infantry ammunition distributing point in rear of each brigade and one artillery distributing point.

117. Assault.—There is little in tactical problems which bears specifically on the conduct of the assault. While the infantry pushes ahead boldly, bayonets fixed, without regard to alinement, the division commander influences the action by the fire of his artillery (although he has none available which is not on direct support missions) and by the division reserve. The latter he uses to meet a counterattack, to exploit a success, or to cover the flank of a penetrating unit. The division reaches its objective prepared to pass to the pursuit in accordance with plans previously made by the division commander.

118. Criticism.—*a.* In their conception of the attack of a position, the Japanese show little appreciation of the realities of modern warfare. Although they have twice had unpleasant experience in position warfare at Shanghai, they have learned slowly and imperfectly lessons which were hammered into European armies in the first weeks of 1914. Impartial foreign military judgment would concede small chance of success to a typical Japanese plan of attack if faced by average troops with average equipment. The following specific criticisms may be made of the Japanese conception and technique of the attack of a position:

(1) The means available for the attack are inadequate.
(2) The time for reconnaissance and preparation is unduly short.
(3) Frontal or nearly frontal attacks are the rule.
(4) Assembly areas are too close to the enemy.
(5) The artillery is incapable of performing the missions assigned.
(6) Provisions for the destruction of obstacles are inadequate.
(7) Administrative and command installations are not distributed in sufficient depth.

These criticisms are discussed in the following paragraphs.

b. The usual special situation of a map problem sets up conditions which would be considered impossible of solution at any staff school outside of Japan—namely, the attack of a wired position offering little possibility for maneuver by a division with a slight numerical infantry superiority, three to four battalions of artillery, and, a few accompanying tanks. That this basic situation is permitted and considered capable of successful and logical solution is the most significant point in the present study. Any explanation of this assumption of military superiority calls for an analysis of Japanese psychology, national vanity, past military experience, and future hypothetical opponents which goes beyond the scope of this study. As has been pointed out in paragraph 103, the tactical methods described herein are those which the Japanese consider appropriate against the Russians. Against the Chinese, Japanese officers say that they can be more bold; against troops of a first-class Western power, they expect to adopt more circumspect methods. Whether any army can quickly and successfully readjust its tactics learned in peace without considerable initial fumbling seems to be open to question.

c. The willingness with which the Japanese commander will order the simultaneous attack of an outpost and a main position has been mentioned in paragraph 114*b*; this, in spite of the prescription in Combat Regulations which indicates that effective reconnaissance is obtained only after the covering forces have been driven in. This

shortening of time for reconnaissance and preparation in many cases reduces the already slender chances of a lieutenant general of reaching his objective. This tendency to a simultaneous attack, however, should not be over emphasized, as it results in many cases from map problem boldness which would probably be tempered in the field. The Japanese officers among whom considerations of face make expressions of "toughness" most important, are probably prone to paper heroics which the naturally cautious Japanese temperament will restrain in practice.

d. The development of the division is generally orthodox except that the assembly areas are invariably within effective light artillery range. The brigade areas are also laterally contiguous but this criticism is rather one of the plan of maneuver which lies behind the development.

e. The plan of maneuver offers nothing in advantageous attack direction. It is usually a parallel, frontal, or semifrontal push executed by the two "wings" of the division with one wing, the decisive effort, somewhat stronger in infantry and artillery. It is true that the conditions of the problem generally limit the possibility of maneuver but it is significant that the critique of problems never mentions the possibility of utilizing the famous marching powers of the infantry to execute anything like a wide envelopment. If one accepts the form of maneuver, however, there is still a weakness in the absence of a decisive massing of the means on the decisive front.

f. The use of the artillery is subject to numerous criticisms, but the fundamental and obvious fault is that there is not enough of it. It is uncertain whether this weakness in artillery is the result of a lack of appreciation of the need of adequate fire support, is a feeling that past war experience has not demonstrated the need of a stronger artillery, or is the acceptance of the fact that Japan is economically incapable of providing and supplying a numerous artillery. At all events, no Western artilleryman will concede that any real effect can be had on a wired-in position by four battalions of light artillery. The period of daylight fire for adjustment prior to the fire for effect reduces the tactical surprise and diminishes the moral effect of the preparation. This unwillingness to fire the preparation unobserved at night suggests low gunnery efficiency. Also the absence of general support artillery reduces the flexibility of the artillery fires and limits the ability of the division commander to intervene promptly in the action through his artillery. From the picture drawn in the tactical problems, one can feel reasonably sure that the Japanese infantry will jump off with the hostile wire uncut and the enemy artillery and machine

guns far from neutralized. The detailed workings of the direct support fires are not described in the problems studied; hence, no estimate of their effectiveness can be made other than that implied by the absence of detailed plans for infantry-artillery liaison.

g. While the detailed administrative plan of the attack does not appear in the problems studied, such establishments as are located on the situation maps are considerably closer to the front line than we consider standard. Lack of depth is thus characteristic of both the tactical and administrative dispositions of the Japanese division and has its origin in the Japanese lack of appreciation of the effects of modern fire power, particularly that of the hostile artillery. A short period of contact with a well equipped enemy will in all probability be a quick corrective for this tendency.

h. In general, although the adverse criticisms which are discussed in the preceding paragraphs are numerous, it is not to be assumed that the Japanese will long persist in these errors, if errors they prove to be, on the battlefield. The Japanese gift for adaptation and improvisation can be counted upon to remedy quickly many of the faults in their peacetime doctrine.

119. Pursuit.—*a. General.*—Japanese regulations and tactical disquisitions emphasize in the usual way the need for pursuit to reap the full fruits of victory. They also recognize the existence of many deterring elements such as fatigue of the troops, disorganization, and depletion of supplies. In spite of these, the Japanese commander is urged to pursue relentlessly and thus to avoid the need of another battle against a reorganized and reinforced enemy.

b. Preparations for pursuit.—The Japanese commander throughout an engagement plans constantly for the pursuit. The enemy is observed carefully, especially at night, for signs of an intention to withdraw. To determine this intention, the Japanese commander has at his disposal observation aviation, ground reconnaissance patrols, and spies. When these are inadequate, he is urged unhesitatingly to stage a local attack to gain the required information. While he is pushing this reconnaissance, he makes preparations for a possible pursuit. These preparations take the form of making certain units ready for immediate pursuit, of assembling sufficient ammunition for the operation, and of outlining a tentative administrative plan.

c. Types of pursuit.—While the quick destruction of the defeated enemy is the object of all pursuit, this optimum cannot always be effected immediately by a single simple maneuver. In seeking to destroy his opponent, the pursuer will usually try to fix him by frontal pressure while enveloping or turning one or both flanks. If this

maneuver fails, he may try to push the retiring enemy off his line of retreat or into a disadvantageous position where he can be more effectively attacked. Recognizing these differing situations implicit in the pursuit, Japanese writers treat the operation under two types: type *A*, where the enemy is destroyed near the field of battle where he sustained his initial defeat; type *B*, where the enemy has partially succeeded in extricating himself and the pursuer must take distant objectives deep in the enemy's rear after resuming semi-march dispositions. In both types, the destruction of the enemy is accomplished by fixing him with direct frontal pressure while mobile pursuit detachments, moving around the flanks, occupy the critical points along his line of retreat and fall upon his rear.

d. Technique of pursuit.—(1) *General scenario.*—(*a*) *Type A.*—This form of pursuit finds its type example in the case of the daylight withdrawal of a hard-pressed enemy. The withdrawal is observed by the attacker who redoubles the frontal pressure while available reserves are quickly formed into pursuit detachments which turn the enemy's flanks and fall upon his rear. Boundaries between front line units are readjusted as needed. The destruction of the enemy is thus accomplished on or near the original field of battle. The detailed action of the separate arms is essentially the same as in type *B* except that distant marches are not required with a reforming of march columns by the frontal pressure force of the infantry.

(*b*) *Type B.*—This form of pursuit is regarded as usual by the Japanese. All problems studied were of this type wherein the enemy succeeds wholly or partially in disengaging himself and beginning a displacement to the rear. The initial withdrawal is usually under cover of darkness and is not at once discovered. When the Japanese front line unit commanders find out what is occurring, they renew the attack individually and upon their own initiative in an effort to push through or around the hostile covering forces. As these Japanese units slowly push through the enemy position, reserve units, formed into pursuit detachments, are started around the flanks with objectives deep in the enemy rear. When the Japanese front line infantry units have passed through the zone of resistance of the covering forces, the division commander halts them, organizes and sends forward additional pursuit detachments, and causes the remainder to form march columns and follow in the trace of the pursuit detachments. As this form of pursuit is considered to be usual, the subsequent remarks on the missions of the various arms apply specifically to this type, although also applicable with slight modifications to type *A*.

(2) *Front-line infantry.*—All units are individually responsible for discovering the hostile intention to withdraw. Having made this discovery, they drive into the enemy covering forces on their own initiative. In order to get through the latter as quickly as possible, it is preferable to turn the organized localities by maneuver or to infiltrate through the gaps. When neither is possible, a quickly organized attack on a narrow front is indicated. As the action of front line units is decentralized, most of the division artillery is attached to front line infantry regiments. Tanks are sent in to block the enemy's retreat and to attack his artillery and command posts. To avoid a serious loss of control, the division commander usually indicates a line in rear of the probable enemy covering positions where the troops halt and re-form for further pursuit. A part of the front line infantry is then organized into one or more pursuit detachments which press on in conjunction with previously formed pursuit detachments. The bulk of the division re-forms march columns and follows after the pursuit detachments.

(3) *Artillery.*—When the enemy is discovered to be withdrawing, the artillery endeavors by fire to disrupt the enemy's retreat by interdicting the important defiles and bottlenecks in the road net. As the front line infantry penentrates into the covering position, the artillery, attached to infantry units, displaces close behind the advancing troops and concentrates its fire on the resisting enemy infantry. Some batteries are attached to pursuit detachments.

(4) *Pursuit detachments.*—The actions of pursuit detachments conform to those in our service.

(5) *Other arms.*—The missions of the other principal arms are normal.

e. Comments.—The Japanese pursuit offers little variation from standard practice worthy of comment. It is felt, however, that the absence of sufficient organic motor equipment in the division to motorize any considerable part of the pursuit detachments will make it often impossible for the latter to reach their destinations in time on the enemy's line of retreat. Japanese regulations urge the utilizing of all available transport, but, in the absence of especially attached motors, the division transport is incapable of giving the required mobility to the pursuit detachments. The well-known marching powers of the Japanese infantry can be counted upon to compensate in a measure for this deficiency in mechanical transport but not to the degree of assuring in the normal case the interception of an enemy retiring along shorter lines and animated by a pressing desire to get to safety. The pursuit is a form of operation thoroughly in

line with the offensive spirit of the Japanese Army. The war in China has shown that the Japanese pursue just as vigorously and unhesitatingly as the regulations say they should. The North China campaign was particularly rich in examples of rapid pursuit. In the advance down the Pinghan and Tsinpu Railways, the Japanese

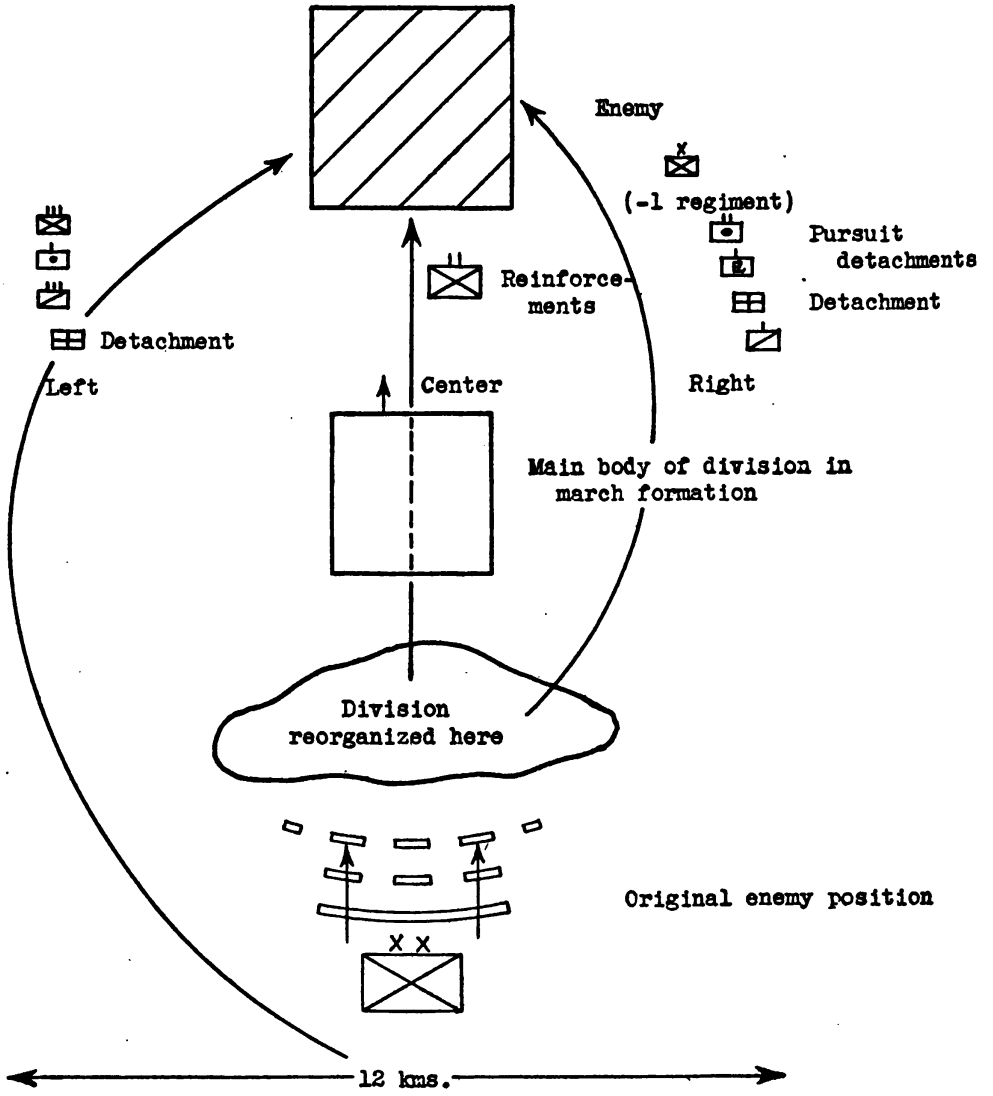


FIGURE 82.—Pursuit formation.

put their pursuit detachments on freight cars and sent them far into Chinese territory while the main body of the divisions followed partly by rail, partly by marching. Off the rail lines, the Japanese organized special motorized units (kaisoku butai) to give rapidity to their pursuit.

120. Attack of river line.—*a. General.*—(1) Japanese river crossing methods are essentially those of the other modern armies of the world. Success is sought through surprising the defense by concealment of preparations and rapidity of action after the crossing starts. Normal attachments to a division contemplating a river cross-

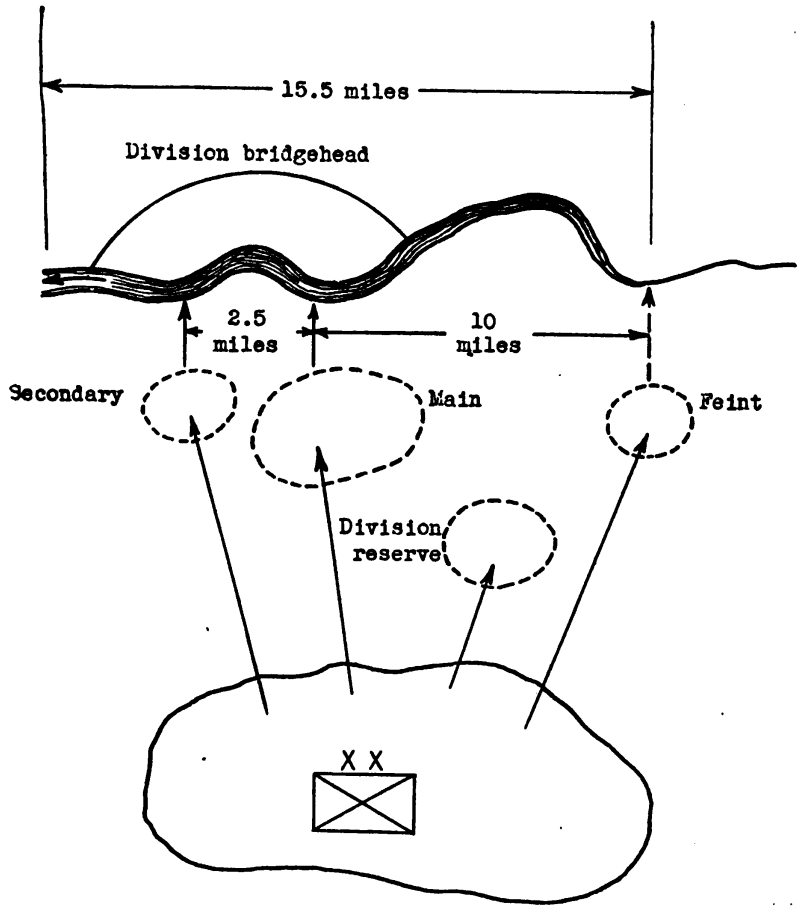


FIGURE 83.—Typical river crossing.

ing are: two or three antiaircraft batteries, one or two squadrons of observation aviation, one or more independent engineer companies, two or more bridging companies, two to three battalions of artillery (mountain or medium howitzers), and an armored car troop.

(2) The advance to the river is made on a broad front and is preceded by advance detachments who drive back enemy patrols from the

near bank and seize existing bridges, bridging materials, and boats. The aviation reconnoitres both banks of the river while the engineers conduct a detailed reconnaissance for possible ferry and bridge sites, and for local engineering resources.

b. Comments.—The river crossing methods just described are so orthodox as to excite little comment. The pooling of all the engineers into a unit in general support of the crossing is a deviation from the usual method of attaching engineers to the crossing commanders. The weakness of the divisional artillery makes especially awkward the support of an operation on a wide front such as a river crossing. It becomes difficult to allot any artillery to the distant feint, without which there cannot be much deception. The use of the reserve to create false activity and the measures taken to control spies among the civilian population are further examples of the emphasis placed on secrecy in all Japanese operations.

121. Night attack.—*a. General.*—The Japanese Army has a strong partiality for the night attack. This form of combat favors the bayonet fighting stressed in the training of the infantry and tends to cover the weakness in artillery and cooperation of the combined arms which foreign observers consider to exist in the Japanese Army. The Japanese are further encouraged in their faith in night attacks by successful experiences in the Russo-Japanese War and subsequent operations in Manchuria and China. Tactical commentators refer to the night attack as "a specialty of the Japanese Army" and as "a traditional Japanese method."

b. Advantages and disadvantages.—The advantages attributed to the night attack are avoidance of losses, concealment of movement, rapidity in closing with the enemy. Disadvantages conceded are loss of cooperation between units, loss of unified direction, chance of mistakes, confusion. It is felt, however, that trained troops can overcome these disadvantages and succeed even when opposed by superior numbers. Thus, in justifying a night attack there is a tendency to reason, "The enemy is too strongly organized or too numerous for us to hope to defeat him in daylight; only by a night attack have we any possible chance to defeat him and accomplish our mission."

c. Occasions for night attacks.—(1) Night attacks are appropriate for units varying in size from the company to the division. Orthodox situations calling for night attacks are the following:

(*a*) A large unit (brigade or division) wishing to extend or complete a success gained during a daylight engagement may continue the attack at night.

(*b*) Large units (brigades or divisions) may use a part of their force to seize by surprise at night points needed to assist the attack of the following day.

(*c*) Local night attacks may be used to distract or mislead the enemy and to conceal one's own activity elsewhere (for example, a night withdrawal).

(2) These three occasions are referred to as orthodox since they are the ones described in Combat Regulations. In practice the night attack has been used in the following additional situations:

(*a*) A large unit wishes to prevent a hostile night withdrawal or to complete the defeat of the enemy before the latter can be reinforced.

(*b*) Superior fire power of the enemy has prevented the reaching of attack objectives in daylight.

d. Hour of attack.—Combat regulations indicate just after dark or just before daylight as desirable hours of attack. In four peacetime exercises the hours were 12:30 AM, dusk (in this problem enemy reinforcements were expected), 2 PM, and midnight. The considerations involved in choosing these hours were that the engineers need at least 2 hours early in the night to cut paths in the hostile wire prior to the attack and that the objectives should be reached shortly before dawn to allow a coordinated renewal of the attack a little after daylight from the new line of departure.

e. Reconnaissance.—Regulations insist on the importance of a thorough knowledge of the terrain on the part of all commanders involved in a night attack. Commentators stress the need of detailed information as to the location of enemy strong points, machine guns, obstacles, and searchlights. In observed peacetime practice, however, the time allotted for reconnaissance is usually quite short. Concrete examples noted are—

(1) A regimental commander, hard pressed in a meeting engagement, decides at 3:30 PM on a night attack at dusk, less than 4 hours later.

(2) In two separate map situations, two brigade commanders decided at 4:00 PM and 5:00 PM, respectively, while in the course of attacking a prepared position, to make a night attack shortly after dusk of the same day. These decisions are believed to have been made at such time and under such conditions as would preclude much real reconnaissance.

f. Objectives.—(1) "The objectives of a night attack are limited and are shallow in comparison to those of daylight attacks." (Combat Regulations.) Each subordinate unit receives a clearly defined terrain objective. Villages are avoided, as they are difficult to attack at night.

(2) Objectives assigned are often ambitious. The lines of tactical localities assigned frequently are not clearly defined features which guarantee against errors in the dark. The final objective is usually the rear edge of a position about 1,100 yards deep. Apparently about half of this is believed enough for the first bound. It will be seen in the discussion of attack dispositions that this depth of objective requires a night passage of lines on the first objective.

g. Conduct of attack.—(1) *Infantry.*—(*a*) The infantry of a night attack is usually disposed in two assault echelons and a reserve. If the objective is shallow, one assault echelon may suffice. In the normal situation, however, a first wave rushes forward and seizes the line which constitutes the first objective; the second wave passes through the first and moves on to the second objective. This second wave has also the mission of repulsing counterattacks and destroying enemy searchlights. The relative strength of the first and second waves depends on the relative strength of the first and second positions. In general, a force of from one to two platoons commanded by an officer is given the mission of attacking and occupying a definite enemy strong point. A battalion generally attacks in a 450- to 550-yard sector with two rifle companies in the first wave, two companies less a platoon in the second wave, and a platoon in battalion reserve. The battalion is expected to reach and occupy two objectives, the more distant being some 1,100 yards from the jump-off line. Where the rear objective is more distant than this or the going is more difficult, two battalions may attack in column, the rear battalion being responsible for the taking of the second objective. Figure 84 is a schematic representation of a typical attack formation.

(*b*) In the foregoing dispositions, Companies 1 and 2 are in a line of platoons, each platoon being in a line of squad columns; Companies 3 and 4 are about 110 yards behind the leading companies in a line of platoons, each platoon being in a column of squads. Exact intervals between platoons are not known but the frontage of a company is relatively narrow, about 110 to 165 yards. The battalion reserve follows the preceding company at about 55 yards. While the Japanese recognize that this dense formation is highly vulnerable to fire, they consider it justified by ease of control and effectiveness of shock action.

(*c*) *Infantry combat.*—The infantry assault is with the bayonet without firing. Battalion guns may be used against searchlights and obstacles. Machine guns will participate in protective fires.

(2) *Wire-cutting, gas, and smoke.*—Engineers are attached to assault battalions for cutting of lanes through the enemy wire. This

cutting starts secretly after dark about 1½ to 3 hours before the attack. About three lanes per battalion are apparently considered sufficient. If gassed areas are to be encountered, disinfecting detachments precede the assault. Chemical detachments for laying smoke screens also may be pushed forward if the enemy searchlights are troublesome.

(3) *Artillery.*—(*a*) The Japanese classify night attacks as *kishū* and *kyōshū*. The first may be translated as "attack by surprise" and the second "attack by force." The first is characterized by an infantry rush with the bayonet unsupported by a preparation or ac-

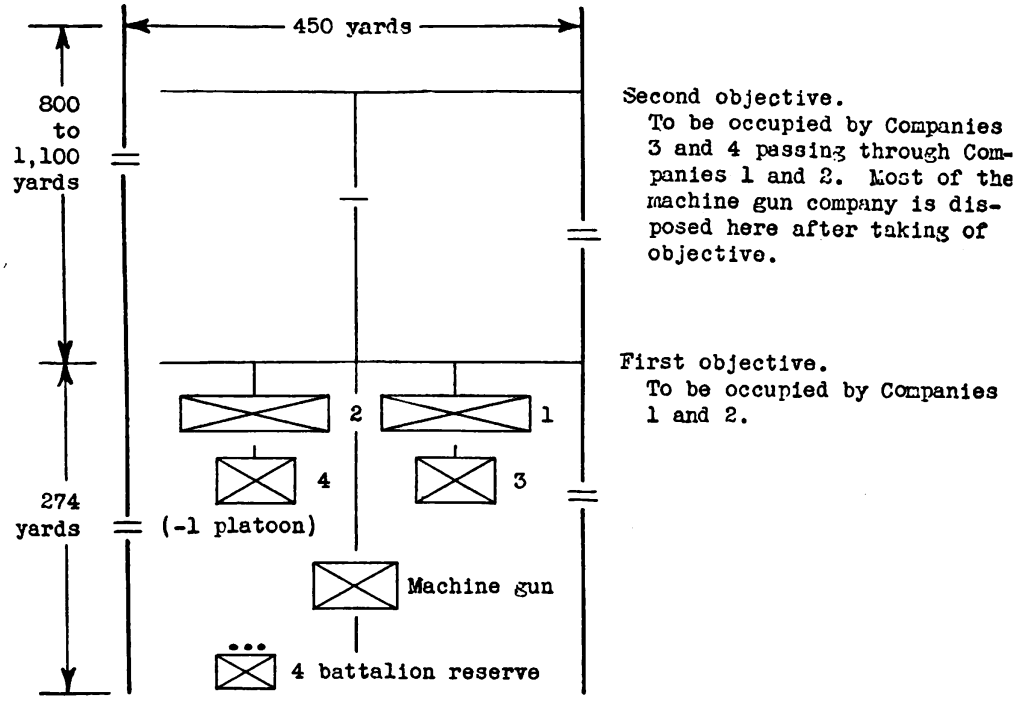


FIGURE 84.—First Battalion in a night attack.

companying fires by the artillery or infantry weapons. The second implies coordinated accompanying fires and possibly a preparation. The attack of the first objective in the problems mentioned is a *kishū* unless the enemy is thought to be expecting a night attack; the attack of the second objective is a *kyōshū*.

(*b*) An artillery battalion normally supports an infantry regiment. The artillery commander after conference with the infantry prepares fires to be available on call during the attack. The usual method of call is by rocket. In preparing fires, special consideration is given possible enemy counterattacks. The artillery may be required to cut wire, but this is costly in ammunition.

(4) *Maintenance of direction.*—Maintenance of direction at night, being difficult, requires special measures. Devices used are—

(*a*) Compass bearing.

(*b*) Road markers to include whitened stakes, strips of paper, lines of chalk or flour, and ropes.

(*c*) Flares.

(*d*) Searchlights.

(*e*) Shells fired for direction of artillery.

(*f*) Rear lights giving direction by alinement.

Company commanders wear two crossed strips of white cloth on their backs; lieutenants, a single strip.

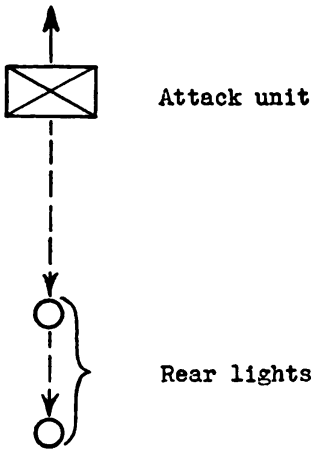


FIGURE 85.—Maintenance of direction.

122. Conclusions.—*a.* An enemy facing the Japanese Army may expect to receive frequent attacks at night, at least until this form of combat proves definitely unprofitable. Factors favoring the success of such attacks are—

(1) Detailed peacetime training in night marches, maneuvers, and attack.

(2) Japanese liking for the bayonet and hand-to-hand fighting.

(3) Emphasis placed on surprise in the execution of night attacks.

b. Defects which, it is believed, will militate against the success of the Japanese night attacks in the face of an alert enemy are—

(1) An over-readiness to attack at night in the hope of retrieving a check received in daylight fighting.

(2) Insufficiency of time allowed for reconnaissance, planning, and distribution of orders.

(3) Overambitious objectives not clearly defined on the ground as unmistakable terrain features.

(4) Mass attack formations highly vulnerable to enemy fire.

(5) Reserve units following on the heels of assault waves where they would soon be lost to control of the commander.

(6) Inadequacy of artillery support to neutralize enemy automatic weapons and to cover the operation with protective fires.

(7) An attempt to execute a night passage of lines in the course of an attack.

c. Against an inferior enemy such as the Japanese are likely to encounter in Asia the night attack has had and will have in the future many successful applications. Against a vigilant enemy strong in automatic weapons it is likely to prove costly unless largely modified in technique of execution.

SECTION III

DEFENSIVE TACTICS

123. Defense of position.—*a. General.*—(1) Japanese military writers admit with the greatest reluctance that their troops will ever be compelled to assume the defensive. This form of combat is considered to be in opposition to the spirit of the Imperial Army and to be justified only in extremely rare cases where an offensive solution is clearly impossible. This pronounced dislike for the defensive has created such a dearth of military literature on the subject that examples in tactical problems are extremely hard to find. The data on frontages, depths, etc., contained in the following study are drawn from a very limited number of such problems and are thus not wholly reliable as generalizations.

(2) The old Combat Regulations (Sento Koyo), superseded in November 1938, based its discussion of the defensive on the active defense. The new regulation takes the passive defense, assumed in the presence of overwhelmingly superior forces, as the typical case of which the active defense is a variant calling for special discussion. This new viewpoint is definitely contrary to former practice where a

return to the offensive is always present in the plans for the defense, even though the initial dispositions are not those of an active defense in the true tactical sense of the word. The change indicates a displacement of official emphasis but probably no real change in the practice of the defense.

b. Selection of defensive position.—The object of the defensive is to inflict on the superior enemy such losses by fire power disposed appropriately on the terrain and behind man-made defensive works that the initial disparity of forces becomes equalized to the point of authorizing a passage to the offensive. The defense is based upon a single position (shujinchitai) which is held to the last extremity. The qualities sought for this main line of resistance (observation, protected flanks, field of fire, covered communications, obstacles, etc.) are those standard to all schools of military doctrine. The new Japanese regulations, following the trend of the times, emphasize the desirability of natural antitank obstacles across the front of the position. In the presence of an enemy who may use gas, the main line of resistance will avoid depressions where gas is likely to accumulate.

c. Occupation of defensive position.—The reconnaissance and orders for the occupation of the position are normal.

d. Dispositions of defense.—(1) *Main line of resistance.*—The dispositions, frontages, and organization of the main line of resistance (considering the guns available) are normal. There is a recent change in Japanese regulations acknowledging the occasional occupation of a "broad front" (battalion frontage about 3,300 yards).

(2) *Outpost line of resistance (keikai jinchi).*—The outpost line of resistance differs very little from ours.

(3) *Advanced defensive position (zenshin jinchi).*—(*a*) On certain occasions the division commander will order the occupation and organization of an advanced defensive position in the zone between the outpost line of resistance and main line of resistance. The purpose of such a position may be one or all of the following:

1. To prevent as long as possible the occupation of important points of terrain near the main defensive position.
2. To delay the enemy preparations for the attack.
3. To induce the enemy to launch his attack in a false direction which will lead him into a position favorable to counterattack or counteroffensive.

(*b*) The organization of a formal advanced defensive position is not standard Japanese practice, although the assignment of some of

the missions of such a position to the outpost line of resistance is not uncommon.

Cases where advanced positions have been organized are—

1. The outpost line of resistance, to obtain observation, is pushed well forward, leaving ungarrisoned an important ridge in the foreground of the main line of resistance.
2. An oblique advanced position is organized between the outpost line of resistance and the main line of resistance to induce the enemy to turn a flank to a projected counterattack or counteroffensive. (Case of an active defense.)

(*c*) The garrison of the advanced position may come from the troops on the outpost line of resistance or on the main line of resistance reinforced by machine guns, antitank weapons, and some artillery firing from advanced positions. The Japanese recognize the delicacy of withdrawing this force at the appropriate time. They make it the responsibility of the division commander to give the force a clear, simple mission and to prescribe the time and manner of withdrawal.

(4) *Forward observers.*—When the division does not organize an advanced position, the zone between the outpost line of resistance and main line of resistance is covered by observers sent forward by the front line battalions of the main line of resistance. These patrol the foreground, cooperate with the troops of the outpost line of resistance, and execute local reconnaissance.

(5) *Reserves.*—(*a*) All units from the company upward hold out reserves for the purpose of executing counterattacks. The division reserve generally varies from one to three battalions. Because of the paucity of organic motor transport, it is not possible in the usual case to attach trucks to this reserve. It is initially located 5,500 to 6,600 yards to the rear in a sheltered position conveniently located with respect to the probable division counterattack. Tanks will often be attached to the reserve.

(*b*) Even when the division plans an active defense, the general reserve generally does not exceed a third of the infantry strength of the division, as front line units deployed on the defensive are considered capable of making a strong offensive return.

(6) *Artillery.*—Artillery positions are normal except as restricted by the number of weapons available.

(7) *Command posts.*—Location in rear of the main line of resistance.

Division	5,500 yards.
Brigade	2,700 yards.
Infantry regiment	1,300 yards.

124. Organization of ground.—*a.* In the early phases of the reconnaissance of the position, the division commander gives intitial instructions to his engineer regarding the supplying of intrenching tools and equipment. The defense order indicates the priority of work, a typical one being the following:

(1) Principal points on the main line of resistance.

(2) Fields of fire and observation posts of the main line of resistance.

(3) Obstacles in front of the main line of resistance.

(4) Communications.

(5) Shelters.

b. It is seldom assumed in tactical problems that there is time available for elaborate fieldworks. The division usually has from about 3 hours to a half day to complete its organization of the ground. Three hours is considered the minimum required to organize a rudimentary system of trenches and obstacles along the main line of resistance. The time-work unit in engineering calculations is the 12-man squad which is considered capable of digging 27 yards of standing fire trench in a little over 3 hours. The man-hour excavation rate is considered to be—

17.5 cubic feet per infantry soldier.
35 cubic feet per engineer soldier.

125. Conduct of defense.—*a. Advanced elements.*—The actions the advanced elements when the enemy approaches the position are similar to ours.

b. Defense of the main line of resistance.—As the hostile infantry forms up for the attack of the main line of resistance, the defensive artillery puts down its counterpreparation fires. Tanks, if available, may be sent forward with artillery support to upset the preparations of the enemy. As the attack enters the zone of infantry fires, the sector commanders conduct the defense of their sectors first by fire, then by the bayonet in front of their trenches. Unit commanders of all echelons counterattack unhesitatingly as the integrity of their positions becomes threatened by the hostile attack. The defensive artillery assists the close-in defense by standing barrages and concentrations within the defensive position.

c. Counterattack or counteroffensive.—The division commander is constantly on the alert to determine the proper time for the division counterattack or counteroffensive. The favorable moment will generally be—

(1) When the enemy attack has stalled.

(2) When the enemy has blundered into an unfavorable position.

(3) When a favorable opportunity has been created by a successful local counterattack.

Plans for the offensive return must be made tentatively well in advance of the occurrence of the opportunity. The attack direction will always attempt to secure the effect of envelopment, but the situation will sometimes compel a purely frontal attack. The counterattack or counteroffensive is supported by the mass of the artillery and tanks of the division. The division commander may control the troops of the counterattack directly or may relinquish control to a sector commander.

d. Antitank defense.—(1) A characteristic of the new Combat Regulations (Sakusen Yomurei, part 2) is a marked concern over antitank defense. The position is chosen to take advantage of all natural obstacles. Every effort is to be made to break up a tank attack in front of the main position by antitank guns, land mines, and artillery while an echelonment of weapons in depth aims at checking the tanks which penetrate the first defenses. Infantry small-arms fire attempts to hold up the infantry following the tanks in order to disrupt the infantry-tank team. For this purpose, the Japanese contemplate some type of obstacle which, though run over by tanks, will rise again and constitute an obstacle to the following foot troops. The defensive machine guns are carefully camouflaged to escape detection by the tanks. When the latter approach within close range, all small-arm weapons concentrate their fire on the tank ports. Command posts secure protection by camouflage and special covering detachments.

(2) The tanks of the defense are considered a potent antitank weapon. Even though inferior in number, if supported by artillery fire, they are expected to be very effective against attack tanks which have run away from their own artillery or which have become dispersed.

126. Comments.—*a.* The strong influence of 1914 tactical thinking is particularly perceptible in the cursory treatment accorded the defensive in Japanese regulations and military writings. It is officially branded as a negative form of combat un-Japanese in essence and spirit. Thus stigmatized, it becomes very hard to

write a tactical problem for which officers are willing to advocate a defensive solution. In the problems studied, the basic decision to defend had already been made by the division commander, a school device to control the offensive *élan* of the student officers. Even when thus forced on to the defensive, Japanese officers have the return to the offensive always uppermost in their minds, being quick to launch counterattacks, large and small, coordinated and uncoordinated, on the slightest provocation. On the maneuver ground, troops are always ready to abandon their prearranged system of infantry fires to meet the attacker with the bayonet in front of their trenches. The defects of a defense so conducted are glaring to the foreign officer, but its positive and aggressive character has virtues, which will, on occasion, upset a careless or overconfident attacker.

b. In spite of the usual lip service to the need of echelonment in depth of the defense, there is an apparent tendency to concentrate a disproportionate strength in the front lines. Especially, this is true of the special weapons (machine guns, battalion guns, etc.). The fewness of these weapons (4 machine guns, 2 battalion guns per battalion) makes it practically impossible to indulge in echelonment if the foreground of the main line of resistance is to be covered by a continuous system of fires. This shortage in matériel will, however, be remedied in part at least in the course of the current rearmament program and the foregoing criticism may be invalidated as the matériel thus becomes more plentiful.

c. The appearance of the "broad defense" in the new Combat Regulations appears to be a recognition of the increased strength of frontal resistance of modern infantry as well as an official corrective to the often remarked Japanese tendency to a shoulder-to-shoulder disposition of units both on the attack and defense. It is questionable, however, whether the Japanese infantry with its present armament can be considered modern. Certainly, the system of fires that a present-day Japanese battalion could set up on a 2,200 to 3,300 yard front would be so tenuous as to approach ineffectiveness. The "broad defense" does not appear admissible until the Japanese division is made notably stronger in machine guns and artillery.

127. Withdrawal.—*a. General.*—There is little military literature obtainable to elaborate on the bare substance of the provisions of the Japanese regulations governing the withdrawal. In general, the method of withdrawal appears to be standard. It is notable, however, that there is not in regulations the usual strong insistence on the dangers of a daylight withdrawal; indeed, the few tactical problems dis-

covered all illustrated the daylight withdrawal. No information has been obtained as to when the Japanese commander considers a withdrawal required or justified since, in the cases studied, the withdrawal was executed on army order and was not imposed by the enemy.

b. Comments.—Japanese procedure in the withdrawal is so orthodox as to warrant little comment. The absence of the customary injunctions against the daylight withdrawal is symptomatic of the Japanese underestimation of the effects of modern fire power; however, it is unwarranted to assume that, in practice, they will not try to avoid daylight withdrawals when the situation permits. The paucity of automatic weapons and artillery in the Japanese division will be a handicap in the withdrawal both by day and night. In the former, it will be hard to dispose of adequate fire power on both the local and general covering positions; in the latter, there will be a shortage of weapons in the hands of the numerically weak "shell" to simulate normal activity and to prevent its being overrun by an aggressive enemy. These are not preoccupations to disturb the Japanese command, however, as it does not expect to engage often in such an inglorious form of warfare as the withdrawal.

128. Delaying action (jikyusen).—*a. General characteristics.*—(1) The Japanese do not recognize the delaying action as a separate and distinct form of military operation but include it in the broader term, *jikyusen* (holding-out-combat). The latter word is used to cover, in addition to pure delay, a number of types of operations characterized by a desire to avoid a fight to finish in which the idea of delay is somewhat remote. Thus, in addition to the typical delay situations such as the action of rear guards and covering forces, the Japanese treat under *jikyusen* demonstrations, reconnaissances in force, and night attacks designed to cover a withdrawal. In the subsequent discussion, an effort is made to disregard the elements not bearing directly on delay which the Japanese inject into the treatment of *jikyusen.*

(2) The usual purpose of delaying action is to gain time, to contain or divert a superior enemy while avoiding decisive combat. "Although these ends are frequently achieved by defensive action, there are occasions when the mission can be accomplished only by offensive action." The preceding sentence, a literal translation from the new Sakusen Yomurei, contains one significant change over the old text of the Sento Koyo. The phrase "frequently achieved by defensive action" is substituted for "usually achieved by defensive action." Thus, the official text is placed more in line with the traditional offensive doctrine of the Japanese Army by suggesting a greater

frequency for the need of offensive action to obtain delay. Elsewhere the same regulation urges that even when defensive measures are initially better adapted to the situation, the commander must always be ready to take advantage of an opportunity for offensive action. When offensive action is indicated, in order to avoid becoming deeply engaged, the division commander designates limited objectives and rigidly controls the number of troops committed to action. In comparison to the meeting engagement, fronts of deployment are wide in such an offensive action.

(3) Mobile troops well equipped with automatic weapons and artillery are best adapted to delaying actions. The fire fight generally takes place at long ranges as the engagement is broken off when the enemy draws near. Frontages are wide but the breadth is obtained not by lateral dispersion within units but by the acceptance of unoccupied intervals between key positions. Reserves are kept large to cover withdrawals, to give continuity to the resistance of the delaying force; and to provide troops for such limited offensive actions as the commander may undertake.

b. Comments.—(1) Delaying action is a form of combat for which the Japanese division is not well adapted. As a defensive form of combat it does not appeal to the Japanese soldier, who understands first and last to fix bayonets and move forward. Influenced by the strength and weakness of this psychology, the Japanese commander will often choose offensive action when the defensive is better suited to the immediate situation. It has been noted that a little fresh encouragement has been given in the new Combat Regulations to the use of offensive action to obtain delay, an encouragement of which Japanese commanders can be expected to take full advantage in order to seek delay through attack. It is felt that overagressiveness will often ill serve the usual purposes of delay.

(2) Aside from psychological considerations, the Japanese division is ill suited to delay because of its deficiency in long-range fire power. Where delay must be effected on wide fronts, it does not have the automatic weapons needed to compensate for the weakness of the effectives on the firing line. Its organic battalions have neither the range nor the number of pieces needed for obtaining delay at long ranges. This shortage in both machine guns and artillery is particularly acute when two positions are occupied simultaneously and it becomes a question of allocating some weapons to the rear position without too great a loss of fire power in front of the forward position. The Japanese division as now constituted does not have the matériel to facilitate delay.

(3) The injunction to hold out a large reserve does not agree with the usual teachings on delay. A reserve suggests the intention to counterattack whereas a delaying position is usually abandoned before the enemy has come within counterattacking range. In the practice of map problems, this large reserve was always used to occupy a rear delaying position so that the operation became, in effect, a delay on successive positions simultaneously occupied. Thus, the requirement of holding out a large reserve in spite of its apparent contradiction becomes reconciled with tactical orthodoxy.

SECTION IV

EMPLOYMENT OF TANKS, MECHANIZED UNITS AND ANTITANK DEFENSE

129. General.—*a. Tactical doctrine.*—As a result of experience in the Manchurian incident, the present war in China, and the clash with the Russians at Changkufeng, the Japanese Army has acquired a lively appreciation of the value of mechanization. Large sums of the current reequipment budget have been set aside to push the mechanization program. Much thought is being given to the proper use of this new weapon in the light of the experience of the Japanese Army itself and of that of foreign armies. A distinguishing feature of the new Combat Regulations (Sakusen Yomurei) is the modification, extension, and detailed expatiation of the paragraphs devoted to the use of tanks and mechanized units. As in other countries, the Japanese are not sure of the proper use of these weapons and are not yet prepared to commit themselves to a detailed tactical doctrine. Hence, the new regulations, while giving additional space to considerations of mechanization treat the subject with broad generalities which leave considerable doubt as to whether the Japanese have worked out many of the practical details of such highly involved questions as infantry-tank-artillery liaison, control by higher commanders, logistics of mechanized forces, etc.

b. Strength.—At the outbreak of the China incident, the known mechanized strength of the Japanese Army consisted of two tank regiments. While the wartime expansion of tank units is not defi-

nitely known, it is believed that in 1939 there was the equivalent of six tank regiments in China and of one organic tank company in each division. No formally organized large mechanized units (brigades or divisions) are known to exist in the Japanese Army; however, improvised mechanized units have been used on the continent repeatedly with considerable success. Such units, while probably without elaborated tables of organization and equipment, are organized on the basis of expediency and availability of matériel with the usual reconnaissance, ground-holding, shock, and supply components which characterize the mechanized brigades and divisions of foreign armies.

130. Tanks with division.—*a. Offensive.*—(1) *Accompanying tanks.*—(*a*) The tanks with a division are normally used as accompanying tanks attached to the infantry units making the principal attack. Such tanks are brought up secretly prior to the attack to assembly positions about 3 miles behind the line of departure. Here final reconnaissance and attack preparations are completed. Tank commanders confer with the infantry regimental and battalion commanders to whom they are to be attached as well as with the artillery which is to support the attack. Topics for conference and decision are: tank objectives and hour of attack; tank jump-off positions; routes to the jump-off position and the subsequent zone of advance; type of artillery support desired and its coordination with the advance of the tanks; plan for meeting a counterattack by hostile tanks; signal communications between infantry, tanks, and artillery. On the night preceding the attack, the tanks move to jump-off positions under cover of the noise of artillery firing and low-flying airplanes. Attack formations aim at obtaining the effect of mass by disposing the tanks in several waves across the front of the infantry unit to which attached. The tanks move forward followed closely by the infantry and supported by the artillery which neutralizes enemy antitank weapons by fire and smoke. Tank objectives are: obstacles blocking the advance of the infantry; the enemy automatic weapons left unneutralized by the artillery; eventually, the hostile artillery and command system. The infantry must stick close to the tanks; if the latter get too far ahead, they may have to turn around and rejoin the infantry.

(*b*) The foregoing discussion applies particularly to the attack of a position where the need for tanks is especially acute. In the meeting engagement, the tactics of the tanks are in general the same except that preparations and liaison arrangements are not so detailed and the attack moves more rapidly. In a favorable sit-

uation, the division commander prior to the main attack may send out all or part of his tanks ahead of the advance guard to upset the hostile deployment and derange the command system of the opposing force. In such a case, the tanks are given a rendezvous point where they assemble and return to the main body in time for use with the principal attack.

(2) *Leading tanks.*—It is doubtful whether the Japanese have had actual experience in the use of leading tanks, although the new Combat Regulations contemplate their use in cases where tanks are available in plentiful numbers. This latter condition is not often likely to exist in the present Japanese Army, underequipped as it is in modern weapons. The Japanese first satisfy the requirements for accompanying tanks; those in excess of this requirement are organized into a leading tank detachment under division control. Taking off several minutes ahead of the main attack, they rush deep into the zone of the hostile artillery and command system. They are given a zone of action, a rallying point, and mission type of order to include the subsequent course of action. Artillery support is planned carefully to cover the tanks through the forward area of hostile antitank weapons. Long-range artillery coordinates its fire with the movement of the tanks so as not to interfere with their progress.

(3) *Miscellaneous uses of tanks.*—The following miscellaneous uses of tanks have been noted in the China War:

(*a*) Tanks break through the defenses at the mouth of a defile, reconnoiter the inner defenses, and return.

(*b*) Tanks execute local battlefield liaison and reconnaissance missions as well as transport essential supplies in the areas beaten by the Chinese small-arms fire.

(*c*) Tanks are the main force in a frontal holding attack, while the remainder of the division envelops a flank.

(*d*) Tanks block the escape of fugitives through the rear gates of walled towns.

b. Defensive.—On the defense, the division commander usually holds his tanks initially in division reserve under cover from artillery fire and attack from the air. Eventually they are attached to the infantry making the division counterattack. They are particularly valuable in stopping a hostile mechanized force, as the defensive tanks can defeat a superior number of the enemy tanks if the latter have run away from their artillery support or have become dispersed. Occasionally, the defending commander may use his tanks, before the enemy attacks, in a raid on the hostile assembly areas. In all cases,

tank actions must be supported by carefully arranged artillery fire to neutralize the hostile antitank guns.

131. Mechanized units.—*a. Organization.*—As previously indicated, the Japanese have in China provisional mechanized units varying in size and composition, according to the matériel at hand and the mission to be accomplished. In general, these units have a strong nucleus of tanks supported by motorized infantry, engineers, field and antiaircraft artillery, anti-gas, and signal detachments. The whole force is supplied by a truck train formed from line of communication (heitan) supply units. Observation aviation is usually attached.

b. Tactics.—(1) *Offensive.*—(*a*) A mechanized force normally receives an offensive mission whereby full advantage can be taken of its high mobility and capacity for independent action. In general, its tactics are about the same as those of a large cavalry force. By secrecy and rapid movement (usually at night) it surprises the enemy force in a terrain suitable for the tanks which form the backbone of the combat strength of the command. The commander, keeping his tanks under central control, masses them for a quick blow in a vital attack direction. The motorized infantry receives any or all of the following missions:

1. It covers the tanks and facilitates their action.
2. It holds the ground won by the tanks.
3. It occasionally takes over a front in the holding attack or makes an attack to create a diversion either by day or night.

The infantry always fights dismounted but stays in its carriers as long as possible. The artillery performs normal support missions with especial attention to enemy antitank guns.

(*b*) As a mechanized force draws near the enemy, the commander prepares tentative plans to meet varying hypotheses, as the situation is susceptible to sudden changes in this fast-moving type of combat. He activates reconnaissance and security agencies, meanwhile gradually reducing the depth of his dispositions. As the enemy situation clears somewhat, he chooses an assembly area in conformance with his tentative scheme of maneuver. This area is as close to the enemy as is consonant with safety. If there is danger of a sudden collision with the enemy, the commander may traverse the final distance between himself and the enemy by bounds from one terrain line to another.

(*c*) A bold envelopment or a turning movement is the maneuver best suited to a mechanized force. Such a force will often march

at night, assemble in darkness, and attack at dawn. In the assembly area, reconnaissance is made, order is restored, and missions are assigned for the subsequent attack. When the enemy situation is vague, the usual objective is a terrain feature the possession of which is essential to the enemy. In the final deployment troops remain in vehicles until the danger of hostile fire forces them to dismount. When this has occurred, empty vehicles are parked under cover from air and ground observation. The unit reserve is usually infantry but on occasion may include some tanks. The detailed conduct of the attack follows the tactics of a large cavalry force.

(*d*) Mechanized units are particularly well adapted to pursuit and exploitation. The objectives assigned to them are those suitable to any pursuit detachment, but their range of action permits a deeper penetration into the hostile areas. It is in this form of action that the Japanese mechanized forces have found their chief employment in the China War. Examples abound in which such units have cut the roads and railroads behind a Chinese front on the verge of collapse and have assailed the Chinese rear. The broad plateaus of Suiyuan and Chahar have afforded a terrain particularly favorable to their use.

(2) *Defensive.*—Since the defensive nullifies the mobility of a mechanized force, it is a form of combat to be avoided, but it may be imposed by the situation. In such a case, the commander usually disposes his dismounted infantry in a discontinuous line of strong points with most or all of the tanks held in reserve. The defense is conducted along customary lines with the principal concern of the commander being the engagement of his tanks in a counterattack. In the usual defensive situation the enemy will be superior in tanks; hence, the commander must endeavor to stage the decisive tank action out of range of antitank guns. Under such conditions, his inferiority in tanks is compensated for by the supporting fires of the artillery. When the hostile tanks are defeated the crisis is passed and the counteroffensive is often justified.

132. Comments.—Mechanization is extending rapidly throughout the Japanese Army where its value is fully understood. The army has acquired considerable battlefield experience in small-scale tank actions and in the use of improvised mechanized forces. Although these latter do not have the striking power of the elaborated mechanized forces of Western powers, they secure most of the benefits of mechanization at a low cost. This question of cost is likely to be the critical limiting factor in the extension of mechanization in Japan, a country poor in foreign exchange and without a well developed automotive industry.

133. Antitank defense.—*a. General.*—The Japanese envisage the inherent disadvantages of enemy tank operations to be—

(1) Natural and artificial obstacles.

(2) Long march columns which are difficult to camouflage.

(3) Adverse weather conditions which may prevail.

(4) Unfavorable working conditions and difficult observation which lower efficiency of crews.

Their antitank instruction stresses taking every advantage of these conditions.

b. Passive defense measures.—Concealment, camouflage, and calm nerves are of utmost importance. Reconnaissance and warning nets are considered essential.

c. Active measures.—These include:

(1) Action by antitank guns, accompanying guns, and mortars.

(2) Bullet splash from machine guns and rifles at a short range (at least one section firing at each tank).

(3) Mines and "tank fighters." The latter comprise men with special training and equipment for direct assault on tanks.

d. Detailed method of attacking a tank.—(1) It is desirable to choose ground where tanks must travel slowly and so as not to interfere with the action of antitank guns.

(2) Each rifle company (sometimes machine-gun and heavy weapon companies organize smaller detachments) includes a section of special "tank fighters" which are specially equipped for action against tanks. Each man is armed with an antitank mine, a bomb, and a smoke hand grenade.

(3) Three ways of attacking tanks are—

(*a*) The tank fighter crawls toward the tank under cover, until he is within the dead space of the tank weapons. Next, he throws the mine, which is attached to a long string, about 15 feet in front of the tank and, by means of the string, pulls it directly under the tank.

(*b*) Several pairs of tank fighters move forward under cover and place a number of mines in front of the tank in such a manner that the tank must drive over one of them.

(*c*) A number of mines are fastened, 1 foot apart, to a 150-foot line. Two men conceal themselves with this chain of mines and draw the mines across the path of the tank as it approaches.

(*d*) The tank fighter is also taught to attack the tank by jumping on top of the tank, usually from the rear, and damaging the guns or rotating mechanism of the turret with picks. The pistol may be used to fire on the crew through openings in the tank. Another method

is to blind the tank crew by throwing a shelter-half over the turret or to smoke it out. Naturally, all these forms of assault are feasible only if the friendly infantry can neutralize the hostile infantry accompanying the tanks. Tanks have been delayed and stopped, finally, by driving 3-inch wooden poles or 1 to 1½-inch rods between the spokes of the tank wheels.

134. Landing operations.—Japanese landing operations have been organized as follows:

a. Preparation.—Landing sites have been carefully reconnoitered beforehand, either by aircraft or by the work of secret agents in peace. Troops earmarked for landing operations have been assiduously practiced beforehand.

b. Rendezvous of transports.—Transports and motor landing craft carriers rendezvous at some convenient anchorage the night before the landing. Where no anchorage is available the transports have arrived off the landing point about the middle of the night.

c. Operation of landing.—Landings usually take place just before dawn on a day when it is high tide just after dawn. Periods of rain or stormy weather are chosen when possible so as to facilitate surprise. Men are transferred from transports and motor landing craft carriers to landing craft just off the site of landing. The initial force usually consists of infantry, some field artillery, engineers, and light tanks, all of which are embarked in motor landing crafts. These make for the shore at full speed, and if in formation all craft shut off their engines and drop their stern anchors together when a short distance off the beach. For the remainder of the distance the boats are eased in until grounded by means of the hand brake on the stern anchor cable. The boats normally ground at about 50-yard intervals. If the operation warrants the boats' leaving immediately, the stern anchors are weighed by hand or power and the boats make off at full speed. Military patrol craft armed with pompoms and machine guns give close support to the landings whilst air and naval support is provided as required. Once a beach head is established the main forces landed proceed inland as fast as possible.

d. For the types of landing craft used see paragraph 67.

e. Air and naval cooperation.—The Japanese have had complete air and naval superiority in all their landing operations on the China coast. Sea communications have thus always been secured and all landings have had overwhelming support from sea and air. On one occasion Japanese destroyers assisted the land forces by gun fire. In order to ensure surprise, naval fire may be withheld until after the

landing of the first flight. Owing to the complete air superiority the Japanese appear to make little or no provision for antiaircraft protection. This fire took the following forms:

(1) Preliminary bombardment of enemy positions at a range of about 1,300 yards.

(2) "Howitzer" fire on special areas. This was achieved by putting extreme elevation on the ships' guns and using a small charge.

f. Forces used.—Almost all Japanese landings were made with a force of two divisions (40,000 men). These appear to have landed with normal equipment, which includes light tanks (3 tons), 10.5-cm field howitzers, 75-mm field guns, etc.

g. Conclusions.—The following factors were instrumental in giving the Japanese the successes they achieved:

(1) Complete security of sea communications.

(2) Overwhelming naval support.

(3) Overwhelming air support.

(4) Inefficiency of enemy watching organization.

(5) Lack of enemy real opposition on landing.

(6) Complete lack of enemy action at sea.

(7) Enemy lack of artillery, which made the establishment of a beach head of little depth sufficient to cover the main landing.

(8) Japanese use of aircraft for supply dropping and bombing which lessened the administrative difficulties of landing transport and artillery in the early stages of the operations.

(9) Policy of Japanese, owing to lack of opposition, to bring their transports close to the shore before transferring men into landing craft.

(10) Care taken to achieve surprise by choosing difficult landing sites and poor weather conditions.

SECTION V

CONCLUSIONS

135. Characteristics of Japanese tactics.—To the exclusion of matters of minor technique, the general characteristics of Japanese tactics may be summarized as follows:

a. The continuous offensive is the basis of Japanese tactical and spiritual training. The offensive is sought under conditions of combat inferiority, which indicates a lack of appreciation of modern

fire power and an overconfidence in the mystic virtue of Japanese spirit (seishin) to overcome material obstacles.

b. The meeting engagement is the preferred form of offensive action. Its conduct is energetic and rapid but is apt to be uncoordinated with a piecemeal commitment of troops.

c. The envelopment is the preferred type of maneuver, although frontal attacks are common in practice. As executed, most envelopments are flat and close-in with little or no interval between frontal and enveloping attacks.

d. The effect of envelopment is usually sought by an advance in parallel columns with a view to overlapping one or both of the hostile flanks. The desire to stage a preconceived maneuver often leads to premature development.

e. Japanese advance guards are unusually strong in infantry, particularly in approaching a meeting engagement.

f. The Japanese Army does not appreciate the difficulties of the attack of a position and does not have the necessary weapons to undertake such attacks except on a narrow front.

g. The Japanese artillery is deficient in number, caliber, and technical training. It is untrained in modern gunnery methods such as use of air photos, night registration, and fire of unobserved concentrations. It has no carefully thought-out plan for liaison with the infantry.

h. The Japanese division is carefully trained in night attacks, believes in them, and can be expected to execute them frequently in war.

i. The Japanese division frequently sends forward an advance detachment amounting to from a third to a half of its strength to precede the main body and facilitate the mission of the division, whether this be offensive or defensive.

j. The Japanese dislike the defensive. When forced to assume it, commanders retain the idea of a quick return to the offensive. They will counterattack on the slightest provocation at all echelons of command.

k. A Japanese defensive position tends to lack depth. The systems of fire in front of and within the position are often imperfectly organized.

l. The Japanese appreciate the importance of secrecy and deception. No maneuver is ever attempted without including in the plan some device to deceive the enemy and conceal the true intention of the commander.

136. Weak points.—Many of the weak points of Japanese tactics noted result from the fact that the division is under-armed by Western

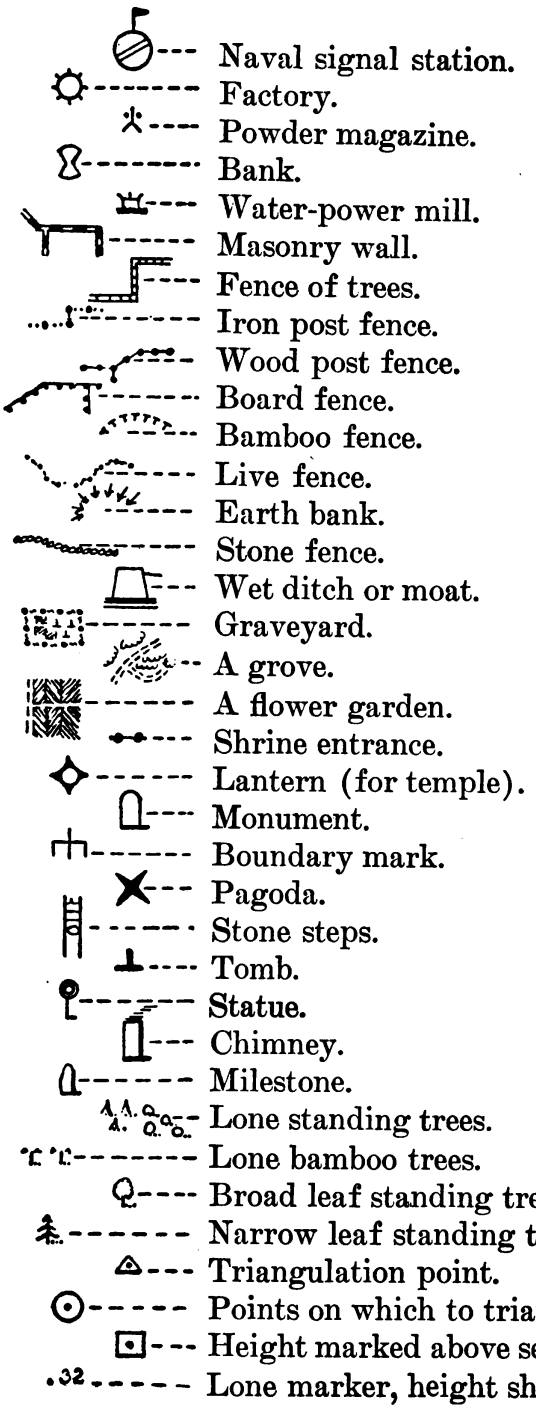
standards of comparison, but the Japanese are making great efforts to correct this deficiency. They are spending large sums on aviation, mechanization, and motorization. They have increased the strength of the division artillery. Division anti-gas and antitank units are being organized. The division which started the China incident will not be the division of a future war. Increased material means will facilitate the task of Japanese tactics.

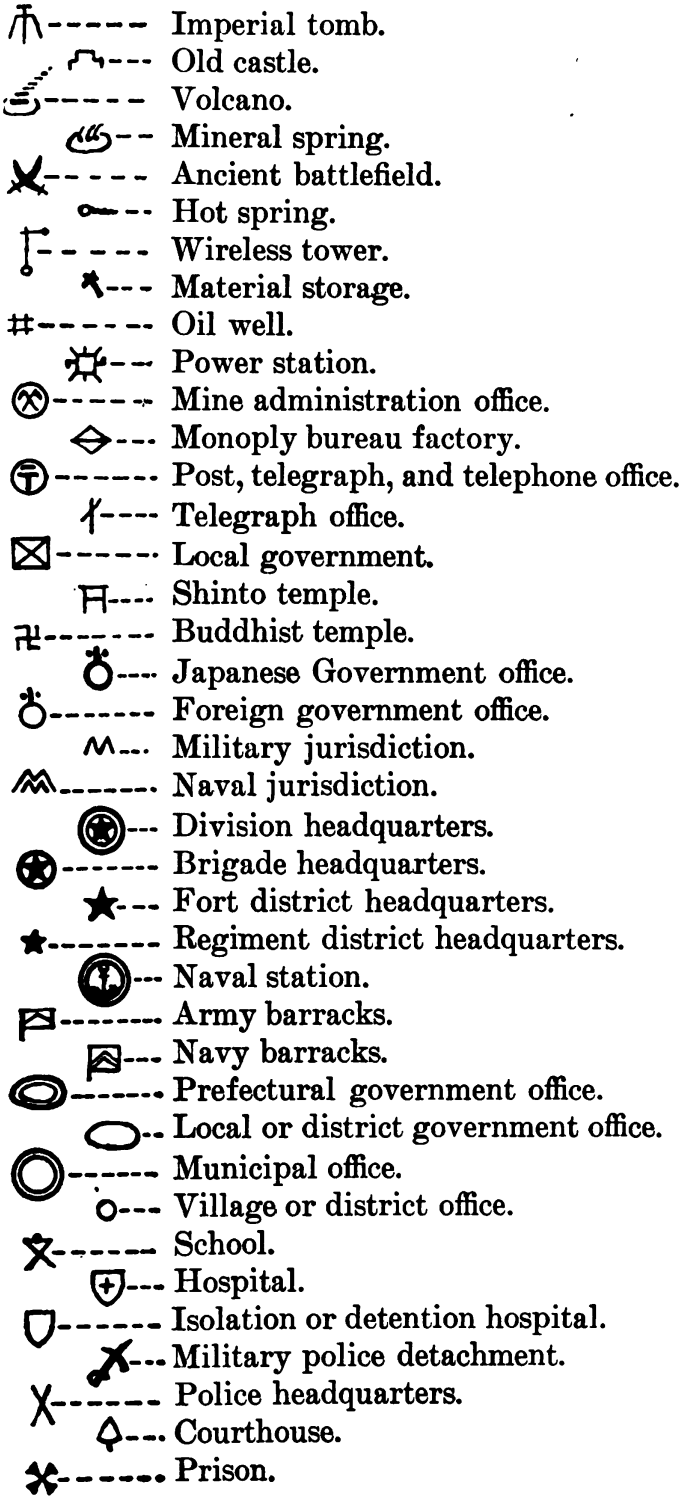
137. Fighting efficiency.—Tactics are without meaning unless studied in relation to the human agent who will apply them in battle. This manual has avoided excursions into the field of Japanese military psychology and national characteristics; however, it should be read with a constant eye to the nature of the Japanese Army for which these tactics are designed. It is an army easily misjudged by the foreign officer who sees first of all its straggling columns, slovenly dress, and unmilitary bearing. Just as there is no glitter to its accouterments, there is little theoretical excellence to recommend its tactics; but it is an army which excels in durability and performance. In the same way that its infantry "straggles" 30 miles a day and arrives at the destination on time and with surprisingly few casualties, its command and staff can be counted on to evolve plans and orders which, without being brilliant tactical combinations, are practical and workable schemes for getting a maximum performance from the Japanese soldier. Furthermore, the Japanese Army which fought with bows and arrows in 1870 is thoroughly capable of learning from its mistakes and advancing with the new developments of warfare. While its swaggering self-confidence may receive some rude jolts in a major war, it is a rugged army fired with a devotion to duty and a narrow patriotism which make it a dangerous foe on a field of its own choosing.

CHAPTER 9

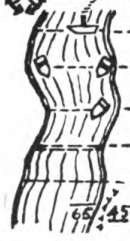
CONVENTIONAL SIGNS AND ABREVIATIONS

138. Conventional signs.—*a. Conventional signs.*

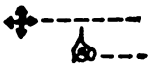




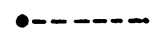
Customhouse.
Revenue office.
Forestry office.
Monopoly bureau.
Post and telegraph office.
Post office.
Telegraph office.
Telephone office.
Meteorological station.
Ship-building way.
Lumber yard.
Mine.
Church.
Lighthouse.
Fixed signal.
Fixed signal.
Buoy.
Buoy.
Buoy.
Buoy.
Warning signal.
Large harbor or anchorage.



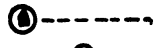
Steamboat ferry.
Ferry, both banks, men and horses.
Ferry for men, one bank only.
Ford for vehicles.
Ford for foot soldiers.
Water depth and bank height shown.
Seaplane Anchorage.
Government landing field.
Commercial landing field.
Emergency landing field.
Beacon, fixed.
Beacon, flashing:
W White.
R Red.
G Green.
A Amber.
Lighting facilities.


Radio broadcasting station.

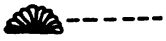

Obstruction.


Tank.


Race course.


Lifeboat.

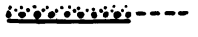

Coast guard station.


Imperial palace, garden, shrine, or mausoleum.


Ocean current (direction and speed).


Dry.


Coast line.


Sand beach.


Steep coast line.


River and stream.

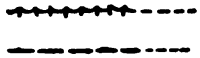

Lake and marsh.


Bog land.

State or prefectural roads.

Other roads.


High voltage transmission line.

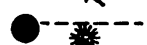

Civil air line.


Fortified and aviation prohibited zone.

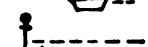

Bridge.

Ferry.

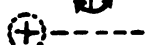

Waterfall.

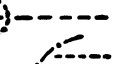

Lighthouse.

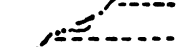

Lightship.

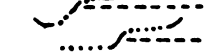

Small harbor or anchorage.

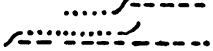

Anchorage for junks.


Reef.

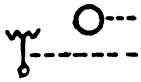

10-fathom line.


20-fathom line.

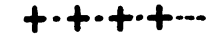

50-fathom line.


100-fathom line.

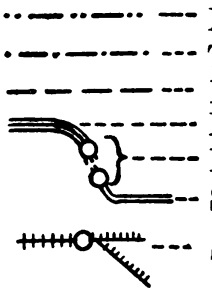

Marine bureau.


Wireless station.

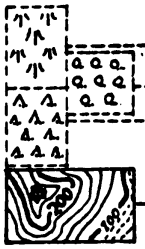
National boundary.


Prefectural boundary.

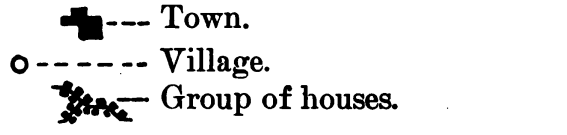
Country (province) boundary.



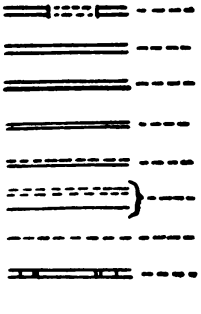
Municipal or district boundary.
Town or village boundary.
Boundary of government land.
Double track railroad.
Railroad stations.
Single track railroad.
Special railway lines (single track right, double track left).



Bamboo grove.
Broad leaf trees.
Narrow leaf trees.
Section of contour map.



Town.
Village.
Group of houses.
Municipal or district office.
Island administration office.
Old castle.
Buddhist temple.
Marshy ground.
Rock cliffs.
Hill.
Terrace.
Crater.
Lone dead or burned tree.
Boundary mark.



Tunnel.
National highway.
Provincial highway.
Country road.
Connecting country road.
Connecting path.
Trail.
Road over 12 feet wide.

---- Road over 6 feet wide.
---- Road less than 6 feet wide.
---- Road impassable to carts.
---- Avenue with trees.
---- Telegraph line.

b. Character groups.—In order to assist in understanding Japanese conventional signs, the following Japanese character groups are given:

Infantry	Cavalry	Field Artillery	Artillery	Engineers
歩兵	騎兵	野砲兵	砲兵	工兵

Army	Corps	Division	Brigade	Regiment	Battalion	Company Squadron Battery
軍	軍團	師團	旅團	聯隊	大隊	中隊

Aviation	Medical	Platoon	Machine Gun	Railroad
行空兵	衛生部	小隊	機關銃	鐵道

Numbers

1	2	3	4	5	6
一	二	三	四	五	六

7	8	9	10	11	12
七	八	九	十	十一	十二

Conventional Signs, Japanese Army
(Published August 23, 1924)

c. General instructions.—(1) Conventional signs of both armies are usually colored. The enemy is usually shown in red and Japanese forces in indigo.

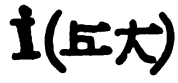
(2) Abbreviations other than these signs are used where the meaning is clear and known. Explanations or special signs may supplement them.

(3) The letter *G* is attached to the symbol for units of the Guards Division. For an independent unit, the letter *S* is added on the end of the name of the unit. Reserves are shown with one line — drawn below the abbreviated sign. National Army troops are shown with two lines = drawn below the abbreviated sign.

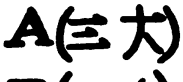
(4) To show boundaries of districts or limits of fortified places a line is used. Directions of shooting, points of attacks, or changes of direction of troops are shown by an arrow →.

(5) Roman numerals are used for the battalions of a regiment only. Arabic numerals for all the other units, thus: 2i—the 2d Infantry; 18P—the 18th Engineers.

(6) The number in parentheses following the sign of a detachment, machine gun, cannon, airplane, etc., shows the number thereof, Thus:


5 battalions of infantry.


4 squadrons of cavalry.


3 battalions of artillery.


1 platoon of engineers.


(2) Machine guns.


(8) Cannons.


(2) Airplanes.

(7) The slanting line indicates that the units to the left are part of the units to the right, thus: III/2i, 3d battalion of the 2d infantry regiment.

(8) Platoons and squads are usually shown as a fraction of a company or squadron, thus:

$\frac{1}{16}$ 2/5K, 1 squad of the 2d squadron of the 5th cavalry regiment.

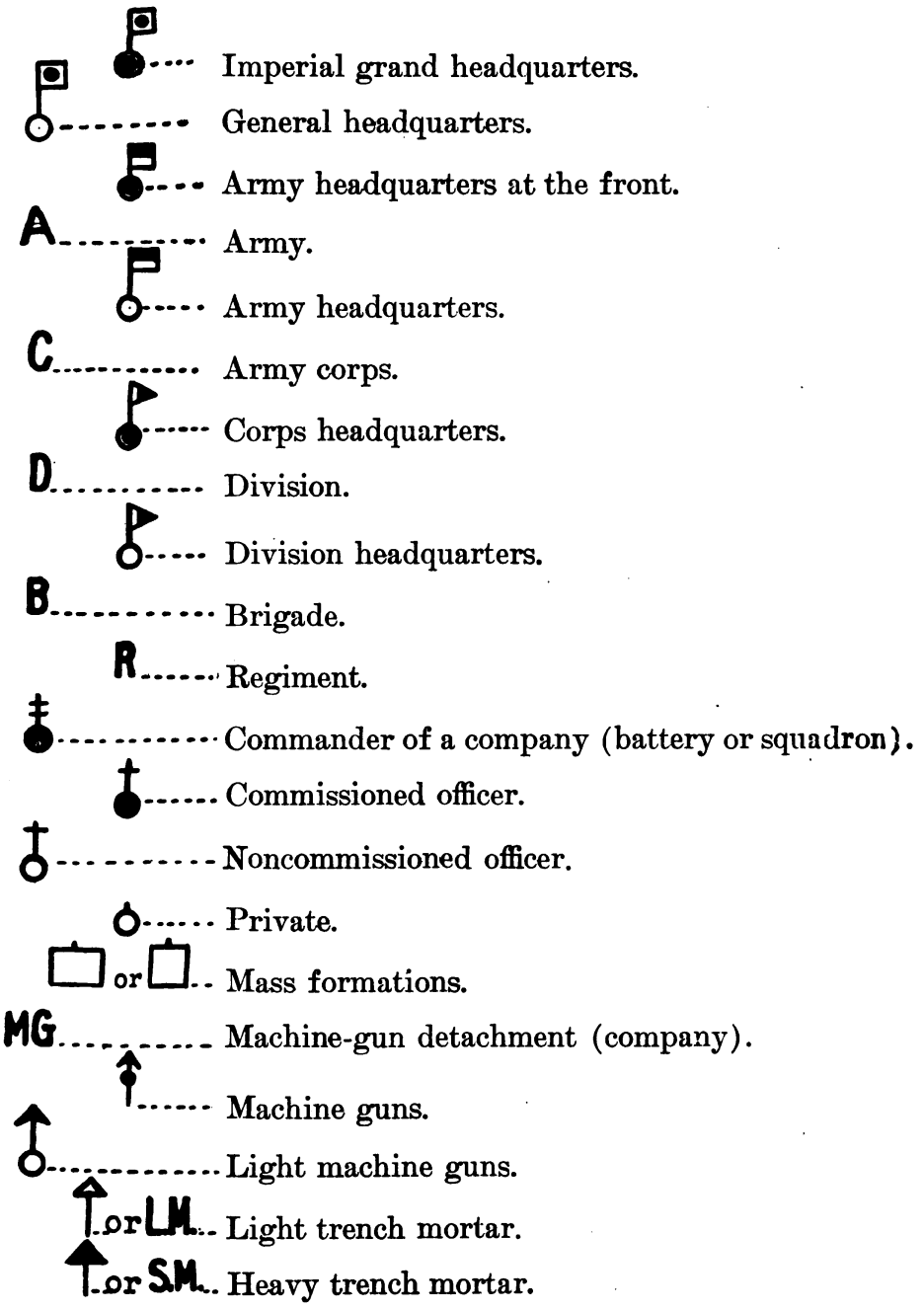
(9) If a few units of larger organizations are missing, those missing may be written with a minus sign in parentheses, thus: 2i (−8.12), 2d infantry regiment less 8th and 12th companies.

139. List of common Japanese military abbreviations.

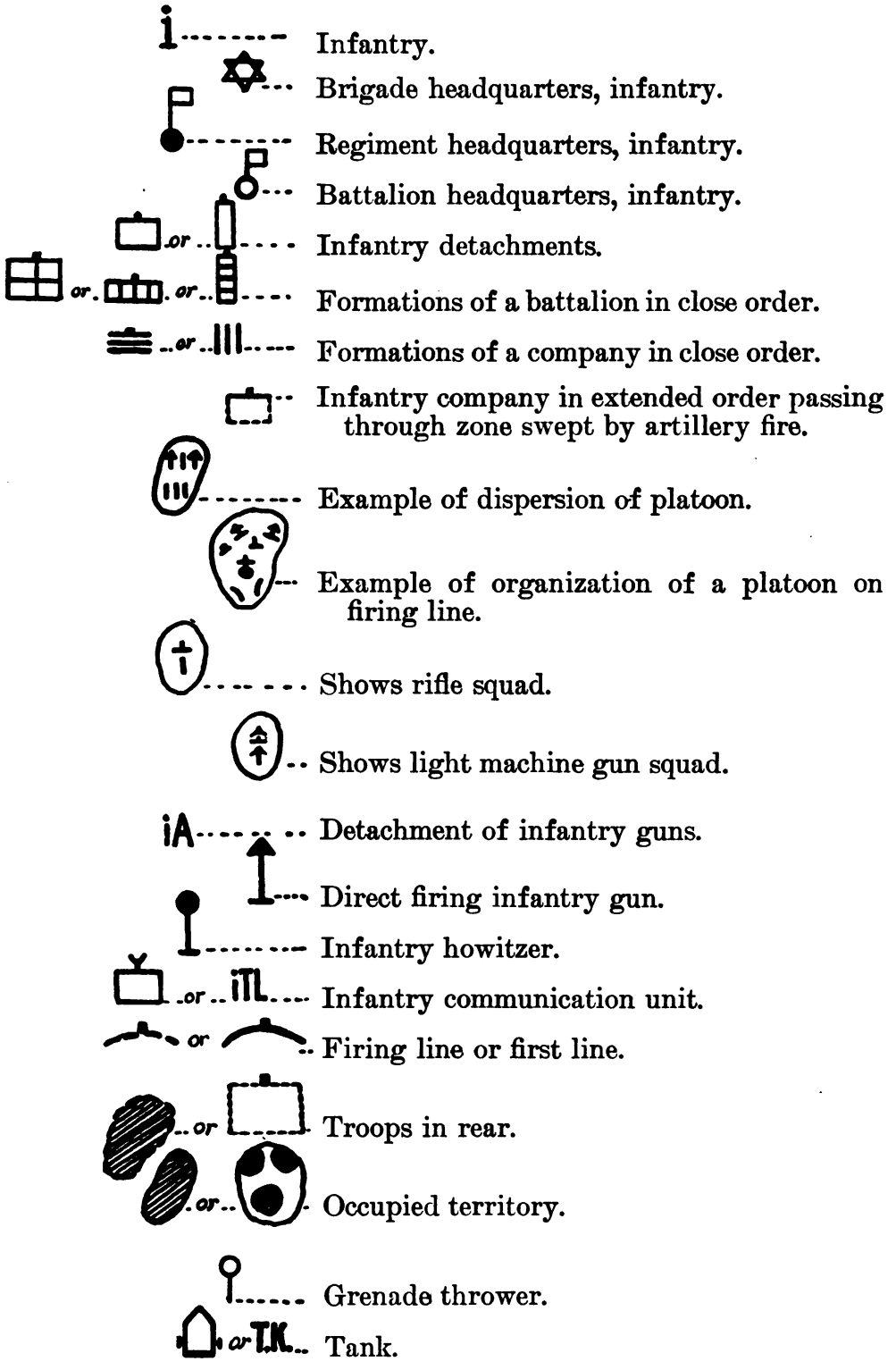
Abbreviation	Japanese	English	German
A	Rikugun	Army	Armee.
A	Yahohēi	Field artillery	Field artillerie.
AA	Kōshahōtai	Antiaircraft artillery unit.	
AMT	Hōhei dan-yaku chūtai.	Artillery ammunition train (column).	Artillerie munition train.
AP	Keikyū shūgōjo	Alarm post (assembly point).	Alarmplatz.
B	Ryodan	Brigade	Brigade.
BA	Sanpōhei	Pack (mountain) artillery.	Bergartillerie.
BK	Gakyō zairyō chūtai	Bridging train (company).	Brückenbau kompagnie.
BM	Ryodan dan-yaku chūtai.	Artillery brigade ammunition column (train).	
Bst	Chūtai danretsu	Battery wagon line.	
C	Gundan	Corps	Korps.
D	Shidan	Division	Division.
DK	Shidan kihei	Divisional Cavalary.	
DLT	Musen denshintai	Radio (wireless) unit	Drahtlose telegraphentruppe.
DTL	Shidan tsūshintai	Divisional signal unit	Division telegraphentruppe.
E	Tetsudōtai	Railway unit	Eisenbahntruppe.
EB	Tetsudō ryodan	Railway brigade	Eisenbahn brigade.
f	Hikōki	Airplane; flying machine.	Flugzeng; flugmaschine.
F	Teki	Enemy	Feind.
FA	Kōjō jūhohei yōsai hōhei.	Siege artillery fortress artillery.	
FB	Kikyūtai	Balloon unit.	
FL	Yasen byōin	Field hospital	Feldlazarett.
FM	Hikōtai	Flying (air) unit	Flugmaschine-truppe.
FT	Yasen denshintai	Field telegraph unit.	
FTL	Kokū tsūshintai	Air service signal unit	Flieger telegraphenleitung.
G	Konoe	Guards	Garde.
GAP	Keikyū daishūgōjo	Large alarm post (assembly point).	Groser alarmplatz.
H	Ryūdampō	Howitzer	Haubitze.
i	Hohei	Infantry	Infanterie.
iA	Hohei hōtai	Infantry gun unit.	
iMT	Hohei dan-yaku chūtai.	Infantry ammunition unit.	Infanterie munition train.

Abbreviation	Japanese	English	German
iTL	Hohei tsūshintai	Infantry signal unit	Infanterie telephon.
K	Kanon	Cannon	Kanone.
K	Kihei	Cavalry	Kavallerie.
KA	Kihohei	Horse artillery	Kavallerie artillerie (reitende artillerie).
KB	Kihei ryodan	Cavalry brigade	Kavallerie brigade.
KK	Kihei shūdan	Cavalry group	Kavallerie korps.
KTL	Kihei tsūshinhan	Cavalry signal unit	Kavallerie telephonabteilung.
	Kei-kikanjū	Automatic rifle (light machine gun).	
LM	Kei-hakugekihō	Light trench mortar	Leichte maschinengewehr.
M	Dan-yaku chūtai	Ammunition column (train).	
M	Kyūhō	Mortar	Mörser.
MG	Kikanjū (chū) tai	Machine-gun company	Maschinengewehr.
P	Kōhei	Engineer	Pionier.
PD	Bashō	Horse depot	Pferdedepot.
PrT	Ryōshoku chūtai	Commissariat train (provision unit).	Provision train.
PT	Shikyūtai	Carrier pigeon unit.	
R	Rentai	Regiment	Regiment.
Rst	Rentai danretsu	Regimental wagon train.	
S	Dokuritsu	Independent	Selbstverständinge.
S	Eiseitai	Medical troops	Sanitätsdetachment.
SA	Yasen jūhōhei	Heavy field artillery	Schwerartillerie.
SM	Jū-hakugekihō	Heavy trench mortar	Schwerer minenwerfer.
St	Danretsu	Ammunition train	Staffel.
SW	Yasen shōmeitai	Field searchlight unit	Scheinwerferverband.
T	Shichō	Train	Train.
Tg	Yusō sentai	Transport unit (convoy).	
TK	Sensha	Tank	Tank.
TL	Yasen denshintai	Field telegraph unit	Feld telegraphentruppe.

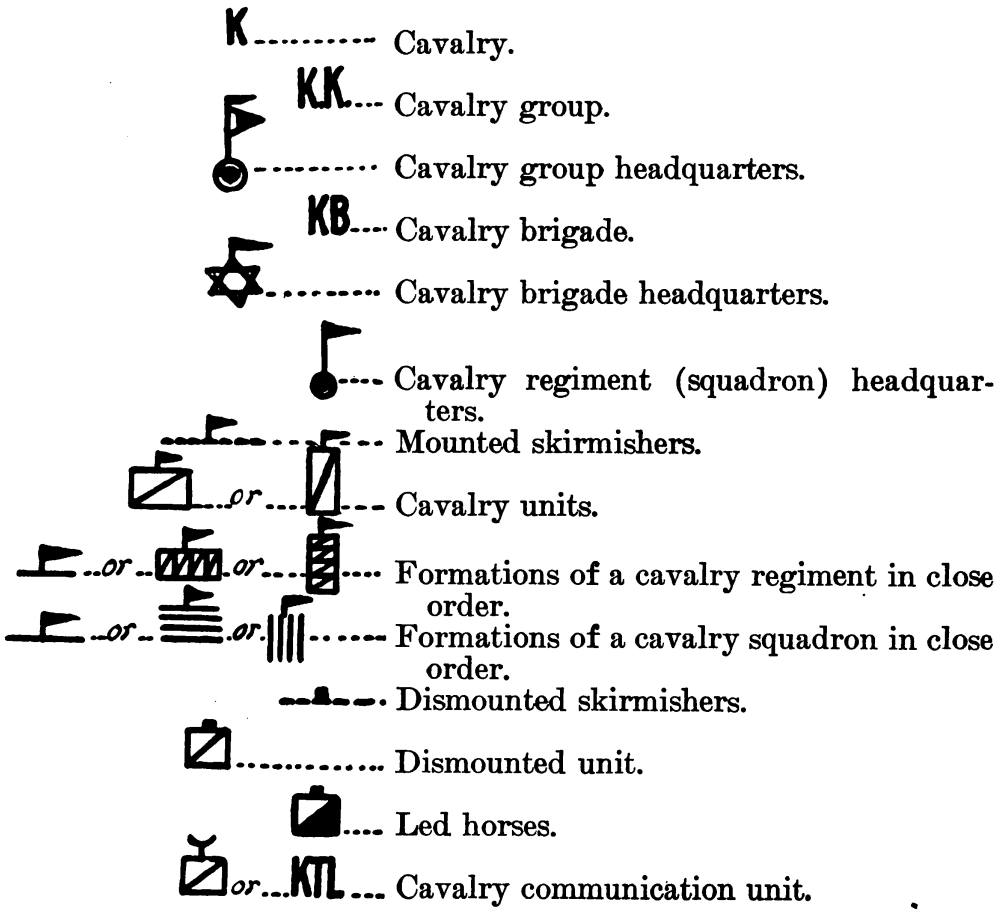
140. Signs for field detachments.—*a. Concerning all the arms (troops symbols).*



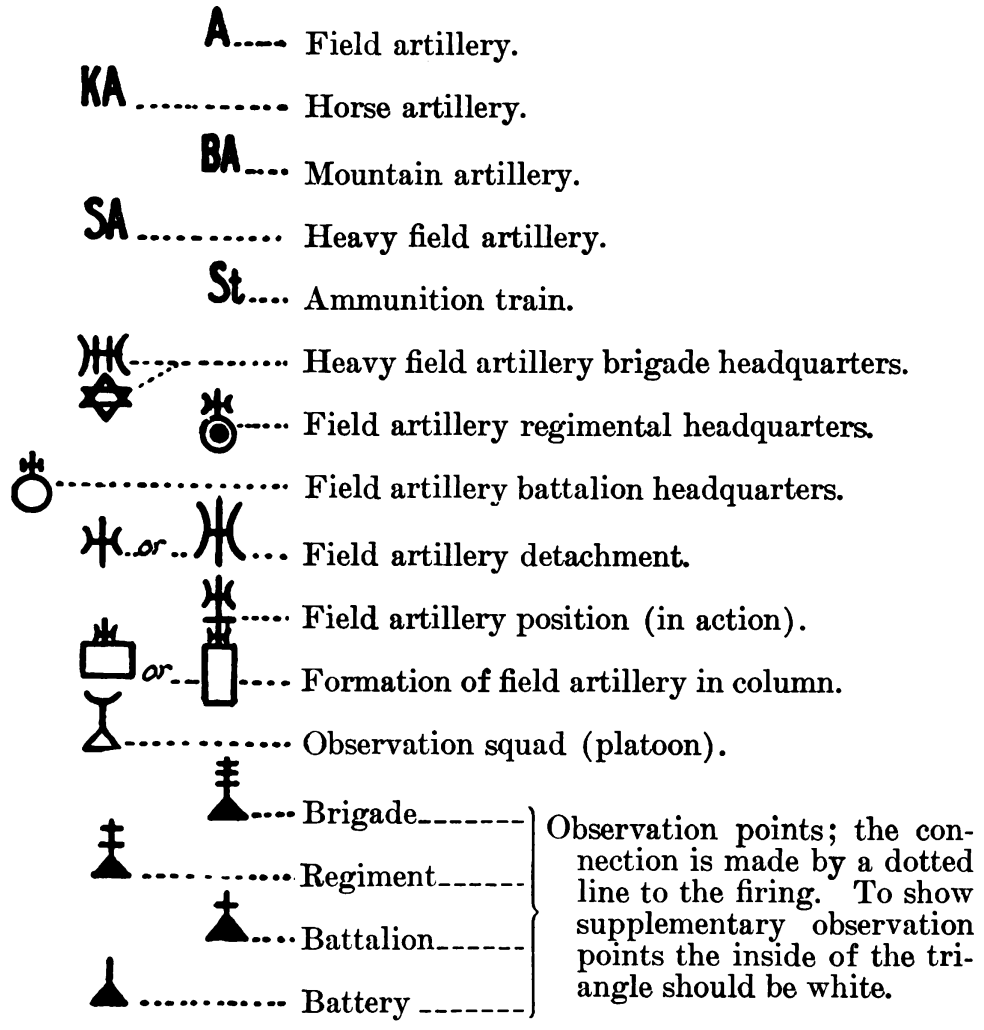
b. Infantry.

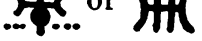


c. Cavalry.

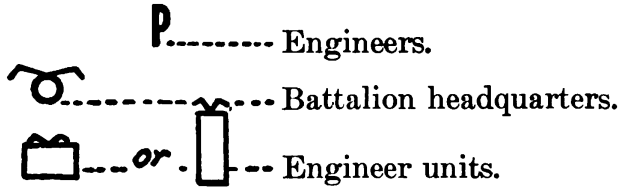


d. Field artillery.



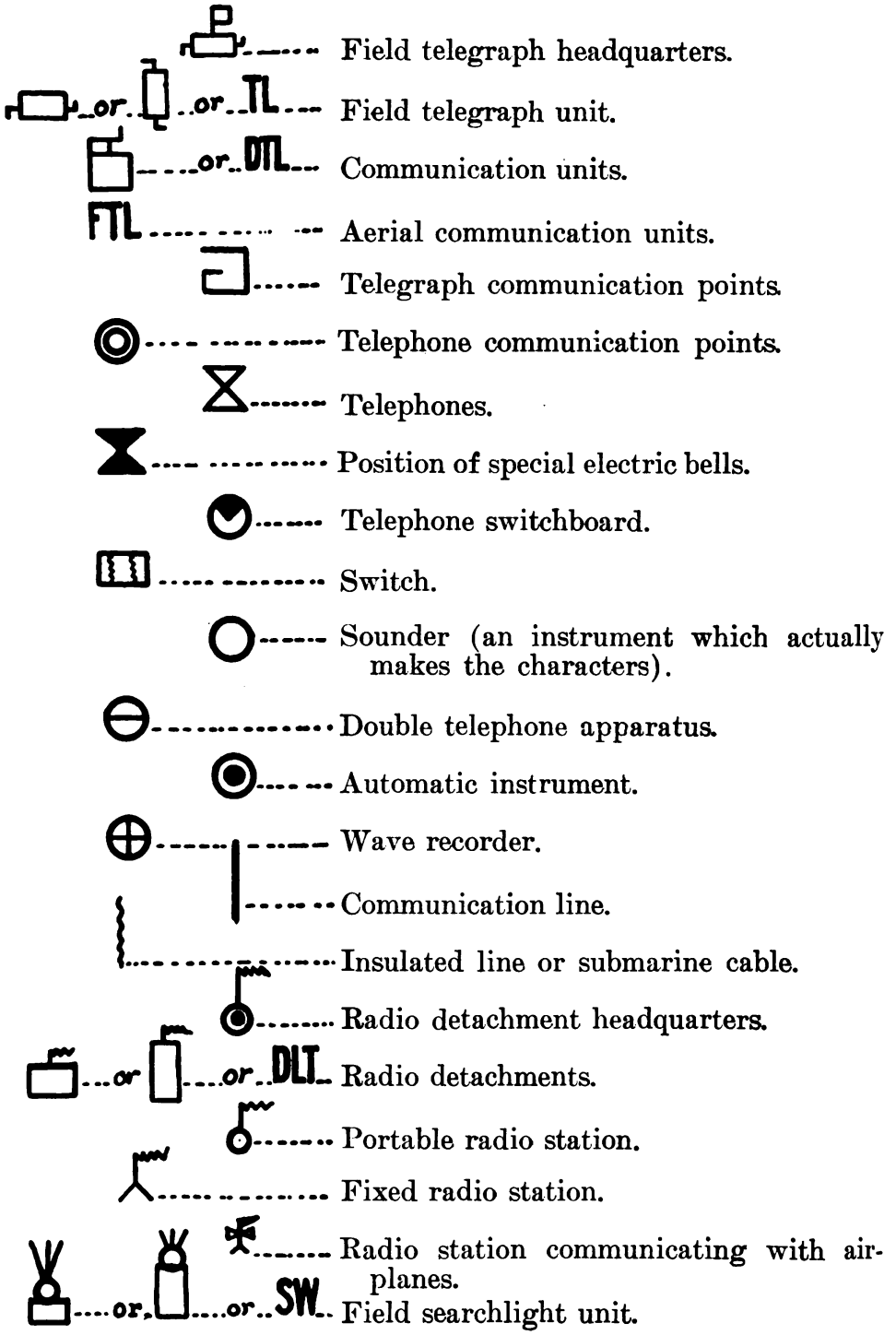
To show horse, mountain, or heavy field artillery use the signs  or  or respectively, instead of  To show the presence of a gun the sign  is used and a howitzer the sign 

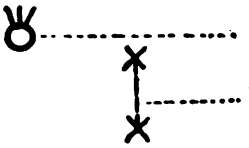
e. Engineers.



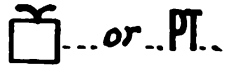
Other symbols the same as for infantry.

f. Communication troops, lights.

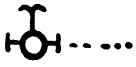


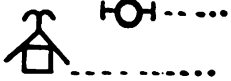

Projector.

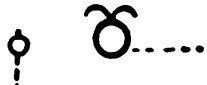
Visual signaling points.



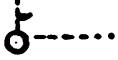
Pigeon unit.

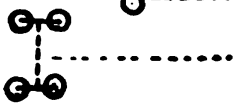

Pigeon wagon.


Pigeon loft.


Pigeon post.


Infantry connecting (or relay) post.


Cavalry connecting (or relay) post.

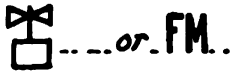

Cyclist connecting (or relay) post.

g. Aerial navigation and aerial defense.


Aviation unit chief.

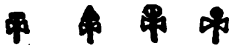

Airplane regiment commander.

Airplane battalion commander.

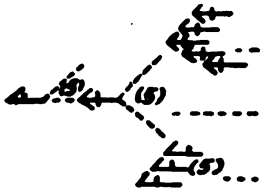


Airplane detachment.


Airplane (reconnaissance airplane for two persons). Short lines show the number of seats. Different kinds of planes for reconnoitering, pursuing or dropping light or heavy bombs are shown, respectively, thus:



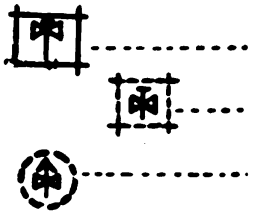
Data on an airplane: Shows an airplane with several seats, heavy bomber, with 6 engines and reaching an altitude of 3,000 meters.



Airplanes (in a horizontal plane).

Pursuit airplanes with one seat and 5 engines.

Airplanes in a vertical plane. (These signs are used chiefly to make notes on the plans of aerial combat.)

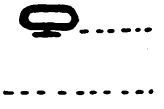


Airdrome

Landing place

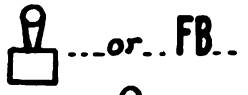
Landing place with limits indicated

} Corresponding to the kinds of airplanes indicated by the sign.

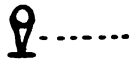


Airship (dirigible).

Balloon unit headquarters.

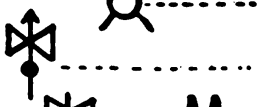


Balloon unit.

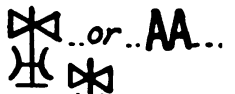


Place for balloon ascension.

Balloon observation group.



Antiaircraft machine gun.



Antiaircraft artillery unit.

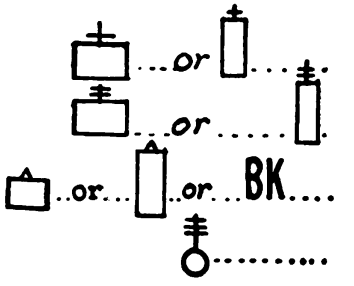
Fixed antiaircraft unit.

Fixed antiaircraft unit headquarters.

Listening apparatus.

Antiaircraft searchlight.

h. Baggage and transport.

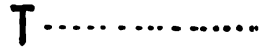


First line baggage (combat train).

Heavy baggage (field train).

Bridge material company (train).

Transport troop battalion headquarters.

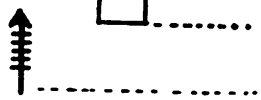


Transport troops. To show the classification of the load the following signs are applied thus:

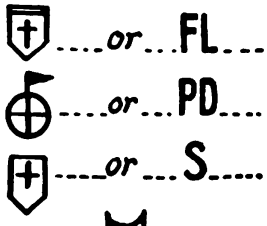
Provisions—Pr.

Ammunition—iM or AM.

Transport in mass formation.



Transport column on the march.

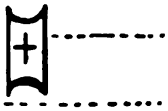


Field hospital

Horse depot

Medical detachment

} Those in operations use the sign Λ.



Medical corps stretcher company.

Medical corps ambulance company.

Dressing station.

Sick horse depot.

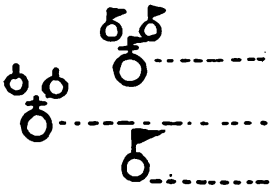
Sick horse first-aid station.

i. Protective troops and camps.

Cavalry

Infantry

} Pickets and outpost (main body).

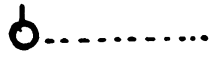


Cavalry sentry group (under noncommissioned officer).

Infantry sentry group (under noncommissioned officer).

Single cavalry sentry.


Double cavalry post.

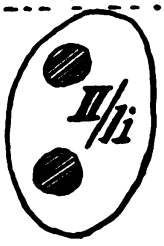

Single infantry sentry.


Double infantry post.

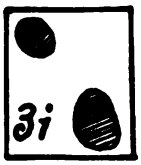

Cavalry patrol (under a noncommissioned officer).


Infantry patrol (under a noncommissioned officer).

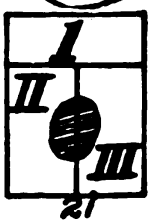

Observation post.



To show a billeting area, a continuous line is drawn around it and the symbols of the detachment written.



In case of close billet, the village and all the dry fields are marked by a rectangle or by a polygon. The symbols of the detachment are written inside or outside.



To show a bivouac, a rectangle is drawn (the front has a thick line) with the symbols inside or outside. The guards of the billets and the bivouacs together with all the observation troops and the outposts are to be shown on the map.

Alarm quarters.

General alarm quarters.


Provision distributing point.

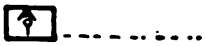

Ammunition distribution point.


Horse watering place.


Horse lines.

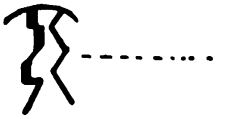

Wagon park. Transport depot.


Artillery park.

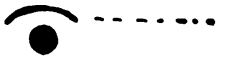
 Machine gun park.

 Automobile park.

j. Construction (works).

 Shelter trench with communicating trenches. The portions defended by fire are shown by a thick line.

 Platform for light machine gun.

 Platform for heavy machine gun.

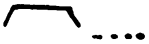
 Platform for light trench mortar.

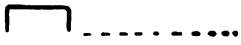
 Platform for heavy trench mortar.

 Platform for direct firing infantry gun.

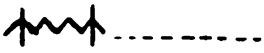
 Platform for infantry howitzer.

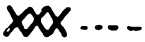
 Field artillery epaulement.

 Epaulement for direct heavy field artillery firing.

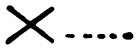
 Epaulement for high angle heavy field artillery firing.

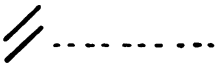
 Low wire entanglements.

 High wire entanglements.

 Abatis.

 Land mines.

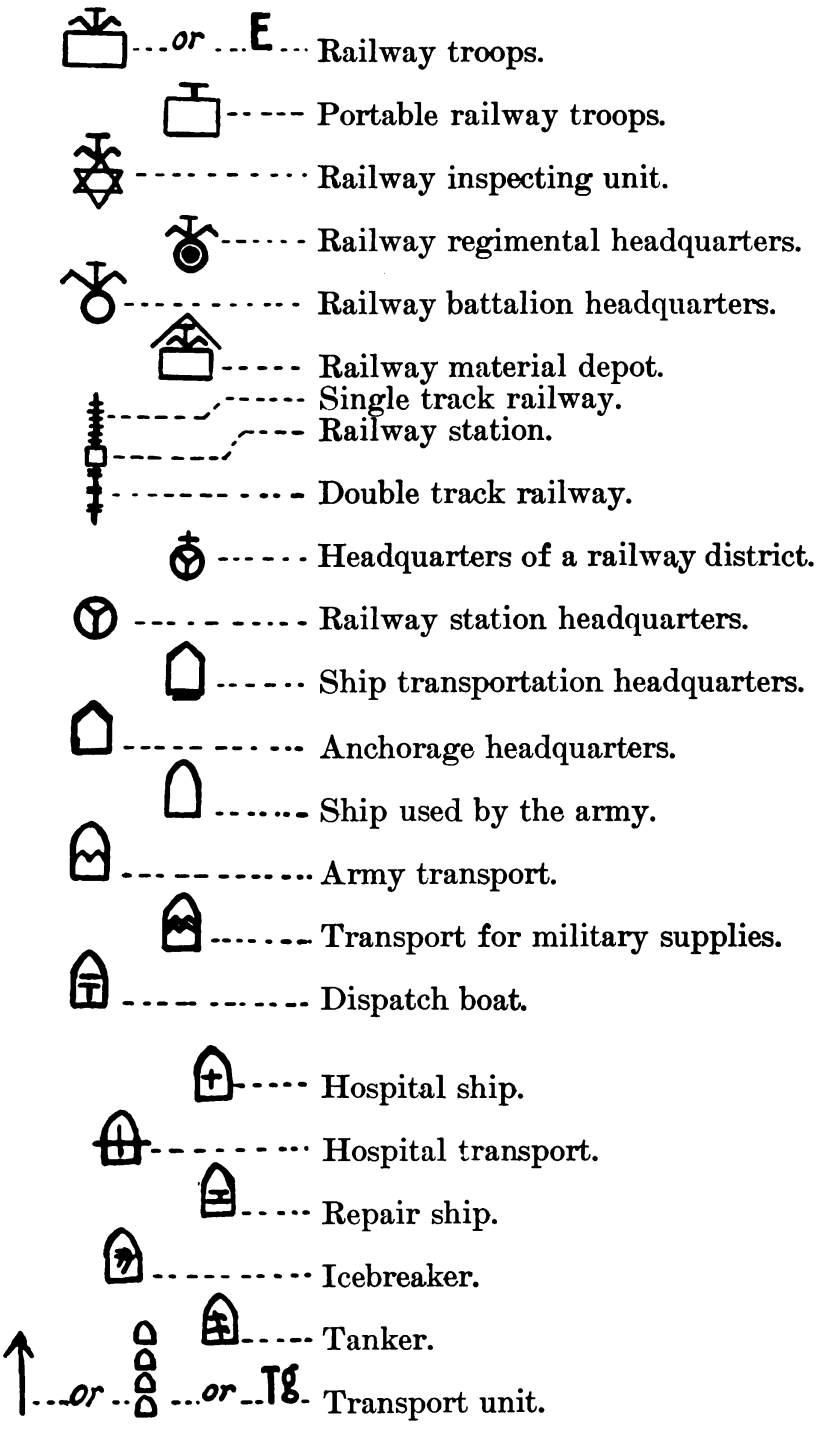
 Section with destroyed works or section of the forest cut.

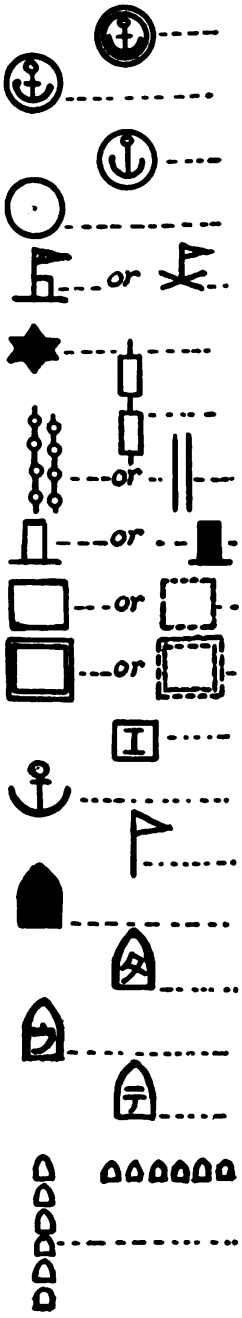
 Section of road or bridge barricade.

 Shelter or overhead cover of a battle position.

False works are marked by an ordinary dotted line.

k. Railways and ships.





Naval base.

Naval center.

Naval supplementary base.

Transport anchorage.

Buoy.

Lighthouse (at sea).

Boom or defense net.

Submarine mine group.

Pier.

Place of assembly for troops.

Place for collecting war stores.

Workshop for embarkation and debarkation office.

Ship entrance.

Signal for embarkation and debarkation office.

Berth anchorage.

Flat boat for troops.

Ship for horses.

Messenger ship.

Group of small ships (arrangement abreast).

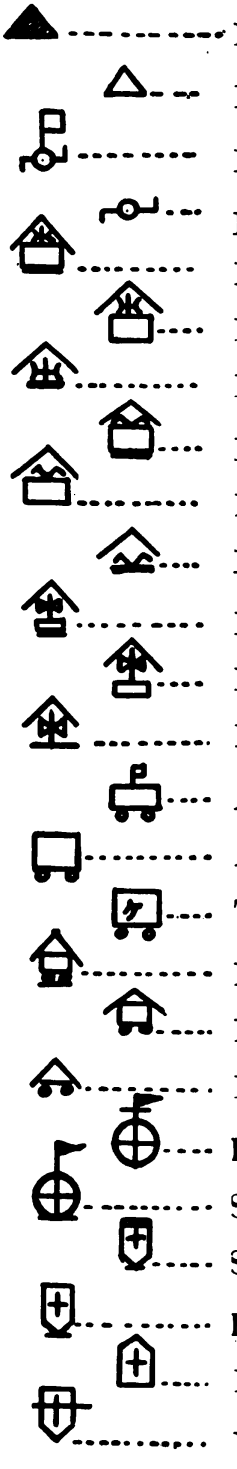
Group of small ships (arrangement single file).

l. Line of communications.

Chief of line of communications of the whole army.

Line of communications inspector.

Line of communications headquarters.



Line of communications headquarters not yet opened.

Branch line of communications headquarters and issuing point.

Line of communications telegraph detachment headquarters.

Line of communications telegraph company.

Field artillery depot.

Field artillery storehouse.

Field artillery branch storehouse.

Field engineers depot.

Field engineers storehouse.

Field engineers branch storehouse.

Field main air depot.

Field air storehouse.

Field branch air storehouse.

Automobile detachment headquarters.

Automobile troops.

Tractor detachment.

Field automobile depot.

Field automobile storehouse.

Field automobile branch storehouse.

Reserve horse depot

Supply sick horse depot

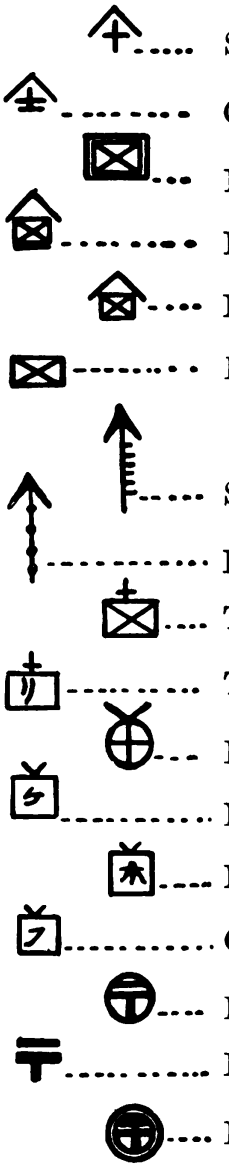
Supply hospital

Field reserve hospital

Places to be put in operation are shown by the sign ∧ drawn on the top.

Field sanitary material storehouse.

Wounded transport section.



Sanitarium (recuperation point for sick and wounded).

Collecting station for sick and wounded.

Field main depot.

Field clothing and ration storehouse.

Field clothing and provision branch storehouse.

Field depot.

Supply transport company.

Local vehicles in single file.

Transport observation troops.

Transport soldiers.

Horse procurement section.

Field construction depot.

Field epidemic depot.

Collecting depot.

Field post office.

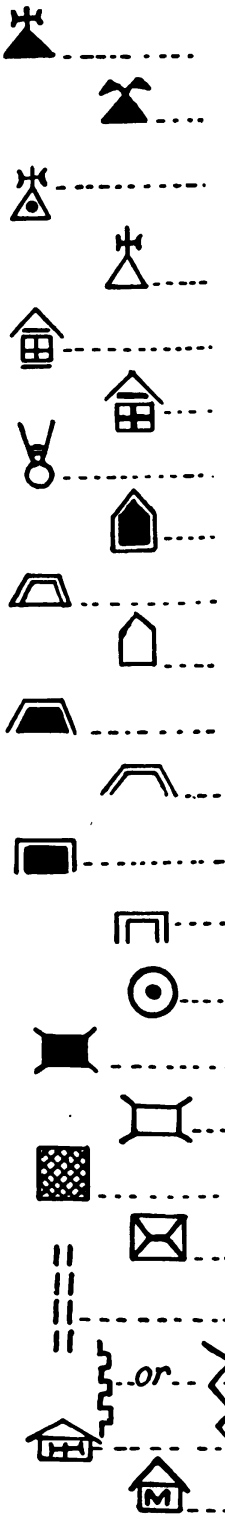
Field post office relay station.

Field post office with direct service.

m. Fortifications.—The following are applied to field works:

Siege artillery and fortress artillery.

Fortress artillery headquarters.



Siege artillery headquarters.

Siege engineers headquarters.

Siege (or fortress) heavy artillery regiment headquarters or headquarters of an independent artillery fort.

Siege (or fortress) heavy artillery battalion headquarters.

Fortress hospital.

Branch fortress hospital.

Subaqueous listening apparatus.

Permanent fort
Semipermanent fort
Improvised fort
} The form is according to circumstances.

Permanent battery for direct fire.

Semipermanent battery for direct fire.

Permanent battery for indirect fire.

Semipermanent battery for indirect fire.

Artillery turret.

Permanent blockhouse.

Improvised blockhouse.

Soldiers' quarters (barracks).

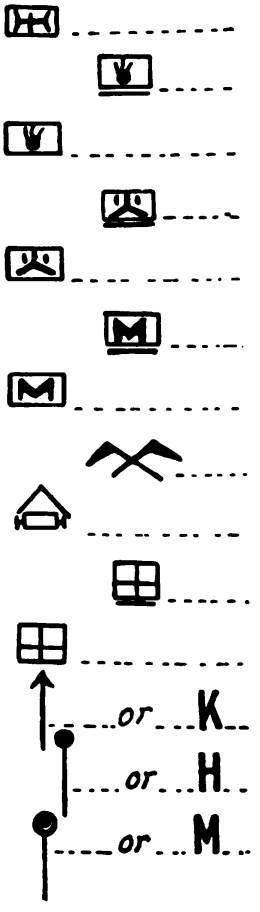
Storehouse or camp (group of tents).

Gallery.

Underground passage (siege approaches).

Siege artillery park.

Siege engineers park.



Artillery park.

Shell storehouse or main magazine.

Projectile dump.

Gunpowder storehouse or main magazine.

Gunpowder branch magazine.

Ammunition dump or main magazine.

Intermediate ammunition dump or branch magazine.

Engineer material distributing post.

Transport material storehouse.

Arms repair shop (large).

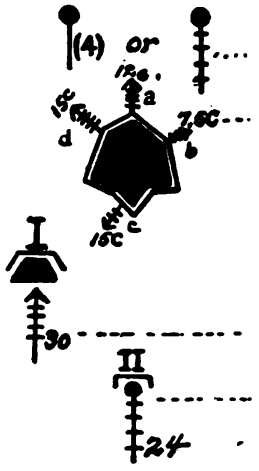
Arms repair shop (small).

Cannon (a gun).

Howitzer.

Mortar.

The caliber is shown by numerals; the number of cannons by numerals in brackets, or by cross lines.



Four 15-cm howitzers.

Shows batteries of a fortress:
a—Four 12-cm guns.
b—Two 7.5-cm guns.
c—Two 15-cm guns.
d—Four 15-cm howitzers.

Four 30-cm guns in permanent battery No. 1.

Four 24-cm howitzers in improvised battery No. 2.

Two 40-cm guns in a turret.

141. Navy symbols.

Navy artillery.

Warship.

The different kinds of warships are shown below.

Battleship.

Cruiser.

Gunboat.

Battle cruiser.

Coast defense ship.

River gunboat.

Auxiliary gunboat.

Submarine.

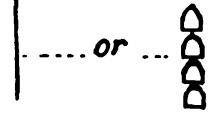
Minesweeper.

Minesweeper, mother ship.

Destroyer.

Torpedo boat.

Aircraft carrier.



Fleet (battleship and battle cruiser divisions are shown by a thick line, all the others by a thin line).

Fleet.

S..... Division of a fleet (fighting unit).

D..... Section of a fleet (division).

GF..... Combined fleet.

Wg..... Minesweeper unit.

CWg..... Combined minesweeper unit.

Sd..... Destroyer squadron.

Ss..... Submarine squadron.

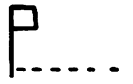
Cdg..... Combined destroyer group.

Gg..... Gunboat unit.

dg..... Destroyer unit.

Sg..... Submarine unit.


Commander in chief of the grand fleet.


Fleet commander.


Commander of a few ships (division or squadron).


Ship's commander (second in command).

f....or.  Airplane.

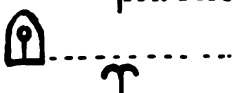
fw..... Seaplane.

fL..... Landplane.


Lookout station (signal station).


Captive balloon.


Watchtower.


Submarine station.


Aircraft station.

142. List of common Japanese naval abbreviations.

Abbreviation	Japanese	English
AG	Tokusetsu hōkan	Auxiliary gunboat.
B	Senkan	Battleship.
BC	Jun-yō senkan	Battle cruiser.
C	Jun-yōkan	Cruiser.
CD	Kaibōkan	Coast defense vessel.
Cdg	Kuchiku rentai	Combined destroyer group.
d	Kuchikukan	Destroyer.
D	Shōtai	Division.
dg	Kuchikutai	Destroyer unit.
Dp	Bokan	Mother ship.
Dpf	Kōkū bokan	Aircraft tender or mother ship.
Dps	Suirai bokan	Destroyer mother ship.
DW	Sōkai bokan	Mine sweeper mother ship.
f	Hikōki	Airplane; flying machine.
F	Kantai	Fleet.
f [1]	Rikujō hikōki	Land airplane.
f [8]	Suijō hikōki	Seaplane.
G	Hōkan	Gunboat.
GF	Rengō kantai	Combined fleet
Gg	Hōkantai	Gunboat unit.
NA	Kaigunhō	Naval gun.
RG	Kayō hōkan	River gunboat.
S	Sensuikan	Submarine.
S	Sentai	Squadron; flotilla.
Sd	Suirai sentai	Destroyer squadron.
Sg	Sensuitai	Submarine unit.
Ss	Sensui sentai	Submarine squadron.
Sv	Kyūnansen	Salvage ship.
t	Suiraitei	Torpedo boat.
W	Sōkaitei (sen)	Minesweeper.
Wg	Sōkaitai	Minesweeper unit.

143. Typical operations map of meeting engagement (illustrating use of Japanese abbreviations).—The advance guard of the right column (fig. 86) will attack the enemy force on the high ground north of *E;* seize the position and occupy it; commit the main force of that column gradually to the fight; and, making the main effort against the high ground, attack and drive the enemy to the northwest. The artillery will be advanced to the vicinity of *G* and assist the fight of the advance guard. The left column will attack the enemy to the front immediately. A part of the artillery of the left column will bring fire to bear on the enemy in front of the right column and assist its advance.

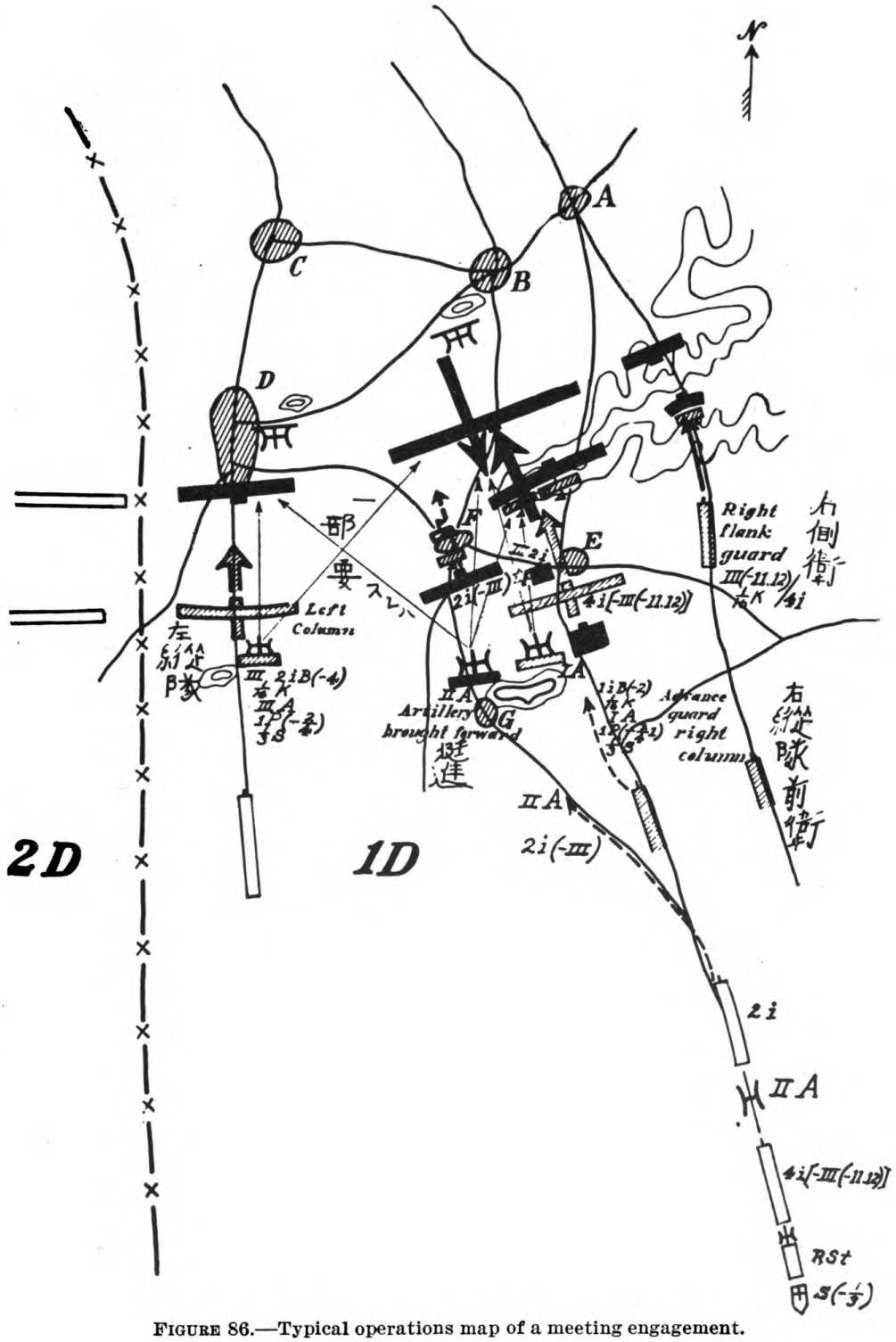


FIGURE 86.—Typical operations map of a meeting engagement.

CHAPTER 10

MILITARY TERMS AND CHARACTERS

144. Military terms.—The following is a list of military terms and their Japanese equivalents which may be useful to unit intelligence officers:

Military term	Japanese equivalent
Army	Rikugun.
General staff	Sanbō hombu.
Chief of general staff	Sanbō sōchō.
Navy	Kaigun.
Navy department	Kaigun shō.
Grade	Kaikyū.
General officer	Shōkan.
General	Taishō.
Lieutenant general	Chūjō.
Major general	Shōshō.
Field officer	Sakan.
Colonel	Taisa.
Lieutenant colonel	Chūsa.
Major	Shōsa.
Company officer	Ikan.
Captain	Tai-i.
First lieutenant	Chū-i.
Second lieutenant	Shō-i.
Noncommissioned officer	Kashikan.
Warrant officer or special duty sergeant major.	Tokumu sōchō.
Sergeant major	Sōchō.
Sergeant	Gunsō.
Corporal	Gochō.
Soldier	Hei, heitai.
Superior private	Jōtō hei.
First class private	Ittō hei.
Second class private	Nitō hei.
Grade	Kaikyū.
Army (unit)	Gun.
Army headquarters	Gun shireibu.
Army commander	Gun shireikan.

Military term	Japanese equivalent
Division	Shidan.
Division headquarters	Shidan shireibu.
Division major general attached to	Shidan shireibuzuki shosho.
Division commander	Shidan chō (chūjō).
Division artillery	Shidan hōhei.
Division cavalry	Shidan kihei.
2 brigades of infantry	Hohei niko ryodan.
1 regiment of cavalry	Kihei ikko rentai.
1 regiment of field or mountain artillery	Yahōhei, moshiku wa sanpōhei, ikko rentai.
1 battalion of engineers	Kōhei ikko daitai.
1 battalion of transport troops	Shichōhei ikko daitai.
Brigade	Ryodan.
Reinforced brigade	Konsei ryodan.
Composite brigade	Shūsei ryodan.
Brigade cavalry	Ryodan kihei.
Infantry brigade	Hohei ryodan.
Cavalry brigade	Kihei ryodan.
Heavy field artillery brigade (There is no light artillery brigade organization.)	Yasen jū hōhei ryodan.
Regiment	Rentai.
Regiment headquarters	Rentai honbu (not shireibu).
Regiment commander	Rentaichō.
Regiment adjutant	Rentai fukukan (fukkan).
Battalion	Daitai.
Battalion headquarters	Daitai honbu.
Battalion commander	Daitaichō.
Battalion adjutant	Daitai fukukan.
Company, troop, battery	Chūtai.
Company (troop, battery) headquarters.	Chūtai jimushitsu (not hombu).
Company (troop, battery) commander	Chūtaichō.
Platoon	Shōtai.
Platoon commander	Shōtaichō.
Squad	Buntai.
Squad commander	Buntaichō.
Detachment	Butai.
Arms or services	Heika.
Arms	Honka.
Infantry	Hohei (aka) (really hi) (red).
Cavalry	Kihei (midori) (green).
Artillery	Hōhei (kiiro) (yellow).
Light field	Ya hō hei.
Mountain	Sanpō hei.
Heavy field	Yasen jūhōhei.
Antiaircraft	Kōsha hōhei.
Heavy	Jūhōhei.

Military term	Japanese equivalent
Engineers	Kōhei.
Transport corps	Shichō hei.
Air	Kōkū hei (sorairo) (really usu konjō) (sky blue).
Military police	Kenpei (kuro) (black).
Staff services	Kakubu.
Medical	Eiseibu (fuka midori) (dark green).
Veterinary	Jū-ibu (murasaki) (purple).
Intendance	Keiribu (gincha) (silver tea).

NOTE.—In all enumerations the Japanese habitually use the order MP, Inf., Cav., Arty., Engrs., Air Service, Transport, abbreviated sometimes to Ken, Ho, Ki, Hō Kō', Kōkū, Shichō.

145. Important military characters.—*a. Arms, services, and units.*

Infantry Hohei	Cavalry Kihei	Artillery Hōhei	The first character alone means army (gun); with second character, corps (gundan).	Division Shidan	Brigade Ryodan
歩兵	騎兵	砲兵	軍團	師團	旅團

Regiment Rentai	Battalion Daitai	Company (troop battery) Chūtai	Platoon Shōtai	Engineer Kōhei
聯隊	大隊	中隊	小隊	工兵

近衛 Konoe, the Imperial guards; used for units of the Imperial Guards Division.

航空兵 Kōkūhei, the air service (a new word).

b. Numbers.

One	Two	Three	Four	Five	Six
一	二	三	四	五	六

Seven	Eight	Nine	Ten	Hundred	Thousand
七	八	九	十	百	千

〇 Zero, used generally where our zero is used, though the character for ten is sometimes used.

c. Grade of officers.—Characters showing officers' grades are given as follows:

(1) *Company officers.*

Captain Taii	First lieutenant Chūi	Second lieutenant Shōi
大尉	中尉	少尉

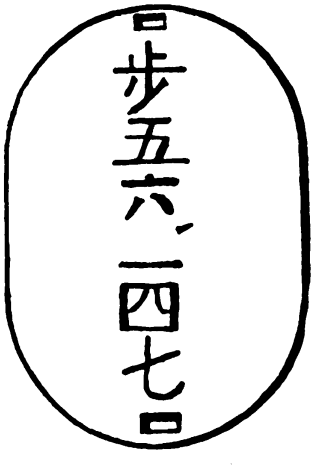
(2) *Field officers.*

Colonel	Lieutenant colonel	Major
Taisa	Chūsa	Shōsha
大佐	中佐	少佐

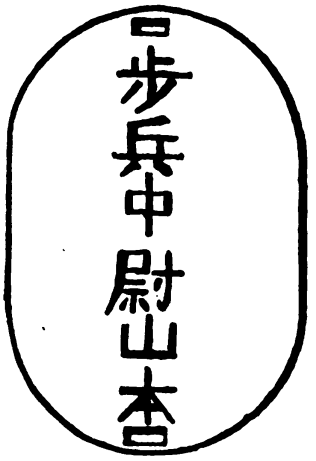
(3) *General officers.*

General	Lieutenant general	Major general
Taishō	Chūsho (or chūjō)	Shōshō
大將	中將	少將

146. Characters on identification tags.—*a. Enlisted man.*—Identification tag of an enlisted man. Reading from top to bottom the first character gives the arm or service, followed by regimental number, a small dash, and ending with the serial number of the man in his regiment. The following reads, "Infantry 56 (regulation), No. 147."



b. Officer.—The following is an officer's identification tag which gives in order from top to bottom, arm or service, grade, and name. This tag reads, "Infantry, first lieutenant, Yamamoto."



c. Reading identification tags.—Japanese is read from top to bottom and from right to left. The characters here used are Chinese characters adapted by the Japanese. One, two, three, or more characters constitute a word. The dash on the enlisted man's tag separates the regiment number from the man's serial number in the regiment. The arm of service is frequently abbreviated and the first character only used. This is true on the enlisted man's tag. In case of engineers, "battalion" is substituted for "regiment." A detailed explanation of the reading of tags follows:

(1) *Enlisted men.*

One character here shown—ki for kihei, cavalry.

One or more characters for number of regiment (in this case 23).

Dash separating regimental number from serial number of man in regiment.

Serial number of man in regiment. One or more characters (in this case 419).

(2) *Officers.*

Generally two characters for arm of service (here engineer).

Two characters for rank (here captain).

One, two, three, or four characters for name of officer (here Tanaka).

d. Examples.—The following are examples of the translation of identification tags:

Artillery.
18th Regiment.
No. 54.

Engineer.
9th Battalion.
No. 60.

Cavalry.
Second lieutenant.
Kawaguchi.

Infantry.
Major general.
Hara.

騎兵大佐内田

Cavalry.
Colonel.
Uchida.

歩四一三五一

Infantry.
141st Regiment.
No. 1,251.

工兵中佐松野尾

Engineer.
Lieutenant Colonel.
Matsunō.

砲十一九

Artillery.
10th Regiment.
No. 9.

歩七六、四四三

Infantry.
76th Regiment.
No. 442.

騎兵少佐谷

Cavalry.
Major.
Tani.

砲十二、一八七

Artillery.
12th Regiment.
No. 187.

歩九一、七六一

Infantry.
91st Regiment.
No. 761.

工兵大尉	Engineer. Captain.
中川	Nakami-gawa.
騎八	Cavalry. 8th Regiment.
六四三	No. 642.
歩兵中尉	Infantry. First Lieutenant.
本西	Motonishi.
歩五二	Infantry. 52nd Regiment.
五〇三	No. 503.

APPENDIX

SUPPLEMENTAL DATA

1. Japanese year dates

Year of Meiji	*Year of our Lord*	*Year of Meiji*	*Year of our Lord*
1st	1868	40th	1907
2d	1869	41st	1908
3d	1870	42d	1909
4th	1871	43d	1910
5th	1872	44th	1911
6th	1873	45th	
7th	1874	*Year of Taisho*	1912
8th	1875	1st	
9th	1876	2d	1913
10th	1877	3d	1914
11th	1878	4th	1915
12th	1879	5th	1916
13th	1880	6th	1917
14th	1881	7th	1918
15th	1882	8th	1919
16th	1883	9th	1920
17th	1884	10th	1921
18th	1885	11th	1922
19th	1886	12th	1923
20th	1887	13th	1924
21st	1888	14th	1925
22d	1889	15th	
23d	1890	*Year of Showa*	1926
24th	1891	1st	
25th	1892	2d	1927
26th	1893	3d	1928
27th	1894	4th	1929
28th	1895	5th	1930
29th	1896	6th	1931
30th	1897	7th	1932
31st	1898	8th	1933
32d	1899	9th	1934
33d	1900	10th	1935
34th	1901	11th	1936
35th	1902	12th	1937
36th	1903	13th	1938
37th	1904	14th	1939
38th	1905	15th	1940
39th	1906	16th	1941

2. Japanese weights, measures, and moneys.—*a. Distance and length.*

Ri=36 cho 2,160 ken=2.4403 miles=3.92727 kilometers.
Ri=(marine)=1 knot=1.85318 kilometers.
Ken=6 shaku=60 sun=5.965163 feet=1.81818 meters.
Shaku=10 sun=100 bu=0.994194 feet=0.30303 meter.
Shaku (cloth measure)=1.25 shaku.
Tan (cloth measure)=a roll of about 25 shaku.

b. Land measure.

Square ri=1,296 square cho.=5.95516 square miles=15.42345 kilometers carrés.
Cho=10 tan=3,000 tsubo=2.45064 acres.
Tsubo or bu=3.95369 square yards=99.17355 ares.
Ko (Formosa)=2,934 tsubo.=3.30579 centiares.

c. Quantity, capacity, and cubic measures.

Koku=10 to=100 sho={4.96005 bushels; 47.95389 gallons (liquid) U. S. A.; 5.11902 bushels (dry) U. S. A.}=1.80391 hectoliters.
Go=10th of a sho.
Koku (capacity of vessels)=10th of a ton.
Koku (timber)=about 1 cubic foot by 10 feet.
Koku (fish)=40 kwan (in weight).
Shakujime (timber)=about 1 cubic feet by 12 feet.
Taba (fagot, etc.)=about 3 by 6 by 6 feet.

d. Weights

Kwan (kan)=1,000 momme={8.26733 pounds avoirdupois; 10.04711 pounds troy}=3.75000 kilograms.
Kin=160 momme={1.32277 pounds avoirdupois; 1.60754 pounds troy}=0.60000 kilograms.
Momme=10 fun={0.13228 ounce avoidrupois; 0.12057 ounce troy}=3.75000 grams.

e. Money.

Yen (¥) = 100 sen = 1,000 rin = (at par) {0.49846 dollars (U. S. A.). / 0.84459 dollars (U. S. A.).*

* Revised rate: dollar = 0.88067 gram of gold.

3. Method of numbering models.—*a.* The type number on weapons and equipment is indicated by the last two digits of the year, according to the Japanese calendar, in which the item was adopted by the army.

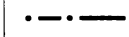
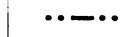
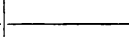
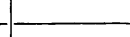
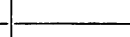
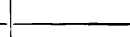
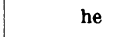
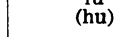
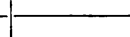
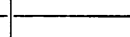
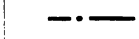
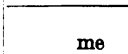
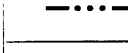
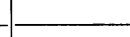
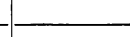
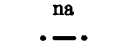
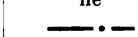
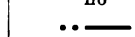
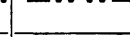
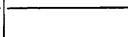
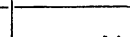
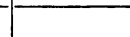
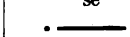
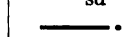
b. The year 1927 is the 2587th year in the history of the Japanese Empire. An item of equipment adopted in 1927 would, therefore, be designated as a type 87 item.

c. A comparative table indicating the western year, the Japanese year, and the type number corresponding thereto follows:

Western year	Japanese year	Type number
1930	2590	90
1931	2591	91
1932	2592	92
1933	2593	93
1934	2594	94

d. This method of marking equipment is in general use in the army for numbering many types of equipment, including airplanes, tanks, ordnance pieces, etc.

4. Japanese field signal code.—*a.* The following table shows the code signals employed to represent the various sounds of the Japanese syllabary. Note that *i* and *e* are repeated in the *y* column, and that *u* is repeated in the *w* column. *Ba*, *be*, *bi*, *bo*, and *bu* differ respectively from *ha*, *he*, *hi*, *ho*, and *fu*, (*hu*) only by the addition of the code signal ". .". Note that the same is true of the *ga* and *ka*, *da* and *ta*, *za* and *sa* columns. The *pa* column is derived from the *ha* column by the addition of the code signal ". . — — .". Where two syllabic versions of the sound indicated by a code signal are given, the upper one indicates the romanized spelling, according to the Hepburn system, which was in official use up to 1937; the lower indicates that now in use. It should be noted that the former (upper) more nearly approximates the rendering of Japanese sounds in English.

a	e	i	o	u	n
					
ba	be	bi	bo	bu	
					
da	de	ji (zi)	do	zu	
					
ga	ge	gi	go	gu	
					
ha	he	hi	ho	fu (hu)	
					
ka	ke	ki	ko	ku	
					
ma	me	mi	mo	mu	
					
na	ne	ni	no	nu	
					
pa	pe	pi	po	pu	
					
ra	re	ri	ro	ru	
					
sa	se	shi (si)	so	su	
					
ta	te	chi (ti)	to	tsu (tu)	
					
wa	(w)e (e)	(w)i (i)	(w)o (o)	(w)u (u)	
					
ya	(y)e	(y)i	yo	yu	
					
za	ze	ji (zi)	zo	zu	
					

b. The following is the list of code signals employed for the transmission of numerals. The normal signals, abbreviated signals, and the romanized rendering of the Japanese sound occasionally used for number representation during communication are listed.

Numeral	Normal	Abbreviated	Romanization
1	·————	—·	hi
2	··———	——··	fu
3	···——	···	mi
4	····—	——	yo
5	·····	·—	i
6	—····	—	mu
7	——···	·—·	na
8	———··	·——	ya
9	————·	···—	ku
0	—————	———	re

c. The following is a list of auxiliary signals used for punctuation, etc.

Period	·····
Paragraph	·—·—··
Brackets	—·——·—
Long sound	·——·—
End of message	···—·
Code or abbreviated numerals	——·——
Error—will correct	·····

d. The following is a list of abbreviations and procedure signals. A line over a signal (such as uu, hone) indicates that the signals should be run together, the normal spacing between signals disregarded.

(1) *General signals and abbreviations.*

Signal or abbreviation			Meaning
Telegraph	Telephone	Air-ground liaison (radio)	
kaku	kaku		General call.
uke		uke	I have a message for you.
wa		wa	Transmit your message!
o	mate	o	Wait.
. . . — .	owari	. . . — .	End of message.
na	ryōkai	na	Understood, acknowledged.
chi			Although I did not completely understand your message, since it is urgent, will deliver it at once.
inuna		inuna	I shall continue transmission.
. . . — . —			End of communication, finished, ending signal.
sara	sara ni	sara	Repeat entire message! Will repeat entire message.
seni			Static or interference. Repeat entire message!
sesan			Static or interference. Repeat entire message 3 times!
koni			Static or interference. Repeat each word!
kosan			Static or interference. Repeat each word 3 times!
kani			Static or interference. Repeat each letter!
kasan			Static or interference. Repeat each letter 3 times!
uu			Routine message (net business).
hone		hone	Main body of telegram.
. . . . .	ayamari	. . . . .	Error—will correct.
yoshi			Go ahead, all right, understood.
uho	doka	uho	Interrogation.
ina			No, negative.

Signal or abbreviation			Meaning
Telegraph	Telephone	Air-ground liaison (radio)	
riya		riya	Will use abbreviations or code.
shia			I have a message to transmit. I shall send number of next message. Have you a message to transmit?
shina			I have nothing to transmit.
kan	kan	kan	Sensitivity.
kan mu	kan nashi	kan mu	No sensitivity.
kan hi	kan warushi	kan hi	Low sensitivity, cannot read.
kan yo	kan yoshi	kan yo	Good sensitivity, can read.
	mei yoshi		Clarity good.
	mei warushi		Clarity poor.
tewa		tewa	Switch to telephone.
	denshin		Switch to telegraph.
rimu			Official telegram.
una			Urgent.
ma			Relay.

(2) *Abbreviations used for time broadcasts, etc.*

Signal or abbreviation			Meaning
Telegraph	Telephone	Air-ground liaison (radio)	
hotoki			Time broadcast.
kise			Weather forecast.
hei	heishiyo	hei	Close station.
kai	kaishiyo		Open station.
hoki			Artillery meteorological message.

(3) *Abbreviations used for corrections, etc.*

Signal or abbreviation			Meaning
Telegraph	Telephone	Air-ground liaison (radio)	
ima	----------	----------	Present telegram.
saho	----------	----------	Previous telegram.
mareme	----------	----------	Send last letter of each line.
kese	----------	----------	Disregard!
tese	----------	----------	Correct!
tesu	----------	----------	Have corrected.
fuku	----------	----------	Repeat code signal!
fufu	----------	fufu	Code signal is not clear.
fuya	----------	fuya	Transmission is not clear.
oso	----------	oso	Send slower!

(4) *Abbreviations used during period of interruption, difficult transmission, etc.*

Signal or abbreviation			Meaning
Telegraph	Telephone	Air-ground liaison (radio)	
konso	----------	konso	Jamming, interference.
kū	----------	----------	Static.
satsu	----------	----------	Atmospheric noises.
uka	----------	----------	Will be able to receive.
koka	----------	----------	Communication reestablished.
uko	----------	uko	Receiver out of order.
soko	----------	----------	Transmitter out of order.
kina	----------	----------	No damage.

(5) *Abbreviations used in air-ground communication.*—Abbreviations used in air-ground communication may also be used in communication with tanks.

Air-ground liaison (radio)	Meaning
Tsuina	Urgent.
Rarera	Disaster, am in difficulty.
Riku	Landed.

NOTE.—The above data were translated from the "Signal Communication Manual, Tentative, 1939."

5. Current strength.—The Sino-Japanese hostilities have caused a large increase in units over the peacetime standing army. Comparisons follow:

Units	1936	January 1939
Infantry divisions	17	56–60
Divisional artillery regiments	14	35
Mountain artillery regiments	3	5
Independent mountain artillery regiments	3	5
Heavy artillery brigades	4	13
Fortress artillery regiments	6	11
Engineer communication regiments	2	4
Engineer railway regiments	2	6
Divisional engineer regiments	17	40
Divisional cavalry regiments	17	40
Cavalry brigades	4	4
Air corps squadrons	16 (1930)	114 (1940)
Tanks	1,007 (1937)	(1940)

The whole force has expanded from 355,000 to about 1,500,000 men during the above period.

INDEX

INDEX

[A. G. 062.11 (3–1–41).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

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Major General,
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