Translation of
JAPANESE ORDNANCE
MARKINGS

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Complete identification of Japanese materiel often necessitates translation into English of the ideographs and phonetic alphabet characters stamped on equipment or printed on accompanying tags, boxes or pamphlets. Because of their inability to read Japanese, many persons responsible for inspection of captured ordnance items are unable quickly and accurately to identify unfamiliar materiel.

This book has been prepared as a practical guide to the translation of Japanese ordnance nomenclature. Its successful use does not require a prior knowledge of Japanese but depends only upon the application of simple principles that can be learned within a few hours. It explains how the recognition of twenty key ideographs, in conjunction with tables in the text, will enable the reader to translate markings that describe Japanese ordnance.

SECTION ONE

INTRODUCTION

### General Discussion of Japanese Characters

KANJI

Until a phonetic alphabet was invented between 774 and 835 A.D. the Japanese depended entirely upon ideographs or picture-characters for written expression of their thoughts. Even today ideographs remain the principal medium for written Japanese, although the phonetic characters have considerable subsidiary use. Since most of the words in the language are represented by an individual character, several thousand ideographs have to be memorized for facility in reading or writing. Most of these characters were adopted from the Chinese in the third century A.D., this Chinese origin being indicated by their name, "Kanji," which means "Chinese characters." During the long period that has elapsed since their adoption, the Chinese sounds for the ideographs have been modified until the present Japanese equivalents are quite different from the original Chinese.

Japanese sentences do not follow normal English structure. While each noun and its descriptive adjectives are represented by a separate ideograph, the position of the noun does not correspond to that in English. Japanese ordnance inscriptions usually have an easily recognized noun character at or near the first part of the sentence. In translating, this permits identification of the noun ideograph to serve as a key to the meaning of the combined characters, as is shown in the section of this book entitled "Explanation of the Key Characters and Their Use." The way in which ideographs are combined to designate a term or item is apparent from the combination of the three characters for picric acid in which the ideographs for yellow, color, and powder are employed.

黄	*ō*	Yellow	
色	*Shoku*	Color	PICRIC ACID
薬	*Yaku*	Powder	

1

Because the number of word sounds in Japanese are limited, a single sound may have various meanings according to the context of the sentence in which it is used. In written Japanese each of these meanings is clearly denoted by a distinctive ideograph. For instance, there are numerous meanings of the word "Sha," each represented by a different ideograph, some of which are illustrated below.

車	社	舍	遮	左	射
Sha	*Sha*	*Sha*	*Sha*	*Sha*	*Sha*
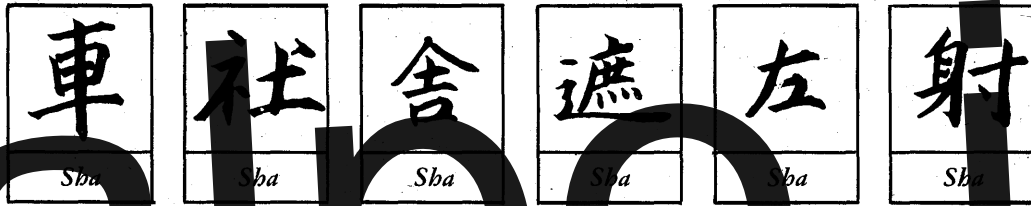
In Japanese ordnance terms only the "Sha" character on the extreme left of this group of six selected pictures of the sound "Sha" is of value. This particular representation of "Sha" indicates a vehicle and, when so used, is always at the end of the group of characters; for example, "jinrikisha" (a two-wheeled cart), and "sensha" (a battle tank).

CART				TANK		
人	*Jin*	(Man)		戦	*Sen*	(Battle)
力	*Riki*	(Moves)		車	*Sha*	(Wagon)
車	*Sha*	(Wagon)				

This form of "Sha" appears in the nomenclature of all Japanese vehicular ordnance items, where it is the terminal sound or ideograph. This "Sha" is the root word for all Japanese vehicles, and is one of 20 key characters in the table of key ordnance characters which will be explained in detail later in this outline.

KANA

The Japanese realized the disadvantages and limitations of their ideograph system in its inability to represent the constantly increasing number of foreign words being absorbed into the language. This problem was solved by use of the phonetic alphabet called "Kana." Unlike Kanji, which cannot express the correct sound or proper construction of words, the

JAPANESE KANA ALPHABET

ア *a*	イ *i*	ウ *u*	エ *e*	オ *o*
カ *ka*	キ *ki*	ク *ku*	ケ *ke*	コ *ko*
ガ *ga*	ギ *gi*	グ *gu*	ゲ *ge*	ゴ *go*
マ *ma*	ミ *mi*	ム *mu*	メ *me*	モ *mo*
ナ *na*	ニ *ni*	ヌ *nu*	ネ *ne*	ノ *no*
ハ *ha*	ヒ *hi*	フ *fu*	ヘ *he*	ホ *ho*
パ *pa*	ピ *pi*	プ *pu*	ペ *pe*	ポ *po*
バ *ba*	ビ *bi*	ブ *bu*	ベ *be*	ボ *bo*
タ *ta*	チ *chi*	ツ *tsu*	テ *te*	ト *to*
ダ *da*	ヂ *ji*	ヅ *zu*	デ *de*	ド *do*
ファ *fa*	フィ *fi*	フ *fu*	フェ *fe*	フォ *fo*
ラ *ra*	リ *ri*	ル *ru*	レ *re*	ロ *ro*
サ *sa*	シ *shi*	ス *su*	セ *se*	ソ *so*
ワ *wa*	ヰ *i*	ウ *u*	ヱ *e*	オ *o*
ヤ *ya*	ヰ *i*	ユ *yu*	ヱ *e*	ヨ *yo*
ザ *za*	ジ *ji*	ス *zu*	ゼ *ze*	ゾ *zo*

eighty Kana characters represent the basic syllables of the language. Since its characters represent sounds and not letters, Kana may be more accurately considered a syllabary than an alphabet. Because of its phonetic nature Kana can be used for foreign words after they have been reduced to Japanese syllables as closely as possible imitative of the sounds in the original words.

Kana is designed around the five vowels, A, I, U, E, O, and the fifteen consonants, K, G, M, N, H, P, B, T, D, F, R, S, W, Y, Z. The working plan of this table is simple. For example, the consonant K produces five separate syllable sounds when added singly to each one of the five vowels. These are KA, KI, KU, KE, and KO. There is a separate alphabet mark, or Kana character, for not only each of the five vowels, but also for each of the seventy-five two-letter sounds, making a total of eighty individual Japanese Kana characters in the basic table.

The pronunciation of the vowel sounds is slightly different from the English pronunciation, thus A, I, U, E, O, are pronounced ah, ee, oo, ay, oh, in Japanese. These pronunciation sounds remain the same when they are converted into the two-letter syllables of the Kana Table.

The table of Kana characters appears on Page 3. These Kana characters are used not only for Japanese ordnance items but also for Japanese medical and chemical warfare terms. Examples of the use of Kana are set forth below. Note again that the Kana characters represent syllables.

When the Japanese want to convert a new English word such as "aneroid" into their printed language they use the Kana system of basic sounds. This can only be done after the English word is separated into a grouping of sounds closest to those in the Kana alphabet. To the Japanese, "aneroid" sounds like the following: ah/nay/ro/ee/do. All these sounds appear in the Kana Table, and can be written by using the Kana characters. The following are examples of the method of changing three words, Aneroid, Magnesium, and Browning, into the written Kana language:

ア	ネ	ロ	イ	ド	ANEROID
A	Ne	Ro	I	Do	
ah	nāy	rō	ēē	dō	

マ	グ	ネ	シュ	ム		MAGNESIUM
Ma	Gu	Ne	Shiyu	Mu		

ブ	ラ	ウ	ニ	ン	グ	BROWNING
Bu	Ra	U	Ni	En*	Gu	

*A special character, en or an, generally ending a word.

4

Since the Kana characters are easier to write than Kanji numerals, Japanese often use Kana to list ordnance items; hence it is common to find a vertical list of items headed by a Kana symbol instead of a number (when used as first, second, third, etc.). On artillery ammunition items, as boosters and fuzes, Kana characters such as "To" are stamped into the metal, or painted thereon. These are important identification marks, discussed later in this publication.

Unusual Methods of Japanese Marking

There are four main types of material on which Japanese character markings describing ordnance items are placed. These are: (1) wooden shipping-cases, (2) metal parts of ordnance items, (3) cardboard tags, tied to the item by string or pasted on metal inner-cases, (4) descriptive booklets, which either accompany the item within the wooden shipping case or are obtained among captured records found with the equipment.

(1) On wooden shipping cases, the Japanese generally describe the item by characters painted across one or more sides of the wooden box, as illustrated:

The first step in translating such an inscription is to determine the order in which the Japanese characters are written. They may start either from left to right or from right to left. The direction in which they are to be read can be found by noting the location of the character for Type ("Shiki") which invariably appears in inscriptions for all ordnance items. In the illustration, it is the third ideograph from the right. By memorizing the Japanese numerals from one to ten, shown in Table No. 5 of Section Two, it is easy to recognize their ideographs, which in Japanese always precede the character for "Type." In the illustration Japanese numerals for "88" are the first two on the extreme right followed by the ideograph for "Shiki" (Type). Thus the direction of placing the characters on this shipping box is from right to left.

When right to left order has been followed in marking, it is suggested (for simplicity in translation) that the characters be copied on paper as usual, but placed in the opposite direction from that found, as follows:

(2) Japanese mark metal parts of ordnance items with both Kanji and Kana characters. The polished brass surface of an artillery shell cartridge-case lends itself readily to the print-

八	八	式*	短	延	期	信*	管*
Hachi	Hachi	Shiki	Tan	En	Ki	Shin	Kan
88 Type			Short-Delay			Fuze	

*Key Characters

ing of the more intricate Kanji characters for marking purposes. These are to prevent mistakes when several types of shells resemble each other, although intended for different weapons. The markings here generally indicate the type of gun that is to fire this ammunition. The following illustration is arranged, not for the purpose of translation of the markings, but to show their position.
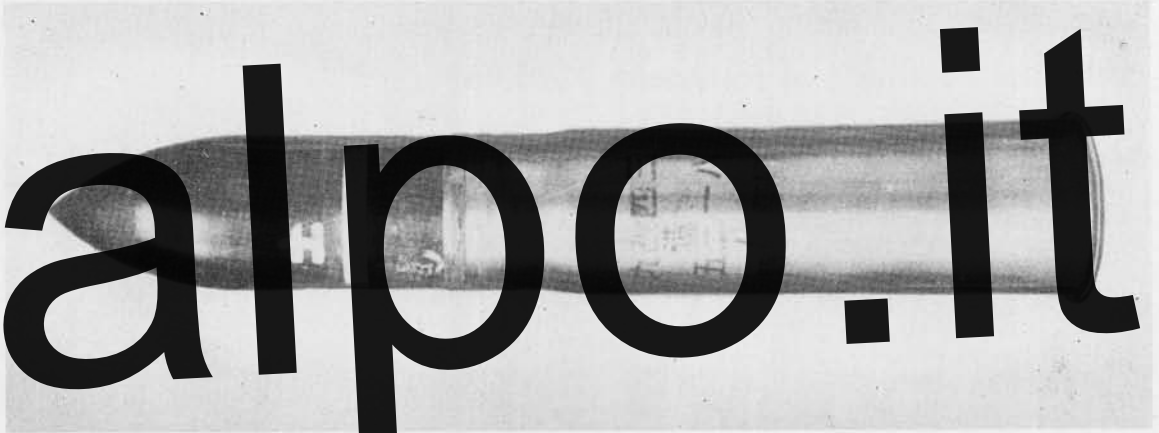
Kana characters are simple in design and make good dies for stamping Japanese metal parts, or for quickly painting an abbreviated arsenal mark. The flexibility of Kana characters in describing various ordnance items is evident in the use of one of the plainest and most widely employed Kana characters, "To."

To

When "To" is painted on the body of an artillery shell, just above the rotating band, it indicates that the shell was manufactured at the "Tokyo Army Branch Ordnance Depot." This is illustrated by the view of a Japanese 150 mm howitzer shell.
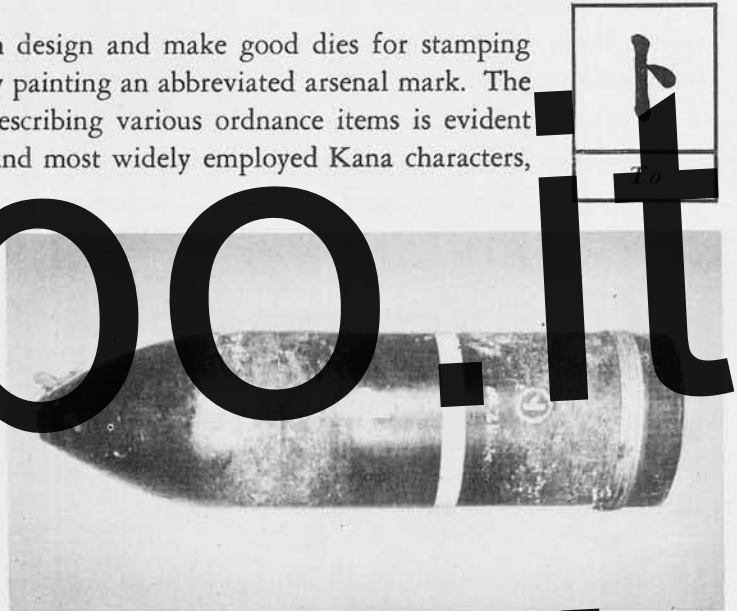
However, when the Japanese mark their machine gun ammunition for airplanes, although they use the same character, "To," to mark the bottom of the cartridge case, it indicates an entirely different place of manufacture. In this case "To" refers to the Toyokawa Navy Yard. As an interesting sidelight on this abbreviated system of marking, the sound of the character "To" is the sound of the first part of the word Toyokawa. Likewise the "A" of the Kana alphabet is used to indicate the Asahi Plant, while "Yo" is used to mark the products of the Yokosuka Navy Yard in airplane machine gun ammunition.

(3) When the Japanese place characters on pasteboard tags or on paper labels attached to ordnance items, they use Kanji.

A sample of such a marking copied from a label glued to the cardboard shipping container for a shell is shown in Section Three of this text. This inscription demonstrates that when the Japanese print ordnance terms on paper they arrange the characters in a long, vertical line reading from top to bottom. The reproduction of characters on this label is accompanied by their actual translation, using the system of selecting the key characters and subsequently referring to the tables in which they are located, as explained in Section Two.

砲兵彈藥

昭和十三年五月

(4) After study of this booklet it will be possible to translate the general descriptive matter in pamphlets accompanying Japanese ordnance items. It is cautioned here that the Japanese put such general descriptions on what we would call the back page of our books. Holding the Japanese book in a normal position it is necessary to turn to the final page and look for key characters.

For example, illustrated here are two sections from the descriptive page of a captured Japanese booklet on Japanese artillery shells. These are shown not for the purpose of translation, but merely to illustrate where to look for them in the book, and to repeat the caution that the characters are to be read along a vertical line from top to bottom.

The heavy-type column to the left is the name: "Artillery Ammunition," while that to the right is the date, "May 1938."

SECTION TWO

INSTRUCTIONS FOR TRANSLATING JAPANESE MARKINGS

Different Japanese Calendar Systems

The Japanese designate types of ordnance materiel, such as mortars, howitzers, rifles, guns, etc., with a descriptive term indicating the year the item was officially adopted. For marking high explosives, a date on the label of the package or outside of the shipping box indicates the date of manufacture. It is common for the Japanese to make liberal use of calendar dates, but it must be remembered that four different systems are employed.

BASIC JAPANESE CALENDAR

One system employs the basic Japanese calendar years, represented either by four digits, as in the year 2598, or by its reduced form 98 derived by dropping the first two digits as is done when our year 1945 is abbreviated to '45. The Japanese Kanji ideograph "Shiki," always employed with the abbreviated date numerals, is shown with the numeral characters for nine and eight.

九	八	式
Ku	*Hachi*	*Shiki*
9	8	Type

As an example of a date in a decade preceding that shown, the year 1921 is the equivalent of the Japanese calendar year 2581, and any Japanese models produced in that year would be called their "Type 81."

REIGN OF EMPEROR OR ERA

The Japanese also indicate the date in terms of the year of the reign of a Japanese emperor, each reign being known as an era. Any ordnance materiel produced within one of these periods might be marked as "Showa Era, 18 Year" (our year 1943), as explained later.

昭	和
Sho	*Wa*
Bright	Era

There have been three different eras representing the reigns of individual Japanese emperors within the past seventy-seven years. The reign of the present emperor, begun in 1926, is referred to as the "Showa Era," meaning the bright period, or the golden era. It is designated by the characters shown at right.

Development of modern Japanese ordnance has occurred only in the three most recent eras.

Era 2 covers the Meiji Era from 1868 to 1912.

Era 3 covers the Taisho Era from 1912 to 1926.

Era 4 covers the Showa Era from 1926 to the present time.

Although Eras 2, 3 and 4 are designated by different ideographs, they employ the same general principle in relation to indicating a date marking. The basis for each is to (a) name the era during which the item was designed or manufactured, and (b) give the particular year of this era to which the date applies.

Conversion of a date within any Japanese era to one in our calendar can be accomplished by adding the given Japanese year to the English date for the year preceding the beginning of the era. For example, the English equivalent of the 20th year of the Showa Era can be found by adding 20 to 1925, which gives our year 1945.

Table No. 6 describes the Kanji characters used by the Japanese to indicate the Meiji Taisho, and Showa Eras.

Japanese Characters for Type and Modification

TYPE

The Japanese always use dates or numerals with a character which refers to dates in classifying their ordnance items. Only one character is used to indicate the type classification. This character is "Shiki." It appears on artillery shells, bombs, small arms, guns, howitzers, fuzes, etc. but always in association with numerals of one or two digits. These numerals are abbreviations for dates in the Japanese calendar.

The following are some common markings used by the Japanese on their ordnance items to express Type and Type Numbers:

二	式	茶	褐	炸	藥
Ni	*Shiki*	*Cha*	*Katsu*	*Saku*	*Yaku*
2	Type	Brown		Bursting	Powder
(Year) 1942		TNT		Bursting Charge	

十	一	年	式	海	岸	砲
Ju	*Ichi*	*Nen*	*Shiki*	*Kai*	*Gan*	*Hō*
11th		Year	Type	Sea	Coast	Gun

MODIFICATIONS

The Japanese describe modifications of ordnance items in the following manner:

一 式	改 一	爆 彈
Ichi *Shiki*	改 二	*Baka* *Dan*
1 Type	Modification 1	Airplane Bomb
1941	Modification 2	

In marking bombs, the Japanese use, in addition to these characters, three extra characters to indicate "mark," "weight," and "design number." These are discussed in Table No. 13.

Note: It is common to find the ideograph for modification with a numeral placed together near the base of the shell. The meaning is "The new improved type No. 2."

Explanation of the Key Characters and Their Use

On page 11 and on the inside of the cover appears a table of key ordnance characters. Each key character is a base or root word which the Japanese use in designating ordnance materiel. Next to each key character, the Japanese write additional characters which modify the root word to indicate the full description of the particular item, as "Sen Sha" (tank) or "Chu Sen Sha" (medium tank). Also in this section are tables of key characters that list those characters which normally accompany the key ideograph, modify it, and in combination with it give the name of a specific Japanese ordnance item. Except in rare instances, the key character is always the last character in a related group of sounds or written characters, but note that in following this rule the direction of writing must first be ascertained.

One key character, such as "Sha" (a vehicle) is the terminal root word for four classes of ordnance items in the vehicular family, namely: Tanks, Trucks, Cars and Tractors.

The particular type of vehicle referred to by "Sha" can be ascertained by using the table to identify the characters that precede the key ideograph.

Table No. 2 has a key character of "Dan," and includes such items as Bullets and Grenades. Note that this key character, "Dan," is added to another key character, "Ryu," to form a double key character group. From this combination is derived a new table (Table No. 12) to indicate Artillery Shells and Rockets.

Likewise the key character "Dan" just described is joined with a second key character "Baku," to form another double-character group, giving us Table No. 18 on Airplane Bombs.

KEY CHARACTERS
for Essential Japanese Ordnance Materiel

TABLE	CHARACTER		ORDNANCE	TABLE	CHARACTER		ORDNANCE
1	車 *Sha*		Tanks Trucks Cars Vehicles	11	銃 *Jū*		MG Rifle Pistol Carbine
2	彈 *Dan*		Bullet Grenade Shell (w. #12) Bomb (w. #18) Rocket	12	榴 *Ryū*		Artillery Shell (W. #2)
3	砲 *Hō*		Gun Cannon Howitzer Mortar	13	號 *Gō*		Mark Number and Data on Bombs
4	藥 *Yaku*		Explosives Ammunition	14	糎 *Sanchi*	粍 *Miri*	Metric Terms (Weight & Dimension)
5	式 *Shiki*		Type	15	機 *Ki*		Aircraft
6	年 *Nen*	月 *Getsu*	Year Month	16	鐵 *Tetsu*		Metals
7	油 *Yu*		Gasoline Fuel Oils Lubricating Oils	17	管 *Kan*		Fuze Cap Train
8	筒 *To*		Primer Shell Case Bangalore Torpedo Grenade Launcher Complete Round	18	爆 *Baku*		Airplane Bomb (w. #2)
9	兵 *Hei*	(or) 軍 *Gun*	Unit or Organization	19	所 *Sho*		Factory
10	雷 *Rai*		Mines Torpedo (Aerial)	20	廠 *Shō*		Arsenal

These are the only tables which are made up from double key characters. The materiel to which the other tables relate appears on top of each table.

Method of Using the Key Character Tables in Translation

1. Become thoroughly familiar with each key character, and with the characters for numerals from 1 to 10.

2. Ascertain the direction in which the particular writing to be translated has been written; i. e., from left to right, right to left, or top to bottom. Page 13 of this outline explains the method.

3. Select all the key characters in the writing.

4. Mark off the characters accompanying each key character. This may be done by drawing rectangles around each related group of characters (key characters plus accompanying modifying characters).

Note: Where the writing to be translated involves a considerable number of characters (i. e., more than 50), it is recommended that the writing be treated piecemeal in groups of three or four characters, selecting a key character from a group and translating that group before proceeding to the next group.

車		戰	車		中	戰	車
Sha		Sen	Sha		Chu	Sen	Sha
Vehicle		Battle	Wagon		Medium	Battle	Wagon
Wagon		TANK			MEDIUM TANK		

The three characters "Chu," "Sen," and "Sha" that compose the word for medium tank, are shown above as the Japanese would write them from left to right on a wooden crating for the vehicle. The key character "Sha" is placed last, to the right of the modifying characters "Chu" and "Sen." When the Japanese mark ordnance items they do so without punctuation. That is one reason why it is necessary to memorize the twenty key characters used in ordnance.

The following example is employed to show the method used in building up "Ju" (meaning a small gun), into the compound group of characters, "Ken Ju" (meaning a pistol) and then "Ji Do Ju" (meaning an automatic rifle).

銃		拳	銃		自	動	銃
Jū		Ken	Jū		Ji	Dō	Jū
Small Gun		Hand Operated	Small Gun		Self	Acting	Small Gun
		PISTOL			AUTOMATIC RIFLE		

Up to now only one key character with its adjective ideographs has been described. The illustration below shows the ideographs for "automatic rifle" by a new key character, "Shiki," plus its descriptive adjective ideographs. Note that there are no periods, commas, or open spaces.

九	八	式	自	動	銃
Ku	*Hachi*	*Shiki*	*Ji*	*Dō*	*Jū*
9	8	Type	Self-	Acting	Small Gun
TYPE 98			AUTOMATIC		RIFLE

The direction in which the Japanese wrote these characters must be determined. The finding of "Shiki" (Type), the character third from the left, is the first step. It is always preceded by numerals. Since the numerals for 9 and 8 are to the left of "Shiki" the writing plan is from left to right.

Since it is a key character, the last character of the line (bearing in mind the direction of the writing of the group) is selected. It is "Ju," a key character for small arms, as is shown in Table No. 11.

Taking "Ju" and its two preceding characters (the Japanese usually write in groups of two, three, or four characters when describing ordnance), turn to Table No. 11. There the meanings of the three picture characters are found to be automatic rifle. Similarly, it is found that "Ku Hachi Shiki" means Type 98.

Elsewhere in this publication are illustrated actual markings found on a captured Japanese ammunition box, an airplane bomb, and a heavy gun. The names of the Japanese characters are given in each case, the key characters being set off from the long string of modifying characters by placing a cross-line just below the key character. The partial translation and the full translation are given with each example.

Note that if the Japanese write from left to right, the cross-line follows the key character and is to the right of it. If the Japanese write from right to left, then the cross-line follows the key character but is to the left of it.

When the Japanese string of characters proceeds from top to bottom, as illustrated in Section Three (page 72), the cross-line is beneath the key character. In the case mentioned there were 43 Japanese characters appearing in one consecutive vertical line which has been divided into four columns for convenience in printing.

The following illustration is employed to show how several vertical columns of Japanese characters may be broken down into the key characters for translation purposes. It has been taken from a Japanese book on Japanese artillery shells. The only additions to it have been the placing of the letters A, B, C, D, and E for reference purposes and the drawing of a line

ⓐ 九一式十榴榴弾砲弾薬

Ⓑ 九一式尖鋭弾

Ⓒ 信管

Ⓓ 弾丸 焰藥（茶褐藥）

Ⓔ 甲種四〇瓦裝火藥筒

5573
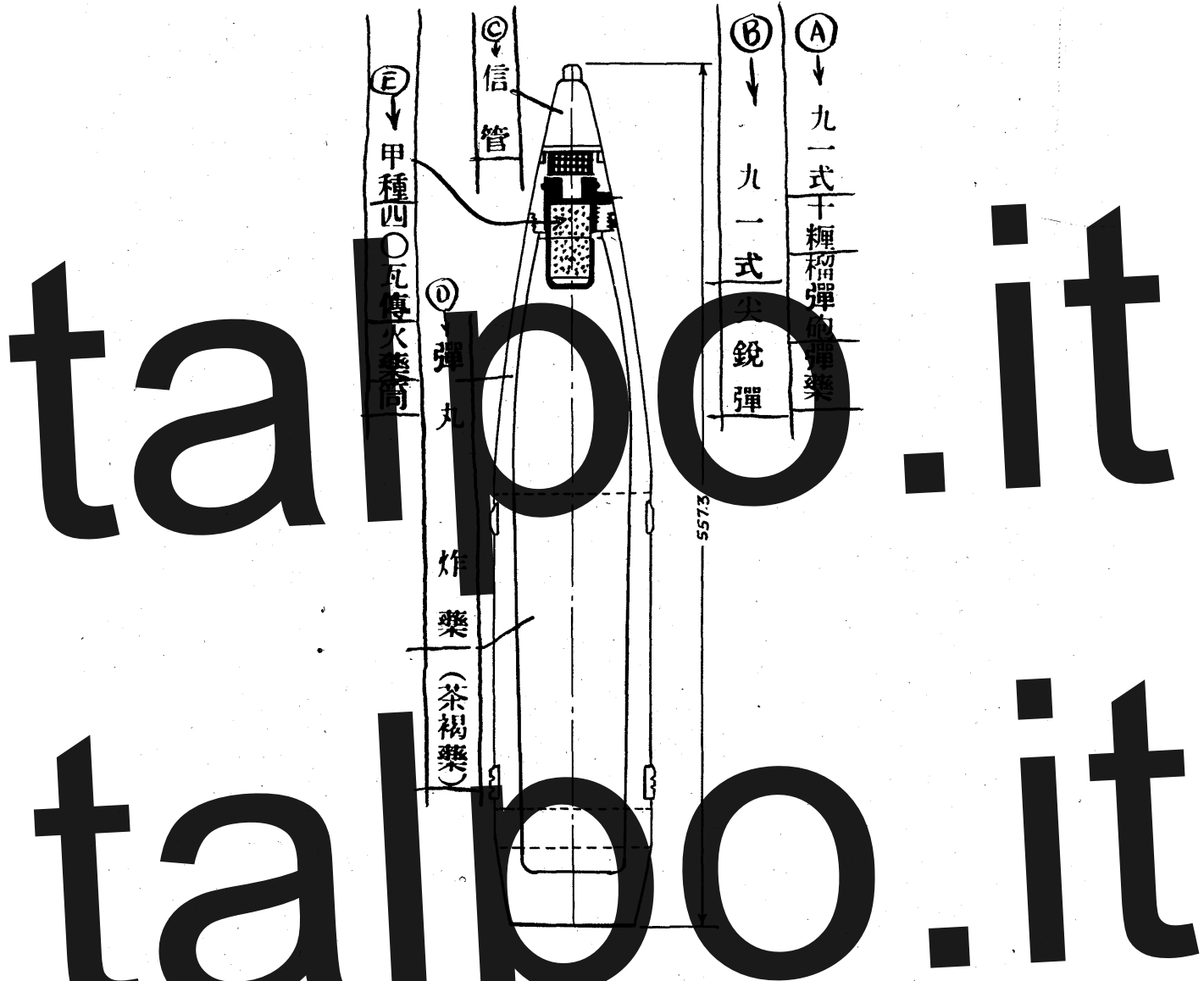
beneath each key character to illustrate the method followed in determining key characters and the preceding characters which are used to describe them.

Roughly, the method is to go to the foot of each vertical line for the first key character and strike a line under it.

The best plan, to avoid confusion in locating the next key character, is to work in groups of but two or three characters at a time. When the Japanese write in vertical columns, the reading starts at the top right hand corner. Here the column marked A is the first to be read. Start at the foot of the column for the first key character. It is "Yaku," found in Table No. 4.

The next question is, how many characters relate to "Yaku"? Table No. 4 shows that in this particular case only "Yaku" and its adjoining character "Dan" are in the table and mean Ammunition (General). The third character from the bottom is next found to be a key character "Ho."

In questioning how many characters are to be included with "Ho," look through Table No. 3. Here it is to be noted that "Ho" and "Po," denoted by the same ideograph, are inter-

changeable when referring to artillery pieces and mortars, depending upon the type of weapon. In this particular case the key character is "Po" and the two characters next to "Po" in the Japanese text are included with the key character in line 5 of the table to form the Japanese word "Ryu Dam Po," meaning Howitzer.

The next key character "Sanchi," meaning centimeter, makes translation easy. With it is the numeral "Ju" (ten) to complete the term 10 CM. It is quite evident that the next character "Shiki" is a key character and it is preceded by the numeral characters "Ku" (nine) and "Ichi" (one), given in Table No. 5. The translation of this phrase is thus "Type 91."

By this same method the ideographs in Column B are identified and translated into "Model 91 Streamlined Shell." Column C is translated as "Fuze." Column D has two sections, an upper and a lower section, the first of which is translated as "Projectile" or "Shell Body," while the lower section means "Explosive Charge, TNT."

TABLES OF BASIC KEY CHARACTERS
FOR JAPANESE ORDNANCE