

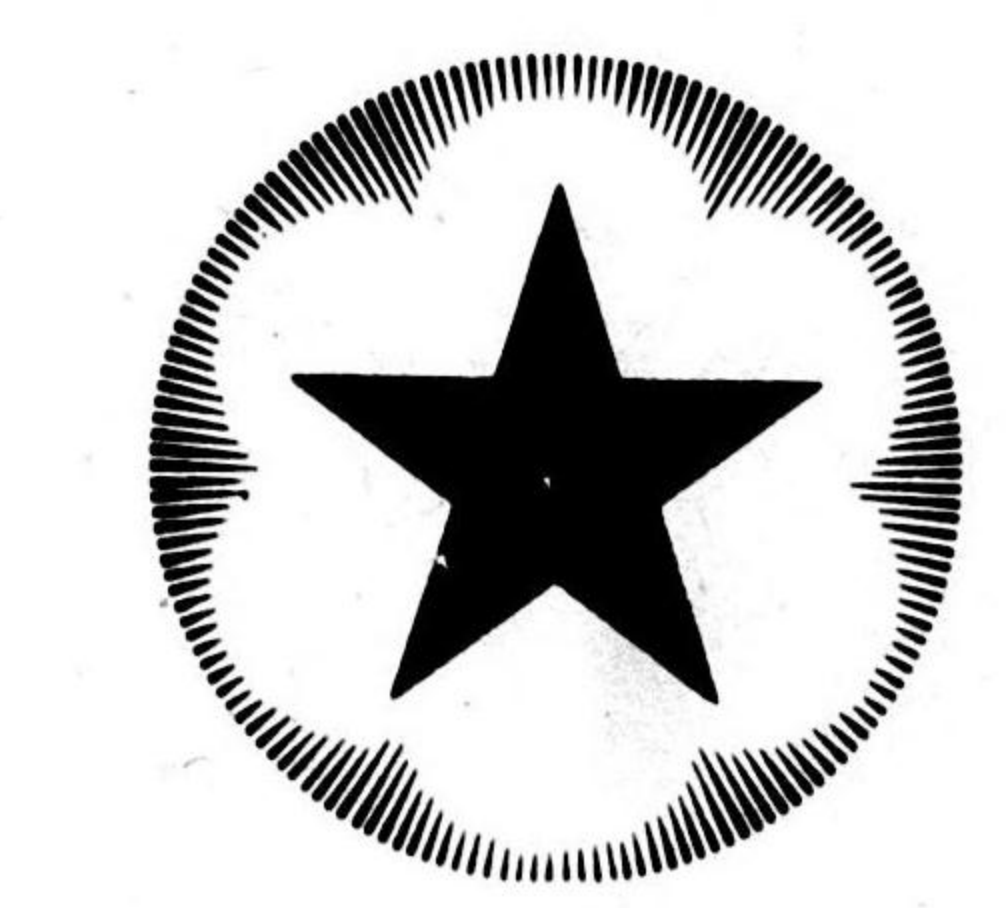
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ARMY SERVICE FORCES MANUAL **M 354-22**

CIVIL AFFAIRS HANDBOOK

JAPAN

SECTION 22: SAGA KEN.



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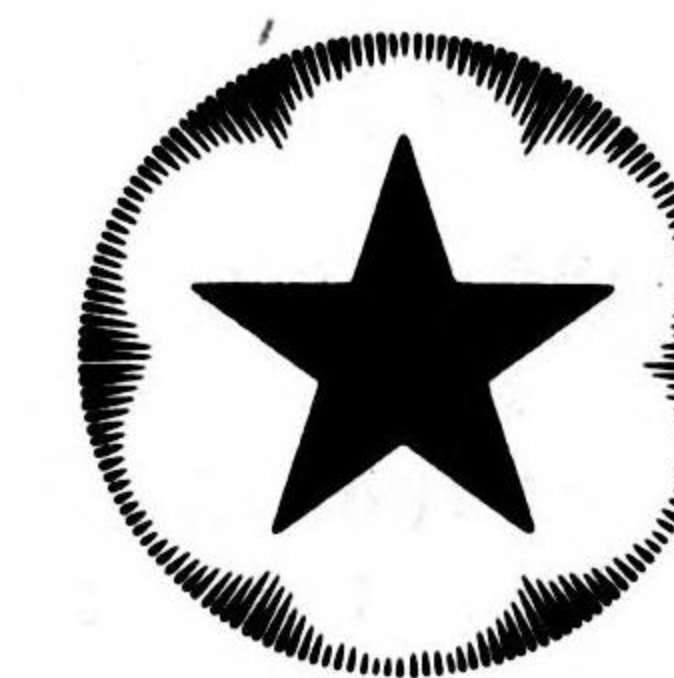
HEADQUARTERS, ARMY SERVICE FORCES

4 AUGUST 1945

CIVIL AFFAIRS HANDBOOK

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Headquarters, Army Service Forces 4 August 1945

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M1 - M99 Basic and Advanced Training
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Induction Training
M200 - M299 Personnel and Morale
M300 - M399 Civil Affairs
M400 - M499 Supply and Transportation
M500 - M599 Fiscal
M600 - M699 Procurement and Production
M700 - M799 Administration
M800 - M899 Miscellaneous
M900 - up Equipment, Materiel, Housing and Construction

* * * * *

HEADQUARTERS, ARMY SERVICE FORCES
Washington 25, D.C. 4 August 1945

Army Service Forces Manual M354 - 22, Civil Affairs Handbook - Japan, Section 22, Saga Ken, has been prepared at the Civil Affairs Holding and Staging Area with the cooperation of the CASA outpost of the Office of Strategic Services, and is published for the information and guidance of all concerned.

By Command of GENERAL SOMERVELL:

OFFICIAL:
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Major General
Acting The Adjutant General

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CIVIL AFFAIRS HANDBOOKS

TOPICAL OUTLINE

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1. Geographical and Social Background
 2. Government and Administration
 3. Legal Affairs
 4. Government Finance
 5. Money and Banking
 6. Natural Resources
 7. Agriculture
 8. Industry and Commerce
 9. Labor
 10. Public Works and Utilities
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 17. Cultural Institutions in Japan
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INTRODUCTION

This manual is one of a series of studies designed to provide Military Government officers working on prefectural and local levels with a concise statement of available factual information.

Each manual covers one prefecture and includes information available at the Presidio of Monterey, California, on 1 August 1945.

Purposes of the Civil Affairs Handbooks

The basic purposes of civil affairs officers are (1) to assist the Commanding General by quickly establishing those orderly conditions which will contribute most effectively to the conduct of military operations, (2) to reduce to a minimum the human suffering and the material damage resulting from disorder and (3) to create the conditions which will make it possible for civilian agencies to function effectively.

The preparation of Civil Affairs Handbooks is a part of the effort to carry out these responsibilities as efficiently and humanely as is possible. The Handbooks do not deal with plans or policies (which will depend upon changing and unpredictable developments). It should be clearly understood that they do not imply any given official program of action. They are, rather, ready reference source books containing the basic factual information needed for planning and policy making.

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SUMMARY

Saga-ken is in the northwest portion of the island of Kyushu. It has 0.6 percent of the total area of Japan Proper and one percent of the total population of Japan. It is predominantly rural, its largest city and capital, Saga-shi, having a population of only about 50,000.

Agriculture is the main occupation with slightly less than half of all the occupied persons in the prefecture engaged in this activity. Saga-ken is a food surplus producing area with the principal surpluses being in rice and wheat. Fish production, especially sardines, is normally sufficient and permits transshipping a portion of it to other prefectures. Forest resources are limited but the prefecture is an important coal mining area. The Kinoshima Field, which has bituminous coal good for cooking, produced almost 2 percent of Japan Proper's mined coal in 1937. Manufacturing is unimportant in Saga-ken with the food processing industry the leading manufacture in the prefecture. There are 2 foreign trade ports in the prefecture, Karatsu and Suminoe. The total volume of imports and exports passing through these ports in 1939 was 2 percent of the national total.

Saga-ken is served by main and secondary railroads and highways. Railroads in the prefecture, 5 of which are considered of primary importance, converge from the east and west on Saga-shi, leaving the north-central section of the prefecture devoid of railroads. The only important trans-prefectural highway is the national highway running east and west from Fukuoka-shi through Saga-shi to Sasebo-shi. The electric power plants in the prefecture, responsible for only 2 percent of the electric energy generated within the Kyushu Supply Area in 1941, are connected with the West Kyushu transmission grid.

Except in matters peculiarly local, the social organization and cultural institutions of the prefecture are similar to those existing in the rest of Japan. The prefecture is a part of Kyushu Administrative Region with headquarters in Fukuoka-shi.

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A. LOCATION AND SIZE

Saga-ken is in the northwest portion of the island of Kyushu at approximately 33°15'N. latitude and 130°20'E. longitude. The prefecture has a north-south extent of 35 miles, an east-west extent of 50 miles, and has an area of 2,449 square kilometers (945 square miles); it comprises 0.6 percent of the total area of Japan proper. The prefecture, slightly smaller than Rhode Island, had a population of 701,517 persons in 1940.

B. TERRAIN REGIONS

Saga-ken is divided into 3 zones: the Saga Plain in the southeastern portion, the Seburi Upland in the northeastern, and the Northwestern Kyushu Broken Lands in the west.

The Saga Plain and the Seburi Upland are parts of the Northern Kyushu Lowlands and Highlands, a long, narrow region (100 by 25 miles) lying north and west of the Central Kyushu Mountains and extending northeast-southwest from Shimonoseki-kaikyo (33°56'N and 130°57'E) to the head of Yatsushiro-wan (32°20'N and 130°26'E). Dominant types of relief are low rugged mountains and hills and flat lowlands.

The Northwestern Kyushu Broken Lands includes all of Nagasaki-ken, the western half of Saga-ken and a few small islands off the northwest coast of Kagoshima-ken.

1. Saga Plain.

The Saga Plain, also known as the Tsukushi Plain, is the largest lowland area on Kyushu Island. It extends 31 miles southwest-northeast, from the head of Ariake-kai (33°05'N and 130°15'E) past Saga-shi (33°15'N and 130°18'E) to the Futsukaichi corridor (20 miles northeast of Saga) and 16 miles northwest-southeast along the east side of Ariake-kai. Inland near Kurume-shi (12 miles east-northeast of Saga) the plain narrows to 6 miles, but widens to 12 miles farther northeast. The Chikugo-gawa separates the plain into 2 approximately equal portions lying in Saga-ken and Fukuoka-ken respectively. Approximately $\frac{1}{4}$ of the total area of Saga-ken lies in the plain.

The plain, which is nearly flat, is divided into $\frac{1}{8}$ -to-2-mile blocks of wet rice land by a complex grid of stream channels and artificial ditches. The seaward margin consists

of low, newly reclaimed alluvial flats, which are in dry and irrigated ditches.

2. Seburi Upland region lies in Saga-ken with the exception of a northern margin in Fukuoka-ken. It is a compact and relatively rugged block of mountains possessing typically bold granitic features. Its numerous valleys are narrow and crooked; about them steep slopes rise to sharp crests (1,500 to 3,000 feet high, reaching a maximum of 3,461 feet at Safuri-yama, 15 miles north of Saga-shi on the border between Saga-ken and Fukuoka-ken). There are no large towns in this area.

3. Northwestern Kyushu Broken Lands.

The western half of Saga-ken lies in the Northwestern Kyushu Broken Lands zone which includes the western peninsula and islands of Kyushu. The major land forms in this irregular-shaped region are flat-topped, steep-sided, lava-covered highlands of 800 to 2,000 feet elevation, between which are belts of rugged hill lands of only 300 to 600 feet elevation. Many shallow but narrow and winding valleys run through the hill belts, and numerous side valleys cut back into the lava uplands. A few higher peaks, mostly volcanoes, rise above the uplands, reaching a maximum of 3,560 feet at Kyoga-dake (25 miles southwest of Saga-shi) near the extreme southern border of Saga-ken.

Soils of the valleys and lower slopes are mostly clay and loam; upland soils have more sand and loose rock.

Karatsu-shi (33°27'N and 129°58'E) is the chief urban center of this area. The route southeastward from Karatsu-shi to Saga-shi follows narrow winding valleys in the low (200 to 500 foot) hilly areas (Chapter IV, A, 2).

In general, travel across country is difficult in this low rugged country. Furthermore, the rice valleys are flooded from June to September and remain wet throughout the year.

The seaward margin of this area in Saga-ken may be divided into 2 portions at Karatsu-shi. The area west of Karatsu-shi consists of an extremely indented coast with short strips of sandy beach alternating with cliffed headlands and steep slopes. There are many off-shore islands. East of Karatsu-shi, the coast is uniform, and a plain consisting of alluvial flats backed by a large area of rounded hills extends from 4 to 6 miles inland.

Madara-shima, 15 miles northwest of Karatsu, extends 2 miles east-west and 1½ miles north-south; it has rugged hills rising in abrupt cliffs from the waters edge and reaches a height of 780 feet. Kakara-shima (12 miles northwest of Karatsu and extending 2½ miles north-south and one mile east-

west), somewhat flatter than the other islands mentioned, is 10 miles northwest of Karatsu-shi and lies only ½ mile off-shore. Kashiwa-shima, covering about one square mile, lies only ½ mile off-shore and 6 miles directly north of Karatsu-shi. Other smaller islands rise abruptly from the waters edge in this area.

C. HYDROLOGY

1. Lakes and Ponds.

No mapped lakes exist in Saga-ken. A large amount of natural storage, however, is accomplished by means of the capacity of the wide, meandering rivers flowing through the great agricultural delta plains lying at the head of the Ariake-kai. Storage is also accomplished by means of power and flood-control dams on the mountain streams of the prefecture.

2. Springs.

Known hot springs are recorded at the following locations: Ureshino-machi, Takeo-machi, Kawakami-mura and Furuya. (See Chapter IV, C, 2). The hot springs in this area, like those of all Kyushu, are highly mineralized. Locations of cold springs are not recorded.

3. Rivers.

The north boundary between Saga-ken and Fukuoka-ken is along the watershed divide; consequently, in this area most of the rivers flow toward the south, emptying into the Ariake-kai. Since the western prefectural boundary is also along the watershed divide, practically all the rivers have their sources within the prefecture. At the east, the boundary is formed by the important Chikugo-gawa.

The most important geographical feature in the economy of the prefecture is the great agricultural delta plain around Saga-shi. It is formed by the lower reaches of the Chikugo-gawa with its distributary, the Hayatsue-gawa, and a series of south-flowing rivers, including the Suminoe-gawa system. It is a solid rice-producing area of about 250 square miles.

The rivers and streams in Saga-ken have characteristics comparable to those located elsewhere in Kyushu: short mountain streams or short tributaries of other rivers; small collecting areas confined to gorges and steep valleys; steep gradients, rapid run-off, turbulent waters; and many power and conservation dams. The lower reaches of the rivers, which lose their gradients rapidly, are choked with sand and gravel.

Saga Plain rivers are somewhat at variance with the general description because they flow for considerable distances through flat zones and level valley floor extensions and thereby lose their gradients more gradually. Numerous earthen dikes and irrigation dams appear in this district.

Rivers in the prefecture show consistent seasonal characteristics. Flash floods may appear at any time, but are most likely during the peak flow months of July, August and September. November through February is a consistently low water period. The mean annual precipitation for this area is approximately 70 inches.

In 1936, a total of 142 urban communities sustained river flood damage in Saga-ken. The total flood zone amounted to 11,774 acres, of which 111 acres were permanently eroded or inundated; 548 buildings were damaged to the extent of 332,662 yen; and an expenditure of 1,138,592 yen was required for repairs and permanent improvements.

The Chikugo-gawa, the principal river in Saga-ken, has a drainage area of 1,102 square miles. Rising in Oita-ken, it is a typical mountain river until it flows through the broad, flat area from Kurume-shi (Fukuoka-ken) to the Ariake-kai. The approaches to the mouth of the river, which is navigable for 50 miles upstream are almost entirely blocked by mud flats. (See Chapter IV, A, 3).

Branches of the Suminoe-gawa, the Rokkaku-gawa and Ushizugawa have their sources in the mountainous west central portion of the prefecture. The Suminoe-gawa's outlet is in the north extremity of Ariake-kai. Vessels of 3,000 tons ascend nearly 2 miles to the port of Suminoe, which is important for coal exporting. (See Chapter IV, A, 3).

D. CLIMATE

1. Seasons.

During the summer season, when the Asiatic anticyclone is replaced by the lower pressure and weaker gradients of the North Pacific anticyclone, air flow over Japan is prevailingly from a southerly direction. Because of their long trajectory over the ocean, these air streams are heavily laden in their lower levels with moisture which is readily precipitated in local showers over Japan.

2. Temperatures.

The midsummer temperatures in Saga-ken are comparable to those of the American Atlantic seaboard from Washington, D.C.

to southern Georgia. The frost-free season is long and varies from 220 to 240 days.

Winters are relatively mild, the coldest months having mean temperatures above freezing; but when it is overcast and a strong wind is blowing, the humid cold is raw and penetrating.

Although there is no available temperature record for a station within the prefecture, temperatures approximate closely those recorded at Fukuoka-shi in neighboring Fukuoka-ken (see Table 1).

TABLE 1

Temperatures, Fukuoka-shi, Fukuoka-ken (in degrees Fahrenheit)

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Ann.
Mean Daily													
Maximum	49	49	56	65	73	79	86	88	81	72	63	53	68
Minimum	34	34	38	45	53	63	72	73	65	52	44	37	51

3. Precipitation, Humidity, Fog.

Precipitation varies from 60 to 80 inches per annum over the prefecture, being much heavier during the summer than the winter. Humidity is high, but fog is not prevalent.

Although no precipitation record is available for a station within the prefecture, rainfall maps indicate that the record made at Fukuoka-shi, in Fukuoka-ken, is probably representative of Saga-ken as well, (see Table 2).

TABLE 2

Precipitation and Humidity at Fukuoka-shi, Fukuoka-ken.

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Ann.
Mean precip., in.	2.8	3.3	4.4	5.1	5.1	10.2	7.7	5.2	8.1	4.2	2.9	3.0	62.0
Mean no. days with precip. of 0.004" or more	17	15	16	14	12	15	14	11	15	12	13	16	170
Mean no. days with trace or more of snowfall	5	6	2	0	0	0	0	0	0	0	*	3	16
Mean relative humidity, (percent)	73	73	74	77	76	82	81	82	83	80	77	74	78

* Less than 0.5 day.

4. Winds.

Saga-ken is located in the typhoon area, but not in the area subject to greatest damage. Typhoons may cross southern Japan at any time during the typhoon season in summer and autumn, but September is the month of maximum frequency. Japan is affected, on the average, by 7 typhoons per year from July through October, but probably not more than 3 cause heavy damage.

II. POPULATION AND SETTLEMENTS

A. POPULATION

In 1940 the population Saga-ken was 701,517, or one percent of the total population of Japan. It had a population density of 281 persons per square kilometer, which was well above the national average of 191. Between 1935 and 1940, Saga-ken showed a natural increase of 35,667 persons, or 5.2 percent, which was slightly below the national average of 5.6 percent. The loss of 20,267 through migration to other areas resulted in a net increase of only 14,531, or 2.2 percent.

It is estimated that as of April 1945 the population of Saga-ken rose to 753,000, of which 100,000 persons came to the prefecture as a result of population dispersal. It would appear that during the period 1940-45 large numbers migrated from Saga-ken to industrial areas, but this trend has been counteracted as a result of bombings and governmental evacuation.

Population of Saga-ken is concentrated in 3 areas: the Saga Plain; the Karatsu-shi area; and the Imari-wan area. The largest and densest concentration is in the Saga Plain.

Saga-ken is predominantly rural, with 88.3 percent of the population, or 619,769 persons, living in rural areas. There were only 2 cities in the prefecture in 1940: Saga and Karatsu. Saga-ken has shown only a slight increase of 24.2 percent in urbanization over the 20 year period 1920-40, with the rural population remaining stable during that time.

The sex ratio of Saga-ken was 95.7 males per 100 females in 1940. In Saga-shi and Karatsu-shi females outnumbered males; the same was true in all towns and villages (10,000 or over) with the exception of Omachi-machi. Table 3 lists the 1940 population of Saga-ken and its minor civil subdivisions.

TABLE 3*

Population, 1940, Saga-ken.

Division	Total
Saga-ken	701,517
Saga-shi	50,406
Karatsu-shi	31,342

Restricted

Division	Total
Saga-gun	88,761
Kitakawasoe	3,840
Higashikawasoe	4,468
Nikita	4,364
Nakakawasoe	3,958
Otakuma	2,151
Minamikawasoe	6,895
Nishikawasoe	4,977
Honjo	3,675
Higashiyoka	5,529
Nishiyoka	3,008
Kase	4,007
Kubota	6,791
Kose	2,252
Hyogo	4,288
Nabeshima	4,372
Takagise	3,514
Kasuga	3,905
Kinryu	3,181
Kuboizumi	3,728
Kawakami	5,718
Matsuume	2,157
Oseki	1,983
Kanzaki-gun	42,456
Kanzaki-machi	6,003
Hasuike-machi	3,927
Saigo	3,978
Shirota	4,446
Sakaino	2,102
Chigose	4,962
Mitakawa	4,403
Higashiseburi	3,325
Niiyama	3,955
Sefuri	2,976
Mitsuse	2,379
Miyaki-gun	61,792
Tosu-machi	14,028
Tajiro-machi	4,789
Kiyama-machi	7,153
Kisato	5,491
Fumoto	3,699
Asahi	3,394
Nakahara	4,277
Kitashigeyasu	6,403
Minamishigeyasu	4,210
Mikawa	4,914
Kamimine	3,434

8

Restricted

Restricted

Division	Total
Ogi-gun	63,052
Ogi-machi	12,854
Ushizu-machi	4,728
Mikatsuki	6,635
Ashikari	7,208
Tokawa	4,968
Higashitaku	6,187
Minamitaku	3,072
Taku	2,650
Nishitaku	2,278
Kitataku	5,695
Nansan	3,104
Hokusan	3,623
Higashimatsuura-gun	106,546
Hamasaki-machi	4,363
Ochi-machi	9,631
Yobuko-machi	7,430
Sashi-machi	6,705
Kagami	4,242
Tamashima	4,550
Nanayama	3,968
Kiuragi	12,679
Kuri	4,097
Onizuka	4,561
Kitahata	9,065
Kirigo	4,031
Iruno	11,084
Ariura	2,806
Chika	3,900
Nagoya	4,919
Minato	4,678
Uchiage	3,232
Nishimatsuura-gun	79,542
Imari-machi	9,064
Arita-machi	6,721
Yamashiro-machi	10,019
Kurokawa	4,244
Hatatsu	3,373
Minamihata	3,656
Okawa	5,585
Matsuura	3,437
Otsubo	4,996
Okawachi	2,506
Arita	4,316
Magarikawa	3,741
Oyama	4,225
Niri	4,398
Higashiyamashiro	9,351

9

Restricted

Division	Total
Kinoshima-gun	110,189
Takeo-machi	10,316
Omachi-machi	20,938
Shiraishi-machi	4,018
Asahi	3,639
Wakaki	2,983
Takeuchi	3,768
Sumiyoshi	3,737
Nakatori	4,495
Nishikawa-nobori	3,033
Higashikawa-nobori	2,920
Tachibana	3,954
Hashishimo	2,656
Suko	3,090
Kitakata	7,721
Kohoku	7,936
Rokkaku	3,549
Fukudomi	6,249
Kitaariake	3,822
Minamiariake	4,426
Nishikie	3,674
Ryuo	3,265
Fujitsu-gun	67,431
Kashima-machi	7,998
Hama-machi	4,080
Shiota-machi	5,122
Ureshino-machi	9,831
Nokomi	5,555
Furueda	2,694
Nanaura	5,737
Tara	6,276
Oura	3,806
Kashima	3,798
Gochoda	4,317
Kuma	3,921
Yoshida	4,296

*All divisions not named in the table are mura.

B. CITIES AND TOWNS

1. Saga-shi.

Saga-shi, the capital of Saga-ken (see AMS map 340440), had a 1940 population of 50,406. Located in the large rice area which extends north from Ariake-kai, beyond Kurume-shi, and farther on into Fukuoka-ken; the city is principally important

as an industrial and agricultural center. Small rivers and streams irrigate the entire area in and around the city. The Yata-koko and the Honjo-koko (rivers) flow south from the city for about 4 miles before emptying into Ariake-kai.

The built-up section of Saga-shi covers slightly more than one square mile and spreads out from the old castle site in the center of the city. This site, which is surrounded by a moat, now contains a group of schools, the prefectural office, a meteorological station, a prison, and Mabeshima Park. A small residential district is in the southwest section. All other government buildings, with the exception of Saga Prison, which is west of the developed section, are just north and east of the moat.

a. North of the castle site are located the city office, city hall, hospital, local court, district court, gendarmerie, tax office, and the forestry office.

b. East of the castle site are located a large hospital, Usui hospital, and the rice exchange.

Matsubara Park, which contains the city library, is off the northeast corner of the moat; Okuama Park, much smaller in area, is to the east. Kono-Ochaya Park is near the west bank of the Tafuse-gawa in the north western section, and another park and a swimming pool are just west of the plant of the Saga Spinning Co.

The Togami Electric Works (Togami Denki Seisha Kusho KK), the principal industry in the city, located 1.1 mile north-northeast of Saga Castle, produces electrical apparatus and machinery. Other factories are the Saga Glass Works, Saga Spinning Mill, and the Saga Gas Company. In the northern part of the city, east of the Saga Electric Railway, are the barracks and drill grounds of the 48th Infantry Regiment. (See Chapter IV, C. for data on utilities.)

2. Karatsu-shi.

Karatsu-shi (1940 population 31,342) is a small industrial center and a secondary coal port for the small mines located south of the city. Karatsu-shi is on the northwest coast of Kyushu at the head of Karatsu-ko, which open into the Tsushima Straits. Several small islands are off the waterfront at the entrance of the bay. Low hills surround the rice land, which is inland from the narrow built-up section. East of this district the Matsuura-gawa flows into the bay; on its west bank, at the beach is the old castle site.

The tidal harbor of the city has very limited facilities, and lighterage service is used for ships in the anchorage. (See Chapter IV, A, 3.) The principal industry, the Karatsu Iron Works, is located on the shore side of the Nishi Karatsu railroad station. This factory is one of the outstanding machine-tool plants in Japan. A railroad causeway runs from the shore to Oshima, north-northwest of the city, on which is located the Mitsubishi Coal Dock. The Takashima Colliery is on Taka-shima, a small island which marks the outer limit of the harbor. Several small machine-tool plants, foundries, and similar establishments are reported in the city. A reported ordinance factory (Karatsu Kakohin Seizosho KK) has not been located. The railroad repair shops of the North Kyushu Railroad, which serves the region's coal fields, are located on Mizushima, east of the heart of the city. This island is separated from the mainland by the Matsuura-gawa and is connected by the Matsuura bridge and a reported pontoon bridge. (See AMS map 340458.)

Government buildings that have been identified are as follows: sub-prefectural office, court of appeals, forestry office, prison, fire house, city hall, hospital. (See Chapter IV, C. for data on utilities.)

3. Tosu-machi.

Tosu (1940 population 14,028), in eastern Saga-ken 15 miles northeast of Saga-shi and 5 miles north of Kurume-shi (Fukuoka-ken), is one of the most important rail junction points in Kyushu. The north-south Kagoshima Main Line is met here by the east-west Nagasaki Main Line, and there is a large marshalling yard. Tajiro-machi, 1 1/2 miles northeast is the inter section of the Nagasaki National Highway with the national highway from Fukuoka to Kurume.

III ECONOMY

A. LABOR

1. Occupation.

The main occupation in Saga-ken is agriculture, which in 1930 accounted for about 55 percent of all employed persons and in 1944 for an estimated 47 percent (See Table 4). The prefecture includes 2.5 percent of the ceramic workers of Japan Proper and ranks 10th in total number of workers employed in ceramics.

TABLE 4
Employment, 1930 & 1944, Saga-ken.

Occupation	1930 Census		1944 Estimate **	
	Number (in thousands)	Percent	Number (in thousands)	Percent
Agriculture	174	54.6	145	46.6
Fishing*	8	2.1	6	1.9
Mining	12	3.8	26	8.3
Manufacturing	45	14.2	62	20.0
Commerce	39	12.3	30	9.7
Communications & transportation	11	3.5	13	4.2
Government & professions	17	5.4	20	6.4
Domestic	9	2.8	5	1.9
Others	4	1.3	3	1.0
Total (1930)	319	100.0	310	100.0

* Fishing: totals are corrected to 1938.

** 1944 estimates are based on the changes of laborers, the reallocation and the redistribution of labor, and the number of men in the armed forces.

As indicated by Table 5, the principal occupational groups in Saga-shi are manufacturing, commerce and government. These are well distributed proportionate to the fact that Saga-shi is the prefectural capital and has a high proportion of government and professional workers. Karatsu-shi is an important fishing port, and both cities serve as commercial and administrative centers for the adjacent agricultural plain.

TABLE 5
Employment, 1930, Saga-shi and Karatsu-shi.

Occupation	Saga-shi		Karatsu-shi	
	Number (in Thousands)	Percent	Number (in Thousands)	Percent
Commerce	6.6	37.4	2.5	37.9
Manufacturing	5.3	30.4	1.7	25.6
Government & professions	2.6	14.6	.8	11.9
Communications			.4	6.7
Marine products			.3	5.1
Others	3.1	17.6	.9	12.8
Total	17.6	100.0	6.6	100.0

2. Industrial Employment.

In 1938 there were 576 principal factories in Saga-ken. These factories had a total employment of 12,927, of whom 58 percent were males. This was an increase over the 406 factories hiring 8,702 people, (54 percent of whom were males), in operation in the prefecture in 1930. As indicated in Table 6, the most important industries in terms of employment were porcelain-ware, electrical machinery and tools, silk reeling and cotton spinning, the production of soda ash paper products, and native wines.

TABLE 6

Principal Factories & Industrial Employment, 1938, Saga-ken.

Industry	Employees			
	Factories	Male	Female	Total
TEXTILES				
Silk reeling (raw silk)	4	148	1,612	1,760
Spinning (cotton yarn)	1	220	1,156	1,376
Woven goods				
pure cotton fabric	2	17	91	108
pure silk fabric	2	1	13	14
Cotton refining	2	4	7	11
METALS				
Casting				
pig iron	8	90	6	96
other	2	24	3	27

Industry	Employees			Total
	Factories	Male	Female	
Metal manufactured goods				
bolts, nuts, washers	2	9	--	9
other metal plate	2	43	4	47
various metal tools	1	3	--	3
other metal manufactured goods	2	45	2	47
Nickel plated goods	1	10	--	10
MACHINERY & TOOLS				
Steam boiler mfg.	1	10	--	10
Internal combustion engines	5	42	--	42
Electric machinery & tools	6	755	221	976
Agriculture machinery	2	21	3	24
Mining ore machinery	3	32	--	32
Textile machinery & tools	1	4	1	5
Food products machinery	2	17	5	22
Printing & bookmaking	1	2	--	2
Manufacturing & treatment use machinery	1	23	6	29
Pump manufacturing	3	123	3	126
Weights & measure	1	3	--	3
Other machinery & tools	27	1324	37	1361
CERAMICS				
Porcelain ware	111	1531	884	2415
Glass & glassware	2	17	3	20
Bricks & Fireproofing	10	49	29	78
roof tile	7	36	12	48
cement products	4	34	14	48
Pottery painting	8	24	41	65
CHEMICAL				
Medicine manufacturing industrial drugs	14	37	109	146
Soda ash	1	280	22	302
Soap & toilet articles	1	65	18	83
Explosives manufacture	2	6	170	176
Coal tar extracts	5	43	--	43
Paper manufacturing	6	282	82	364
Fertilizer				
animal matter	1	--	--	--
LUMBERING & WOODENWARE				
Lumbering	14	95	2	97
Woodenware				
furniture & fixtures	4	21	--	21
wooden boxes, barrels	5	27	2	29
other wooden products	4	29	13	42

Industry	Factories	Employees		Total
		Male	Female	
PRINTING & BOOKBINDING				
Printing	13	86	7	93
FOOD PRODUCTS				
Native wines	124	1,271	1	1,272
Soy sauce, bean paste	9	78	1	79
Soft drinks	3	8	18	26
Milling industry	1	39	2	41
Sweetmeats, breads	5	25	7	32
Canned goods	3	22	33	55
Livestock products	1	6	5	11
Marine products	1	1	3	4
Tea processing	1	--	--	--
Ice manufacturing	6	28	--	28
Wheat flour processing	6	24	5	29
Other food products	12	71	--	71
GAS & ELECTRICITY				
OTHER INDUSTRIES				
Paper products	2	6	12	18
Straw & hemp products	60	128	450	578
Leather	2	12	--	12
Cotton & hemp lines	4	--	30	30
Sewing	11	57	41	98
Native style umbrellas	1	4	--	4
Stone mason	3	34	--	34
Other products	23	121	126	247

3. Labor Exchanges.

There are 2 branches of the National Labor Exchange in Saga-ken: one in Saga-shi, and one in Karatsu-shi. These exchanges contain records of all employable persons, their present occupation, skills and a history of employment. In cities, towns and townships which do not have labor exchanges the same information is found in the Government office or city hall.

B. AGRICULTURE

1. Food Situation.

Including all food sources, this prefecture is a surplus producing area based on the estimated Japanese national intake of 2,150 calories per capita per day. The principal production surpluses are in rice and wheat. Production of all foods provided

a surplus of 200-1,000 calories per capita per day, in terms of average production for 1935, 1937 and 1939. The total surplus of foods produced in this prefecture, in terms of a caloric equivalent of brown rice, is estimated at 144 million pounds annually. Based on the national consumption estimate of 372 pounds per capita per year, this prefecture has a normal estimated rice surplus of 219 pounds per capita per year.

The aggregate annual production of foodstuffs in the prefecture, on a caloric basis, is estimated at 946 billion calories.

2. Agriculture in Relation to Physical Factors.

The length of the growing season in this prefecture is from 220 to 240 days. (For information on temperature and rainfall, see Chapter I,C).

3. Farm Organization and Methods.

a. Farm population. The number of farm households in Saga-ken in 1939 was 63,694, or 1.2 percent of the nation's total. The average amount of cultivated land was 2.8 acres per household. In 1936, 30,058 families were engaged in silk-worm production (See Table 4).

b. Land utilization. In 1939, the total amount of cultivated land was 177,000 acres, of which 132,000 acres, or approximately 75 percent, were devoted to rice growing. Grass lands cover wide areas in the broken forest lands in the northern part of the prefecture. Dry crops occupy many slopes in the southeastern part of the prefecture. Rice growing is divided into 2 general areas: a large solid block in the southeastern part of the prefecture and a group of small individual areas in the northwest half of the prefecture.

The large block in the southeast surrounds Saga-shi. It reaches from a point 3 miles north of Tosu-machi on the eastern boundary of the prefecture, to 2 miles south of Kashima-machi, on the coast in the southern part of the prefecture. This is a distance of about 42 miles along the prefectural boundary and the coast of Ariake-kai. The northern part of the rice area, near Tosu-machi, is about one mile in width, but gradually widens to 15 miles as it nears Saga-shi and the coast. About 3 miles southwest of Saga-shi the area again narrows as it extends down the coast, to an average width of about 4 miles inland from the coast. Included in this large area are the following cities and towns: Tosu-machi, Kanzaki-machi, Saga-shi, Ogi-machi-, Takeo-machi, Shiota-machi and Kashima-machi.

A less important rice growing area is located at the head of the Tobo-wan, extending inland along a river about 5 miles

with a width of one mile. Adjoining the above mentioned area, a strip of rice land one mile wide extends to the west along the coast for a distance of 4 miles with one narrow branch extending inland about 3 miles. To the east along the coast within 6 miles of the mouth of the river are 3 areas, none of which exceed one square mile in size.

c. Fertilizer. Fertilizer requirements in Saga-ken in 1930 are shown in Table 7.

TABLE 7
Fertilizer Requirements, 1930, Saga-ken.
(in pounds per acre)

Crop	Nitrogen (N)	Phosphoric acid (P ₂ O ₅)	Potash (K ₂ O)
Rice, paddy	96	78	108
Wheat	106	85	92
Barley	114	100	102

Figures for 1937 show a consumption of 239 short tons of sulphate of potash and 937 short tons of muriate of potash. Consumption figures for nitrogen and phosphorus fertilizers for the prefecture are not available.

The agencies of the Japan Sulpha-Ammonia Corporation, first priority dealers in the prefecture, were located (1940) in Tojin-cho, Saga-shi and Kanzaki-machi, Kanzaki-gun.

4. Crops.

a. Field crops. Rice is by far the most important grain crop in the prefecture. Although wheat ranked second, the rice acreage in 1939 was more than twice that of wheat and production nearly 3½ times as great. Barley ranked a low third, having less than half the acreage and production of wheat. Other grains were of little importance in the prefecture. (See Table 8).

Legumes were relatively unimportant, with the total acreage of the most important, soybeans and broad beans, consisting of only 10,300 acres in 1939. Broad beans ranked first in production, but second in acreage, whereas soybeans ranked second in production and first in acreage.

TABLE 8
Field Crops, Saga-ken.

Crop	1935, '37, '39 average pro- duction (short tons)	Acreage	1939 Production (short tons)	1943-44 estimated prod- uction (short tons)
Rice*	217,506	132,000	201,500	213,000
Wheat	45,719	58,626	57,977	35,500
Barley	19,511	26,692	25,911	18,000
Naked	15,331	21,264	20,421	15,000
Common	4,179	5,428	5,490	3,000
Rye	-----	9,169***	-----	-----
Broad beans	-----	4,309	3,041	-----
Soybeans	3,034	6,011	2,433	3,500
Millet	-----	991	453	-----
Foxtail	-----	854	393	-----
Proso	-----	137	60	-----
Peas	-----	365	235	-----
Buckwheat	-----	301***	-----	-----
Kidney beans	-----	73	43	-----
Peanuts	57**	25	11	-----
Maize	-----	21***	-----	-----
Oats	-----	12	7	-----

* Rice production in 1942 was 211,016.5 short tons, or a decrease of 2,203 short tons from a 5 year average (1937-41 inclusive).

** 1936 figures.

*** 1937 figures.

Stocks of rice in storage showed a rapid decrease from spring to fall, as shown by the following figures for 1939:

Date	Rice in storage (in short tons)
1 March	162,458
1 May	124,942
1 July	88,135
1 September	52,772
1 November	15,967

b. Vegetables. White radishes and sweet potatoes are the most important vegetables grown in the prefecture. While white radishes, with a total yield of 23,362 short tons in 1939, ranked first from the standpoint of tonnage produced, sweet potatoes,

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with a production of 19,508.5 short tons in the same year, is the more important crop because of its greater food value. Other vegetables of considerable importance in the prefecture are Irish potatoes, taro, and rape cabbage. Each of these crops yielded over 7,000 short tons in 1939. (See Table 9).

TABLE 9

Vegetables, 1936 and 1939, Saga-ken.

Kind	1936	Acreage	1939
	Production (short tons)		Production (short tons)
White radishes	23,503	2,517	23,362
Sweet potatoes	35,648	4,335	19,508
Irish potatoes	8,493	1,679	7,878
Taro	9,839	1,775	7,653
Rape cabbage	-----	1,177	7,236
Watermelons	5,619	715	4,701
Eggplant	4,808	726	4,098
Cucumbers	3,025	494	2,788
Burdock	2,943	622	2,677
Mixed onions	2,426	464	2,555
Pumpkins	2,052	401	2,114
Tomatoes	-----	277	1,664
Green onions	1,324	286	1,357
White cucumbers	-----	251	1,219
Lotus root	-----	321	1,087
Turnips	-----	221	974
Cabbage	826	137	815
Cantaloupe	-----	151	796
Carrots	503	118	581

c. Fruit. Almost 82 percent of the oranges, the most important fruit produced in the prefecture in 1939, were of the mandarin type. In the same year, persimmons were next in importance, with a total production of 6,766 short tons. Other fruits were of minor importance (See Table 10).

TABLE 10

Fruits, 1933 and 1939, Saga-ken.

Fruit	1933	1939
	Production (short tons)	
Oranges	6,101	8,750
Mandarin	5,201	7,216
Bitter (Natsumikan)	684	1,166
Navel	214	368

Restricted

Fruit	1933	1939
	Production (short tons)	
Persimmons	10,325	6,766
Japanese pears	1,858	1,081
Plums	-----	883
Loquats	-----	699
Grapes	167	235
Peaches	181	169

* Does not include the figure for dried persimmons of which there were 810 tons in 1933.

d. Industrial crops. From the standpoint of acreage and yield, rape seed ranks first among the industrial crops in the prefecture. Over 11,000 acres of rape were cultivated in 1937. Production figures for 1937 are not available, but over 100,000 hectoliters of rape seed were produced in 1936. (See Table 11).

Silkworm production is of relatively minor importance in the prefecture. The 1939, production of 2,483.5 short tons represented only 0.7 percent of the national total. In 1936, there were 30,058 families engaged in silkworm production.

The yield of tea per acre is apparently lower than the national average. Although the 1,260 acres devoted to the crop in 1939 represented 1.3 percent of the national total, the production of 580,000 pounds in that year represented only 0.5 percent of the national total.

Tobacco, rush, pyrethrum and peppermint are produced in limited quantities.

TABLE 11

Industrial Crops, 1936 and 1939, Saga-ken.

Crop	1936	Acreage	1939
	Production (short tons)		Production (short tons)
Rape seed	101,711**	11,574*	-----
Tea	-----	1,260	290
Mulberry	-----	7,749	2,483***
Tobacco	106	165*	-----
Rush	91	-----	-----
Pyrethrum	11	-----	-----
Peppermint	7	-----	-----

* 1937 production figures
** Hectoliters
*** Cocoons

5. Livestock.

As shown in Table 12, the number of cattle in the prefecture gradually increased from 23,029 head in 1933 to 27,529 in 1939. In numbers, cattle far exceed any other class of livestock except chickens. Even so, there was less than 0.5 head of cattle per household in the prefecture in 1939. Only a small number of cows were kept for milking purposes. In 1936, there were only 40 dairies in the prefecture, with a total of 331 cows, or an average of 8.2 cows per dairy. There were 220 other farms with a total of 367 head of milk cows. Hogs showed a decrease of about 10 percent from 1933 to 1939, while the number of sheep and goats showed considerable increase. Rabbits, which apparently are a relatively new class of livestock in Japan, more than doubled in numbers from 1936 to 1939. (See G2 map, Southwest Japan, Kyushu, Vegetation).

TABLE 12
Livestock, Saga-ken.

Type	Production (in head)		
	1933	1936	1939
Chickens	697,472	664,094	-----
Cattle, total	23,029	25,476	27,529
Oxen	-----	-----	9,399
Cows	-----	-----	18,130
Milk cows	686	698	-----
Rabbits	-----	10,715	27,691
Horses	17,708	17,329	-----
Hogs	3,043	2,819	2,712
Goats	691	1,104	1,989
Sheep	37	112	235
Ducks	4,770	2,829	-----

6. Meat, Egg and Dairy Products.

Eggs were the leading livestock product in the prefecture in 1939, with a total production of nearly 40 million eggs. The meat produced from all cattle, horses and hogs slaughtered in 1936 totaled less than 800 short tons (Table 13).

TABLE 13
Meat, Eggs & Dairy Products, 1936, Saga-ken.

Product	1936	
	Head slaughtered	Quantity (short tons)
Cows	2,869	529.1
Horses	1,107	167.5
Hogs	1,262	79.4
Calves	37	3.3
Milk	-----	1,355.8
Condensed milk	-----	203.6
Butter	-----	-----
Eggs (chicken)	-----	39,542,000. (eggs)

7. Economic Position of the Farmer.

In 1939, of the total land cultivated in this prefecture, 76,000 acres, or 43 percent, were farmed by tenants. The average farm is small as shown by the fact that 22 percent were of less than $\frac{1}{2}$ hectare (1.235 acres), and 57 percent were of less than one hectare (2.471 acres) each in size, while only .0004 percent, or 31 farms, were larger than 5 hectares (12.3 acres). In 1936, out of 135,798 acres under paddy rice production, 63,199 acres, or 46.4 percent, were cultivated by tenants. The situation with regard to dry crops was more favorable. Of a total 41,293 acres in dry crops, 11,950 acres or only 28.9 percent were cultivated by tenants.

The following experiment stations and control offices were engaged in agricultural work in Saga-ken in 1938:

Agricultural Experiment Station	Kamino-cho, Saga-shi
Sericulture Experiment Station	Ogi-machi, Ogi-gun
Sericulture Control Office	Prefectural Office Grounds, Saga-shi
Cocoon Inspecting Station	Kasuga-mura, Saga-gun
Grain Inspection Office	Matsubara-cho, Saga-shi
Animal Breeding Grounds	Kurokawa-mura, Nishimatsu- ura-gun

(For a list of agricultural schools, see Chapter V,D,4.)

C. FISHERIES

1. Production.

The average annual production of fish in Saga-ken for the years 1935-39 was 29,756,000 pounds. This was 5/10 percent of the total production of Japan proper. The estimated production for 1943-44, adjusted for wartime changes, was 24 million pounds. Fish production in this prefecture is normally sufficient for transshipping a part of it to other prefectures. Table 14 gives the relative value of all coastal fisheries products in Saga-ken in 1936.

TABLE 14

Fisheries Products, 1936, Saga-ken.

Kind	Value (in thousand yen)	Kind	Value (in thousand yen)
Fish		Fresh Water Fish	
Sardines	516	Eel	47
Sea bream (<u>tai</u>)	300	Carp	22
Horse mackerel	65	Trout	6
Grey mullet	60	Shellfish	
Mackerel	59	Prawn	177
Yellowtail	58	Squid	131
Spanish mackerel	55	Octopus	60
Tuna	29	Oysters	31
Black sea bream	28	Clam	1
Flatfish	13	Sea weed	
Bonito	12	Funori	7
Flying fish	9	Laver	2
Mackerel pike	3	Tengusa	1
Shark	2	Others	639
		Total Value	2,373

In 1936 there were 17,796 fishermen, 10,576 of whom were full-time. In that year there were 6,049 fishing boats, 1,146 of which were equipped with gasoline motors. Of the motorless boats, 4,853 were of less than 5 tons and 50 were between 5 and 20 tons. (See Table 4.)

2. Ports and Fishing Centers.

The principal fishing ports of Saga-ken and their chief fishing products are listed as follows:

Imafuku: sardine, sea bream, yellowtail, mackerel, horse mackerel
 Kasumoto: Yellowtail, squid
 (Iki Island)

Yobuko-machi: sardine, sea bream, yellowtail, mackerel, horse mackerel
 Karatsu-shi: sardine, sea bream, yellowtail, mackerel, horse mackerel

Takakushi has a fishing boat harbor with a depth of 18 to 30 feet. There are several small piers with shallow landing depths alongside. For further details on ports, see Chapter IV, A, 3.

3. Coastal Fishing.

The greater part of the fishing around Saga-ken is coastal fishing; consequently, very few deep-sea vessels are based there. The sardine season off the coast of Saga-ken is mainly from February to April. One spawning ground lies off the west coast of Kyushu. (See OSS map 627 for fishing areas.)

4. Specialized Fisheries.

Saga-ken is one of the main prefectures for oyster culture, which is confined to a species known as sumi-no-ye-gaki (*Ostrea ariakensio*). There is a fishery experimental station located in the prefectural office in Saga-shi.

D. FOREST RESOURCES

1. Area and Composition of Forest Land.

The forests of Saga-ken are mainly of local importance since they are rather limited in area. Two large main tracts cover nearly 1/5 of the area, or about 200 square miles. One is located along the southeastern border of Fukuoka-ken, and the other along the eastern border of Nagasaki-ken. Since no very great elevations are reached, most of the timber is of subtropical species, evergreen broadleaved and coniferous trees. Live oaks, boxwood, cedar, cypress and red pine make up the most important commercial trees.

2. Forest Administration and Management.

No information regarding the extent or location of public or private forests is available except that 38 percent of the prefecture is under public ownership. It is quite likely that a large part of this is forest land.

All forest land, public and private, is subject to administrative control of the Bureau of Forestry (Sanri-Kyoku) of the Ministry of Agriculture and Commerce (Noshō-shō). A forestry administration office is located in Kumamoto-ken, Kumamoto-shi, for the whole island of Kyushu. This office not only supervises management of all public lands but enforces the basic forest law which applies to public and private lands alike. The

local forestry office is at Yoga-cho, Saga-shi. The enforcement of fire prevention and cutting controls is handled by government forestry officials located at forestry administration stations. The station for Saga-ken is located in Takeomachi, Kinoshima-gun.

3. Forest Problems.

Fire presents only a slight danger to forests in Saga-ken, even during the months of March and April when the forests are dry and the hazards increase. Precipitation is so abundant that only during dry years does danger develop. With such large volumes of broadleaved trees, the danger is small in any case. Intensive fire protection systems maintain adequate fire control. Some damage results from floods, high winds, insects, disease and miscellaneous causes.

4. Forest Products.

Saga-ken produces only a very minor amount of timber from its 13 sawmills. Though not important in the national production, it is of importance locally in supplying building materials and other needed forest products. Timber valued at slightly more than 800,000 yen; fuel wood worth 760,000 yen; and charcoal amounting to 386,000 yen were produced from Saga's forests in 1936. Some small amounts of thatching, bark, poles and posts, as well as bamboo products, also are produced in the forest operations. (See Table 6.)

E. MINING

Saga-ken is an important coal-producing prefecture with extensive mining operations in the Karatsu field located in the west central part of the prefecture. The Kinoshima Mine, in Kinoshima-gun, the largest in the prefecture, produced 880,000 short tons of coal, or 1.7 percent of all Japanese coal, in 1937. Chromite and kaolinite is produced only in very small quantities. Granite and andesite are quarried in Ogi-machi, Ogi-gun, and used for building stones.

1. Non-Ferrous Minerals.

Chromite is mined at the Kyuragi mine, Higoshimatsuura-gun.

2. Non-Metallic Minerals.

Extensive deposits of kaolinite are found in Arita-machi, Nishimatsuura-gun. Internationally famed porcelain is made from this clay in crude hand potteries.

3. Coal.

a. Karatsu field. Tertiary coal-bearing strata underlie extensive areas in Higashimatsuura-gun, Kinoshima-gun, Nishimatsuura-gun and Ogi-gun in the west central part of the prefecture. The sub-bituminous coal is found in seams from one to 13 feet thick. In 1912, the actual reserves of the field were 19,000,000 short tons of coal in an 8 square mile area and a probable reserve of 125,000,000 short tons in a 50 square mile area. Between 1913 and 1927, 31,000,000 short tons of coal were mined and 988,000 short tons were mined in 1935. Increased mechanization in the larger mines has increased the coal mined per man from 162 short tons in 1926, to 247 in 1932.

The largest mine in the field is the Kinoshima mine, of the Kinoshima Coal Mining Company located in Kitakata-mura, Kinoshima-gun (33° 13' N. 130° 04' E.). Coal is shipped by rail to the Nagasaki Main Line of the Imperial Government Railways. Mine production in 1934 was 550,000 short tons; in 1935, 620,000; 1936, 788,000 and in 1937 the mine output was 880,000 short tons of bituminous coal of strong coking qualities. The coal has a 12,662 BTU value, is 46.2 percent fixed carbon, and contains 42.7 percent volatile matter. The mine is developed through 2 slopes. Dormitories for the 6,000 miners adjoin the tipples.

The Iwaya Mine in Ochi-machi, Higashimatsuura-gun (33° 18' N. 130° 02' E.), operated by the Kajima Coal Mining Company, produced 126,000 short tons of coal in 1934, 140,000 short tons in 1935, 124,000 short tons in 1936, and 153,000 short tons in 1937. The coal is good for coking and has a BTU value from 12,300 to 13,000.

In 1935, 48,200 short tons of coal were mined by the Murai Mining Company at the Mukiyama mine in Yamashiro-machi, Nishimatsuura-gun (33° 20' N. 129° 47' E.). (See Saga-ken map.)

The Mitsubishi Kogyo KK (Mitsubishi Mining Company) operates the Ochi mine in Ochi-machi, Higashimatsuura-gun (33° 20' N. 130° 01' E.). In 1935, 474,000 short tons of coal were mined.

b. Minor mines are listed in Table 15. (See OSS Map 7204 for location of mines.)

TABLE 15
Coal Mines, Saga-ken.

Mine	Owner	Location (machi or mura)	Location (gun)	Coordinates		Production (short tons)	Year	Transporta- tion
				N.	E.			
Higashibaru	--	Kitataku-mura	Ogi	33°18'	130°06'	--	--	Spur to Karatsu Main RR Line
Hirayama	--	Ochi-machi	Higashi- matsuura	33°19'	130°00'	--	--	---
Irino	Nogami Min- ing Co.	---	---	--	--	(15,700 (27,600	1934 1935	---
Koga	--	Higashitaku- mura	Ogi	33°17'	130°10'	--	--	Prefectural highway
Kyuragi	--	Kiuragi-mura	Higashi- matsuura	33°19'	130°04'	--	--	Karatsu Main RR. Line
Nakayama	--	Mitataku- mura	Ogi	33°17'	130°06'	--	--	Spur to Karatsu Main RR. Line
Okubo	Jihachi Hamano	---	---	--	--	(16,800 (23,500	1934 1935	---
Otaniguchi	--	Omachi-machi	Kinoshima	33°13'	130°07'	--	--	1 mile to Nagasaki RR.
Shinyashiki	Furukawa(Fujii) Mining Co.	---	---	--	--	(64,300 (76,100	1934 1935	---
Takagi	--	Taku-mura	Ogi	33°17'	130°05'	--	--	Prefectural highway
Yamashiro	Sugewara KK.	Yamashiro- machi	Nishi- matsuura	33°18'	129°46'	--	--	---
Yokoshi	--	Taku-mura	Ogi	33°19'	130°04'	--	--	Spur to Karatsu Main RR. Line

4. Mining Administration.

Saga-ken is in the Kyushu administration district of the Munitions Ministry (Gunju-sho). Headquarters for the district are in Fukuoka-shi, Fukuoka-ken. Mine maps, production reports and other records are maintained at district headquarters. Mine inspectors and other mining officials make regular trips to the mining districts. All mapping and geologic work done in the prefecture by the Imperial Geologic Survey is authorized and supervised directly from Tokyo headquarters of the Survey. (See OSS Map 6254.)

F. MANUFACTURING

Saga-ken has a low degree of industrialization with the value of the prefecture's manufactured products in 1938 reported to be less than one percent of the total for Japan Proper (See Table 6.)

In terms of 1938 values, the manufactured goods produced in Saga-ken (in the order of importance) were: food processing, textile, machinery and tool and chemical products. (See OSS maps 3892 and 7204.) Together these categories accounted for 86.8 percent of the value of the prefecture's manufactures in 1938. Appendix I lists manufacturers.

TABLE 16

Manufactures, 1938, Saga-ken.

(by major categories in non-government plants employing 5 or more persons)

Industry	Value (in millions of yen)	Rank among prefectures	Percent of value of total manufactures, Saga-ken*	Number of plants
Food processing	15.7	23	31.3	172
Textile	11.6	39	23.0	11
Machinery and tools	9.9	23	19.8	53
Chemical	6.4	37	12.7	30
Ceramics	3.4	23	6.7	142
Metal	0.7	42	1.3	18
Lumber and woodenware	0.6	46	1.4	27
Printing	0.2	45	0.3	13
Other	1.7	27	3.5	106
Total	50.2	39	100.0	572

* In no category of manufacturing shown does Saga-ken account for as much as one percent of the value of total manufactures for Japan Proper.

1. Food Products.

In 1938 food processing was the major industry of Saga-ken. The value of processed food and beverages amounted to nearly 1/3 of the prefecture's total industrial production. Sake was the largest industry in the group, with 157,338 hectolitres valued at 7,646,077 yen. Production of alcoholic beverages has

undoubtedly been restricted during the war. Milling, predominantly of wheat flour, was second in the group. Reduction in wheat imports may have curtailed flour production in recent months.

The value of other food products industries, in order of importance, is shown in Table 17. Although the coastal waters of Saga-ken yield large catches of fish, there were no fish canneries reported in the prefecture. The 3 canneries shown for 1938 canned only fruit and vegetables. Wheat flour processing in Saga-ken consists of producing noodles, vermicelli and similar foods. The only dairy product manufactured in Saga-ken is condensed milk.

TABLE 17

Food Industries, 1938, Saga-ken*.

Industry	Number of plants	Value of products (in yen)
Breweries & distilleries	124	7,701,313
Flour mills	1**	5,772,586
Soy sauce, bean paste & vinegar	9	605,447
Canning	3	460,438
Candy, baking & mizu ami	5	271,671
Wheat flour processing	6	182,631
Ice plants	6	123,298
Dairy products	1	107,849
Soft drink plants	3	96,685
Other food products	14	368,246
Total	172	15,690,164

* Non-government plants with 5 or more operatives.

** 4 other establishments also produce flour but not as their major product.

2. Textiles.

The textile industry of Saga-ken is relatively unimportant. The largest units (both located in Saga-shi) were: first, a cotton spinning mill of the Kangafuchi Spinning Co.; and, second, a filature of the Katakura Silk Co.. The former is reported sold to the Japan Machine Manufacturing Co. and the latter converted to aircraft parts production.

The balance of the 11 textile mills in this prefecture consist of 3 more silk filatures, 2 cotton weavers, 2 silk weavers and 2 miscellaneous textile finishing plants.

Textile production in 1938, by value, was as follows:

Raw silk	5,315,850 yen
Cotton yarn	4,912,225 yen
Cotton fabrics	1,208,075 yen
Silk fabrics	13,090 yen
Cotton batting	53,470 yen

Calicos made up 85 percent of the cotton fabrics; the balance were shirtings, duckcloth, cotton flannel and drills.

3. Chemicals.

Chemical manufacturing is the fourth important industry in Saga-ken, but it is of minor importance nationally. The 1938 value of production included 2,333,333 yen for paper products and 1,500,000 yen for drugs. The latter represents about one percent of Japanese production. In 1938, 6 percent of Japan's rape seed oil, which amounted to 500,000 yen, was produced in this prefecture.

4. Metal Processing.

Saga-ken's metal industry is small, and large concerns are few in number. The Karatsu Iron Works, (Karatsu Tekkosho KK) reputed to be one of Japan's leading tool makers, specializes in alloy steel production from its open hearth furnace. The furnace's reported ingot capacity was 8800 short tons annually. The Japan Mining Co. (Nippon Kogyo KK) is reported to have a plant in the prefecture producing one short ton of ferro-nickel per day.

The number of plants producing various types of fabricated steel items in 1938 are as follows:

Iron machinery castings	8
Iron kettles	1
Steel washers	2
Castings	1
Metal articles	2
Flated articles	2

5. Machinery, Tools and Appliances.

Saga-ken does not rank high in the manufacturing of machinery, tools and appliances; however, fine machine tools and spark plugs are produced. The Karatsu Iron Works is rated as manufacturing the best heavy duty machine tools in Japan and ranks sixth in volume of output among machine tool factories. The Osaka Porcelain Co. is an important producer of spark plugs.

The principal machinery products of Saga-ken in 1938, were valued as follows:

Miscellaneous parts	5,597,142 yen
Electrical equipment	3,461,723 yen
Pumps	218,048 yen
Machinery parts & accessories	210,555 yen

6. Aircraft, Vehicles, Railroad Equipment and Ships.

There are no known manufacturers of vehicles or railroad equipment in Saga-ken but there are 2 shipyards reported. One textile mill is reported to have been converted to manufacturing aircraft parts.

7. Wood Products.

Except for the paper and paperboard industry, the wood-using industries of Saga-ken are not highly developed. This may be partly due to the prefecture's lack of timber resources. In 1938 there were only 27 sawmills and woodworking plants, with 5 or more employees operating in the prefecture, and their products were valued at only a little over 500,000 yen. This was only 1.4 percent of the value of Saga-ken's total 1938 industrial output. The 14 sawmills' output was valued at 412,556 yen. A small number of plants produced wooden clogs, furniture, fixtures and wooden containers.

The paper industry of Saga-ken, especially paperboard, is of some national importance, but is not one of the largest producing centers. In 1938 there were 6 paper and paperboard mills in the prefecture, whose products were valued at 2,332,874 yen. There were no pulp mills reported; hence, wood pulp must be imported into the prefecture.

8. Other Manufactures.

The value of factory production in the minor manufacturing categories has not been great, but it includes important percentages of the national totals in some items.

a. Ceramics. Clay, cement, glass and porcelain products are produced in Saga-ken, which ranked 23rd among the prefectures of Japan in 1938 value of factory-produced ceramics. The clay products included 1.3 percent of Japan's common brick and small quantities of roof tiles, fire brick and other items. Small quantities of tile, pipe and other cement wares were produced. Glass production was small (72,142 yen in all), but included cooking wares, shades and light bulbs, bottles, window glass and other products. Porcelain wares were valued at more than 3,000,000 yen. This included 5.1 percent of the cooking and tableware; 7.7 percent of the furniture and fixtures;

1 percent of the tile; 3.2 percent of the electric insulators, and 8.5 percent of the acid and heat resistors made from porcelain. Akita-machi and Imari-machi are well known for the manufacture of fine porcelain ware.

b. Miscellaneous consumer goods. Miscellaneous factory production included paper, bamboo, stone and straw products. The last named was valued at 761,000 yen in 1938. A few parasols and a small quantity of netting were also reported. There was some factory manufacture of clothing, including western style garments, leather and non-leather footwear, and tabi, or bifurcated socks.

G. CONSTRUCTION AND CONSTRUCTION MATERIALS

1. Construction.

The types of construction in Saga-ken are similar to those throughout Japan. Most large industrial plants built in the last decade are of re-inforced concrete, but older factories are usually of wood and brick construction. Most commercial establishments are of wood-frame construction, often with brick facings. Urban residences are primarily of wood, generally with paper partitions and tile roofs. Thatched roofs are common in the rural areas.

2. Construction Materials.

a. Lumber. Saga-ken has limited stands of commercial timbers widely scattered in the high mountain regions.

b. Cement. The Hokoku Semento KK, Saga Plant, is located in Higashikawasoe-mura, Morotomi. Equipped with 2 rotary kilns, this plant, which produces Portland cement, has an annual capacity of 51,274 metric tons.

c. Structural steel. The structural steel mills nearest Saga-ken, which has none, are located in Fukuoka-ken.

d. Lime. In 1938, this prefecture produced 3 percent of the total national production of lime.

e. Glass. In 1942, a major plant producing glass products was reported located in Uranosaki in Nishimatsuura-gun.

H. TRADE AND COMMERCE

1. Foreign Trade.

The total volume of trade and commerce of Saga-ken's 2 open ports, Karatsu-shi and Suminoe in Fukudomi-mura, Kinoshima-gun and about 5 miles southwest from Saga, was 0.02 percent of the national total in 1939.

a. Karatsu-shi. The yen value of Karatsu-shi's imports and exports are indicated in Table 18.

TABLE 18

Year	Imports & Exports, 1929-40, Karatsu-shi, Saga-ken.	
	Exports (in yen)	Imports (in yen)
1929	1,695,798	770,683
1930	1,672,820	760,553
1931	639,995	430,483
1932	446,309	644,083
1933	400,157	1,637,403
1934	213,606	557,348
1935	531,999	373,539
1936	-----	524,142
1937	164,211	727,811
1938	528,903	445,316
1939	856,167	158,120
1939 (1st qtr.)	235,864	-----
1940 (1st qtr.)	14,000	-----

The most important exports ad valorem from Karatsu-shi in 1938 were lumber and wood products, 468,700 yen; coal, 41,600 yen. There were no important exports. The imports of Karatsu-shi accounted for 54 percent of her foreign trade and consisted chiefly of salt, valued at 445,300 yen.

Of the exports of Karatsu-shi in 1938, over half were to China: 310,902 yen to Northern China, and 41,640 to Central China. There were no imports from China in that year.

b. Suminoe. The yen values of the total exports and imports of Suminoe are indicated in Table 19.

TABLE 19 Restricted
Imports & Exports, 1929-39, Suminoe, Saga-ken.

Year	Exports (Yen)	Imports (Yen)
1929	455,622	174,332
1930	352,006	208,171
1931	380,149	101,713
1932	225,470	193,733
1933	363,168	117,050
1934	218,191	158,037
1935	121,772	134,885
1936	224,081	89,335
1937	177,980	116,737
1938	-----	95,401
1939	-----	233,577
1939 (1st qtr.)	-----	20,973

No important exports were listed from Suminoe in 1938, and her imports consisted chiefly of Indian corn valued at 79,200 yen.

2. Warehousing.

In Karatsu-shi, it is reported that about 8 acres of open storage space are available on the reclaimed west side of the basin at Nishikaratsu. The open storage space at the main quay (Nishi-ko, southwest side of the east mole) and on the central mole (Nishi-ko, west of main quay) totals about 3 acres. About 14 acres of coal storage area is in the rear of the coaling piers at O-shima.

3. Domestic Trade.

Karatsu is the most important port in the ken for domestic trade moving by water and in 1936, rated 43rd among Japan's ports. Exports were 274,000 metric tons valued at 3,196,000 yen of which coal, table salt, bean paste, and soy sauce were the most important items. Imports amounted to 39,000 metric tons of 4,659,000 yen value and the most important items were table salt, fresh fish and shell fish, and iron.

I. FINANCE

1. Private Finance.

a. Relative position of Saga-ken. The following figures (Table 20) show the relative position of Saga-ken in private finance, as compared with the rest of Japan:

TABLE 20

Bank Deposits, Savings & Life Insurance, 1936 & 1944, Saga-ken

	Total for Saga-ken	Percent of National Total
Population, 1936	686,000	.96
Total bank deposits (banks with head offices in prefecture), 1936	60,195,000 yen	.47
Deposits in postal savings transfer accounts, 1936	11,366,000 yen	.9
Amount of ordinary life insurance in force, 1936	26,114,000 yen	.72
Savings goal*, 1944	210,000,000 yen	.6

* An estimate which includes net increases of bank deposits, postal savings, trust deposits, deposits of financial co-operatives, insurance reserves, deposits of mutual finance companies, private investment, bond purchases, etc.

b. Banking. As of 1940, there were 11 ordinary provincial banks operating in Saga-ken, with a total of 47 branches and 4 agencies; all but 6 branches were located inside the prefecture. There was one prefectural savings bank with a head office and one branch in the prefecture. One national bank maintained a branch in this prefecture.

The following is a list of the banks and branches that were known to exist in Saga-ken in 1940, with salient data as to their operations. Since 1940, there has been a decided trend for loans to give way to government securities as the chief asset of most institutions, and total assets have increased materially thereby reflecting an expansion of deposits. Since the recent trend among provincial banks in Japan has been toward the merging of all prefectural banks in each prefecture into one bank, it is quite probable that some, or possibly even all, of the prefectural banks listed here have been merged.

(1) Provincial Banks

Saga Chuo Ginko (Saga Central Bank)

Main office: Karatsu-shi

Restricted

Branches: Of a total of 13, 12 are in Saga-ken. There are 3 agencies.

Location of known branches and agencies in Saga-ken:

Saga-shi (2 branches)
 Karatsu-shi
 Saga-gun, Higashikawasoe-mura
 Ogi-gun, Ogi-machi
 Higashimatsuura-gun, Hamasaki-machi
 Higashimatsuura-gun, Ochi-machi
 Higashimatsuura-gun, Yobuko-machi
 Nishimatsuura-gun, Otsubo-mura
 Kinoshima-gun, Fukudomi-mura

yen		yen	
Total assets	23,690,000	Total liabilities	23,690,000
Securities	5,081,000	Deposits	18,641,000
Cash on hand	3,570,000	Reserves	59,000
Total loans	8,626,000	Net profit(6 mos.)	unknown
Uncalled capital	2,252,000	Paid-up capital	2,278,000

Saga Kogyo Ginko (Saga Industrial Bank)

Main office: Kinoshima-gun, Takeo-machi

Branches: Of the 16 branches 13 are in Saga-ken. There is only one agency.

Location of known branches and agencies in Saga-ken:

Saga-shi
 Higashimatsuura-gun, Kitahata-mura
 Nishimatsuura-gun, Imari-machi
 Nishimatsuura-gun, Arita-machi
 Nishimatsuura-gun, Matsuura-mura (agency)
 Nishimatsuura-gun, Arita-mura
 Kinoshima-gun, Takeo-machi
 Kinoshima-gun, Asahi-mura
 Kinoshima-gun, Kitakata-mura
 Fujitsu-gun, Shiota-machi
 Fujitsu-gun, Ureshino-machi
 Fujitsu-gun, Yoshida-mura

yen		yen	
Total assets	43,292,000	Total Liabilities	43,292,000
Securities	10,555,000	Deposits	21,949,000
Cash on hand	2,664,000	Reserves	485,000
Total loans	11,465,000	Net profit(6 mos.)	130,000
Uncalled capital	1,480,000	Paid-up capital	2,270,000

Restricted

Saga Hyaku-Roku Ginko (Saga 106th Bank)

Main office: Saga-shi

Branches: Of the 5 branches, 4 are in Saga-ken.

Location of branches in Saga-ken:

Saga-shi (2 branches)
 Kanzaki-gun, Kanzaki-machi
 Miyaki-gun, Tosu-machi

yen		yen	
Total assets	43,292,000	Total liabilities	43,292,000
Securities	28,529,000	Deposits	40,191,000
Cash on hand	4,597,000	Reserves	183,000
Total loans	8,469,000	Net profit(6 mos.)	39,000
Uncalled capital	1,000,000	Paid-up capital	1,000,000

Kashima Ginko (Kashima Bank)

Main office: Fujitsu-gun, Kashima-machi

Branches: All 3 branches are in Saga-ken, and are located as follows:

Fujitsu-gun, Hama-machi
 Fujitsu-gun, Tara-mura
 Kinoshima-gun, Nishikie-mura

yen		yen	
Total assets	5,399,000	Total liabilities	5,399,000
Securities	2,209,000	Deposits	3,860,000
Cash on hand	1,004,000	Reserves	390,000
Total loans	1,878,000	Net profit(6 mos.)	22,000
Uncalled capital	400,000	Paid-up capital	600,000

Horai Ginko (Horai Bank)

Main office: Kinoshima-gun, Takeo-machi

Branches: There is one in Kinoshima-gun, Nakatori-mura.

yen		yen	
Total assets	3,488,000	Total liabilities	3,488,000
Securities	926,000	Deposits	2,368,000
Cash on hand	524,000	Reserves	43,000
Total loans	1,044,000	Net profit(6 mos.)	13,000
Uncalled capital	750,000	Paid-up capital	250,000

Restricted

Ogi Ginko (Ogi Bank)

Main office: Ogi-gun, Ushizu-machi

Branches: There is one branch in Ogi-gun, Ogi-machi.

	yen		yen
Total assets	unknown	Total liabilities	unknown
Securities	1,376,000	Deposits	2,873,000
Cash on hand	1,153,000	Reserves	163,000
Total loans	814,000	Net profit(6 mos.)	17,000
Uncalled capital	150,000	Paid-up capital	350,000

Yobuko Ginko (Yobuko Bank)

Main office: Higashimatsuura-gun, Yobuko-machi

Branches: All 4 branches are in Saga-ken, and located as follows:

Higashimatsuura-gun, Sashi-machi
 Higashimatsuura-gun, Nanayama-mura
 Higashimatsuura-gun, Ariura-mura
 Higashimatsuura-gun, Minato-mura

	yen		yen
Total assets	unknown	Total liabilities	unknown
Securities	1,236,000	Deposits	2,263,000
Cash on hand	865,000	Reserves	89,000
Total loans	530,000	Net profit(6 mos.)	19,000
Uncalled capital	225,000	Paid-up capital	275,000

Imari Jitsugyo Ginko (Imari Industrial Bank)

Main office: Nishimatsuura-gun, Imari-machi

Branches: The 2 branches are located in Saga-ken, as follows:

Ogi-gun, Ogi-machi
 Nishimatsuura-gun, Yamashiro-machi

	yen		yen
Total assets	2,712,000	Total liabilities	2,712,000
Securities	137,000	Deposits	2,104,000
Cash on hand	529,000	Reserves	44,000
Total loans	1,522,000	Net profit(6 mos.)	8,000
Uncalled capital	300,000	Paid-up capital	200,000

Taku Ginko (Taku Bank)

Main office: Ogi-gun, Kitataku-mura

Restricted

Branches: There is one branch in Ogi-gun, Higashitaku-mura.

	yen		yen
Total assets	unknown	Total liabilities	unknown
Securities	177,000	Deposits	646,000
Cash on hand	189,000	Reserves	15,000
Total loans	349,000	Net profit(6 mos.)	unknown
Uncalled capital	325,000	Paid-up capital	175,000

Hama Ginko (Hama Bank)

Main office: Fujitsu-gun, Hama-machi

Branches: There is one branch at Fujitsu-gun, Kashima-machi.

	yen		yen
Total assets	2,209,000	Total liabilities	2,209,000
Securities	1,098,000	Deposits	1,637,000
Cash on hand	283,000	Reserves	33,000
Total loans	434,000	Net profit(6 mos.)	4,000
Uncalled capital	352,000	Paid-up capital	148,000

Omura Ginko (Omura Bank)

Main office: Nagasaki-shi

Branches: There is one branch in Saga-shi.

(2) "Big" Ordinary Banks

Sumitomo Ginko (Sumitomo Bank)

Main office: Osaka-fu

Branches: There is one branch in Saga-shi.

(3) Savings Banks

Hizen Godo Chochiku Ginko (Hizen Consolidated Savings Bank)

Main office: Karatsu-shi

Branches: There is one branch in Saga-shi.

	yen		yen
Total assets	9,188,000	Total liabilities	9,188,000
Securities	6,090,000	Deposits	7,880,000
Cash on hand	614,000	Reserves	171,000
Total loans	648,000	Net profit(6 mos.)	22,000
Uncalled capital	750,000	Paid-up capital	250,000

c. Insurance. It is not known which insurance companies were operating in Saga-ken, but as of 1936 there were 1,009,598 ordinary life insurance policies in force in the prefecture, with a total value of 132,295,000 yen. Announcement was made in April, 1945 that all insurance companies in Japan had been merged into 2 companies, a life insurance company and a property insurance company. It is not known whether they have succeeded in merging all the operations of these companies.

d. Postal savings. Postal savings are very important in the financial picture of the prefecture since the ordinary individual uses the post office as his bank both for savings and also as a checking account, through postal transfer accounts. Postal savings in Saga-ken totaled 74,459,000 yen as of the end of June 1942.

e. Credit associations. These associations were important to the individual, both as a place to invest his money and as a source from which small loans could be obtained. In 1936 there were 151 associations operating in Saga-ken, with a total investment of 79,522,000 yen.

f. Mutual financing associations (Mujin). In common with the credit associations, the mujin were important to the ordinary individual as a place for investment and a source for small loans. Statistics are given below as of 1936:

Main offices	4	
Branch offices	3	
Authorized capital	260,000	yen
Paid-up capital	110,000	yen
Number of association accounts	248	
Number of individual accounts	11,783	

2. Public Finance.

a. Relative position of prefecture. The following figures show the relative position, in regard to public finance, of Saga-ken, compared with the rest of Japan as of 1936:

	Total for Saga-ken (in yen)	Percent of total for all prefectures
Prefectural revenue	6,221,000	1.0
Prefectural expenditures	6,221,000	1.0
National business profits tax collection		
(1) Individuals	191,000	.7
(2) Corporations	80,600	.13
Total taxable income	19,544,375	.4
National income tax collections	749,196	.31

b. Income of prefectural government. In the 1938-39 fiscal year the income of the prefectural government of Saga-ken (in thousand yen) was derived from the following sources:

Total income	6,221
Surtaxes on direct national taxes	
Land tax	694
Income tax	405
Other	251
Special land tax	96
House tax	422
Business tax	92
Miscellaneous taxes	484
Property income	7
Employment & handling fee	744
National grants in aid	1,260
Prefectural loans	836
Balance from previous fiscal year	135
Other	795

c. Expenditures of prefectural government. Expenditures in the fiscal year 1938-39 (in thousand yen) were as follows:

Total expenditures	6,221
Council expenses	31
Police expenses	678
Public works	1,035
Education	1,657
Encouragement of industry	1,491
Health & sanitation	110
Social welfare	46
Prefectural loan expenses	522
Handling of prefectural expenses	80
Official's expenses	358
Other	213

d. Income of cities. Revenues of cities in Saga-ken for the fiscal year 1938-39 (in thousand yen) were as follows:

Total revenue	1,782
Surtaxes on direct national taxes	
Land tax	37
Income tax	none
Other	103
Surtaxes on prefectural taxes	
Special land tax	1
House tax	74
Business tax	16
Miscellaneous taxes	105
Special tax	234
Property income	12

Restricted

Employment fee & handling fee	264
Delivery & subsidy	156
City loans	376
Balance from previous year	169
Other	234

e. Expenditures of cities. Expenditures of cities in Saga-ken for the fiscal year 1938-39 (in thousand yen) were as follows:

Total expenditures	1,782
Council expense	11
Office expense	167
Public works	241
Education	504
Health & sanitation	182
Social welfare	121
Police	13
Encouragement of industry	31
Municipal loan expense	320
Liability expense	6
Planning	47
Maintenance expense (property)	42
Electric & gas construction	none
Other	96

f. Income of towns and townships. Revenue of the towns and townships in Saga-ken for the fiscal year 1938-39 (in thousand yen) were as follows:

Total revenue	6,496
Surtax on national taxes	
Land tax	575
Income tax	none
Other	154
Surtax on prefectural taxes	
Special land tax	73
Personal property tax	170
Business tax	71
Miscellaneous taxes	415
Special taxes	2,054
Estate incomes	172
Rents & commissions	197
Subsidies	1,178
Town & village loans	366
Amount carried forward from previous year	217
Other	857

g. Expenditures of towns and townships. Expenditures of the towns and townships in Saga-ken for the fiscal year 1938-39 (in thousand yen) were as follows:

Total expenditures	6,498
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Restricted

Council expense	57
Office expense	1,104
Public works	409
Education	3,400
Health & sanitation	106
Social welfare	197
Police	63
Encouragement of industry	189
Public loan expense	312
Various taxes & burdens	51
Building funds	83
Electricity & gas enterprise	5
Other	521

h. Public debt. The local public debt in Saga-ken as of 1936 totaled 14,782,000 yen. The following is a breakdown of this debt (in thousand yen) according to areas and objectives for which the debt was incurred:

By area

Prefectural	8,456
Municipal	2,147
Town & village	3,931
Water supply (district)	247

By objective

Education	1,842
Health & sanitation	1,060
Services expenses	5,486
Disaster repair	1,880
Ordinary construction	3,368
Electric & gas works	68
Public welfare	717
Other	361

i. Incidence of national income tax. Some indication of the incidence of the tax burden is given by the following figures which show the number of persons in the prefecture in the various income tax brackets as of 1936:

Total number paying income tax	8,485
Number paying less than 10 yen	2,453
10 to 15 yen	1,817
15 to 20 yen	764
20 to 30 yen	837
30 to 50 yen	786
50 to 100 yen	732
100 to 200 yen	552
200 to 500 yen	329
500 to 1,000 yen	111

Restricted

1,000 to 2,000 yen
2,000 to 5,000 yen
Over 5,000 yen

Individuals
81
17
6

j. Finance offices in Saga-ken. An office of the Revenue Bureau of the Ministry of Finance (Okura-Sho) was located in Saga-shi in 1943.

Restricted

Restricted

IV. PUBLIC SERVICE

A. TRANSPORTATION

1. Railroads.

a. Pattern and importance. The railroads in Saga-ken converge from the east and west on Saga-shi in the south. The north-central section of the prefecture is devoid of railroads.

From Tosu-machi on the Kagoshima Main Line, which runs north and south cutting the east edge of the prefecture, the Nagasaki Main Line runs southwest through Saga-shi and then west. It is fed by the Karatsu Line from the northwest, the Imari Line from the west, and the Ariake Line from the south. Entering the prefecture from the southeast is a railroad connecting Yanagawa-machi in Fukuoka-ken with Saga-shi. The only electric line in the prefecture runs north from Saga-shi. The remaining lines are minor roads stemming from the main lines.

Railroads of primary importance are the: (1) Kagoshima and (2) Nagasaki Main Lines; and the (3) Imari, (4) Ariake, and (5) Karatsu Lines.

Railroads of secondary importance are the: (6) Saga Electric, (7) Hichiku, (8) Kita Kyushu, (9) Chuo, and (14) Saga Lines.

Railroads of minor importance are the 4 mining roads numbered (10) through (13).

Numbers above refer to route numbers shown on OSS map 7204.

Details concerning gauge, trackage, etc., are given in Table 21 and Appendix II.

b. Administration. The regional railway office for Saga-ken is located at Moji-shi in Fukuoka-ken.

c. Yards and shops. At Tosu-machi is a marshalling yard of the hump-gravity type with a daily capacity of 3,000 cars. Roundhouses are at Tosu-machi and Hizen-Yamaguchi.

2. Highways.

a. Importance and pattern. Highways in Saga-ken are best developed within the Saga plain. The only important trans-prefectural route is the national highway running east and west from Fukuoka-shi through Saga-shi to Sasebo-shi, with a branch from Takeo-machi extending south toward Nagasaki-shi. The

Restricted

populous areas, and secondary roads provide short-cuts or crossovers between primary highways. There are many trails and paths over the mountains, but they are impassable to motor vehicles.

e. Primary prefectural highways.

(1) Ogi-machi to Otakuma-mura. Perfectly straight and level, passing through irrigated rice fields in suburbs of Saga-shi.

(2) Kanzaki-machi, through Ogi-machi and Hamasaki-machi to Fukuoka-ken border. From Kanzaki to 6 miles west of Ogi-machi, the highway passes through irrigated rice fields in the populous suburbs of Saga-shi. Here it is level and without sharp curves. Next, for 5 miles, it passes through a narrow mountain gorge, then through rice fields to Hamasaki-machi. North of that town, it is very close to the shore.

(3) Saga-shi north to Fukuoka-ken border. To a point 5 miles north of Saga-shi, there are tramway tracks in the roadbed. It next goes over a mountain, with rather steep grades, to an elevation at the prefectural border of 1,600 feet.

(4) From 2 miles east of Kanzaki-machi to Kurume-shi (Fukuoka-ken). Passes through thickly populated area, then crosses the Chikugo-gawa on a wooden bridge several hundred feet long, into Kurume-shi, Fukuoka-ken.

(5) Saga-shi southeast to Fukuoka-ken border. Good, level road to the Chikugo-gawa. No bridge across river; probably a ferry.

(6) From National Highway, north of Takeo-machi, to the Ogi-Hamasaki road. Between the national highway and Nishinoharu this road passes over a mountain; near the peak it goes through a short tunnel. Beyond Nishinoharu it traverses a level valley.

(7) Shiota-machi to Kawago via Takahashi. To Takahashi, this road passes between rice fields; beyond, it goes through a mountain gorge.

(8) Shiota-machi west to National Highway. Goes through narrow valley of irrigated rice fields, close to Shiota-gawa.

(9) Yamaguchi to Kashima-machi to Nagasaki-ken border. From Yamaguchi to Hama-machi, passes through irrigated rice fields; south of Hama-machi it closely follows the coast and is very winding.

(10) Hamasaki-machi to Karatsu-shi to Imari-machi to Nishinoharu. Restricted area, no data available to Imari-machi. From Imari-machi to Kawago, road passes over a mountain but remains straight with no steep grades. Between Kawago and Nishinoharu, it passes over another mountain and is winding, with some rather steep grades.

(11) Karatsu-shi to Yobuko-machi. A good coastal highway, winding but level.

(12) Tajiro-machi east to Fukuoka-ken border. A short, comparatively straight, level road.

See OSS map 7204.

3. Water Transport.

The total unloading capacity of ports in Saga-ken accessible to ocean vessels is 2,000 short tons per 10-hour day.

All prefectural shipping is under the jurisdiction of the Moji Marine Transport Bureau, a local branch of the national Ministry of Transportation and Communications (Unyutsushin-sho)

Ports are listed to north coast from east to west and south coast from west to east, as follows: (see AMS map L571 and H.O. Charts 2305, 2329, and 5676, and Chapter I, C.)

a. Hamasaki-machi.

(1) Location: 2 3/4 miles east of Karatsu-shi on Karatsu-ko.

(2) Harbor: small-boat basin with a harbor depth of 23 to 34 feet.

b. Karatsu-shi: (see AMS map 340458.)

(1) Location: southeastern shore of Karatsu-ko.

(2) Nature of port: principally coal shipping.

(3) Harbor: natural harbor divided into 2 ports by Oshima and causeway connecting island to mainland: Nishi-ko to west and Higashi-ko to east with the 2 connected by a boat channel cutting the Oshima causeway.

Nishi-ko, which has an entrance width of 1,000 yards, contains the main harbor works. The harbor with a general depth of 24 to 30 feet and 33 feet at the entrance has two 500-yard anchorages in 35 feet, three of 400-yards in 25 feet, and four of 300-yards in 15 feet. There is a 2,700-foot retaining wall on the southwest side of Oshima from which project 6 small coaling piers. These are accessible only to lighters which load from cars at a railway trestle 200 feet in the rear of the bulkhead. Its berthing space consists of the main quay accommodating one 350-foot vessel drawing 20 feet and two 200-foot

vessels drawing 12 feet; the central mole to the east of the main quay will accommodate one 200-foot vessel drawing 12 feet; and the bulkhead wharf between the main quay and the central mole accommodates one 200-foot vessel. The basin to the west of the mole, protected by a breakwater on the north, is believed to have a quay of less than 6 feet; a float in the basin, maintained by Mitsubishi, and a 118-foot quarantine pier in shoal water are reported west of the basin.

Higashi-ko, a small-boat basin in the mouth of the Matsuura-gawa located on the southeast side of Oshima, has an entrance width of 1,450 yards. Depths are 6 to 33 feet in the harbor proper, 30 to 34 feet at the entrance to the harbor, 1.5 or more feet in the basin on the southeast side of Oshima, and 4.5 feet in the basin of the Matsuura-gawa. There are two 500-yard anchorages in 35 feet, six 400-yard anchorages in 25 feet, and five 300-yard anchorages in 15 feet. During north winds the anchorages are unsuitable for large vessels because of the heavy seas. There are landing facilities for small craft within the mouth of the Matsuura-gawa.

The high water tidal interval is 12 hours 26 minutes; spring tides rise 8.5 feet and neap tides rise 5.5 feet.

The estimated unloading capacity is 2,000 short tons per 10-hour day. In 1938, 132 steamers entered the port carrying 268,377 tons* and 174 steamers cleared carrying 364,663 tons*. Two sailing vessels entered the port with 195 tons* and 3 cleared with 315 tons*. (Figures marked with an asterisk (*) indicate that information is not available as to kind of tons.) A small steam vessel is used as a tug.

(4) Clearance: by rail (connected to the Kyushu system which serves coaling facilities at Oshima) and by road. Clearance is adequate.

(5) Storage, supplies, repair. For storage there are 8 acres on reclaimed land on the west side of the basin in Nishi-ko, 3 acres at the main quay and central mole in Nishi-ko, and 14 acres for coal in the rear of the coaling piers on Oshima.

Water of poor quality is available from a water boat equipped with a pump, and from 2 tank-boats. The total delivery rate is 50,000 gallons per day. Coal in unlimited quantities is available from barges, which average 95 short tons. Coal is loaded into the barges by hand. The bunkering rate is 150 to 200 tons (type of tons unknown) per hour.

Repairs on a moderate scale is available. Engine and boiler repairs might be undertaken by the West Karatsu Engine and Iron Works.

- c. Tobo.
 (1) Location: close to and northwest of Karatsu-shi within Karatsu harbor limit.
 (2) Harbor: boat basin protected by breakwaters, with 1.5 feet depth.
 (3) Clearance: road only.
- d. Minato-mura.
 (1) Location: northwest shore of Karatsu-wan.
 (2) Harbor: protected by jetty. Entrance 1,500 feet wide.
 Depths: harbor, 6 feet; entrance channel, 21 to 42 feet.
- e. Yobuko-machi.
 (1) Location: 7.5 miles north-northwest of Karatsu-shi.
 (2) Harbor: natural inlet open to north. Anchorages range from 72 to 84 feet, with a deep approach. Tides: springs rise 7.8 feet, neaps, 4.8 feet.
 (3) Clearance: road.
- f. Nakoya-ura.
 (1) Location: first inlet west of Yobuko-ko.
 (2) Anchorage: in 78 to 84 feet, with a deep approach.
 Tides: springs rise 7.8 feet, neaps 4.8 feet.
- g. Hato-misaki.
 (1) Location: northwest of Nakoya-ura.
 (2) Harbor: boat basin on south side of cape.
- h. Madarashima.
 (1) Location: southeast coast of Madara-shima, west of Hato-misaki.
 (2) Harbor: small-craft basin at head of inlet opening to southeast.
- i. Kariya-ko.
 (1) Location: large inlet entered between Toriki-saki and O-saki.
 (2) Anchorage: landlocked, in 30 to 72 feet, soft mud.
- j. Hoshika.
 (1) Location: east of Taka-shima.
 (2) Clearance: ferry operating across Hibi-suido to Taka-shima.
- .. Takakushi.
 (1) Location: east of northern tip of Fuku-shima.
 (2) Harbor: fishing harbor with depth of 18 to 30 feet. The entrance channel is 1,500 feet wide and 42 feet deep. There are several small piers in shallow water.

vessels drawing 12 feet; the central mole to the east of the main quay will accommodate one 200-foot vessel drawing 12 feet; and the bulkhead wharf between the main quay and the central mole accommodates one 200-foot vessel. The basin to the west of the mole, protected by a breakwater on the north, is believed to have a quay of less than 6 feet; a float in the basin, maintained by Mitsubishi, and a 118-foot quarantine pier in shoal water are reported west of the basin.

Higashi-ko, a small-boat basin in the mouth of the Matsuura-gawa located on the southeast side of Oshima, has an entrance width of 1,450 yards. Depths are 6 to 33 feet in the harbor proper, 30 to 34 feet at the entrance to the harbor, 1.5 or more feet in the basin on the southeast side of Oshima, and 4.5 feet in the basin of the Matsuura-gawa. There are two 500-yard anchorages in 35 feet, six 400-yard anchorages in 25 feet, and five 300-yard anchorages in 15 feet. During north winds the anchorages are unsuitable for large vessels because of the heavy seas. There are landing facilities for small craft within the mouth of the Matsuura-gawa.

The high water tidal interval is 12 hours 26 minutes; spring tides rise 8.5 feet and neap tides rise 5.5 feet.

The estimated unloading capacity is 2,000 short tons per 10-hour day. In 1938, 132 steamers entered the port carrying 268,377 tons* and 174 steamers cleared carrying 364,663 tons*. Two sailing vessels entered the port with 195 tons* and 3 cleared with 315 tons*. (Figures marked with an asterisk (*) indicate that information is not available as to kind of tons.) A small steam vessel is used as a tug.

(4) Clearance: by rail (connected to the Kyushu system which serves coaling facilities at Oshima) and by road. Clearance is adequate.

(5) Storage, supplies, repair. For storage there are 8 acres on reclaimed land on the west side of the basin in Nishi-ko, 3 acres at the main quay and central mole in Nishi-ko, and 14 acres for coal in the rear of the coaling piers on Oshima.

Water of poor quality is available from a water boat equipped with a pump, and from 2 tank-boats. The total delivery rate is 50,000 gallons per day. Coal in unlimited quantities is available from barges, which average 95 short tons. Coal is loaded into the barges by hand. The bunkering rate is 150 to 200 tons (type of tons unknown) per hour.

Repairs on a moderate scale is available. Engine and boiler repairs might be undertaken by the West Karatsu Engine and Iron Works.

- c. Tobo.
 (1) Location: close to and northwest of Karatsu-shi within Karatsu harbor limit.
 (2) Harbor: boat basin protected by breakwaters, with 1.5 feet depth.
 (3) Clearance: road only.
- d. Minato-mura.
 (1) Location: northwest shore of Karatsu-wan.
 (2) Harbor: protected by jetty. Entrance 1,500 feet wide.
 Depths: harbor, 6 feet; entrance channel, 21 to 42 feet.
- e. Yobuko-machi.
 (1) Location: 7.5 miles north-northwest of Karatsu-shi.
 (2) Harbor: natural inlet open to north. Anchorages range from 72 to 84 feet, with a deep approach. Tides: springs rise 7.8 feet, neaps, 4.8 feet.
 (3) Clearance: road.
- f. Nakoya-ura.
 (1) Location: first inlet west of Yobuko-ko.
 (2) Anchorage: in 78 to 84 feet, with a deep approach.
 Tides: springs rise 7.8 feet, neaps 4.8 feet.
- g. Hato-misaki.
 (1) Location: northwest of Nakoya-ura.
 (2) Harbor: boat basin on south side of cape.
- h. Madarashima.
 (1) Location: southeast coast of Madara-shima, west of Hato-misaki.
 (2) Harbor: small-craft basin at head of inlet opening to southeast.
- i. Kariya-ko.
 (1) Location: large inlet entered between Toriki-saki and O-saki.
 (2) Anchorage: landlocked, in 30 to 72 feet, soft mud.
- j. Hoshika.
 (1) Location: east of Taka-shima.
 (2) Clearance: ferry operating across Hibi-suido to Taka-shima.
- .. Takakushi.
 (1) Location: east of northern tip of Fuku-shima.
 (2) Harbor: fishing harbor with depth of 18 to 30 feet. The entrance channel is 1,500 feet wide and 42 feet deep. There are several small piers in shallow water.

1. Kugi-shima.

(1) Location: small island just off east central shore of Imari-wan, 4 miles northwest of Imari-machi.

(2) Harbor: small fishing harbor on south side.

m. Imari-machi.

(1) Location: at head of Imari-wan.

(2) Harbor: the harbor is located in the mouth of the Iwaregawa, is available to small boats only. There is a shoal in the inner harbor; the entrance channel to which is 1.5 feet. Tides: spring rise is 10 feet, neap tide rise is 6 feet. The anchorage in Iwari-wan, which has a deep approach, is 66 to 120 feet in depth.

(3) Landing facilities: pier equipped with coal conveyor. Harbor works were in progress in 1938.

(4) Clearance: rail and road.

n. Kujukutsu.

(1) Location: southwest shore of Imari-wan; close to and northwest of Imari-machi.

(2) Harbor: boat basin.

(3) Clearance: rail and road.

o. Uranosaki.

(1) Location: 4 miles north-northwest of Kujukutsu.

(2) Harbor: open roadstead. 30 feet close off shore.

(3) Landing facilities: 100-yard pier, equipped with coal conveyor, capable of accommodating vessels of 1,000 tons deadweight. There are 2 mooring buoys off the head of the pier.

(4) Clearance: rail and road.

(5) Supplies: coal and water are available at the pier.

There is a water boat of small capacity.

p. Hama-machi.

(1) Location: south coast, northwest shore of Ariake-kai.

(2) Harbor: small fishing port with basin. The minimum depth is 3 feet in the basin.

(3) Clearance: rail and road.

q. Suminoe (Fukudomi-mura, Kinoshima-gun).

(1) Location: south coast, head of Ariake-kai, 5 miles southwest of Saga-shi.

(2) Nature of port: exclusively used for exporting coal.

(3) Harbor: 2 miles inside mouth of Suminoe-kawa. The channel leading to the river mouth is extremely narrow and shallow. Vessels of 1,000 to 3,000 tons* enter at high tide. At high water springs vessels drawing 21 feet can enter; at high water neaps tides the maximum draft that can be taken is 15 feet. Least charted depth in the channel, is 3 feet. In the river below the village there are 3 mooring buoys. Two vessels, headed

upstream and downstream respectively, can secure to the same buoy.

(4) Landing facilities: coal is brought alongside vessels in small vessels directly from mines up river. It can be delivered at the rate of about 200 tons per hour.

(5) Clearance: rail at Ushizu-machi 3 miles due north. Road. A ferry crosses the river.

4. Air Facilities.

As shown in Table 22, at the end of 1944 there was one classified and possibly one reported landing ground in Saga-ken. Kurume (Kurume West) Landing Ground was formerly reported to be an army airfield. There is a possibility that Saga Landing Ground may be the same as Kurume Landing Ground.

TABLE 22

Airports & Seaplane Anchorages, 1944, Saga-ken.

Name	Type	Approximate Locations Classified*
Kurume (Kurume West)**	LG	8mi. NE of Saga
Saga(may be KurumeLG)	LG	Reported* Near Saga.

* All fields whose existence has been established by reasonably conclusive evidence are included in the CLASSIFIED list. Those fields whose existence is questionable owing to possession of only dubious or insufficient evidence are included in the REPORTED list.

** Alternate names are carried in parentheses after the principal names.

Abbreviations

LG= landing ground without an all-weather runway and without complete facilities.

B. COMMUNICATIONS

Saga-ken is included with Fukuoka-ken, Miyazaki-ken, Kagoshima-ken, Kumamoto-ken, Nagasaki-ken and Oita-ken in a single administrative district under the Kumamoto Bureau of Communications (Kumamoto Teishin-kyoku) of the Ministry of Transportation and Communications (Unyu Tsushin-sho). The headquarters of the district are located at Kumamoto-shi, Kumamoto-ken. The Bureau, headed by a chief, consists of 4 main departments: business, engineering, management and savings. The chief of the bureau is responsible for all civilian communication activities, telephone, telegraph and postal within the district. (See OSS map 3888 for location of telecommunications system).

Actual operation of submarine cables, as well as radio-telegraph and radio telephone, in Saga-ken is nominally in the hands of the International Telecommunications Co., which is, however, entirely dependent on the Japanese government.

1. Telephone.

As of 1939 Saga-ken had approximately 6110 telephones, an increase of 452 since 1937. This represents an average of 0.89 telephones for every 100 persons, which compares with 1.38 for Japan proper. In 1940, there were 549,014,000 and 41,673 local and long distance calls respectively, for the Kumamoto Communications District. It is estimated that the daily average of calls handled in Saga-ken for the same year were 105,290 local and 7,990 long distance calls. The local calling rate (number of calls per day per telephone) fluctuated between 15 and 17, which is extremely high in comparison to call rates in the United States, but is an average figure for Japan. All telephone messages are rigidly funneled. A telephone call from one communications district to another must pass through the telephone central of each district, as well as the local exchange at the end of the call. Because of this funneling of messages, long distance circuits are particularly vulnerable at exchanges, and the expansion of the system is limited by the capacity of these installations.

The main communications route in Saga-ken is part of one of the series of great loops, apparently designed to meet military needs, so that every city and town along this route can be reached from 2 directions. The main cable route enters the prefecture from Fukuoka-ken and the north, paralleling the Kita Kyushu RR line to Karatsu-shi. From Karatsu-shi it follows the Imari RR line to Imari-machi, Arita-machi and then to Sasebo-shi in Nagasaki-ken. An important extension off the main route is the circuit from Karatsu-shi to Yobuko-machi which connects

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the submarine cable to Korea. During the last 10 years, the Bureau of Communications has constructed, due to the insistence of the army, an elaborate network of subterranean and submarine cables throughout Japan. For this reason it can be expected that this main route is of cable construction rather than open-wire. The underground cables are laid in ducts, and are paper-insulated and lead-covered. The ducts are generally iron tubes, but, where there is no surface water, earthen or concrete tubes are used.

Telephone service will be found in the majority of the other cities and towns not situated on the main route, if they are located on main highways or railroads. In most cases, the open-wire feeder circuits to these cities and towns are constructed of 1.6 mm. hard-drawn copper wire. Telephones will be found in practically all police stations, police sub-stations and police boxes in the prefecture.

Telephone rates in Saga-ken are flat rate according to 1938 figures, 60 to 90 yen per year were charged, with the exact rate being determined according to the number of subscribers.

The telephone exchanges (single and multiple position magneto switchboards), along with telegraph installations, will be found in the same buildings as the post offices. In a majority of cases, one clerk is responsible for all the contacts that the general public has with the communications board.

It is estimated that there are 1,500 telephones in Saga-shi and 780 in Karatsu-shi. The majority of these telephones will be of the wall type. There are very few private branch exchanges (PBX) and only 13 public telephones.

2. Telegraph.

Karatsu-shi is the center of telegraph activity in Saga-ken. It is connected by direct trunks with the Communications Zone Center at Kumamoto-shi, for which it serves, together with Saga-shi, as a sub-center.

There are main trunk lines from Karatsu-shi to Yobuko-machi, connecting at the latter point with submarine cables. Also from Karatsu-shi are main trunk lines to Fukuoka-shi, Fukuoka-ken, leaving the prefecture at Hamasaki-machi. The important link in the Sasebo-Kumamoto circuit enters the prefecture from Sasebo-shi at Arita-machi and follows the Nagasaki RR. line to Tosu-machi via Takeo-machi, Saga-shi and Kanzaki-machi. At Tosu-machi it connects with the Fukuoka-Kumamoto main trunk line. Traffic originating in Saga-ken is

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is routed through the Karatsu-shi or Saga-shi sub-centers to the communications zone center at Kumamoto. Telegraph lines are of both aerial and underground construction.

The telegraph central for Karatsu-shi is believed to be located in the post office building, with branch offices in most of the sub-post offices throughout the city. This building is located in the northeast section of Karatsu-shi, about 100 yards northeast of the railroad station. In the remainder of the prefecture, however, telegraph service facilities are located in either the second class post office or railroad station. In 1936, telegraph service was also available in 59 of the 70 third class post offices. Such combination offices are particularly strategic, as they usually contain telephone facilities as well.

It is believed that printer telegraph will be found in Yobuko-machi, Karatsu-shi and Saga-shi. The most common types of equipment are: Western Electric Duplex, Morkum Double Duplex, Teletype, Baudot Multiplex, and the Japanese letter printer. The outlying areas depend almost entirely on hand keys.

Ordinary telegrams dispatched from the prefecture in 1936 totaled 1,017,000 as against a total of 1,149,000 delivered for the same year. Rates for official and private telegrams are 15 Japanese kana characters or 5 European words for 40 sen, with an overcharge of 7 sen for 5 additional Japanese kana characters or one additional European word.

3. Radio

There are no known radio transmitter installations in Saga-ken.

Public address systems, being an integral part of Japanese life, can be found in such places as the Otoguchi Grounds (park) in Karatsu-shi; railroad stations; and schools throughout the prefecture. Many of the towns throughout the prefecture have small municipal parks equipped with loud speakers for relaying the programs of the Broadcasting Corporation of Japan. Similar equipment is frequently installed near shrines or other places where crowds gather.

Radio broadcasting is one of the chief means of public instruction in Saga. Although there are no broadcasting facilities in the prefecture, programs are picked up from JOLK, the 500 watt transmitter of the Japan Broadcasting Corporation in nearby Fukuoka-ken. The corporation likewise maintains 11 scattered information offices throughout the prefecture.

As of April 1943, there were approximately 40,218 licensed

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receivers, or 30.4 radios per 100 families. These receivers are similar to small table models manufactured in the United States. Shortwave reception is prohibited, and there is only one band provided on receivers, covering roughly 550 to 1,500 kc, or slightly less than the United States standard broadcast band. These sets are of 3 and 4 tubes and are designed solely for local reception. Edison screw-type sockets are used. Since 1925 the operation of radio receivers has been licensed in Saga-ken. Each receiver owner is required to post his license disc on the door of his home. In April 1945, the month rate was doubled, the charge being 6½ yen for 6 months, or 12 yen for a year. The application fee was abolished. A continuing check is made by repairmen and consultants, who travel throughout Saga-ken under the sponsorship of the Broadcasting Corporation of Japan, and by specially selected repair shops. In this capacity they are able to watch for indications of illegally constructed or operated receivers, or clandestine transmitters.

4. Cables

Yobuko-machi, in Saga-ken, is the terminus of important cables from Korea. Of the 4 cables terminating here, 2 are for telephone and 2 are for telegraph service. Several short cables to the small islands north of Saga-ken have their terminals in the Yobuko-Karatsu area. (See Table 23).

TABLE 23

Submarine Cable Landings, 1944, Saga-ken.

From	To	Number of Cables	Type	H.O. Chart
Yobuko-machi	33°32' N 129°54' E	Indoiji Iki-shima, Nagasaki Pref.	33°44' N 129°46' E	1 Telg. 2305 2475
Yobuko-machi	33°32' N 129°54' E.	Kochi, Tsu-shima, Nagasaki Pref.	34°16' N. 129°20' E	1 telp. 2305 2475
Yobuko-machi	33°32' N. 129°54' E	Gonoura, Iki-shima Nagasaki Pref.	33°43' N 129°40' E	2 telp. & telg. 2329 2475
Hoshiga	33°26' N. 129°47' E.	Taka-shima, Saga Pref.	33°25' N 129°47' E.	2 telp. and/or telg 2329 2475

5. Postal Service.

Postal headquarters for this prefecture are located in Kumamoto-shi, Kumamoto-ken.

In 1936 there were 133 post offices in Saga-ken, classified as shown in Table 24. The locations of these post offices are

shown in Table 25.

TABLE 24

Post Offices, 1936, Saga-ken.

Class	Number
1. First class; administrative headquarters of communications district	0
2. Ordinary first class	1
3. Second class	1
4. Special third class	1
5. Third class, with telegraph and telephone	44
6. Third class, with telegraph only	0
7. Third class, with telephone only	0
8. Ordinary third class, without telegraph or telephone	0
9. Third class, no collection or delivery, with telegraph and telephone	14
10. Third class, no collection or delivery, with telegraph only	1
11. Third class, no collection or delivery, with telephone only	0
12. Third class, no collection or delivery, no telegraph or telephone	10
13. Sub-post office; collection and delivery, but no telegraph or telephone	1
14. Classification unknown	60
Total	133

TABLE 25

Locations of Post Offices, 1936, Saga-ken.

(Numbers indicate class of post office as shown in Table 22)

SAGA-SHI	2
KARATSU-SHI	3
SAGA-GUN	
Kubota-mura	5
Nabeshima-mura	12
Takagise-mura	5
Kasuga-mura	5
Kawakami-mura	9
KANZAKI-GUN	
Kanzaki-machi	5
Hasuike-machi	5
Shirota-mura	9

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Higashiseburi-mura	12
Niyama-mura	5
Sefuri-mura	5
Mitsuse-mura	5
MIYAKI-GUN	
Tosu-machi	5
Tajiro-machi	5
Nakahara-mura	5
Kitashigeyasu-mura	9
OGI-GUN	
Ogi-machi	5
Ushizu-machi	5
Mikatsuki-mura	12
Ashikari-mura	12
Higashitaku-mura	5
Taku-mura	5
Nishitaku-mura	12
Kitataku-maru	12
Kitayama-mura	5
Hokusan-mura	5
HIGASHI MATSUURA-GUN	
Namasaki-machi	5
Ochi-machi	5
Yobuko-machi	5
Sashi-machi	5
Tamashima-mura	9
Nanayama-mura	5
Onizuka-mura	12
Kirigo-mura	5
Iruno-mura	10
Ariura-mura	5
Nagoya-mura	5
Minato-mura	9
NISHI MATSUURA-GUN	
Imari-machi	4
Arita-machi	5
Kurokawa-mura	5
Hatatsu-mura	5
Minamihata-mura	9
Okawa-mura	5
Matsuura-mura	5

Mail is ordinarily delivered 4 or 5 times each day from first class offices, 3 or 4 times each day from second class offices and twice per day from third class offices.

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6. Newspapers.

As of 1937, there were 103 newspapers and magazines published in Saga-ken. There were 6 publications with daily editions, 12 with more than 4 editions per month and 85 which had less than 3 editions per month. In 1938 the number of daily newspapers was reduced to 4, a number which may have been further reduced by mergers since that date. In 1943, newspapers in Saga-ken had a circulation of 85,338, with a population ratio compared to distribution of 8.2. An important local newspaper is the Saga Godo Shimbun, located in Matsubara-cho, Saga-shi.

In keeping with the general prevailing conditions, in that the northern half of Japan is being served by Tokyo newspapers and the southern half by Osaka newspapers, it is very likely that Osaka papers have a large circulation in Saga-ken. The leading Osaka Papers are the Osaka Asahi Shimbun and the Osaka Mainichi Shimbun. In addition to their large metropolitan editions, these papers publish provincial editions, which are preferred by readers in smaller cities and rural areas, since they give local news items together with national and international coverage. Some provincial issues are printed in metropolitan centers and transported by plane and train to the outlying areas.

Although freedom of the press is theoretically guaranteed under the Japanese Constitution, the Board of Information has complete authority over the publication of all printed matter. Actual supervision is exercised by the police, to whom a copy of each publication of any nature must be furnished.

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C. UTILITIES

1. Gas.

Two public utility gas enterprises operate in Saga-ken, serving Saga-shi and Karatsu-shi, and in 1939 supplied 2,067 consumers with a total of 944,000 cubic meters of gas.

Table 26 lists the number of consumers, annual sales and length of mains, as of 1938.

TABLE 26

Public Utility Gas Enterprises, 1938, Saga-ken.

City	Company	Consumers	Annual sales (cubic meters)	Length of mains (kilometers)
Saga	Saga Limited Liability Cooperative Assn.	1,200	500,000	25.6
Karatsu	Karatsu Gasu KK	700	200,000	

2. Water Supply and Distribution.

Water is plentiful in Saga-ken and the mean annual precipitation is approximately 70 inches. According to available records, there are 7 known waterworks in the prefecture, 2 owned by cities, 4 by towns and villages, and one by a private company. In the prefecture, 12,120 or 9.5 percent of the buildings are supplied with water. Of the 12,120 buildings supplied in Saga-ken in 1937, 7,538 were identified as follows: 336 private, 37 common, one public, 6,703 metered and 461 fire hydrants.

The following communities in Saga-ken are known to have waterworks: Saga-shi, Karatsu-shi, Hamasaki-machi, Imari-machi, Takeo-machi and Yobuko-machi.

Cities, towns and village waterworks are built and maintained by the communities concerned subject to the approval of the Ministry of Welfare (Kosei-sho), when the project is designed to serve more than 10,000 people or where the cost is in excess of 30,000 yen, or where the national government has granted a subsidy. In other cases, the approval of the prefectural governor only is required. Private companies may build and operate public water works when the community is unable to do so.

Available data concerning waterworks in Saga-ken follows: (figures are for 1937 unless otherwise noted)

a. Saga-shi. Water works built in year 1916.

Population served	33,259.0
Percent of total population	70.0
No. of building units supplied	6,393.0
Percent of total units	72.1
Average daily supply (in gallons)	995,175.0
Average daily per capita consumption (in gallons)	28.0
Length of distribution mains (miles)	32.2
Water pressure in lbs/in ² (1927)	22.0
Total outlets (all kinds)	5,875.0
Metered outlets only	5,076.0
Fire hydrants (1927)	409.0
Private wells in city	1,200.0

The planned ultimate capacity of the water system is 1,100,000 gallons per day.

Source of supply. Water supply is from drilled wells at Higashitashire, 756 feet deep, 12 1/2" casing; Nagase, 618 feet deep, 12 1/2" casing; and Akamatsu, 897 feet deep, 12 1/2" casing.

Supply line installation. At each well there is a storage pond and rapid filtration and aeration installations of unknown capacities.

Distribution system. The distribution system has 3 reservoirs, 2 with a total of 220,000 gallons capacity and a third of unknown capacity. Records also indicate a reservoir 43 feet high, which may be one of the above mentioned.

The city is serviced partly by gravity and partly by a pressure system. Two distribution pumps of unknown capacity are employed. The gravity system takes advantage of the original storage tank head. During the severe drought of 1939 and 1940, the city of Saga had to resort to water usage restrictions.

b. Karatsu-shi. Water works built in year 1937.

Population served	7,310.0
Percent of total population	30.4
No. of building units supplied	1,462.0
Percent of total units	30.4
Average daily supply (in gallons)	195,750.0
Average daily per capita consumption (in gal.)	28.0
Length of distribution mains (miles)	20.5
Total outlets (all kinds)	1,568.0
Metered outlets only	1,249.0
Private wells in city	4,100.0

No information is available on the supply and distribution installations.

At the port, facilities for water supply to vessels are provided, including a water boat equipped with a pump and 2 tank boats. Total delivery rate is approximately 50,000 gallons per day. In 1937, before the construction of the city water works, the quality of the port water was reported as poor but this may have been improved subsequently.

c. Imari-machi. This town has had a water works since 1918 and at present it serves practically all of the population. The average daily capacity is 172,200 gallons delivered at a pressure of 36.4 lbs/in. In 1927 there were 46 fire hydrants. The water source is from the Imari-gawa and its purity may be indicated by the following bacteria colonies per cubic centimeter count made in 1927:

Raw water at source: max. 426, min. 81, mean 253.
 Finished water in mains: max. 62, min. 9, mean 35.

d. Takeo-machi. According to 1927 records, this town had a waterworks system with a capacity of 110,000 gallons, and per capita consumption of 22 gallons per day. The source of supply is from a drilled well at Hachinanami-ku. Further details are not available.

e. Hamasaki-machi. According to 1944 records, this town has a waterworks system, but details are lacking.

f. Yobuko-machi. This town was listed, in 1944 records, as having a waterworks, but no data as to water source, equipment or distribution is available.

3. Sewage Disposal.

According to available records, no modern sewage disposal systems existed in Saga-ken up to 1940.

As elsewhere in Japan, night soil collection is an accepted method for urban sewage disposal. For yard stick purposes primarily, it may be stated that in 1939, in Saga-shi 1,139 homes were served and the total volume of night soil removed was approximately 1,000,000 gallons. In Karatsu-shi in 1937, 6,947 homes were served and the total volume of night soil removed in 1939 was approximately 2,000,000 gallons. Ninety-nine tons of sludge were used as fertilizer in 1938.

4. Electric Power.

At the end of 1943, the electric power generating plants of Japan had an estimated total capacity of 11,400,000 kilowatts and an estimated production of 46,700,000 kilowatt hours. The Kyushu Supply Area, comprising all the prefectures of Kyushu, had approximately 15 percent of the total power capacity of Japan and generated approximately 18 percent of the total production of Japan. Saga-ken produced some 2 percent of the

total electric energy generated within the Kyushu Supply Area.

The Kyushu Supply Area is sub-divided into 3 sub-areas or transmission networks: Kokura-Tobata-Yawata (covering these cities and nearby areas); West Kyushu (covering roughly the remainder of Fukuoka-ken, all of Nagasaki and Saga prefectures, and the western portions of Miyazaki, Kumamoto, and Kagoshima prefecture); and East Kyushu (consisting of Oita-ken and the eastern parts of Miyazaki; Kumamoto; and Kagoshima prefectures).

The prevailing frequencies are: West Kyushu, 60 cycles, and East Kyushu, 50 cycles. Energy transfer between these sub-divisions is limited by the capacity of dual-frequency generators connected to either system. (See Table 27).

a. Capacity and production. Saga-ken has 9 electric generating plants ranging in capacity from 1,000 to 8,400 kilowatts. All are hydro-electric and have a combined capacity of 26,230 kilowatts. Estimated production in 1943 was 153,000,000 kilowatt hours. Table 27 lists these plants and Appendix III gives details of installed equipment.

TABLE 27

Electric Generating Plants, 1944, (1,000 or More Kilowatt Capacity) Saga-ken

Name	Location	Type; frequency	Capacity (in kilowatts)	Rank in prefecture
Hirotaki No. 1	Sefuri-mura, Kanzaki-gun	H,60	1,500	7
Hirotaki No. 2	Niiyama-mura, Kanzaki-gun	H,60	1,000	9
Kawakamigawa No. 1	Nansan-mura, Ogi-gun	H,60	8,400	1
Kawakamigawa No. 2	Kose-mura, Saga-gun	H,60	2,200	5
Kawakamigawa No. 3	Nansan-mura, Ogi-gun	H,60	2,400	3
Kawakamigawa No. 4	Kose-mura, Saga-gun	H,60	1,100	8
Kawakamigawa No. 5	Matsuume-mura, Saga-gun	H,60	2,400	3
Kiuragi	Kiuragi-mura Higashimatsuura-gun	H,60	5,230	2
Tamashima	Nanayama-mura, Higashimatsuura-gun	H,60	2,000	6

Legend: H-hydro

b. Transmission and distribution. Electric energy is transmitted and distributed by means of 3 phase, alternating current circuits. The hydro-electric generating stations along Kawakami-gawa are connected by means of a 66 kilovolt single-circuit line. The Hirotaki stations No. 1 and No. 2 are connected to the same system by means of an 11 kilovolt, single-circuit line. A 66 kilovolt 2 circuit line runs northeasterly from Nagasaki-shi to Fukuoka-shi through the approximate center of Saga-ken. Running in a southeasterly direction from Saga-shi, a 110 kilovolt line connects with hydro-electric stations located in the approximate center of Kyushu. Other lines, of 24 kilovolts, supply other sections of Saga-ken. OSS map 7204 gives a schematic picture of transmission in the prefecture.

Distribution is by means of 2.3 to 11 kilovolt circuits. Service to commercial and industrial consumers is at standard voltages of 110 and 220. For industrial consumers, 440 volt, 3 phase service is available.

c. Utilization. Five industrial consumer groups account for approximately 85 percent of the kilowatt-hours used in Saga-ken. These, in descending amount of consumption, are mining, food processing, pottery manufacture, marine products processing and the textile industry.

d. Administration. The generation and transmission of electric power in Saga-ken, as in the remainder of Japan, is handled by the privately-owned but government controlled Nippon Hassoden KK (Japan Electric Generation and Transmission Company). The headquarters of this company are located in Tokyo and a main branch office is in Fukuoka-shi. Distribution of electric power throughout Saga-ken is handled by the government-controlled Kyushu Haiden KK (Kyushu Electric Distribution Co.). These companies are under the direct control of the Munitions Ministry (Gunju-sho).

V. SOCIAL ORGANIZATION AND CULTURAL INSTITUTIONS.

A. GOVERNMENT AND ADMINISTRATION

1. Prefectural Government.

a. Governor (Kenchiiji). The Governor of Saga-ken is of "ordinary" chokunin rank. Prefectural governors are appointed on recommendation of the Premier. They have primary responsibility for the implementation of nationally determined policy at the prefectural level and are accountable to the Minister of Home Affairs. Under the present regional organization of Japan, they are accountable also to the administrative head of the region in which the prefecture is located.

b. Secretariat (Chiji Kambo). The governor's secretariat is composed of his personal assistants and internal administrators, as distinguished from the personnel of the departments. In 1943 in Saga-ken, the secretariat consisted of the following sections:

General Affairs Section (Shomu-ka)
Documents Section (Bunsho-ka)
Investigations Section (Chosa-ka)

c. Departments (Bu). Prefectural administrative functions are performed by departments and sections. In 1943 in Saga-ken, these departments and the sections thereunder were as follows:

Internal Administration Department (Naisei-bu)
Agricultural Affairs Section (Nomu-ka)
Commerce and Industry Section (Shoko-ka)
Shrines, Temples and Military Affairs Section (Shaji Heiji-ka)
Welfare Section (Kosei-ka)
Food Administration Section (Ryosei-ka)
Education Section (Kyoiku-ka)
Public Works Section (Doboku-ka)
Forestry Affairs Section (Rimmu-ka)
Cultivated Land Section (Kochi-ka)
Marine Products Section (Suisan-ka)
Sanitation Section (Eisei-ka)
Police Department (Keisatsu-bu), (see Chapter V., B.)

d. Assembly (Kenkai). The prefectural assembly deliberates and votes upon the budget, accounts, prefectural taxes, and fees, and public works, but may be over-ruled by the Governor. It also may suggest but may not initiate regulations. Prior to June 1943, prefectural elections occurred concurrently with national elections. Since June 1943, elections to prefectural

assemblies have been suspended. In May 1945 the Cabinet approved an election to fill vacancies in prefectural assemblies. In 1935, the membership of the Saga-ken assembly was as follows:

From cities (<u>shi</u>)	2
From counties (<u>gun</u>)	28
Total	30

e. Council (Ken Sanikai). Prefectural councils act for assemblies when they are not in session. Councils consist of members of the assemblies elected by them, the prefectural governors as chairmen, and 2 high administrative officials of the prefectures. In 1935, the elected membership of the Saga-ken council was 10.

f. Administrative personnel. In 1936, there were 53 classified civil service employees of sonin rank and 251 of hannin rank in the Saga-ken administration.

2. Representation in the Imperial Diet (Teikoku Gikai).

In 1945, Saga-ken had 6 representatives in the Imperial Diet elected in 1942 from 2 election districts, 3 from the first and 3 from the second.

Table 28 is an analysis of the 1937 and 1942 elections of representatives to the Imperial Diet from Saga-ken:

TABLE 28

Election Analysis, 1937 & 1942,
Saga-ken.

	1937	1942
Number of representatives	6	6
Candidates for election	10	12
Qualified voters	137,052	-----
Valid votes cast	116,252	127,625
Invalid votes cast	1,178	-----
Voters per 1,000 population	200.4	-----
Population represented per member	113,983	-----

3. Kyushu Administrative Region.

Saga-ken is in the Kyushu Administrative Region which contains, in addition, the prefectures of Fukuoka, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima and Okinawa. The office of the Superintendent General (Chiho Sokan Fu) of the Kyushu region is located in Fukuoka-shi in Fukuoka-ken. Since their institution in 1943 as a war-time measure to control Japan's

economy, the regions have undergone territorial and frequent functional and organic changes. They were started as a means of achieving decentralization of administration while retaining centralization of policy-making and control. They have come to be regarded as an integral part of the present war-time governmental organization of Japan. See OSS Map 6254.

4. Local Government.

a. Cities (shi). There are 2 municipalities in Saga-ken with the legal status of shi: Saga and Karatsu.

(1) Administrative officials. The following are 1936 combined figures for the cities of Saga-ken:

Mayors	2
Deputy mayors	2
Treasurers	2
Committees	116
Deputy and honorary ward heads	218
Other officials (salaried)	130
Total salaried personnel	470

(2) Assemblies (shikai). In 1937, the combined membership for the 2 city assemblies of Saga-ken was 60. The number of voters was 13,160.

(3) Councils (shi sanjikai). In 1935, the combined membership of the city councils in Saga-ken was 18.

b. Towns (machi) and townships (mura). There are 21 towns and 102 mura in Saga-ken, (see Appendix IV for list of names).

(1) Administrative officials. The following are the 1936 combined figures for the towns and townships in Saga-ken:

Mayors: honorary	122
salaried	1
Deputy mayors: honorary	115
salaried	8
Treasurers	121
Committees	35,010
<u>Buraku</u> heads and deputies	3,199
Other officials (salaried)	636
Total personnel	39,212

(2) Town assemblies (chokai). The following are figures for 1937, at which time there were 20 towns in Saga-ken:

Number of town assemblies in prefecture 20
 Total membership 356
 Voters 29,284

(3) Township assemblies (sonkai). The following are 1937 figures at which time there were 103 mura in Saga-ken:

Number of township assemblies in prefecture 103
 Total membership 1,428
 Voters 87,838

B. PUBLIC SAFETY

1. Police.

The civil police of Saga-ken in 1938 consisted of the prefectural police chief (keisatsubu-cho), 4 police superintendents (keishi), 20 police inspectors (keibu), 47 assistant police inspectors (keibuho), 65 police sergeants (junsabu-cho), and 470 policemen (junsu). This total personnel of 607 represents a ratio of one police officer for each 1,173 population compared with a national ratio of one policeman for each 1,000 population.

In 1943, the prefectural police department (keisatsu-bu) of Saga-ken contained the following administrative sections: Special Higher Police, Police Affairs, Peace Preservation, Insurance, and Employment with an administrative office in charge of each.

In 1938, there were in Saga-ken 15 police stations (keisatsu-sho), 15 police substations (keibuho junsabu-cho) and 196 police boxes (junsu chuzai). There is a police training center located in Akamatsu-cho in Saga-shi. The exact number of police detention quarters (keisatsu ryuchijo) in Saga-ken is not known.

The following are locations of police stations:

Saga-shi: Matsubara-cho, center of city, northeast edge of old castle grounds.

Karatsu-shi: east central part of town, 300 yards north of Karatsu Railway Station.

Kanzaki-gun; Kanzaki-machi, northwest edge of town, adjacent to subprefectural office.

Miyaki-gun: Tosu-machi, Toki, southern part of town, near Kagoshima Main line railroad tracks.

Ogi-gun: (1) Ogi-machi, 100 yards north of subprefectural

office and city hall. (2) Taku-mura, center of mura, on prefectural road, about 100 yards from Ureshino-gawa.

Nishimatsuura-gun: (1) Imari-machi, east section of city, 50 yards southeast of subprefectural office. (2) Arita-machi, center of town on Nagasaki Main Line, 250 yards southeast of town office.

Kinoshima-gun: (1) Takeo-machi, center of town. (2) Rokkaku-mura, data not available.

Fujitsu-gun: (1) Kashima-machi, east central part of town, 100 yards north of town office. (2) Ureshino-machi, center of town, on prefectural road, about 100 yards from Ureshino-gawa.

Higashimatsuura-gun: (1) Ochi-machi, eastern section of town, 600 yards northwest of Ochi Railway Station on Karatsu Line. (2) Yobuko-machi, north section of town, 100 yards southeast of town office.

Saga-gun: Higashikawasoe-mura, west bank of Chukiego-gawa.

Saga-ken undoubtedly has a detachment of kempei (gendarmarie), but no special information is available to distinguish their activities and organizations in Saga-ken from the rest of Japan.

2. Prisons.

The Saga prefectural prison, known as the Saga Prison, is located in the western outskirts of the city of Saga about one-half mile south of the Nagasaki Main Line and about one mile northwest of the prefectural offices located in the center of the city. In 1938, administrative personnel of this prison consisted of one assistant governor of prisons, 3 chief wardens, one doctor, 2 chaplains, 3 assistants for industrial work, 13 matrons, 53 warders, and 10 hired help, a total of 86. Based on averages, this number of warders indicate a prison population of approximately 800 inmates, and the presence of matrons indicates a women's section of the prison. The prison is listed as being under the administrative control of the governor of Nagasaki Prison in Nagasaki-ken. Such an administrative setup is not unusual in the case of the smaller prefectures, which are often combined with an adjacent larger prefecture for penal administration, the senior prison official reporting to the Ministry of Justice for all prisons in the area. (See OSS Map 6254.)

Maps also indicate another prison or jail in Akamatsu-cho district of the city of Saga, about $\frac{1}{4}$ mile southeast of the prefectural buildings in the center of the city. No other information is available relative to this place of confinement.

Table 29 gives the ratio of prisons per 100,000 persons in Saga-ken, compared with the ratio for the whole of Japan proper:

TABLE 29

Ratio of Prisoners, 1929-38, Saga-ken.
per 100,000

Year	Saga Prefecture	Japan Proper
1929	86.1	153.2
1930	92.7	166.8
1931	143.9	170.9
1932	119.6	188.6
1933	120.9	199.6
1934	138.2	202.2
1935	142.5	190.8
1936	158.4	197.5
1937	93.9	177.4
1938	73.0	157.5
Average	116.9	180.5

3. Fire Fighting and Control.

As of 1937, fire fighting stations, personnel and equipment in Saga-ken consisted of 129 volunteer fire brigades; 45,264 volunteer fire brigade personnel; 5 automobile pumps; 3 motorcycle pumps; 108 other type gas powered pumps; 314 hose carts; 636 hand pumps; and 167 reservoirs for fire use. There were no fire boats, steam engine pumps or mechanical ladders.

In 1937, there were no fire fighting personnel, as regular members of a fire department under the jurisdiction of the police. All fire fighting was by volunteer fire brigades, maintained at the expense of local government under police supervision.

4. Civilian Defense.

The local civilian defense organization is built around the

neighborhood association to which every Japanese belongs, with its activities supervised by the police. At the prefectural level, civilian defense is administered by the prefectural police bureau; however, even in 1943 Saga-ken had not established a civilian defense section in the prefectural police department as had most of the other prefectures. Obviously, civilian defense does not assume the importance in Saga-ken as in other prefectures with metropolitan and industrial areas.

5. Incidence of Crime.

The following (Table 30) is a table of arrests for criminal offenses in Saga-ken during the year 1937:

TABLE 30

Arrests of Criminals, 1937,
Saga-ken.

Crime	Saga-ken	Japan
Interference with the execution of official duties	4	489
Incendiarism & fires through negligence	108	12,245
Obstruction of traffic	17	831
House breaking	30	9,268
Forgeries of currencies, documents or seals	347	18,526
Obscenities, illicit intercourse & bigamy	25	3,566
Gambling and lotteries	303	40,204
Malfesance & bribery	2	2,781
Murder & attempted murder	17	2,211
Assault & battery	231	26,590
Accidental injuries, fatalities & occupational accidental injuries	192	21,638
Abortion	---	472
Interfering with capture & imprisonment	---	130
Kidnapping & abduction	12	1,040
Defamation of honor & character	16	1,725
Theft	3,279	436,775
Burglary	6	1,603
Fraud, embezzlement & blackmail	4,309	280,874
Dispossession	4,894	209,886
Others (miscellaneous)	139	24,624
Subtotal arrests for violation of penal code	13,931	1,095,478
Army & Navy criminal code violations	4	502
Violations within police court jurisdiction		
Departmental ordinance	786	163,919
Prefectural regulation	49	10,598
Violation of prefectural regulation	3,064	333,104
Other criminal law violations	5,569	503,026
Grand total	23,403	2,106,627

In 1940, in Saga-ken, 11,683 persons were found guilty of crime, a ratio of 16.6 per thousand persons compared to a national ratio of 12 per thousand persons.

C. LEGAL AFFAIRS.

Justice in Japan is administered on a national basis under the jurisdiction of the Ministry of Justice (Shiho-sho). The Minister of Justice has general supervision of courts and procurators. The theory and practice of legal affairs are uniform for all prefectures.

1. Courts of Appeals (Koso-in).

Below the Supreme Court (Daishin-in), which sits only in Tokyo, are 7 collegiate courts of appeals, located in the following cities: Tokyo, Hiroshima, Nagasaki, Sendai, Nagoya, Osaka, and Sapporo. The Nagasaki Court of Appeals has jurisdiction over Saga-ken.

2. District Courts (Chiho Saibansho).

In general there is one district court in each prefecture of Japan, the Saga District Court being located in Saga-shi, Matsubara-cho.

3. Local Courts (Ku-Saibansho).

There are 3 local courts in Saga-ken, located as follows:

Karatsu Local Court (Jiro-ichi, Karatsu-shi)
Imari (Imozato) Local Court (Nishimatsuura-gun, Otsubomura)
Takeo Local Court (Kimoshima-gun, Takeo-machi)

4. Police Courts (Keizai-Saibansho).

Police courts are presided over by police officers, and are held in police stations (for location see Chapter V, B, 1). Their jurisdiction is limited to misdemeanors involving penalties not exceeding a fine of 20 yen, a detention of not over 20 days, or a combination of both.

D. HEALTH AND SANITATION

1. Public Health Organization and Services.

In Saga-ken, as in other prefectures, public health activities and services stem from the prefectural office. Authority over these matters rests with the prefectural governor.

AS of 1943, under the governor's direction and supervision, the Health (or Sanitation) Section (Eisei-ka) of the Department of Internal Administration (Naisei-bu), assisted by the Police Department, carried out the prefectural phases of the national health program (consisting of sanitation, epidemic disease control, chronic disease prevention, collection of vital statistics, medical care, etc.) as well as local health activities. The organization of the Eisei-ka, the specific functions it serves, and the nature of the public health activities of the police department are not definitely known. Although detailed information is not available for Saga-ken on the organization of public health in cities, towns, and villages, it is believed to be the same as in other predominantly rural prefectures.

Numerous semi-official and private organizations such as the Saga medical and dental societies, the Saga branch of the Japanese Red Cross Society, local health unions and other community organizations cooperate in measures to improve the health of the people and are reported to have been mobilized to function in war emergency conditions.

In contrast to urban prefectures (e.g., Nagasaki, Fukuoka, etc.) Saga-ken has no medical, dental or pharmaceutical schools, no medical or public health institutes and no large urban areas which attract the most skilled medical personnel. There are only a few public hospitals listed for Saga-ken, and there are no military, naval, or civilian medical supply storage areas specifically reported for this prefecture. The ratio of physicians in actual practice to population (1938) in Saga-ken (6.2 per 10,000) was lower than the national ratio (7.2 per 10,000) even though the ratios per urban and per rural populations exceeded the corresponding ratio for Japan. (See topic 3 this section for personnel data).

Although war needs have most likely depleted the ranks of civilian medical personnel in Saga-ken, it is believed that the number of medical facilities has increased and public health services have been mobilized for emergency conditions.

2. Medical Facilities.

An incomplete list of hospitals in Saga-ken for 1938 reports one public hospital (apparently the Prefectural Koseikan Hospital) with a bed capacity of 188 and 52 private hospitals with a bed capacity of 1,125. The list does not include leprosaria or charity, mental, tubercular or prostitute hospitals.

Among the institutions in the prefecture, at least the following are important because of their personnel, modern equipment and facilities: the Koseikan Hospital, the Saga Sanatorium for Wounded Soldiers and the Karatsu Health Center. Information is not available about the status of private hospitals, the total bed capacity of public and private hospitals after 1938, or about the location or facilities of military hospitals assumed to be in this area.

From the large number of the following institutions reported for Japan as a whole in 1938, it is assumed that some of them will be found in Saga-ken: communicable disease hospitals, isolation wards, medical clinics (shinryojo), dental clinics, trachoma treatment centers, medical stations and infant health centers.

Although only one tuberculosis sanatorium is reported for Saga-ken (1938), the very high incidence of tuberculosis (1,332 deaths in 1938) would indicate that additional hospital facilities are available for tuberculosis patients in this area. Two mental disease hospitals were reported for the same year. The number of mental patients (cases reported for 1936) was 691, (463 male and 228 female), out of a total of 36,047 for Japan.

Four mineral hot-spring areas, used as health resorts, are listed for Saga-ken: Ureshino and Takeo, in the southern part of the prefecture; Kami-Kumakawa and Furuya, located north of Saga-shi. (See Chapter I.C.2.)

Hospitals, health centers, clinics and laboratories in Saga-ken are as follows:

- a. Prefectural Koseikan Hospital, Saga-shi Mizuga-cho: 188 beds (1938**).
- b. Prefectural Clinic, Saga-shi, Mizuga-cho, (1938).
- c. Karatsu Health Center, Karatsu-shi. Established under the National Health Center Act of 1937, (1939).

d. Quarantine Hospital, Karatsu-shi. Located on Myoken, the dock district west of Oshima, (1943).

e. Saga Sanatorium for Wounded Soldiers, Saga-ken: one medical officer (chief 3rd grade in government service), one Commissioner (7th grade), 6 medical officers (one 5th grade, 4 6th grade and one 7th grade). (July 1943). ***

* An incomplete list of medical institutions and facilities.

** Dates shown are the dates of the information given.

*** As of 1938, 2 mental disease hospitals were reported for Saga-ken, one tuberculosis sanatorium, 2 to 4 bacteriological laboratories and 52 private hospitals.

3. Medical Personnel and Schools.

The ratio of practicing physicians to population in Saga-ken in 1938 was one doctor to every 1,610 persons (6.2 per 10,000). This figure is less than the national ratio of 7.2 per 10,000 for the same year. Of more specific interest is the ratio of practicing physicians to population in urban and rural areas. In Saga-ken, there were 12.6 practicing physicians per 10,000 urban population and 5.3 per 10,000 rural population. For the same year, 1938, corresponding national figures were 11.9 and 4.7 respectively. Thus, although the ratio for Saga-ken (rural and urban combined) was less than that for Japan, Saga had a higher ratio of practising physicians per urban and per rural population than Japan. The apparent inconsistency is explained by the very high percentage of rural population (88) in the prefecture as compared with the lower percentage (61) in Japan.

There were approximately twice as many midwives and practitioners of traditional treatments (acupuncture, moxa and massage) as there were doctors in Saga-ken in 1936-38, and during the same years there was a slight reduction in the number of doctors.

There are no medical, dental, pharmacy or veterinary schools reported for Saga-ken. Public health personnel required for local health programs receive intensive training at the Karatsu Health Center, Karatsu-shi.

Medical personnel in Saga-ken are shown in Table 32 below.

TABLE 32

Medical Personnel, 1936-38 Saga-ken.

Year	Doc-tors	Den-tists	Pharma-cists	Veteri-naries	Mid-wives	Nurses	Practitioners of acupuncture, moxa & massage
1936	455	165	153	**	790	750	1,040
1938	443	180	162	192	797	900	**

* Of this number, 6 are women; of the total, 443, there were 432 in actual practice. These were distributed as follows: 105 in urban and 327 in rural (i.e., machi and mura) areas.

** Figures not available.

4. Vital Statistics.

In Saga-ken, as in other prefectures, birth reports (shussho todoke-ide) and death reports (shibo todoke-ide) are registered at the district (prefectural), municipal, town or township offices where the individual identification registers (koseki) are kept. Reports are then forwarded through the prefectural office in Saga-ken to national agencies.

Birth and death rates for Saga-ken are shown below in Table 33.

TABLE 33

Vital Statistics, 1920-38, Saga-ken, Japan & U.S.
(per 1,000 population)

	Birth Rates					
	(Average yearly rate, intercensal periods)		(yearly rates)			
	1920-25	1925-30	1930-35	1937	1938	
Saga-ken	35.70	34.68	33.63	34.01	27.90	
Japan	34.82	33.70	31.75	30.61	26.70	
United States	22.7	20.0	17.4	17.1	17.6	
	Death Rates					
	Saga-ken	22.29	21.01	20.12	19.47	19.92
	Japan	22.22	19.50	17.98	16.95	17.44
	United States	12.1	11.9	11.00	11.3	10.6

Birth rates in Saga-ken were consistently higher than in Japan from 1920 to 1938 and were more than 1½ times as high as those for the United States. For the prefecture, birth rates

remained approximately constant from 1920 to 1937 and, as in the case of Japan, dropped sharply in 1938.

Death rates in Saga-ken have decreased from 1920 to 1938; however, they have been consistently higher than the rates for Japan and have been approximately twice as high as those for the United States.

Infant death rates for Saga-ken have been among the highest in Japan. From 1934 to 1938, the yearly rates per 100 live births in this prefecture were 14.4, 11.4, 14.6, 12.6 and 14.6 respectively. Corresponding national rates were 12.5, 10.7, 11.7, 10.6 and 11.4. In comparison with these high rates, both prefectural and national, the United States had a rate of 2.9 in 1940.

Leading causes of death in Saga-ken for 1938 are shown in Table 34 below.

TABLE 34

Causes of Death, 1938, Saga-ken & Japan

Cause	Saga-ken		Japan	
	deaths	rate per 100,000	deaths	rate per 100,000
Pneumonia (107-109)*	1,378	198.43	118,153	165.1
Cerebral hemorrhage (82)	1,361	195.98	126,861	177.2
Tuberculosis (23-32)	1,332	191.81	148,827	207.9
Diseases of early infancy (157-161)	1,166	167.90	79,246	110.7
Senility (162)	1,083	155.95	98,772	138.0
Nephritis (130-132)	836	120.38	61,996	86.6
Cancer (45-53)	577	83.09	50,447	70.5
Diarrhea & enteritis (less than 1 year of age) (119)	496	71.42	58,465	81.7
Diseases of the heart (90-95)	494	71.14	47,460	66.3
Diarrhea & enteritis (over 1 year of age) (120)	454	65.38	58,491	81.7
Meningitis (non-tuberculous) (79)	393	56.59	36,748	51.3
Bronchitis (106)	291	41.90	26,178	36.6
Cause of death, ill-defined or unknown (200)	286	41.18	36,255	50.7
Beri beri (61)	237	34.13	12,712	17.8
Liver & gall bladder diseases (124-127)	224	32.26	13,567	19.0

Restricted

Cause	Restricted		Restricted	
	deaths	rate per 100,000	deaths	rate per 100,000
Pleurisy (110)	219	31.54	20,980	29.3
Peritonitis due to unknown causes (129)	175	25.20	20,384	28.5
Ulcer of stomach & duodenum (117)	165	23.76	13,279	18.6
Non-specific diseases of stomach & duodenum (118)	162	23.33	16,858	23.6
Total deaths, all causes	13,601		1,259,805	

* Numbers refer to diseases in the "International List of Causes of Deaths".

As in all parts of Japan, respiratory diseases are of prime importance among the leading causes of death in Saga-ken. In 1938, pneumonia, tuberculosis, bronchitis, and pleurisy accounted for 3,220 deaths (24 percent of all deaths). The degenerative diseases (cerebral hemorrhage, nephritis, diseases of the heart and cancer) accounted for a similar number of deaths (3,268, or 24 percent of all deaths). In all likelihood, the latter figures would be higher were it not for the inadequate diagnoses reflected in such vague categories as "senility", "cause of death ill-defined", "peritonitis due to causes unknown" and "non-specific diseases of the stomach and duodenum". A total of 1,709 deaths, (13 percent of all deaths), were grouped under one of these 4 non-specific causes in this prefecture as compared with 1,507 deaths in Nagasaki-ken, which has approximately twice as large a population as Saga-ken. For 2 of these categories, "senility" and "cause of death ill-defined", crude death rates per 100,000 in New York City for the same year were 0.3 and 0.2 as compared with Saga-ken's very high rates of 156.0 and 41.2 respectively.

The high death rate from "diseases of early infancy" in Saga-ken (167.9) as compared with Japan (110.7) is consistent with the high infant death rates.

It is of interest to note that Saga-ken, one of the food surplus areas in Japan, had 237 deaths from beri beri (1938) and a death rate from this disease that was twice as large as the national rate.

Among the causes of death not listed in Table 34 are diabetes, (25 deaths); syphilis, (133); puerperal diseases, (44); and suicide, (74).

5. Communicable Diseases.

Deaths from communicable diseases are shown in Table 35.

Restricted

TABLE 35

Communicable Diseases, 1938, Saga-ken & Japan

Diseases	deaths	
	Saga-ken	Japan
(Population 1938)	(695,357*)	(71,570,244)
Intestinal typhoid fever (1)**	42***	7,819
Paratyphoid fever (2)	3***	297
Smallpox (6)	2	6
Measles (7)	74	4,997
Scarlet fever (8)	4	398
Whooping cough (9)	96	8,871
Diphtheria (10)	25***	4,135
Influenza (11)	80	7,646
Dysentery (13a)	11***	5,550
Ekiri (13b)	160***	16,416
Erysipelas (15)	48	3,409
Cerebrospinal epidemic meningitis (16)	5	715
Sleeping sickness (17)	14	1,088
Tetanus (22)	13	1,775
Tuberculosis of respiratory organs (23a, b,c)	974	107,442
Tuberculosis of all other organs (24-32)	358	41,385
Tuberculosis (all forms) (23-32)	1,332	148,827
Leprosy (33)	2	337
Syphilis (34)	133	4,412
Gonococcus infection & other venereal diseases (35)	1	47
Sepsis (non puerperal) (36)	140	9,203
Malaria (38)	1	207
Other diseases due to protozoa, helminths & hemorrhagic jaundice due to spirochaetes (39)	20	1,545
Bacterial diseases of duodnum (40)	3	280
Other diseases of helminths (42 a,c,d,e)	9	493
Mycosis (43)	4	418
Other epidemic or parasitic diseases (44)	1	149
All epidemic infections & parasitic diseases (1-44)	2,216	229,708
All diseases (1-200)	13,601	1,259,805
Percentage of deaths caused by (1-44)	16	18

* By interpolation: 1935 and 1940 populations.

** Numbers refer to diseases in the "International List of Causes of Death".

*** Another source lists 40 deaths for typhoid fever, 5 for paratyphoid, fever, 32 for diphtheria, 16 for dysentery and 156 for ekiri. Corresponding national figures are similarly in disagreement.

In proportion to population, Saga-ken in 1938 had more deaths than Japan from a number of communicable diseases including paratyphoid fever, smallpox, measles, whooping cough, erysipelas, sleeping sickness, syphilis, sepsis (non puerperal) and miscellaneous diseases due to protozoa and helminths.

In this connection, it should be noted that Saga-ken is an epidemic area for schistosomiasis and liver fluke (clonorchis) infections. Of the 6 deaths from smallpox reported for Japan in 1938, 2 were in Saga-ken. Vaccinations against smallpox are compulsory throughout Japan. They are given in 2 periods: (2) shortly after birth and, if negative, are repeated before June of the following year, and (b) in the 10th year. In 1936, a total of 19,962 first period vaccinations and 19,245 second period vaccinations were given in Saga-ken. In all, 36,472 persons, (5.3 percent of the population), were vaccinated one or more times that year. Although the vaccination program of Japan provides almost complete coverage, there are numbers of migrant peoples who escape vaccination. This may account for the cases in Saga-ken.

Data available on communicable disease morbidity, other than that derived from physical examinations of school children, is shown in Table 36.

TABLE 36

Diphtheria, Typhoid & Paratyphoid Fever, Dysentery, & Ekiri, 1938, Saga-ken & Japan.

	Cases		Fatality (rate per 100 cases)		Morbidity (rate per 100,000 (pop.*))		Death rate per 100,000 pop.*)	
	Saga-ken	Japan	Saga-ken	Japan	Saga-ken	Japan	Saga-ken	Japan
Diphtheria	269	28,420	12	14	38.7	39.7	4.6	5.4
Typhoid fever	293	42,132	14	17	42.2	58.9	5.8	9.7
Paratyphoid fever	27	6,117	19	5	3.9	8.5	.7	0.4
Dysentery (including ekiri)	379	80,221	45	25	54.6	112.1	24.8	28.2
Ekiri	270	32,728	58	47	38.9	45.7	22.5	21.7**

*Population determined by interpolation: 1935 and 1940 population.

Data in this table is taken from a source which differs from that in Table 33. See footnote * to that table.

For 1938, the incidence of the diseases shown in Table 34 as evidenced by the morbidity rates, is considerably lower in Saga-ken than in Japan and the death rates in general are slightly lower. The prefectural case fatality rate, however, is appreciably higher for paratyphoid, dysentery and ekiri than the national rate.

Results of physical examinations for children in public and private elementary schools in Saga-ken in 1935 showed that 14.9 percent of those examined had trachoma and 0.8 percent had one or more contagious skin diseases. Comparable national percentages were 10.3 and 2.1 respectively. The size of the sample was not reported.

6. Medical Supply.

One important drug manufacturing plant, the Morita Seiyaku Kobushiki Kaisha (capital: 500,000 yen, is located (1944) in Kashima-machi, Fujitsu-gun, Saga-ken. Information is not available about the specific drugs and medicinals produced here or about the stocks maintained on hand.

Of the 4,218 medicine manufacturers (small establishments) located in Japan in 1936, 21 were in Saga-ken. For the same year, the number of peddlers of patent medicines in Saga-ken (6,274) was proportionately much higher than that for most prefectures and the number of retailers of patent medicines (3,213) was proportionately higher than that for most prefectures.

It is believed that some medical supplies will be found in storage depots and warehouses at military and naval establishments assumed to be in the area, in underground warehouses reported to have been established throughout Japan and in small quantities in the hospitals, laboratories, and quarantine station (Karatsu-shi) in Saga-ken. Small stocks may also be found in the drug stores of Saga-shi and Karatsu-shi.

Saga-ken, like other prefectures, is dependent upon Tokyo and Osaka laboratories for its vaccines and serums.

7. Sanitation, Port Quarantine and Public Health Laws.

Water supply and sewage disposal are covered in Chapter IV, c. Saga-ken in 1938 had the smallest number (8) of slaughterhouses in Kyushu. Of these, 2 were established by cities and 5 by machi or mura.

The adequacy of food inspection and specific data on other phases of sanitation in this prefecture, as distinguished from other prefectures, are not available.

Of the 5 temporary quarantine stations reported for Japan in 1938, one was located at Karatsu-shi in Saga-ken. This station provided medical and veterinary inspection, and facilities were available for disinfection and for a destruction of rats and insects. In 1938, no infectious diseases were found at the Karatsu-shi station, and only 4 out of a total of 258 inspected ships were subjected to rat and insect extermination procedures.

Public health laws and regulations applicable to all of Japan are narcotics control, epidemic disease control, food and water sanitation, sewage disposal, public hospitals, etc., obviously apply to Saga-ken as well. The substance of local health ordinances is unknown.

There is a patent medicine research laboratory located in the prefectural office, Saga-shi.

E. PUBLIC WELFARE

1. Organization.

The public welfare program in Saga-ken is conducted on a national basis according to standards and policies established by the Ministry of Welfare (Kosei-sho). Provincial administration is conducted by the Welfare Section (Kosei-ka) under the Prefectural Department of Internal Administration (Naisei-bu). The mayors of the cities and the heads of the towns and townships are responsible for the distribution of relief. These officials are assisted by paid welfare directors in the cities (shi). There are 38 welfare districts (homen) in the urban areas of Saga-ken. These districts are serviced by District Welfare Committees (homen-iin) composed of volunteer social workers who do the actual field work. They also maintain in the municipal offices an index file (homen-caado) of families receiving assistance.

a. Saga-shi. Saga-shi is divided into 20 relief districts served by 20 volunteer social workers. In 1939 the amount of money spent for relief was larger than that of cities of comparable size.

There are 2 private children's institutions, (capacity 60), and one pawn shop.

b. Karatsu-shi. Karatsu-shi is served by 17 volunteer social workers operating from the one relief district. There are 4 private day nurseries, (capacity 495).

c. On Madara-shima there is the Pio Takijiin (Pope Pius Orphanage), the address being Nagoya-mura, Higashimatsuura-gun.

2. Kinds of Assistance.

a. Poor relief: for the aged and infirmed over 65; children under 13; persons ill or disabled; maternity cases. Application is made through the volunteer welfare workers at the municipal offices. Financial support: one-half national, one-half prefectural. The amount of money spent for relief in Saga-ken is less than the national average but is in accord with that of surrounding prefectures. Relief standards appear low.

b. Mothers' and children's relief: for children under 14 and supporting adults. Application is made through the volunteer social workers at the municipal offices. Financial support: one-half national, one-fourth prefectural, one-fourth municipal.

c. Veterans' relief: for incapacitated veterans and

their dependents and for survivors of deceased military personnel. Application is made through the municipal offices of "The Information Service for Soldiers' Families". Financial support: entirely national.

d. Other services of the Welfare Section: removal of neglected children from their homes, recommendation for tax cancellation, provision for burial of indigents.

e. Minimum cost services: one public market, 11 public pawn shops.

f. Institutions: 3 children's institutions (one government subsidized), 26 day nurseries, one reformatory, 2 old people's homes (both received government subsidies), 5 settlements.

F. EDUCATION

1. Educational System.

The educational policies and administration of all schools in Japan (with the exception of naval and military schools, which are under the Navy and War Ministries and a few other institutions under the jurisdiction of other government offices) are under the control of the Ministry of Education (Mombu-sho). These schools may be classified into 3 groups according to establishing authority as follows:

- a. National government schools.
- b. Public schools.
 - 1. Those established by prefecture.
 - 2. Those established by cities.
 - 3. Those established by towns and mura.
- c. Private schools.

Government schools are under the direct supervision of the Ministry of Education, which also supervises directly all schools of higher education, both public and private.

The prefectural government through the Education Section (kyoiku-ka) of the Department of Internal Administration (naisai-bu) is responsible to the national Ministry of Education for the supervision of all secondary and elementary schools in the prefecture, both public and private. The actual management of a school is the responsibility of the governmental unit which established it: national government, prefecture, city, town or township.

2. Elementary Schools.

In 1935 Saga-ken had 60,528 boys and 59,957 girls of

elementary school age (6 to 14 years). Of this number, 200 boys and 206 girls were exempted from attendance at school.

There were at this time 233 primary schools, including 58 ordinary elementary schools (jinjo shogakko), and 175 higher elementary schools (koto shogakko) including detached classes or branch schools (bunkyojo). There were 2,537 elementary school classes in the prefecture.

In 1935 there were 2,818 elementary school teachers in the prefecture or an average of 11.4 teachers per school, as follows:

- a. Regular elementary school teachers: 2,654, Ordinary: 2,160, Higher: 494.
- b. Teachers holding licenses for special subjects: 17, Ordinary: 3, Higher: 14.
- c. Assistant teachers: 111, Ordinary: 105, Higher: 6.
- d. Substitute teachers: 36, Ordinary: 28, Higher: 8.

With the exception of Kohoku-mura, each town and mura in the prefecture had at least one elementary school (see Table 37).

TABLE 37

Public Schools, 1938, Saga-ken

	Ordinary Elementary Schools (6 Grades)	Higher Elementary Schools (8 Grades)	Detached Classes	Middle School	Girls' High Schools (T-technical)
Saga-shi	5	2	-	2	2
Karatsu-shi	2	4	-	1	1
Saga-gun					
Kitakawasoe-mura	-	1	-	-	-
Higashikawasoe-mura	-	1	1	-	-
Nikita-mura	-	1	-	-	-
Nakakawasoe-mura	-	1	-	-	-
Otakuma-mura	-	1	-	-	-
Minamikawasoe-mura	-	1	-	-	-
Nishikawasoe-mura	-	1	-	-	-
Honjo-mura	-	1	-	-	-
Higashiyoka-mura	-	1	1	-	-
Nishiyoka-mura	-	1	-	-	-
Kase-mura	-	1	1	-	-
Kubota-mura	-	1	-	-	-
Kose-mura	-	1	-	-	-
Hyogo-mura	-	1	-	-	-
Nabeshima-mura	-	1	-	-	-

Restricted

Takagise-mura	-	1	-	-	-
Kasuga-mura	-	1	-	-	-
Kinryu-mura	-	1	-	-	-
Kuboizumi-mura	1	1	-	-	-
Kawakami-mura	-	1	-	-	-
Matsuume-mura	-	1	2	-	-
Oseki-mura	-	2	-	-	-
Kanzaki-gun					
Kanzaki-machi	-	1	-	-	1
Hasuike-machi	-	1	-	-	-
Saigo-mura	-	1	-	-	-
Shirota-mura	-	1	-	-	-
Sakaino-mura	-	1	-	-	-
Chigose-mura	-	1	-	-	-
Mitakawa-mura	-	1	1	-	-
Higashiseburi-mura	1	1	-	-	-
Niiyama-mura	-	1	-	-	-
Sefuri-mura	-	1	2	-	-
Mitsuse-mura	-	1	-	-	-
Miyaki-gun					
Tosu-machi	1	-	1	-	1
Tajiro-machi	1	1	-	-	-
Kiyama-machi	-	1	1	-	-
Kisato-mura	-	1	-	-	-
Fumoto-mura	-	1	-	-	-
Asahi-mura	-	1	1	-	-
Nakahara-mura	-	1	-	1	-
Kitashigeyasu-mura	-	1	-	-	-
Minamishigeyasu-mura	-	1	-	-	-
Mikawa-mura	-	1	-	-	-
Kamimine-mura	-	1	-	-	-
Ogi-gun					
Ogi-machi	4	-	1	1	1
Ushizu-machi	1	-	-	-	-
Mikatsuki-mura	1	-	-	-	-
Ashikari-mura	-	1	-	-	-
Tokawa-mura	-	1	-	-	-
Higashitaku-mura	-	1	1	-	-
Minamitaku-mura	-	1	1	-	-
Taku-mura	-	1	-	-	-
Nishitaku-mura	-	1	-	-	-
Kitataku-mura	-	1	-	-	-
Nansan-mura	1	1	2	-	-
Hokusan-mura	-	2	1	-	-
Higashimatsuura-gun					
Hamasaki-machi	1	1	1	-	-
Ochi-machi	5	-	1	-	-
Yobuko-machi	-	3	-	-	-
Sashi-machi	-	1	1	-	-
Kagami-mura	-	1	2	-	-
Tamashima-mura	1	1	2	-	-
Nanayama-mura	3	1	-	-	-

Restricted

	Ordinary Elementary Schools (6 Grades)	Higher Elementary Schools (8 Grades)	Detached Classes	Middle School	Girls' High Schools (T-technical)
Kiuragi-mura	1	1	3	-	-
Kuri-mura	1	1	-	-	-
Onizuka-mura	-	1	2	-	-
Kitahata-mura	-	2	2	-	-
Kirigo-mura	-	3	-	-	-
Iruno-mura	-	2	1	-	-
Ariura-mura	-	1	-	-	-
Chika-mura	1	1	-	-	-
Nagoya-mura	2	1	1	-	-
Minato-mura	1	1	1	-	-
Uchiage-mura	1	-	2	-	-
Nishimatsuura-gun					
Imari-machi	2	-	-	-	-
Arita-machi	1	-	-	-	-
Yamashiro-machi	-	2	-	-	-
Kurokawa-mura	1	1	1	-	-
Hatatsu-mura	1	1	1	-	-
Minamihata-mura	-	2	-	-	-
Okawa-mura	1	-	-	-	-
Matsuura-mura	-	1	-	-	-
Otsubo-mura	1	-	-	-	1
Okawachi-mura	1	-	-	-	-
Arita-mura	-	1	-	-	-
Magarikawa-mura	-	1	-	-	-
Oyama-mura	-	1	-	-	-
Niri-mura	-	1	-	-	-
Higashiyamashiro-mura	-	2	1	-	-
Kinoshima-gun					
Takeo-machi	-	1	1	1	1
Omachi-machi	-	1	-	-	-
Shiraishi-machi	-	1	-	-	1 (T)
Asahi-mura	-	1	-	-	-
Wakaki-mura	-	1	1	-	-
Takeuchi-mura	-	1	-	-	-
Sumiyoshi-mura	1	1	-	-	-
Nakatori-mura	-	1	2	-	-
Nishikawa-nobori-mura	-	1	-	-	-
Higashikawa-nobori-mura	-	1	-	-	-
Tachibana-mura	-	1	1	-	-
Hashishimo-mura	-	1	-	-	-
Suko-mura	-	1	-	-	-
Kitakata-mura	-	1	1	-	-
Fukudomi-mura	-	1	-	-	-
Kitaariake-mura	-	1	-	-	-
Minamiariake-mura	-	1	-	-	-
Nishikie-mura	-	1	-	-	-
Rokkaku-mura	-	1	-	-	-
Ryuo-mura	-	1	1	-	-

Fujitsu-gun	-	1	-	1	1
Kashima-machi	-	1	-	-	-
Hama-machi	-	1	-	-	-
Shiota-machi	1	1	-	-	-
Ureshino-machi	2	2	1	-	-
Nokomi-mura	-	1	4	-	-
Furueda-mura	-	1	-	-	-
Nanaura-mura	-	1	3	-	-
Tara-mura	-	1	3	-	-
Oura-mura	-	1	-	-	-
Kashima-mura	-	1	-	-	-
Gochoda-mura	-	1	2	-	-
Kuma-mura	-	1	-	-	-
Yoshida-mura	-	1	1	-	-

3. Secondary Schools (1935).

There were 7 boys middle schools (chu-gakko), (Table 37) with 185 instructors and 4,695 students. Saga-ken Middle School is located in Akamatsu-cho, Saga-shi; and Tatsuya Middle School is located in Mizugae-cho, Saga-shi.

There were 10 girls' high schools (koto-jogakko) (Table 37) with 175 instructors and 5,076 students; 2 girls' vocational high schools; (Saga-ken Girls' High School and Seibi Municipal Girls' High School in Akamatsu-cho, Saga-shi); 15 public vocational and trade schools.

Among the vocational and trade schools were:

- 2 industrial schools with 42 instructors and 652 students.
- 5 agricultural schools with 52 instructors and 813 students.
- 4 commercial schools with 57 instructors and 1,776 students.
- 4 trade schools with 32 instructors and 725 students.

The locations of the following vocational schools as of 1938 are known:

Saga-ken Agricultural School	Shiraishi-machi, Kinoshima-gun.
Kanzaki Prefectural Agricultural School	Niiyama-mura, Kanzaki-gun.
Nishimatsuura Prefectural Agricultural School	Niri-mura, Nishimatsuura-gun.
Arita Prefectural Technical School	Arita-machi, Nishimatsuura-gun.
Saga-ken Agricultural Technology School	Kasuga-mura, Saga-gun.
Imazato Prefectural Commercial School	Otsubo-mura, Nishimatsuura-gun.
Kashima Ritsukyo Vocational School	Kashima-machi, Fujitsu-gun.
Saga-ken Commercial School	Akamatsu-cho, Saga-shi.
Saga-ken Technical School	Mizugae-cho, Saga-shi.
Karatsu Prefectural Commercial School	Karatsu-shi.

4. Special & Higher Schools.

- a. Deaf, Dumb and Blind schools. In 1935 there was one

public school for the deaf, dumb, and blind. In the blind section were 5 teachers and 38 students, and in the deaf and dumb section, 5 teachers and 50 students. The school is located in Mizugae-cho, Saga-shi.

b. Normal schools. There are 2 normal schools in the prefecture, with 41 teachers and 499 students. These two, Saga-ken Normal School and Saga-ken Girls' Normal School, as well as the Prefectural Teachers' Training School for Young Men's Schools are all located in Akamatsu-cho, Saga-shi.

c. In 1941, the Saga Higher School, located in Honjo-mura, Saga-gun, had 38 teachers and 499 students. It has a library of 27,688 volumes.

5. Young Men's Schools (Seinen gakko).

In 1935 there were 138 young men's schools, with 479 teachers and 23,720 students.

6. Private Schools.

There were known to be 5 private schools in the prefecture in 1935. The locations of the following are known:

Shintoku Academy	Kasuga-mura, Saga-gun.
Kyowa Girls' High School	Yoka-cho, Saga-shi.
Girls' High Sewing School	Yoka-cho, Saga-shi.

G. ASSOCIATIONS

Associations known to exist in Saga-ken are the Karatsu Chamber of Commerce and Industry, Karatsu-shi; and the Saga Chamber of Commerce and Industry, Matsubara-cho, Saga-shi.

H. CULTURAL INSTITUTIONS

The only important cultural institutions in Saga-ken are the following libraries:

a. Saga Prefectural Library (founded 1929), 43,302 volumes, Saga-shi.

b. Yotoku Bunko (private library, founded 1928), 18,194 volumes, Fujitsu-gun.

VI. WHO'S WHO IN SAGA-KEN

This chapter consists of a listing, divided into 2 parts, of prominent persons reported to be residents of Saga-ken. List "A" classifies persons, by cities; according to occupation. Those names starred with an asterisk (*) indicate persons who are believed to have some knowledge of English.

List "B" is an alphabetical directory which presents available biographical information concerning persons in list "A". A date in parentheses placed after a statement, e.g. "(1940)", indicates the date of the report giving that information.

The use of the occupational List "A" will aid in locating experienced personnel in various fields. The alphabetical directory, List "B", will in some instances aid in identifying persons and in checking their background and experience.

Local Japanese records or files on persons should prove useful whenever they can be secured. Certain key sources of this nature are listed here:

1. The Koseki.

Each city, town, and township maintains a record of all families domiciled within the unit, including the names of all members of the family, even though they may be living elsewhere, together with the dates of their birth, marriage, and death. The files of the community also indicate the following classifications of individuals: foreigners, Koreans, and laborers. It will be noted that every individual is listed in at least 2 different places, the Koseki of his native city, town, and township and the police box of the district where he actually resides.

2. Police Registers.

- a. The central files of the Special Higher Police (Tokubetsu Koto Keisatsu) which are kept in the police stations.
- b. Kempei (Military Police) records of political offenders. The location of these files is unknown except that they would be under military custody.
- c. Local police box records which list the name, age, address, and occupation of each person living within the

district.

3. Files of National Employment Exchanges.

These exchanges, located in Saga-shi and Karatsu-shi, of all employable persons, listing their occupations and present employments. In villages and towns having no employment exchanges, the same information is found in the village office or city hall.

4. Files of Public Welfare Offices.

Lists are kept of the homen-iin, prominent persons in the community doing volunteer welfare work. These persons are of the wealthy, leisure class, and have training in public relief techniques. The homen-iin number about 10 to 200 persons in each city, depending upon its size.

5. Postal Savings Accounts Records.

Records of postal savings accounts are kept in local post offices. Each account lists the name, address, occupation, and amount of deposit.

6. Other sources include bank records, municipal tax rolls, corporation employment records, military draft records and the Shokuin-Roku (Roster of Government Officials, an annual registry of the Imperial Cabinet).

A. LIST BY CITIES ACCORDING TO OCCUPATION

COMMUNICATIONS

NEWSPAPERS

NAKAO, Ihachi

Representative, Saga Godo
Shimbun

NAKASHIMA, Masumi

Editor, Saga-shi

COURTS AND LAW

MIYAMA, Buhei

Chief, Saga District Court

TANIUCHI, Shotaro

Procurator, Saga District Court

EDUCATION

EGUCHI, Shigekuni

Pres., Saga-shi Higher Schools

*HINOTSUKI, Akiyoshi

Ex-pres., Saga-shi Higher

Schools

MORIOKA, Kisaburo

Dir., Saga-shi Higher School

ENGINEERS

TAKEO, Toshisuke	Deleg. to World Power Conf.; Karatsu-shi
TOGAMI, Nobufumi	Elec. engr., Saga-shi
*TOSHISUKE, Takeo	Elec. engr., Karatsu-shi

FINANCE

OSHIMA, Kotaro	Dir., Saga-shi bank
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GOVERNMENT AND ADMINISTRATION

Pref. Govt. Officials

KIYAZAKI, Kenta	Pref. Governor
MAZAKI, Nagatoshi	Ex-pref. Governor
TANAKA, Shogo	Ex-pref. Governor
YOKOTA, Masando	Head, Gov's. Secretariat
KOMATSU, Takehiko	Chief, Bus. Aff. Sect.
SUZUKI, Minoru	Chief, Investig. Sect.
OHAMA, Yoshio	Head, Int. Aff. Dept.
URA, Nagakatsu	Ex-head, Int. Aff. Dept.
KAMO, Sekiji	Chief, Agric. Aff. Sect.
SATO, Kesaichi	Chief, Com. & Ind. Sect.
SANO, Gosaku	Chief, Shrines, Temples & Mil. Aff. Sect.; chief, Welf. Sect.
YAMAMOTO, Goro	Chief, Food Adm. Sect.
OKABE, Shuichi	Chief, Educ. Sect.
YOKO, Masao	Chief, Promotion Sect.
YAGI, Mitsuo	Chief, Pub. Wks. Sect.
HOSHINO, Yoshiaki	Chief, For. Aff. Sect.
YAMANE, Toichiro	Chief, Cultiv. Land Sect.
MIYAZAKI, Hihozo	Chief, Marine Prod. Sect.
TSUNODA, Shigenobu	Chief, Sanit. Sect.
MATSUNO, Sadao	Head, Police Dept.
SHIGEMORI, Hiroji	Chief, Insur. Sect.
MATSUDA, Kazuo	Chief, Employm. Sect.
SAITO, Hisao	Chief, Spec. Higher Pol. Sect.
MUTA, Shinichi	Chief, Pol. Aff. Sect., Chief, Peace Preserv. Sect.

Saga-shi Officials

HASHIZUME, Isamu	Mayor
TAKEMOTO, Shikataro	Deputy mayor
YOSHIMURA, Hayasaku	Chief, Pol. Sta.
TAKAZONO, Sakae	Head, Nat'l. Employm. Exch.

Karatsu-shi Officials

KISHIGAWA, Zentaro	Mayor
YOKOO, Saroku	Deputy mayor
HISATOMI	Treasurer
HOMMURA, Tanetaka	Chief, Pol. Sta.
TAIRA, Tokuhiko	Head, Nat'l. Employm. Exch.

HOUSING

KINOSHITA, Sakae	Architect, Saga-gun
MURAKAMI, Sadame	Architect, Saga-shi
YOSHIZAWA, Manfuku	Architect, Saga-shi

PUBLIC UTILITIES

TOGAMI, Nobufumi	Dir., Elec. works, Saga-shi
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RELIGION

*TAKEDA, Torasaku	Christian pastor, Saga-shi
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TRANSPORTATION

OSHIMA, Kotaro	Dir., RR Co., Saga-shi
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MISCELLANEOUS

Presumed to Speak English

Saga-shi

*TAGUCHI, Kenji

Other cities and towns

*KOSE, Paul G	Ogi-gun
*TOMIMASU, Shutaro	Karatsu-shi

B. ALPHABETICAL DIRECTORY

EGUCHI, Shigekuni: pres., Saga Higher Sch., Saga-shi, 1944.

HASHIZUME, Isamu: mayor, Saga-shi; b. Saga-ken 1880; dir., Takatori Mining Co; lawyer & dir., Hizen Elec. Ry. Co; present post since 1936; address: Kaisho Koji, Saga-shi; listed, Who's Who, 1941-42.

*HINOTSUKI, Akiyoshi: ex-pres., Saga Higher Sch; b. Ehime-ken, 1888; grad. Tokyo Imp. Univ., litt., 1913; prof., Yone-

zawa Higher Tech. Sch; prof., Niigata & Osaka Higher Schs; studied in Eng. and Amer., 1923; pres., Saga High Sch. 1941-44; address: Nishiharibata-cho, Saga-shi; listed, Who's Who, 1941-42.

HISATOMI: treasurer, Karatsu-shi, 1943.

HOMMURA, Tanetaka: Chief, Police Station, Karatsu-shi, 1943.

HOSHINO, Yoshiaki: chief, For. Aff. Sect., Int. Aff. Dept., Pref. Gov't, 1943.

KAMO, Sekiji: chief, Agric. Aff. Sect., Int. Aff. Dept., Pref. Gov't, 1943.

KINOSHITA, Sakae: constr. engr.; member Building Institute; address, Higashiyokamura, Saga-gun, 1930.

KISHIGAWA, Zentaro: mayor, Karatsu-shi, 1943.

KIYAZAKI, Kenta: gov., Saga-ken; former Chief of Finance Sect., Tokyo Metrop. 1944.

KOMATSU, Takehiko: chief, Bus. Aff. Sect., Pref. Gov't, 1943.

*KOSE, Paul G: attended Boston Univ.; address, Ogi-machi, Ogi-gun.

MATSUDA, Kazuo: chief, Employm't. Sect., Police Dept., Pref. Gov't, 1943.

MATSUNO, Sadao: head, Police Dept., Pref. Gov't., 1943.

MAZAKI, Nagatoshi: ex-gov., Saga Pref., 1940; b. Kumamoto Pref., 1893; grad. Tokyo Imp. Univ., 1921; entered civil service on grad.; chief, Personnel Sect., Kumamoto Pref. Gov't., 1935; address, Matsubara-cho, Saga-shi; listed, Who's Who, 1941.

MIYAMA, Buhei: chief, Saga District Ct., Saga-shi, 1944.

MIYAZAKI, Hirozo: chief, Marine Prod. Sect., Int. Aff. Dept., Pref. Gov't., 1943.

MORIOKA, Kisaburo: dir., Saga Higher Sch.; b. 1881, Fukui Pref.; grad. Tokyo Imp. Univ., Eng. law, 1906; principal Miyagi Pref. Tsukitate Mid. Sch., 1916; Yamagata Pref.

Sakata Mid. Sch.; prof. Saga Higher Sch. 1934; present post 1935; address, Saga Higher Sch. residence, Nishiharibata, Akamatsu-cho, Saga-shi; listed, Who's Who, 1941.

MURAKAMI, Sadame: constr. engr.; member Architectural Institute; address, 1 of 36 Yoga-cho, Saga-shi, 1930.

MUTA, Shinichi: chief, Pol. Aff. Sect., Chief, Peace Preserv. Sect., Police Dept., Pref. Gov't., 1943.

NAKAO, Ihachi: representative, Saga Godo Shimbun, Matsubara-cho, Saga-shi.

NAKASHIMA, Masumi: edit. chief., Saga Godo Shimbun, Saga-shi; member, Japan Press Assoc., 1943.

OHAMA, Yoshio: Head, Int. Aff. Dept., Saga-ken: formerly chief, 2nd sect. of Ec. Bur., Ishikawa-ken, 1944.

OKABE, Shuichi: chief, Educ. Sect., Int. Aff. Dept., Pref. Gov't., 1943.

OSHIMA, Kotaro: dir., Saga Central Bk; dir., Hizen Coop. Sav. Bk. and Kyushu Ry. Co; aud., Toyokuni Cement Mfg. Co., Toho Elec. Power & Komatsu Mfg. Cos; rep., Oshima & Co., b. Saga-ken, 1859; address: Saga-shi, 1937.

SAITO, Hisao: chief, Spec. Higher Pol. Sect., Police Dept., Pref. Gov't., 1943.

SANO, Gosaku: chief, Shrines, Temples & Mil. Aff. Sect.; chief, Welf. Sect., Int. Aff. Dept., Pref. Gov't., 1943.

SATO, Kesaichi: chief, Com. & Ind. Sect., Int. Aff. Dept., Pref. Gov't., 1943.

SHIGEMORI, Hiroji: chief, Insur. Sect., Police Dept., Pref. Gov't., 1943.

SUZUKI, Minoru: chief, Investig. Sect., Gov's. Secretariat, 1943.

*TAGUCHI, Kenji: attended, Saga High Sch., 1910-15; Columbia S.S., Eng., 1930; address, Saga-shi.

TAIRA, Tokushiro: head, Nat'l. Employm't Exch., Karatsu-shi, 1943.

TAKAZONO, Sakae: head, Nat'l. Employm't Exch., Saga-shi, 1943.

Restricted.

*TAKEDA, Rev. Torasaku: attended, Harvard Univ. & Boston Univ.; res., 237 Kawabaru Koji, Saga-shi.

TAKEMOTO, Shikataro: deputy-mayor, Saga-shi, 1943.

TAKEO, Toshisuke: delegate, World Power Conf., Tokyo, 1929; res., Karatsu-shi.

TANAKA, Shogo: ex-pref. governor.

TANIUCHI, Shotaro: procurator, Saga District Ct., Saga-shi, 1944.

TOGAMI, Nobufumi: dir., Togami Elec. Wks; dir., Kita Amakusa Elec. Co; Nippon Tungsten Co; ex-vice-chairm. Saga Cham. of Com. & Ind.; b. Kumamoto-ken, 1895; grad. Mitsubishi Tech. Sch., Nagasaki, 1912; Tokyo Inst. of Elec., 1913; estab. present firm, 1925; address, 166 Yoda-cho, Saga-shi; listed, Who's Who, 1941-42.

*TOMIMASU, Shutaro: attended Columbia Univ., 1913-17, M.A.; res., Karatsu-shi.

TOSHISUKE Takeo: pres., Karatsu Iron Wks., Karatsu-shi; b. 1874; educ.: 3 yrs. Tokyo Technical College; 2 yrs. Stevens Institute of Technology, M.E. 1898; 1898-1900, employed in drafting room W. D. Forbes & Co., Hoboken, N. J.; 1900-01 employed by Providence Engineering works; 1901-02 employed by Planters Compress Co., Boston; 1902-04 Chief Engineer, Kobukuro Iron Works; 1904-07, Supt. of Machine Shops, Osaka Iron Works, Osaka (steamship & war vessel construction); 1908 and after, (a) Constr. Eng., Yoshinotani Coal Mining Co., Ltd., (b) Gen. Mgr., Karatsu Iron Works, Karatsu, Hizen, Japan (c) Constr. Eng., Takeuchi Mining Co., Hizen and (d) Pres., Karatsu Iron Works, Nishi-Karatsu, member, Amer. Soc. of Mech. Eng., 1908-42.

TSUNODA, Shigenobu: chief, Sanit. Sect., Int. Aff. Dept., Pref. Gov't., 1943.

URA, Nagakatsu: ex-head, Int. Aff. Dept., Pref. Gov't.

YAGI, Mitsuo: chief, Pub. Wks. Sect., Int. Aff. Dept., Pref. Gov't., 1943.

YAMAMOTO, Goro: chief, Food Adm. Sect., Int. Aff. Dept., Pref. Gov't., 1943.

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Restricted

Restricted

YAMANE, Toichiro: chief, Cultiv. Land Sect., Int. Aff. Dept., Pref. Gov't., 1943.

YOKO, Masao: chief, Promotion Sect., Int. Aff. Dept., Pref. Gov't., 1943.

YOKOO, Saroku: deputy-mayor, Karatsu-shi, 1943.

YOKOTA, Masando: head, Gov's. Secretariat, 1943.

YOSHIMURA, Hayasaku: chief, Police Station, Saga-shi, 1943.

YOSHIZAWA, Manfuku: constr. engr.; member Architectural Institute; address, 33 Shii Koji, Saga-shi, 1930.

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Restricted

APPENDIX I.

A. LIST OF MANUFACTURERS.

TEXTILES

1. Kanegafuchi Boseki KK, (Kanegafuchi Spinning Co.).
Saga-shi.
Spinners of cotton yarns.
2. Katakura Seishi KK.
Tosu-machi, Miyaki-gun.
Raw silk.

CHEMICAL COMPANIES

3. Government-owned plant
Ochi-machi, Higashimatsuura-gun.
Ethyl alcohol, (daily capacity, 4,770 U.S. gallons absolute alcohol).
4. Hinomoto Sekken Seizosho KK.
Tosu-machi, Miyaki-gun.
Glycerol.
5. Karanami Kogyo KK.
Uranosaki-mura, Nishimatsuura-gun.
Soda ash and caustic soda (1937 capacity 18,000 metric tons).
6. Karatsu Kakohin Seizosho KK.
Karatsu-shi.
Detonators or blasting caps.
7. Morita Seiyaku KK (established 1923).
Kashima-machi, Fujitsu-gun.
Capital, 500,000 yen; 250,000 paid up.
Drugs.
8. Nippon Kayaku Seizo KK.
Kiyama-machi, Miyaki-gun.
Fuses, detonators or blasting caps.
9. Tokyo Kayaku Kogyo KK.
Kiyama-machi, Miyaki-gun.
Detonators or blasting caps.

MACHINERY, TOOLS AND APPLIANCES.

10. Fukushima Tekkosho.
5 of 1591 Tononoura, Yobuko-machi, Higashimatsuura-gun.
Internal combustion engines.

11. Harada Nagu Seizo Kojo.
Oaza Sakai Nishi, Kisato-mura, Miyaki-gun.
Machines for rope making.
12. Honjo Tekkosho.
1612 Tononoura, Yobuko-machi, Higashimatsuura-gun.
Internal combustion engines.
13. Karatsu Tekkosho KK.
Karatsu-shi.
Burning mills, broaching machines, broaches, gear cutting machines, grinders, gun turning and burning lathes, millers and milling machines, slotters, turret lathes, portable cranes, aircraft ordnance.
14. Koran KK.
702 Arita-cho, Saga-shi.
Insulators for high tension use and possibly equipped to make spark plugs.
15. Masaki Tekkojo KK.
Oaza 1 of 397 Ushijima, Kose-mura, Saga-gun.
Machinery.
16. Nakajima Tekkosho.
Oaza 66 Hasuike, Hasuike-machi, Kanzaki-gun.
Lead wires.
17. Mito Tekkosho.
Oaza 8543 Tomioka, Takeo-machi, Kinoshima-gun.
Stone crushers.
18. Teroaka Tekkosho.
Tononoura, Yobuko-machi, Higashimatsuura-gun.
Internal combustion engines.
19. Togami Denki Seisakusho KK.
385 Ota Kara-cho, Saga-shi.
Automatic switches for patent Togami distribution system; various forms of switches for low, high and extra high tension; supervisory controlling device, panel and switches for Navy.
20. Hamazaki Zosensha.
Oaza Kabeshima Katajuma, Yobuko-machi, Higashimatsuura-gun.
Shipbuilding.
21. Katakura Seishi.
Tosu-machi, Miyaki-gun.
Aircraft parts.

22. Shibata Zosensho.
Oaza Tonoura, Yobuko-machi, Higashimatsuura-gun.
Ship repairs.

B. PRODUCTS.

(Numbers refer to companies in List A.)

TEXTILES

Calicos
Cotton batting
Cotton fabrics
Cotton yarn 1
Raw silk 2
Silk cloth

CHEMICALS

Alcohol (ethyl) 3
Caustic soda 5
Detonators or blasting caps 6, 8, 9
Drugs 7
Fuses 8
Glycerol 4
Soda ash 5

MACHINERY, TOOLS AND APPLIANCES

Engines, internal combustion 10, 12, 18
Insulators, for high tension 14
Machinery 15
Machines for rope making 11
Machinery, stone crushers 17
Machine tools 13
Spark plugs 14
Switches: automatic and low, high and extra high tension 19
Wires, lead 16

TRANSPORTATION

Aircraft 21
Ship 20, 22

APPENDIX II

RAILROAD LINES

The following railroads are discussed in this appendix:

1. Kagoshima Main Line
2. Nagasaki Main Line
3. Imari Line
4. Ariake Line
5. Karatsu Line
6. Saga Electric Line
7. Hichiku Railroad
8. Kita-Kyushu Railroad
9. Chuo Railroad
10. Coal mine railroad
11. Coal mine railroad
12. Coal mine railroad
13. Coal mine railroad
14. Saga Line

Mileages given in Items 1 through 14 of this appendix are correct within one percent in nearly all cases. Bridge and tunnel lengths are approximate unless carried out to inches or decimals. Bridges up to 200 feet in length are designated as "short span" bridges.

1. Kagoshima Main Line.

Passenger traffic: north from Tosu-machi, 23 trains daily each way in 1937; 19 trains daily each way, estimated 1945. South from Tosu-machi, 16 trains daily each way in 1937; 14 trains daily each way, estimated 1945.

Freight traffic: north from Tosu, 8,100,000 metric tons, including the weight of rolling stock, were estimated to have moved in 1944. South from Tosu, 5,600,000 metric tons, including the weight of rolling stock, were estimated to have been hauled in 1944.

TABLE 38.

Stations & Important Features, Kagoshima Main Line, Saga-ken.

<u>Mileage from Fukuoka-ken border</u>	<u>Feature</u>
0.0	RR enters prefecture. Double track throughout prefecture.
1.4	Kiyama station.
3.9	Tajiro station.

4.4	Spur 1.2 miles long extending southwest connects with Nagasaki Main Line.
4.7	Tosu station.
4.9	Junction with Nagasaki Main Line from west.
8.6	RR leaves prefecture, Saga-Fukuoka border.

TABLE 39

Bridges & Overheads, Kagoshima Main Line, Saga-ken.

Mileage from Fukuoka-ken border	Length & Type	Obstacle
1.8	Short span	Creek
* 4.3	Short span	City street
* 5.5	Short span	Prefectural highway
5.8	Short span	Creek
6.0	Short span	Creek
6.3	Short span	Yasuru-gawa
6.5	Short span	Creek
7.2	Short span	Creek
7.7	Short span	Creek
8.3	Short span	Creek
8.5	Steel, 337 m., with 1 left span	Chikugo-gawa.

2. Nagasaki Main Line.

Passenger traffic: Tosu-machi to Nagasaki-ken border; 12 trains daily each way, 1937; 11 trains daily each way, estimated 1945.

Freight traffic: Tosu to Nagasaki-ken border, 6,400,000 metric tons, including the weight of rolling stock, were estimated to have been hauled in 1944.

TABLE 40

Stations, Nagasaki Main Line, Saga-ken.

Mileage from Tosu station	Feature
0.0	Tosu station, eastern terminal of Kagoshima Main Line.
0.2	Leaves Kagoshima Main Line.
5.3	Nakabaru station.
9.8	Kanzaki station.
12.5	Shigaya station.

* Overheads.

15.5	Saga station.
17.4	Nabeshima station.
19.5	Kubota station, junction with Karatsu Line from the northwest.
21.3	Ushizu station.
24.7	Hizen-Yamaguchi station, begin double track.
25.1	Junction with Ariake Line from the south, end of double track section.
27.9	Omachi station.
29.3	Kitakata station, Kinoshima Coal Mine RR crosses Nagasaki Main Line on grade 0.6 miles west.
31.8	Takahashi station.
33.1	Takeo station.
38.0	Mimasaka station.
40.7	Kamiarita station.
42.2	Arita station.
46.0	RR leaves prefecture, Saga-Nagasaki-ken border.

TABLE 41

Bridges & Overheads, Nagasaki Main Line, Saga-ken.

Mileage from Tosu station	Length & Type	Obstacle
0.7	Short span	Creek
1.0	Short span	Creek
1.9	Short span	Creek
2.1	Short span	Creek
3.3	Short span	Creek
3.8	Short span	Creek
4.3	Short span	Creek
5.1	Short span	Shozu-gawa
5.6	Short span	Stream
6.1	Short span	Creek
6.2	Short span	Creek
6.3	Short span	Creek
8.5	Short span	Creek
8.6	Short span	Creek
9.0	Short span	Tade-gawa
9.2	Short span	Stream
9.4	Short span	Sambommatsu-gawa
9.6	Short span	Creek
10.2	Short span	Jobaru-gawa
11.9	Short span	Indo-gawa
12.8	Short span	Creek
12.9	Short span	Creek
13.0	Short span	Creek
13.3	Short span	Creek
13.4	Short span	Creek
13.5	Short span	Creek
13.6	Short span	Creek

Mileage from Tosu station	Structure	Obstacle
13.7	Short span	Kose-gawa
16.4	Steel, pratt truss 1 span 30.48 m., E-33 loading.	Tafuse-gawa
18.0	Short span	Stream
18.3	Short span	Creek
18.6	Steel, pratt truss 3 spans, @30.48 m., E-33 loading.	Kase-gawa
19.1	Short span	Sakai-gawa
21.7	Steel, pratt truss 1 span 30.48 m., E-33 loading.	Taku-gawa
22.2	Short span	Creek
22.4	Short span	Creek
22.6	Short span	Creek
22.7	Short span	Creek
23.1	Short span	Creek
23.2	Short span	Creek
24.9	Short span	Creek
25.4	Short span	Creek
25.5	Short span	Creek
25.6	Short span	Creek
28.9	Short span	Creek
31.1	Short span	Creek
* 34.7	Short span, masonry	Prefectural highway
* 35.5	Short span, masonry	Prefectural highway
40.8	Short span	Creek
41.6	Short span	Creek
41.7	Short span	Creek
41.8	Short span	Creek
41.9	Short span	Creek
42.8	Short span	Arita-gawa
43.2	Short span	Creek

TABLE 42

Tunnels, Nagasaki Main Line, Saga-ken.

Mileage from Tosu station	Length in feet
40.2	200
40.6	200
41.3	400

3. Imari Line.

* Overheads

TABLE 43
Stations, Imari Line, Saga-ken.

Mileage from Arita station	Feature
0.0	Arita station, southern terminal on Nagasaki Main Line.
0.8	Leaves Nagasaki Main Line.
3.2	Zoshuku station.
5.7	Meotoishi station.
8.4	Switch into Imari station, begin double track.
8.8	Imari station, junction with Kita-Kyushu RR. from the east.
9.2	End of switch & double track.
10.8	Higashiyamashiro station.
12.3	Kusukutsu station.
14.2	Kubara station.
16.2	Uranosaki station.
16.5	RR leaves prefecture, Saga-Nagasaki-ken border.

TABLE 44

Bridges & Overheads, Imari Line, Saga-ken.

Mileage from Arita station	Length & Type	Obstacle
2.7	Short span	Creek
2.8	Short span	Creek
* 4.4	Short span	Prefectural highway
* 4.8	Short span	Prefectural highway
5.0	Short span	Creek
5.3	Short span	Arita-gawa
5.9	Short span	Creek
6.7	Short span	Creek
* 9.7	Short span	Prefectural road
10.0	600 ft.	Arita-gawa
11.2	Short span	Creek
13.1	Short span	Tidewater

4. Ariake Line.

This line is a cut-off for the Nagasaki Main Line to Isahaya-shi in Nagasaki-ken.

Passenger traffic: Yamaguchi to Nagasaki-ken border, 10 trains daily each way, 1937, and estimated 1945.

* Overheads

TABLE 45 *
Stations, Ariake Line, Saga-ken.

Mileage from Hizen-Yamaguchi station	Feature
0.0	Hizen-Yamaguchi station, northern terminal of the Nagasaki Main Line
0.4	Leaves Nagasaki Main Line
3.1	Fukuji station
6.1	Hizen-Ryuo station
9.4	Hizen-Kashima station
11.1	Hizen-Hama station
22.1	RR leaves prefecture, Saga-Nagasaki border

TABLE 46
Bridges & Overheads, Ariake Line, Saga-ken.

Mileage from Hizen- Yamaguchi station	Length & Type	Obstacle
** 1.4	Short span	Prefectural highway
1.6	Steel, 2 spans, @ 45.72 thru Pratt truss E-33 loading	Rokkaku-gawa
7.8	Short span	Creek
8.0	Steel, 2 spans, @ 60.96, 1 Pratt & 1 through Warren truss, E-33 loading	Shiota-gawa
8.1	Short span	Creek
8.3	Short span	Creek
9.0	Short span	Creek
9.1	Short span	Creek
9.2	400 ft steel	Tidewater
9.8	500 ft steel	Naka-gawa
10.6	300 ft steel	Tidewater
11.4	200 ft steel	Hama-gawa
12.0	Short span	Creek
** 12.1	Short span	Prefectural highway

5. Karatsu Line.

Freight traffic: 4,800,000 metric tons, including the weight of rolling stock, were estimated to have been hauled on this line in 1944.

* Table incomplete beyond Hama-machi.
** Overheads.

TABLE 47
Stations, Karatsu Line, Saga-ken.

Mileage from Saga-shi station	Feature
0.0	Saga station, southeastern terminal of line
4.0	Kubota station, uses right of way of Nagasaki Main Line to Kubota. (For intervening features, see Nagasaki Main Line.) Leaves Nagasaki Main Line.
7.2	Ogi station
10.7	Higashitaku station
13.5	Azamibaru station
13.6	Spur 0.9 miles long extending northwest
17.0	Kiuragi station
18.6	Iwaya station
20.3	Ochi station, begin double track
21.1	Junction with Kita-Kyushu RR
24.5	Yamamoto station
29.0	Karatsu station
30.8	Nishi-Karatsu station, northwestern terminal

TABLE 48 *
Bridges & Overheads, Karatsu Line, Saga-ken.

Mileage from Saga station	Length & Type	Obstacle
8.2	Short span	Creek
10.8	Short span	Creek
11.6	Short span	Imade-gawa
** 13.9	400 ft	Prefectural highway
16.0	200 ft	Kiuragi-gawa
16.1	Short span	Stream
16.4	200 ft	Kiuragi-gawa
17.9	Short span	Kiuragi-gawa
18.4	Short span	Kiuragi-gawa
** 21.4	Short span	Prefectural road
21.5	250 ft	Matsuura-gawa

TABLE 49
Tunnels, Karatsu Line, Saga-ken.

Mileage from Saga station	Length in feet
9.3	700
14.9	1,400
21.7	200

* Table incomplete beyond Yamamoto station
** Overheads

6. Saga Electric RR.

TABLE 50

Stations, Saga Electric RR, Saga-ken.

Mileage from Southern Terminal	Feature
0.0	Southern terminal at station, opposite Saga station on Nagasaki Main Line.
1.2	Nawate station.
2.0	Takagise station.
3.6	Kasuga station.
4.9	Northern terminal at Kawakami station.

There is one short span bridge on this line.

7. Hichiku RR.

TABLE 51

Stations, Hichiku RR, Saga-ken.

Mileage from Takao station	Feature
0.0	Takao station in Saga-shi, western terminal of the line.
1.1	Tono-Kose station.
2.6	East Hasuike station.
3.2	Oshika station.
3.9	Sakimura station.
5.7	Eastern terminal at Sangenya station.

TABLE 52

Bridges, Hichiku RR, Saga-ken.

Mileage from Takao station	Length & Type	Obstacle
0.1	250 ft	Kose-gawa
2.2	Short span	Nakachi-gawa
2.8	Short span	Jobaru-gawa
4.6	Short span	Tade-gawa

8. Kita-Kyushu RR.

TABLE 53

Stations, Kita-Kyushu RR, Saga-ken.

Mileage from Imari station	Feature
0.0	Imari station, western terminal at Imari station on Imari Line.
16.8	Yamamoto station; Kita-Kyushu Line crosses the Karatsu Line.
20.8	Higashi-Karatsu station.
22.8	Nijino Matsubara station.
24.0	Hamasaki station.
26.0	RR leaves prefecture, Saga-Fukuoka-ken border.

Within one mile of the Fukuoka-ken border there are 3 tunnels, 200, 300 and 400 feet in length. One and one-tenth miles from the Fukuoka-ken border is a bridge 200 feet in length spanning the Tamashimagawa.

9. Chuo RR.

This railroad joins the Kagoshima Main Line north of Tajiro-machi, and extends one mile east, where it crosses the Saga-Fukuoka-ken border.

There are 3 short-span bridges on this line.

10. Coal Mine RR, Higashimatsuura-gun.

TABLE 54

Stations, Coal Mine RR, in Higashi-Matsuura-gun, Saga-ken.

Mileage from Karatsu line	Feature
0.0	Southern terminal at Kuratsu Line, 0.3 miles east of Azamibaru station.
0.0	Overhead, short span across prefectural highway. Spur 0.3 miles long extending east.
0.1	Overhead, short span across improved road.
0.2	Bridge, short span across creek.
0.2	Overhead, short span over improved road.
0.3	Bridge, short span across creek.
0.5	Tunnel 300 ft long.
0.6	Bridge, short span over creek and improved road.
1.2	Northern terminal at coal mine.

11. Kinoshima Coal Mine RRs, in Kinoshima-gun.

TABLE 55

Stations, Kinoshima Coal Mine RRs,
Kinoshima-gun, Saga-ken.

Mileage from Kakebashi station	Feature
0.0	Southern terminal in Kakebashi.
0.2	Grade crossing over Nagasaki Main Line.
0.7	Northern terminal at Kinoshima Coal Mine.

TABLE 56

Stations, Kinoshima Coal Mine RRs,
Kinoshima-gun, Saga-ken

Mileage from Rokkakugawa station	Feature
0.0	Southern terminal at Rokkaku-gawa, 0.8 mile west of Kitakata station on the Nagasaki Main Line.
0.0	Overhead, 300 ft, across Nagasaki Main Line.
1.0	Northern terminal at Kinoshima Coal Mine.

12. Coal Mine RR, in Higashi-matsuura-gun.

The northern terminal of this line is at Motoyama. The railroad extends 0.6 mile to the south, where it terminates at a coal mine.

13. Coal Mine RR, Nishimatsuura-gun.

This railroad crosses the Imari Line at Uranosaki station. It extends 0.8 mile south and 0.4 mile north of this crossing.

There is one short-span bridge on this line.

14. Saga Line.

The western terminal of this line is at Saga-shi. The railroad extends southeast for 5 miles, where it crosses the Saga-Fukuoka-ken border.

At the border is a bridge across the Chikugo-gawa, 1,690 feet long with reinforced concrete piers and well foundations. There are 15 spans, one plate girder lift span of 48 tons and 80 feet long with lift rise of 76.6 feet. Steel trusses, 2 @ 156 feet; deck plate girders, 9 @ 121 feet, one @ 74 feet, one @ 54 feet, and one @ 43 feet.

APPENDIX III

ELECTRIC GENERATING PLANTS

(1,000 KW. Capacity and Over.)

The following abbreviations are used in this appendix:

Technical terms

a	amperes
ac	alternating current
adv	advertisement
ave	average
Btu	British thermal unit
C	centigrade
cap	capacity
conn	connection
cont	continuous
cm	centimeter
cm ²	square centimeter
cm	square centimeter
cyc	cycles
dc	direct current
D-D	delta-delta (transformer connection)
D-Y	delta-Y (transformer connection)
econ	economical
eff	effective
est	estimated
F	Fahrenheit
ft	feet
ft ²	square feet
hp	horsepower
in	inch
inc	includes
in ²	square inch
kg	kilogram
kg/cm ²	kilograms per square centimeter
km	kilometer
kv	kilovolt
kva	kilovolt-ampere
kw	kilowatt
kwh	kilowatt-hour
lb	pound
lbs/in ²	pounds per square inch
m	meter
m ²	square meter
m ³	cubic meter
m ³ /sec	cubic meters per second
max	maximum
max pk	maximum peak

Technical terms

min	minute
mini	minimum
no	number
opp	opposite
pf	power factor
ph	phase
qv	which see
reg	regular capacity
reg pk	regular peak
res	reserve, reserve capacity
rpm	revolutions per minute
sec	second
spec	special capacity
supp	supplement, supplementary capacity
t	ton
t/hr	tons per hour
v	volt
Y-Y	transformer connection
@	each
*	indicates that kw have been estimated from kva at 80 percent power factor

Non-Japanese trade names

AC	Allis-Chalmers Mfg. Co.
AEG	Allgemeine Elektrizitäts-Gesellschaft
ASEA	Allmänna Svenska Elektriska Aktiebolag
B	Boving & Co., Ltd.
BBC	Brown, Boveri & Co., Ltd.
BTH	British Thomson-Houston Co., Ltd.
B & W	Babcock & Wilcox Co.
D	Dicker
EC	Erie City Boiler Co.
EE	English Electric Co., Ltd.
EW	Escher, Wyss Co.
G	Green Economizer Co.
GE	General Electric Co.
H	Heine
IPM	I. P. Morris Co.
MV	Metropolitan-Vickers Electric Co., Ltd.
P	Pelton Steel Casting Co.
R	Russell
S	Shepardson
SB	Sulzer Brothers, Ltd.
SS	Siemens Schukert Werke A. G.
STAL	Svenska Turbin fabriks Aktiebolaget Ljungstrom
V	Voith
W	Westinghouse Electric & Mfg. Co.
WE	Western Electric Co.

HIROTAKI NO. 1 HYDRO PLANT

Capacity commonly in use (in kw): 1500, as of June 1928.
 Source of power: Kibaru-gawa of the Chikugo-gawa system.
 Date of construction: completed 1927; in operation Mar. 1940.
 Details: particular capacities (in kw): 1,412 installed cap.
 666 reg; 834 spec.
 Eff. head: 166.5 m; flow, 1.25 m³/sec.
 Plant, equipment:
 Turbines: 2@ 800 hp, Pelton-type, horizontal-shaft,
 Voith-make: 1 @ 800 hp, Pelton-type, horizontal-shaft,
 Shibaura-make.
 Generators: 2 @ 456 kw, 3-ph, 11,000 v, 600 rpm, 60
 cyc,
 SS-make: 1 @ 500 kw, 3-ph, 11,000 v, 600 rpm, 60
 cyc Shibaura-make.
 Transformers: 3 @ 1,500 kva.
 Transmission line to sub-station at Kawakami No. 1
 Hydro Plant is 9.746 km long.

HIROTAKI NO. 2 HYDRO PLANT

Capacity commonly in use (in kw): 1,000 (see date of
 construction)
 Source of power: Kuratani-gawa and Kibaru-gawa of the
 Chikugo-gawa system.
 Date of construction: construction begun Dec. 1930; in
 operation Mar. 1940.
 Details: particular capacities (in kw): *1,000 installed
 cap; 316 reg; 684 spec.
 Layout: aqueduct-type.
 Eff. head: 64.076 m; flow, 1.948 m³/sec.
 Penstocks: 1.
 Plant, external features: the plant is entirely out of
 doors.
 Plant, equipment:
 Turbines: 1@ 1,450 hp, Francis-type.
 Generators: 1 @ 1,250 kva, 3-ph, 720 rpm, 60 cyc.
 Transmission line to substation at Kawakami No. 1 Hydro
 Plant is 11.286 km long

KAWAKAMIGAWA NO. 1 HYDRO PLANT

Capacity commonly in use (in kw): 8,400, as of Dec. 1936.
 Source of power: Kawakami-gawa.
 Date of construction: founded June 1916; in operation Mar.
 1940.
 Details: particular capacities (in kw): *6,720 installed
 cap; 3,100 reg; 5300 spec; 6,532 reg pk.
 Layout: aqueduct-type
 Eff. head: 125.5 m; flow - 8.9 m³/sec.
 Penstocks: 3.
 Plant, external features: of concrete construction, 2
 stories high with several wooden dwellings nearby.

Plant, equipment:

Turbines: 3 @ 8,500 hp, 3-ph, Francis-type, B-make.
 Generators: 3 @ 2,800 kva, 3-ph, 6,600 v, 720 rpm, 60 cyc, Shibaura-make.
 Transformers: 3 @ 2,500 kva, 1-ph, 6.6/67.5,66,64.5 kv, D-D conn, water-cooled, 60 cyc, core-type, Ge-make;
 3 @ 1,250 kva, 3-ph 6.6/67.5,66,64.5 kv, D-D conn, water-cooled, 60 cyc, shell-type, Shibaura-make;
 3 @ 2,000 kva; 3 @ 5,000 kva.
 Other equipment: Semi-automatic (one-man control) equipment installed.

KAWAKAMIGAWA NO. 2 HYDRO PLANT

Capacity commonly in use (in kw); 2,200 as of Dec. 1926.
 Source of power: Kawakami-gawa.
 Date of construction: unknown; in operation as early as Dec. 1926 and as recently as Mar. 1940.
 Details: particular capacities (in kw): *1,760 installed cap; 800 reg; 1,400 spec.
 Eff. head: 39.2 m; flow, 7.8 m³/sec.
 Plant, equipment:
 Turbines: 2 @ 1,430 hp, Francis-type, horizontal-shaft, Voith-make; 1 @ 950 hp, Francis-type, Hitachi-make.
 Generators: 2 @ 800 kw, 3-ph, 2,400 v, 600 rpm, 60 cyc, SS-make; 1 @ 645 kw, 3-ph, 2,400 v, 720 rpm, 60 cyc, Hitachi-make
 Transformers: 3 @ 660 kva, 1-ph, 2.4/24/36 kv, D-D conn, water-cooled, 60 cyc, shell-type, SS-make;
 3 @ 300 kva, 1-ph, 2.4/23,24,25 kv, D-D conn, water-cooled, 60 cyc, shell-type, Hitachi-make
 Other equipment: automatic equipment, by which plant is controlled from Kawakamigawa No. 1 Plant, has been installed.

KAWAKAMIGAWA NO. 3 HYDRO PLANT

Capacity commonly in use (in kw): 2,400 as of Dec. 1936.
 Source of power: Kawakami-gawa.
 Date of construction: unknown; in operation as early as Dec. 1926 and as recently as Mar. 1940.
 Details: particular capacities (in kw): Est. 2,400 installed cap.
 Eff. head: 28.4 m; flow - 6.68 m³/se .
 Plant, equipment:
 Turbines: 1 @ 2,026 hp, Francis-type, horizontal-shaft, Dengyosha-make; another turbine has probably been added.
 Generators: 1 @ 1,400 kw, 3-ph, 6,600 v, 514 rpm, 60 cyc, Shibaura-make; another generator has probably been added.
 Transformers: 3 @ 1,000 kva, 1-ph, 6.6/24,24.6,25 kv, D-D conn, water-cooled, 60 cyc, shell-type, GE-make.
 Other equipment: automatic equipment, by which plant is controlled from Kawakamigawa No. 1 Plant, has been installed.

KAWAKAMIGAWA NO. 4 HYDRO PLANT

Capacity commonly in use (in kw); 1,100 as of June 1928.
 Source of power: Kawakami-gawa.
 Date of construction: unknown; in operation as early as Dec. 1926 and as recently as Mar. 1940.
 Details: particular capacities (in kw): *1,035 installed cap; 480 reg; 620 spec; 750 reg, pk.
 Eff. head: 42.3 m; flow - 3.48 m³/sec.
 Plant, equipment:
 Turbines: 1 @ 1,600 hp, Francis-type, horizontal-shaft, Voith-make.
 Generators: 1 @ 1,294 kva, 3-ph, 6,800 v, 600 rpm, 60 cyc Ge-make
 Other equipment: automatic equipment by which plant is controlled from Kawakamigawa No. 1 Plant has been installed.

KAWAKAMIGAWA NO. 5 HYDRO PLANT

Capacity commonly in use (in kw): 2,400, as of Jan. 1929.
 Source of power: Kawakami-gawa.
 Date of construction: completed Jan. 1929; in operation Mar. 1940.
 Details: particular capacities (in kw): *2,640 installed cap; 853 reg; 1,547 spec.
 Eff. head: 25.78 m; flow - 12.522 m³/sec.
 Dam: of concrete with stone pitching; 2 stone gates.
 Plant, equipment:
 Turbines: 1 @ 3,820 hp, Francis-type, vertical-shaft, Hitachi-make.
 Generators: 1 @ 3,300 kva, 3-ph, 277 rpm. 60 cyc. Hitachi-make.
 Other equipment: automatic equipment, by which plant is controlled from Kawakamigawa No. 1 Plant, has been installed.

KIURAGI HYDRO PLANT

Capacity commonly in use (in kw): 5,230, as of Dec. 1936.
 Source of power: Kiuragi-kawa and Tenno-gawa.
 Date of construction: construction was begun Oct. 1930 and completed Feb. 1931; in operation Mar. 1940.
 Details: particular capacities (in kw): *5,000 installed cap; 900 reg; 4,330 spec; 5,000 reg pl.
 Eff. head: 193.54 m; flow, 3.34 m³/sec.
 Dam: 15.5 m high, 47.4 m long, overflow-type.
 Plant, external features: the plant is completely out-of-doors.
 Plant, equipment:
 Turbines: 2 @ 3,700 hp, Francis-type, vertical-shaft.
 Generators: 2 @ 3,125 kva, 3-ph, 6,600 v, 720 rpm, 60 cyc.
 Transformers: 3 @ 3,000 kva.
 Other equipment: automatic equipment installed for remote control from the Higashi Taku transformer station.

TAMASHIMA HYDRO PLANT

Company: Toho Denryoku KK
 Capacity commonly in use (in kw): 2,000, as of Dec. 1936.
 Source of power: Tamashima-gawa and Kari-gawa.
 Date of construction: construction was begun Sept. 1930 and completed Dec. 1930; in operation Mar. 1940.
 Details: particular capacities (in kw): #2,000 installed cap; 560 reg; 1,440 spec.
 Eff. head: 72.72 m; flow - 3.0478 m³/sec.
 Plant, equipment:
 Turbines: 1 @ 2,900 hp, Francis-type, vertical-shaft.
 Generators: 1 @ 2,500 kva, 3-ph, 6,600 v, 600 rpm, 60 cyc.
 Transformers: 3 @ 350 kva, 6.6/24,25 kv.
 Other equipment: equipment for automatic control from the Karazu substation installed.

APPENDIX IV

PLACE NAMES AND LOCATIONS.

<u>SHI</u>		<u>LAT. N.</u>	<u>LONG. E.</u>
KARATSU		33.27	129.58
SAGA		33.14	130.18
<u>MACHI</u>	<u>GUN NO*</u>	<u>LAT. N.</u>	<u>LONG. E.</u>
Arita	6	33.11	129.54
Gosu (see Tosu)	5		
Hama	1	33.05	130.07
Hamasaki	2	32.27	130.02
Hasuike	3	33.15	130.21
Imari	6	33.16	129.53
Kanzaki	3	33.18	130.22
Kashima	1	33.06	130.06
Kiyama	5	33.26	130.31
Ochi	2	33.21	130.01
Ogi	7	33.17	130.12
Omach	4	33.13	130.07
Sashi	2	33.28	129.56
Shiota	1	33.08	130.04
Shiraishi	4	33.21	130.28
Tajiro	5	33.23	130.31
Takeo	4	33.11	130.01
Tosu	5	33.22	130.31
Ureshino	1	33.07	130.00
Ushizu	7	33.15	130.12
Yamashiro **	6	33.19	129.48
Yobuko	2	33.32	129.54
<u>MURA</u>	<u>GUN NO*</u>	<u>LAT. N.</u>	<u>LONG. E.</u>
Arita	6	33.11	129.54
Ariura	2	33.29	129.53
Asahi	5	33.22	130.29
Asahi	4	33.13	130.01
Ashikari	7	33.13	130.13
Chigose	3	33.16	130.20
Chika	2	33.30	129.52
Fukudomi	4	33.11	130.12
Fukuji ***	4		
Fumoto	5	33.23	130.27
Furueda	1	33.04	130.06
Gochoda	1	33.07	130.04
Hashishimo	4	33.12	130.04
Hatatsu	6	33.22	129.53
Higashikawa-nobori	4	33.09	129.59

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Higashikawasoe	8	33.14	130.22
Higashiseburi	3	33.23	130.23
Higashitaku	7	33.16	130.09
Higashiyamashiro	6	33.16	129.52
Higashiyoka	8	33.13	130.18
Hokusan	7	33.10	129.56
Honjo	8	33.13	130.16
Hyogo	8	33.16	130.19
Iruno	2	33.27	129.50
Kagami	2	33.26	130.00
Kamimine	5	33.21	130.25
Kase	8	33.13	130.15
Kashima	1	33.06	130.06
Kasuga	8	33.20	130.16
Kawakami	8	33.19	130.16
Kinryu	8	33.21	130.18
Kirigo	2	33.25	129.53
Kisato	5	33.23	130.32
Kitaariake	4	33.10	130.10
Kitahata	2	33.20	129.57
Kitakata	4	33.13	130.03
Kitakawasoe	8	33.14	130.19
Kitashigeyasu	5	33.20	130.28
Kitataku	7	33.18	130.07
Kitayama	7	(See Hokusan-mura)	
Kiuragi	2	33.18	130.04
Kohoku	4	33.12	130.09
Kose	8	33.15	130.19
Kuboizumi	8	33.20	130.19
Kubota	8	33.14	130.14
Kuma	1	33.09	130.03
Kuri	2	33.22	130.01
Kurokawa	6	33.20	129.52
Magarikawa	6	33.12	129.51
Matsuume	8	33.21	130.15
Matsuura	6	33.17	129.58
Mikatsuki	7	33.17	130.13
Mikawa	5	33.17	130.25
Minamiariake	4	33.09	130.08
Minamihata	6	33.18	129.56
Minamikawasoe	8	33.11	130.19
Minamishigeyasu	5	33.17	130.27
Minamitaku	7	33.15	130.07
Minamiyama	7	(See Nansan-mura)	
Minato	2	33.31	129.57
Mitakawa	3	33.20	130.24
Mitsuse	3	33.26	130.17
Nabeshima	8	33.16	130.15
Nagoya	2	33.35	129.42
Nakahara	5	33.01	130.39
Nakakawasoe	8	33.12	130.20
Nakatori	4	33.12	129.58

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Nanaura	1	33.03	130.08
Nanayama	2	33.27	130.07
Nansan	7	33.20	130.14
Niiyama	3	33.21	130.22
Nikita	8	33.13	130.19
Niri	6	33.16	129.49
Nishikawa-nobori	4	33.08	129.57
Nishikawasoe	8	33.13	130.19
Nishikie	4	33.10	130.07
Nshitaku	7	33.16	130.02
Nishiyamashiro **	6		
Nishiyoka	8	33.13	130.16
Nokomi	1	33.02	130.04
Okawa	6	33.18	129.56
Okawachi	6	33.14	129.54
Onizuka	2	33.25	130.00
Oseki	8	33.24	130.13
Otakuma	8	33.11	130.20
Otsubo	6	33.16	129.54
Oura	1	32.58	130.11
Oyama	6	33.13	129.52
Rokkaku	4	33.10	130.07
Ryuo	4	33.08	130.06
Saigo	3	33.21	130.20
Sakaino	3	33.15	130.21
Sefuri	3	33.23	130.19
Shirota	3	33.16	130.22
Suko	4	33.11	130.06
Sumiyoshi	4	33.13	129.57
Tachibana	4	33.11	130.04
Takagise	8	33.17	130.17
Takeuchi	4	33.13	129.58
Taku	7	33.16	130.05
Tamashima	2	33.25	130.05
Tara	1	33.02	130.10
Tokawa	7	33.15	130.11
Uchiage	2	33.31	129.54
Wakaki	4	33.15	129.59
Yoshida	1	33.03	130.01

* Gun:

1. Fijitsu
2. Higashimatsuura
3. Kanzaki
4. Kinoshima
5. Miyaki
6. Nishimatsuura
7. Ogi
8. Saga

** Nishiyamashiro-mura changed to a machi in 1936 and re-named Yamashiro.

*** Fukuji-mura changed to a machi in 1936 and re-named Shiraishi.

TABLE OF WEIGHTS AND MEASURES

WEIGHT

1 momme (10 fun)	-0.1323 oz.	- 3.750 grams
1 kin (160 momme)	-1.323 lb.	- 0.600 kilograms
1 kan (1000 momme)	-8.267 lb.	- 3.750 kilograms
1 koku (fish) - 40 kan		
1 ounce	- 7.560 momme	
1 pound	- 120.958 momme	
1 short ton	- 241.916 kan	
1 gram	- 0.266 momme	
1 kilogram	- 266.666 momme	
1 metric ton	-1666.66 kin	

Length

1 shaku (10 sun)	- 11.930 inch	- 30.303 centimeters
	- 0.994 foot	- 0.303 meter
1 ken (6 shaku)	- 5.965 feet	- 1.818 meters
1 cho (60 ken)	- 0.678 mile	- 109.090 meters
1 ri (36 cho)	- 2.440 miles	- 3.927 kilometers
1 shaku (cloth measure)	- 1.25 shaku	
1 tan (a roll of cloth)	- approx. 25 - 30 shaku	
1 hiki (cloth)	- 2 tan	
1 inch	- 0.084 shaku	
1 foot	- 1.006 shaku	
1 yard	- 3.017 shaku	
1 mile	- 885.123 ken	- 0.4098 ri
1 meter	- 3,300 shaku	
1 kilometer	- 550,000 ken	- 0.2546 ri

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AREA

1 sq. shaku	-	0.988	sq. foot	
1 tsubo (36 sq. shaku)	-	3.954	sq. yards	
1 se (30 tsubo)	-	118.614	sq. yards	- 0.992 are
1 cho (100 se)	-	2.45	acres	- 0.0099 sq. kilometer
1 sq. ri	-	5.955	Sq.miles	-15.424 sq. kilometers
1 tan - 10 se				
1 sq. foot	-	1.0116	sq. shaku	
1 sq. yard	-	9.105	sq. shaku	
1 acre	-	40.804	se	
1 sq. mile	-	261.147	cho	
1 are	-	30.250	tsubo	
1 hectare	-	1.008	cho	
1 sq. kilometer	-	100.833	cho	

Capacity

1 sho (10 go)	-	3.812	pints (U.S.)	-	1.804	litres
1 cu. shaku	-	0.983	cu. foot	-	27.826	litres
1 cu. tsubo	-	7.861	cu. yards	-	6.010	kilolitres
1 koku (dry)	-	4.960	bushels (British)			
	-	5.119	bushels (U.S.)			
1 koku (timber)	-	approx.	10 cu. feet			
1 shakujime (timber)	-	approx.	12 cu. feet			
1 cu. foot	-	1.0176	cu. shaku			
1 cu. yard	-	27.474	cu. shaku			
1 gallon (U.S.)	-	2.098	sho			
1 bushel (British)	-	1.305	cu. shaku			
1 litre	-	0.554	sho			
1 kilolitre	-	35.937	cu. shaku			
1 cu. metre	-	35.937	cu. shaku			
1 koku (liquid)	-	10 to 100	sho	-	1000	go