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PREFECTURAL STUDIES

AICHI KEN

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Civil Affairs Handbook

J A P A N

Prefectural Studies

A I C H I K E N

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THIS MANUAL IS ONE OF A SERIES OF PREFECTURAL STUDIES ON JAPAN PREPARED AT THE CIVIL AFFAIRS HOLDING AND STAGING AREA WITH THE COOPERATION OF THE CASA OUTPOST OF THE OFFICE OF STRATEGIC SERVICES

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This series of studies is 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 embodies information available at the Presidio of Monterey, Monterey, California on 1 September 1945.

The preparation of these studies is a part of the effort to carry out Military Government responsibilities as efficiently as possible. These handbooks do not deal with plans or policies, (which will depend on changing and unpredictable developments).

It should be clearly understood that they do not imply any given course of official action. They are, rather, ready-reference source books containing the basic factual information needed for planning and policy making.

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Washington 25, D. C. September 1945

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BY ORDER OF THE SECRETARY OF WAR:

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SUMMARY

Aichi-ken is on the southeast coast of south central Honshu. There are 8 cities in Aichi-ken. The principal city and prefectural capital is Nagoya-shi, third largest in Japan and center of one of the 4 major regions. The prefecture ranks fifth in density of population.

It is among the most highly industrialized prefectures of Japan although agriculture was the leading occupation in 1930. It is estimated that manufacturing accounted for 40 percent of the occupied population in 1944. The prefecture is a deficit area in agricultural production, but self sufficient in fishing. It does not have extensive mineral deposits.

Nagoya-shi is the fifth ranking Japanese port in foreign and tenth in domestic trade. There are 3 smaller ports of which 2 ship in domestic trade only.

The Nagoya-shi section is well served by railroads extending in all directions from the city. In the southeast, most lines are confined to the coastal areas, and rail facilities in the mountainous northeast are poor.

The highway system is well adapted to needs of local traffic but offers little competition to the railroads in long distance travel.

The telephone system is one of the most extensive in Japan and Nagoya-shi is the center of one of the telegraph zones. Radio broadcasting is well developed, covering most of the neighboring prefectures as well as Aichi-ken itself. There is a comparatively large number of licensed receiving sets in the hands of the public. The prefecture's electric power system is part of the Osaka-Nagoya transmission network, which can exchange service with the Osaka-Kobe and Tokyo grids. It is estimated that the 1941 production of the 23 generating plants in Aichi-ken was 2.6 percent of the national total.

Aichi-ken is in the Tokai-Hokuriku Superintendency-General. Cultural and social institutions and organizations are similar to those found in other densely populated prefectures.

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PHYSICAL BACKGROUND

A. LOCATION AND SIZE

Aichi-ken is in south-central Honshu on the southeast coast at approximate latitude 35°00'N, longitude 137°15'E. It is bounded on the north by Gifu-ken and Nagano-ken; on the south by the Pacific Ocean, and on the southwest and west by Ise-wan and Mie-ken. (See AMS Map L571)

The prefecture has a north-south extent of 60 miles and an east-west extent of 67 miles. Its area is 5,084 square kilometers (1,962 square miles), comprising 1.3 percent of the total area of Japan Proper. It is slightly smaller than the State of Delaware, and in 1940 had a population of 3,166,592 persons.

B. TERRAIN REGIONS

The greater part of Aichi-ken lies in the Ise-wan lowlands, a large horseshoe-shaped region which curves around the west, north, and east sides of Ise-wan. The remainder of the prefecture spreads over the southwestern corner of the Kiso Mountains and the western third of the Hamamatsu coastal lowlands.

1. The Ise-wan Lowland.

Except for the Kanto Plain, this is the largest lowland region in Central Honshu. It is bordered by the Suzuka Highlands on the west, the Nagara and Hida Mountains on the north and northeast, and by the Kiso Mountains on the east; the city of Nagoya lies near its center. The region's greatest north-south dimension within the prefecture is 55 miles, and its width ranges from about 32 miles in the Nagoya Plain sub-region to less than 2 miles at the tip of Chita-hanto. Aichi-ken contains more than ½ of the lowland. Of the 6 sub-regions, Aichi-ken contains about ½ of the Nagoya Plain and all of the Okazaki Plain and the Seto Terraces.

The Nagoya Plain sub-region, named for Japan's third largest city, is a rectangular area at the head of Ise-wan and is about 34 miles north-south by 24 miles east-west. The city of Nagoya, about 3 to 4 miles across, occupies most of the plain's southeastern corner. Most of the area consists of the low, flat to gently sloping alluvial plains of the lower Kiso-gawa and other smaller streams. Altitudes above 300 feet are uncommon. Although highly industrialized, a large part of the plains area is in rice. The western part of the plain has numerous diked areas in which irrigation is easy and drainage is difficult. Four important rivers gather drainage from the high mountains of central Honshu, and from ancient times this has

been a region of disastrous floods.

The Okazaki Plain sub-region is in the southeastern corner of the Ise-wan Lowlands and is about 13 miles wide by 18 miles long. This area bears a close resemblance to the terrain of the Nagoya Plain except that is is somewhat more rolling and has fewer streams and irrigation ditches. Along the eastern margin, where it abuts against the Kiso Mountain region, there is a transitional belt of low dissected terrace country about 1 to 3 miles wide where elevations occasionally exceed 1,000 feet.

The Seto Terraces sub-region is a complex area of dissected terraces, hills and plains and lies between the Nagoya and Okazaki Plains. It includes Chita-hanto, and from its northeastern corner to the southern tip of that peninsula has an airline length of 35 miles. It ranges in width from 3 to 15 miles. The terraces abut against the Nagara and Kiso Mountains in the north and east, and to the south and west are bordered by the Chita-wan, the Ise-wan and the Nagoya Plains. Elevations range downward from more than 1,000 feet in the northern portion to ridges mostly below 300 feet in the southern part of Chita-hanto. Ridge tops and valley bottoms are generally less than 300 yards wide in the north, although the area is interspersed with gently sloping basins from 2 to 10 miles across. Valleys become wider toward the southern boundary and valley sides are usually less than 150 feet high. A narrow discontinuous coastal plain runs along the edge of the Chita peninsula and is followed by railroad rights of way.

2. <u>The Hamamatsu Coastal Lowlands</u>.

The part of this region within Aichi-Ken has an east-west length of about 29 miles and a width which ranges from about 5 miles in the west to about 18 miles in the eastern portion. Elevations almost everywhere are below 300 feet. Occasional ridges exceeding 1,000 feet are not typical of the region.

The Toyohashi Plain sub-region, roughly 10 miles across, is made up largely of delta plains of the Toyo-gawa and adjacent streams and averages from 0 to 300 feet in elevation. The Kiso and Akaishi Mountains form the northern and eastern boundaries respectively. The Atsumi-hanto Terraces represent the southern boundary while Atsumi-wan is to the west.

The Atsumi-hanto Terraces sub-region, 29 miles long and 3 to 5 miles wide within Aichi-Ken, is adjoined on the east by the Akaishi Mountains, and elsewhere by low plains and bays. Flat ridges ranging from 100 to 200 feet high, a mile to several miles long, and 50 to several hundred yards wide, with

low but steep sides, are characteristic of the terrain. Scattered through the typical terrace country of Atsumi-hanto are hills which attain 500- to 800-foot elevations and small low-lying plains. Transportation systems within the region are quite limited.

The Akaishi Mountains extend for a distance of 5 miles into Aichi-Ken as far as the east bank of Toyo-kawa, constituting an area of less than 70 square miles. Elevations are moderate and seldom exceed 2,000 feet.

The southwest third of the Kiso Mountains region falls within Aichi-Ken. Altitudes range between 1,000 and 2,000 feet, valleys are relatively broad, and a rather complete network of improved roads penetrates the area.

A small group of tiny islands lie at the entrance to Atsumi-wan. The entire chain is only about 7 miles long and the largest island, Sakuno-shima, at the northwestern end, is little more than 1 square mile in area. Altitudes seldom exceed 300 feet.

C. HYDROLOGY

1. Rivers.

The Tenryu-gawa, Kiso-gawa, and Shonai-gawa are among the important rivers of Japan. See AMS L571.

a. Tenryu-gawa. This river originates in Suwa-ko in Nagano-ken and empties into the sea about 6 miles southeast of Hamamatsu-shi in Shizuoka-ken. It runs along the Aichi-Shizuoka border for a distance of 10 miles where it flows through a deep canyon-like valley in inaccesible mountain country. For stream flow data and other details see Shizuoka-ken Manual.

b. Kiso-gawa. This river, one of the largest in Japan, originates in Nagano-ken and flows through Gifu-ken and along the western boundary of Aichi-ken into Ise-wan about 12 miles southwest of Nagoya. It has a length of 144 miles and a drainage basin of 2,513 square miles. It has two main tributaries, the Nagara-gawa and the Hida-gawa, both in Gifu-ken. In the section along the Aichi-ken boundary, the Kiso-gawa flows through the Nagoya Plain. Here it is a braided stream, bordered by wide barren flats, and with many channels and islands. There are many mouths to the river and several of them, particularly those near Nagoya, are canalized.

To facilitate navigation a jetty is located near the mouth of the river, which requires frequent dredging. Shallow-draft boats can ascend the main stream for about 50 miles. Depths are generally more than 5 feet for 140 miles upstream to a point above Agematsu-machi in Nagano-ken. Depths are variable in the lower course, ranging from 4 feet to more than 20 feet. The least depths are in the vicinity of Gifu-shi in Gifu-ken and Inuyama-machi in Aichi-ken where the river begins to spread over the Nagoya Plain.

The main peaks of high water occur in late summer and early fall. Melting snows result in a minor high-water period in April. During the periods from January 1920 to August 1922 and from January 1923 to December 1929, stream-flow gaugings were taken near Yaotsu-machi in Gifu-ken. The drainage area above the gauging station is reported to be 355 square miles. The monthly maximum was 85,500 cubic feet per second (July 1922.) The monthly minimum was 290 cubic feet per cubic second (February,1925.) The monthly mean was 2,230 cubic feet per second. The maximum flood during the period was not recorded.

River improvement works have been constructed on the

Kiso-gawa to facilitate flood control, irrigation, and navigation. The works consist mainly of levees to confine the flood stream; movable dams, sluices, and canals to divert some of the additional stream flow during periods of flood; retarding basins to equalize stream flow; and straightened channels to quicken flood discharge. The movable dams, sluices, and canals are located near the estuaries, and, by diverting some of the flood waters, reduce silting in the river, and make dredging for navigation feasible.

c. Shonai-gawa. This river, 93 miles long, originates in Gifu-ken, and empties into Ise-wan at the western edge of Nagoya-shi. It is navigable for about 34 miles above its mouth. Between 1920 and 1929 stream flow observations were made near Tajimi-shi in Gifu-ken at the head of navigation, above which the drainage area is 230 square miles. The maxium flood was not recorded. The monthly maxium was approximately 40,000 cubic feet per second, the monthly minimum approximately 300 cubic feet per second and the monthly mean approximately 1,811 cubic feet per second. (See also Chapter IV, Section A, 3.)

d. Streams and Canals of Nagoya-shi. Several streams discharge into the river harbor of Nagoya among which are the Naka-gawa, Arako-gawa, and the Hori-gawa from the north, and the Yamasaki-gawa and the Oe-gawa from the east. These streams have been dredged for various distances for irrigation, flood control, and navigation purposes. Together they form 20.8 miles of navigable waterways.

The Naka-gawa canal is the largest canal in the Orient. It extends from the western part of the harbor of Nagoya to the Hori-kawa, which is north of the city. It has a length of 20,967 feet and a width ranging from 208 to 298 feet, with a normal depth of 10 feet and a depth of 7 feet during low water. The vertical banks of the canal, which are founded on piles, are 12 feet above the bottom of the canal; sloping banks rise 5 feet more above the tops of the walls. On either side of the canal the land has been reclaimed for a width of about 435 feet to be used for wharves and industrial plants. The canal has 2 locks, one of them being at its lower end, 385 feet long and 35 feet wide.

A short canal has been built connecting the Naka-gawa and the Hori-gawa canals. The Hori-gawa has itself been canalized to Nagoya for a length of about 6.8 miles. It passes through Atsuda-ku. The Shinhori-kawa canal branches off the Hori-gawa canal 5,000 feet above its mouth and runs parallel to it for about 2.8 miles to the central part of Nagoya. The smaller canals in Nagoya are part of the flood control works which have been built at the deltas of the

major streams, and regulating dams have been constructed to make them usable by small boats.

e. River flood damage. In Aichi-ken in 1936 river floods caused damage to 139 communities, injuring 2 people and damaging 138 buildings. 1,360 acres of agricultural fields and rice paddies were flooded. Damages amounted to 312,400 yen and 2,770,300 yen were expended in repairs and capital improvements.

D. CLIMATE AND WEATHER.

1. Seasons.

Even though Aichi-ken has mountainous terrain in its eastern portion, its weather and climate at any particular time are reasonably uniform. Winter frontal storms moving down from the northwest usually spend their precipitation on Honshu's backbone of mountains and leave Aichi-ken with clear skies and temperatures which average about 40 degrees Fahrenheit.

The summers are hot, humid and rainy. The moisture-laden winds usually moving northward across the Pacific Ocean cause considerable cloudiness and frequent thunderstorms. In spring and autumn the winds are light and variable, frontal storms are at their peak and precipitation is heavy. The temperatures are moderate. Occasional typhoons occur in the late summer and fall.

2. Temperatures.

The midsummer temperature in Aichi-ken comparable to that of the American Atlantic seaboard from about Washington, DC to southern Georgia. The frost-free season is long and varies from 180 to 260 days.

Winters are relatively mild, the coldest months having mean temperatures above freezing. On sunny winter days midday temperatures are very pleasant, but when it is overcast and a strong wind is blowing, the humid cold is raw and penetrating.

The temperature record at Nagoya-shi is considered to be representative except for mountainous areas of the prefecture (see table 1).

TABLE 1

Temperatures, Nagoya-shi (in degrees Fahrenheit)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.
Mean daily max.	47	49	55	66	73	79	86	89	82	72	62	51	68
Mean daily min.	30	31	36	46	54	63	71	73	66	53	42	34	50
Absolute max.	64	69	77	87	90	96	99	100	96	85	81	70	100
Absolute min.	13	15	20	29	37	47	57	58	49	35	27	19	13

3. Precipitation, Humidity, Fog.

Annual precititation varies from 60 to 100 inches over the prefecture, being much heavier during the summer than the winter. Humidity is high, but fog is not prevalent. Table 2 gives the record at Nagoya-shi, which is representative of the western 2/3 of the prefecture. Precipitation is heaviest in the eastern portion.

TABLE 2

Precipitation, Humidity & Fog, Nagoya-shi.

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.
Mean precip., in	2.4	2.8	4.8	6.4	6.5	9.0	7.0	6.9	9.6	6.2	3.2	2.3	67.1
Mean days with precip. of 0,004" or more	10	9	12	13	12	15	15	12	16	12	10	10	146
Mean days with trace or more of snowfall	6	5	2	*	0	0	0	0	0	0	*	3	16
Mean relative humidity, (per cent)	75	71	69	72	73	78	79	78	81	78	76	76	75
Mean days with fog													4.1

4. Winds.

Table 3 gives the percentage frequency of various wind directions. The average velocity is 5.6 m.p.h. with aminimum of 4.9 m.p.h. in the fall and a maximum of 6.7 m.p.h. in February. There are about 8 days per year with gales.

TABLE 3

Surface Wind Directions, Nagoya-shi
(percentage frequencies)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann.
N	26	24	22	18	18	12	12	14	21	32	28	28	21
NE	6	6	4	4	5	5	5	7	6	6	3	7	6
E	2	2	2	5	7	5	6	8	5	2	3	3	4
SE	2	2	4	11	13	17	20	19	15	3	3	2	9
S	1	2	4	9	12	18	16	16	10	4	3	2	8
SW	2	2	4	8	8	11	12	11	7	5	7	2	6
W	16	15	16	12	12	12	11	10	9	11	13	17	13
NW	44	46	43	32	24	19	16	14	26	37	40	38	32
C	1	1	1	1	1	1	2	1	1	1	1	1	1

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. A fully developed typhoon may have a heavy rain area with a radius of perhaps 150 miles. Much of the damage resulting from the storms is caused by the very high tides which follow in its wake. Aichi-ken is located in the typhoon belt and in the area subject to greatest damage.

5. Catastrophes.

Japan has, on the average, about 1,500 earthquakes annually, or approximately 4 shocks per day. Since 1596 there have been more than 50 earthquakes resulting in loss of life, and 21 of these have caused the deaths of more than 1,000 persons. Those which have affected Aichi-ken are shown in Table 4.

TABLE 4

Serious Earthquakes, Aichi-ken.

Date	Locality	Deaths	Buildings Destroyed
3 Feb. 1605	Southeast coast of Japan	8,800	---
28 Oct. 1707	Southeast coast of Japan	4,900	29,000
9 June 1854	Yamato & Iga Provinces (includes west Aichi)	1,057	5,000
23-24 Nov. 1854	Tokaido and Shikoku (includes coastal Aichi-ken)	4,200	79,300

28 Oct. 1891	Mino and Owari Provinces (includes northwest Aichi-ken)	7,273	80,000

II. POPULATION AND SETTLEMENTS.

A. POPULATION.

In 1940 the population of Aichi-ken (including members of the armed forces) was 3,166,592 or 4.3 percent of the total population of Japan. The population density was 623 persons per square kilometer which placed it fifth among the most densely populated prefectures in Japan. (National average being 191). Between 1935 and 1940 it experienced a natural increase of 160,766 persons or 5.8 percent. Furthermore, it received 143,125 persons through migration during this same period, which gave it a net increase of 303,891 persons or 10.6 percent. This placed it fifth among the prefectures of Japan in rate of population increase during this period.

It is estimated that as of April 1945 the normal population of Aichi-ken (excluding armed forces) would reach 3,178,000. It is believed that 300,000 persons have left the prefecture as a result of population dispersal, which would bring the 1945 estimates to 2,878,000.

The population of Aichi-ken concentrated in 4 geographical areas, the Nagoya Plain, the Okazaki Plain, the Toyohashi Coastal Lowlands and along the eastern coast of the Chita-hanto. The largest and densest population concentration is on the Nagoya Plain, which is one of the most densely populated areas of Japan.

Aichi-ken is highly urbanized and ranks fifth in Japan among the urbanized prefectures. 54.3 percent of the population or 1,720,593 persons lived in urban areas in 1940. In 1943 there were 8 cities: Nagoya, Toyohashi, Okazaki, Ichinomiya, Seto, Handa, Toyokawa, and Kasugai. In 1940 more than 1/3 of the population of Aichi-ken lived in Nagoya, which was at that time the third largest metropolis in Japan.

In 1940 the sex ratio for Aichi-ken was roughly one male for every female. The city of Nagoya had a preponderance of males, while in all the other cities the females outnumbered the males. At the end of 1938 there were 481 foreigners (Koreans not included) in Aichi-ken. Table 5 shows the population of Aichi-ken as of 1940 by minor civil division.

TABLE 5

Population, 1940, Aichi-ken

Division	Total
AICHI-KEN	3,166,592
NAGOYA-SHI	1,328,084
Higashi-ku	205,458
Nishi-ku	185,705
Naka-ku	186,856
Minami-ku	96,933
Chikusa-ku	107,435
Nakamura-ku	125,237
Showa-ku	182,556
Atsuda-ku	98,089
Nakagawa-ku	88,208
Minato-ku	51,607
TOYOHASHI-SHI	142,716
OKAZAKI-SHI	84,073
TOYOKAWA-SHI	30,455
KASUGAI-SHI	28,587
ICHINOMIYA-SHI	70,792
HANDA-SHI	49,153
SETO-SHI	45,775
AICHI-GUN	57,613
Narumi-machi	14,815
Toyoake-mura	7,872
Togo-mura	4,241
Nisshin-mura	8,055
Tempaku-mura	8,097
Idaka-mura	5,307
Nagakute-mura	5,138
Hatayama-mura	4,088
HIGASHIKASUGAI-GUN	79,850
Komaki-machi	13,528
Sakashita-machi	3,878
Koscji-machi	7,479
Moriyama-machi	19,936
Shinano-machi	7,620
Ajioka-mura	4,145
Shinooka-mura	5,207
Shidami-mura	2,665
Asahi-mura	8,082
Mizuno-mura	7,310
NISHIKASUGAI-GUN	57,323
Nishibiwajima-machi	8,700
Kiyosu-machi	4,866
Shinkawa-machi	12,576
Yamada-mura	5,981
Kusunoki-mura	2,627
Toyoyama-mura	3,713
Kitazato-mura	4,535
Shikatsu-mura	5,428

Nishiharu-mura	6,535
Kasuga-mura	2,362
NIWA-GUN	86,506
Hotei-machi	8,006
Inuyama-machi	14,350
Kochino-machi	16,620
Iwahura-machi	9,521
Oguchi-mura	7,206
Gakuden-mura	3,453
Haguro-mura	3,363
Ikeno-mura	899
Joto-mura	4,014
Fuso-mura	8,246
Chiaki-mura	5,791
Tanyo-mura	5,037
HAGURI-GUN	32,101
Miyata-machi	4,818
Asai-machi	5,297
Kisogawa-machi	13,097
Kusai-mura	4,220
Kitagata-mura	4,669
NAKASHIMA-GUN	114,237
Inazawa-machi	16,883
Imaise-machi	9,885
Oku-machi	7,397
Okoshi-machi	20,015
Hagiwara-machi	7,455
Sobue-machi	12,079
Yamato-mura	7,135
Asahi-mura	6,029
Meiji-mura	7,125
Nagaoka-mura	1,799
Heiwa-mura	7,134
Chiyoda-mura	5,167
Osato-mura	6,134
AMA (KAIBU)-GUN	134,748
Tsushima-machi	22,733
Jimokuji-machi	9,111
Kanie-machi	11,856
Yatomi-machi	6,670
Kamori-mura	5,749
Shippo-mura	5,395
Miwa-mura	6,024
Oharu-mura	5,068
Tomita-mura	9,244
Nanyo-mura	8,539
Eiwa-mura	4,436
Jushiyama-mura	4,451

Tobishima-mura	3,831
Nabeta-mura	4,304
Ichie-mura	2,882
Saya-mura	4,134
Tatsuta-mura	6,432
Hakkai-mura	4,348
CHITA-GUN	171,204
Obu-machi	13,967
Arimatsu-machi	2,747
Otaka-machi	7,075
Ueno-machi	11,179
Yokosuka-machi	11,333
Yawata-machi	11,062
Okada-machi	4,823
Ono-machi	3,104
Tokoname-machi	11,997
Nishiura-machi	6,022
Noma-machi	4,790
Uchimi-machi	5,568
Toyohama-machi	6,757
Morozaki-machi	5,772
Kowa-machi	5,666
Taketoyo-machi	8,102
Agui-mura	8,591
Higashiura-mura	12,017
Asahi-mura	6,548
Miwa-mura	5,297
Onizaki-mura	6,765
Kosugaya-mura	4,690
Shinojima-mura	2,594
Himagashima-mura	2,050
Fuki-mura	2,688
HEKIKAI (OMI)-GUN	188,121
Anjo-machi	26,355
Takahama-machi	14,819
Shinkawa-machi	11,839
Ohama-machi	15,026
Tanao-machi	5,904
Yahagi-machi	11,937
Chiryu-machi	12,253
Kariya-machi	22,689
Yosami-mura	9,649
Asahi-mura	5,976
Meiji-mura	12,535
Sakurai-mura	6,596
Mutsumi-mura	9,061
Kamigo-mura	7,944
Takaoka-mura	12,379
Fujimatsu-mura	8,159

HAZU-GUN	95,438
Nishio-machi	19,597
Heisaka-machi	10,798
Teratsu-machi	4,884
Isniki-machi	17,554
Yoshida-machi	7,296
Hazu-machi	9,255
Fukuchi-mura	6,132
Miwa-mura	4,821
Toyosaka-mura	2,874
Muroba-mura	2,009
Yokosuka-mura	9,147
Sakushima-mura	1,071
NUKADA-GUN	44,403
Fukuoka-machi	3,657
Iwatsu-machi	9,499
Koda-mura	9,183
Ryugaya-mura	1,387
Fujikawa-mura	1,341
Yamanaka-mura	1,665
Motojuku-mura	1,761
Toyotomi-mura	3,746
Miyazaki-mura	2,515
Kawai-mura	2,355
Katano-mura	2,104
Shimoyama-mura	1,746
Tokiwa-mura	3,444
NISHIKAMO-GUN	58,815
Koromo-machi	20,629
Miyoshi-mura	6,833
Homi-mura	3,910
Sanage-mura	6,975
Fujioka-mura	4,794
Obara-mura	6,249
Ishino-mura	3,581
Takahashi-mura	5,844
HIGASHIKAMO-GUN	31,507
Asuke-machi	3,378
Matsudaira-machi	6,436
Morioka-mura	3,266
Shimoyama-mura	5,066
Komo-mura	3,817
Asahi-mura	5,971
Asuri-mura	3,573
KITASHIDARA-GUN	35,309
Taguchi-machi	3,979
Hongo-machi	2,021
Inabu-machi	5,348
Damine-mura	2,150

Furikusa-mura	2,996
Mitono-mura	1,733
Miwa-mura	2,288
Shimokawa-mura	1,289
Sono-mura	2,017
Toyone-mura	4,322
Tomiyama-mura	871
Kamitsugu-mura	1,495
Shimotsugu-mura	2,186
Nagura-mura	2,614
MINAMISHITARA-GUN	32,338
Shinshiro-machi	6,708
Ebi-machi	2,862
Chisato-mura	4,605
Togo-mura	6,696
Nagashino-mura	2,987
Horaiji-mura	4,013
Tsukude-mura	4,467
HOI-GUN	73,218
Goyu-machi	1,748
Akasaka-machi	1,398
Kozakai-machi	6,350
Mito-machi	7,815
Miya-machi	8,507
Gamagori-machi	17,285
Katanohara-machi	8,232
Nagasawa-mura	1,210
Hagi-mura	1,212
Ichinomiya-mura	5,268
Maeshiba-mura	3,090
Otsuka-mura	3,087
Shiotsu-mura	3,644
Nishiura-mura	4,372
ATSUMI-GUN	67,319
Futagawa-machi	10,125
Tawara-machi	12,985
Noda-machi	3,263
Fukue-machi	11,531
Takatoyo-mura	3,418
Oitsu-mura	3,004
Sugiyama-mura	3,087
Kambe-mura	4,251
Akabane-mura	6,415
Irakozaki-mura	5,260
Izumi-mura	3,980
YANA-GUN	26,907
Ono-machi	1,486
Nanasato-mura	2,752
Yamanoyoshida-mura	2,975

Funatsuke-mura	3,669
Yana-mura	5,365
Kanazawa-mura	865
Kamo-mura	1,404
Yamato-mura	957
Mikami-mura	1,020
Ishimaki-mura	6,414

*1940 population census. In the case of incorporations and amalgamation of machi or mura into shi since 1940, the incorporated area is adjusted by the additions of the other areas on the basis of the 1940 census. The gun population are also adjusted.

B. CITIES AND TOWNS.

1. Nagoya-shi.

Nagoya-shi, with a 1940 population of 1,328,084, ranks third among Japanese cities, and is one of the three greatest industrial cities of the country. While its production is smaller and less diversified than that of Tokyo or Osaka, Nagoya's industrial system is more modern and highly specialized for precision types of war production. Moreover, the city's rapid industrial expansion within the past 5 to 7 years has been almost exclusively in direct war industries, and it is in this respect that the area is considered one of the 4 primary industrial centers of Japan. Until approximately 1937, Nagoya was principally important for textiles, machinery and machine tools, aircraft, ordnance, foodstuffs, ceramics, rolling stock, watches and clocks, and chemicals. Since then great expansion has occurred in aircraft, machine tools, ordnance, special steel alloys, electrical equipment and chemicals. At the same time, new industries have been established in the neighboring towns: automobiles and motors, non-ferrous metals, anti-friction bearings, iron and steel, machine tools, and aircraft.

The bulk of these large industries are located in the city proper. See AMS Maps 340592, 340593, 340594, 340595. The Mitsubishi, Aichi and other aircraft factories within the city comprise the largest known concentration of primary aircraft capacity to be found in any Japanese city. The production of machine tools and light electrical equipment is also outstanding, the city being the site of the Okuma Iron Works (Okuma Tekkosho KK) and Mitsubishi Electric Company (Mitsubishi Denki KK), both ranking among Japan's leading machine tool concerns. There are a number of other large plants, but a substantial part of the city's industrial potential depends on the output of many small factories and household shops which are integrated into basic war production both within and beyond the Nagoya area. These small factories tend to cluster in congested residential and industrial areas of the city.

Nagoya is located on the southern margin of the Nagoya Plain, one of Japan's rich agricultural regions; the center of the city is about 4 miles inland from the northeastern extremity of shallow Ise-wan. The wide delta of the Kiso-gawa and its distributaries extends southwestward from the city. Nagoya's southernmost ward border the newly developed harbor, which is connected with the main part of the city by the canalized Hori-kawa and the Naka-gawa, a large industrial canal.

Nagoya is distinctly outlined by the harbor to the south, the Shonai-gawa along the west and north and low, rolling hills to the east. From the air, the city appears congested and low-lying, with few buildings rising over 2 to 3 stories except for a number of 8 to 9 story government and commercial buildings in the north central part.

The political boundaries of Nagoya enclose 160 square kilometers or nearly 62 square miles and extend southward to the bay. However, only in recent years, with the attempt to develop a deep-water harbor, has urban development reached to the coast. The city's shape is still that of a funnel, with the broader, central portion several miles inland but industrial and commercial development have expanded the southern portion greatly in recent years.

While the industrial districts and residential sections of Nagoya are congested and densely populated (about 18,500 per square mile), the density is in no way comparable to that of Tokyo or Osaka. Since no disaster was experienced for at least 50 years prior to the war, the city has developed with a minimum of municipal planning. Its extremely rapid industrial expansion within the last 10 years has resulted in a mushroom growth of workers' quarters in the vicinity of the industrial districts. In addition to a few wide avenues (running generally east-west and north-south) the only significant firebreaks are the lower portions of the Naka and Hori canals, sections of the multi-track right-of-way and three or four park or temple grounds. Prior to the incendiary attacks, bands of buildings were destroyed to serve as additional firebreaks.The city's vulnerability to fire is indicated by figures concerning types of construction, published in 1938, which show that an overwhelming percentage of the buildings are of wood and plaster.

Inadequate city planning has made the pattern of land use very irregular. Combustible houses crowd most of the city's large, fire-resistant buildings. A predominantly residential section extends along the entire eastern section of the city. Mixed residential/industrial sections extend along the southern, western and northern sides. The central commercial district is situated just south and northeast of Nagoya Castle. Regional concentration of factories is less conspicuous than in Tokyo or Yokohama. In general, however, they have had a tendency to collect in a "Y" shaped industrial area which includes the narrow southern end of the city and its southeastern and south-western margins, where canal and rail facilities are best developed. The newest factory areas appear to be on the reclaimed land around the harbor, along the improved Naka-gawa canal, and on the northeastern fringe The street pattern throughout the city is highly erratic but follows a roughly rectangular alignment, greatly modified by the new-

ly developed modern thoroughfare, and the canals and rivers that flow through the city. There are 542 bridges within Nagoya.

Nagoya's high industrial potential made it an early target for air raids and extensive damage to commercial and industrial areas has resulted. As of 17 July 1945, 11.3 square miles of the city had been destroyed by air attacks. From the point of susceptibility to fire, information which may still be of value, the city may be divided into two zones:

a. The most vulnerable area in the city is where the population density and congestion are highest. T is zone covers the central commercial district and the municipal center, marked by numerous multi-story brick or concrete business and government buildings. The clusters of large department stores, offices, banks, postal and telegraph offices, etc., (of generally fire-resistant construction) are crowded by congested blocks of combustible dwellings. Just south of the largest buildings are most of the city's hotels and theaters, several schools and temple grounds. Small factories dot the southern part of this zone, especially along the banks of the canals.

b. This zone comprises three districts, all less congested than zone a. The largest of these districts extends along the eastern and northern sides of the city. Its southern half covers a primary concentration of important industries as well as smaller plants; workers' homes crowd the factories,and more widely spaced residences extend along the eastern fringe. Its northern half covers another cluster of industries, while the northernmost part, north of the Castle, is a mixed industrial and residential district containing many medium-sized factories. The second district of zone 2 covers the warehouse section of Nagoya Harbor. Warehouse construction varies from wood to concrete, but most of the construction is combustible. The third district of this zone extends along the railroad station and freight yards in northwestern Nagoya and covers clusters of factories producing machine tools, aircraft parts, and ceramics, as well as a number of textile mills Workers homes, many of them housing railroad employees, crowd these plants on all sides.

Open spaces within Nagoya include 22 parks. In the northwest section are Nakamura-koen and several small parks surrounding shrines; in the northeast section are Tsurumi-koen, Shiga-koen, the grounds of the Tokugawa estate, the Tokai Middle School and the Castle; and in the southeast is the large Yobitsugi-koen.

2. Toyohashi-shi.

Toyohashi-shi, 1940 population 142,716, is in the heart of Japan's oldest military districts, and is important as the site of many government military schools. Army, cavalry, artillery, infantry, gunnery and youth military schools are located in the city. The city's economy, however, is dominated by manufacturing and the silk industry is well developed. The population of Toyohashi is reported to have increased around 50% in the period 1930-1940, an increase which reflects reports that the region has developed into a new industrial center. See OSS Map 3803.

The city is located on the Toyo-kawa east of Atsumi-wan, an eastern arm of Ise-wan. It is less compact than most Japanese cities of its size and contains numerous open spaces, mainly those surrounding the various army installations. The roads are surfaced, but with few exceptions are narrow and unsuitable for motor traffic The commercial section in the center of the city spreads to the east of the Tokaido Main Line R.R. station. Residential sections lie to the south of the commercial area and are bordered on the south by the military schools, an armament factory and an explosives factory, in the southernmost part of the city. The most important of the new plants in the city may be the Dai Nippon Heiki factory KK ordnance which was completed in 1941 for the manufacture of special ordnance and precision machine tools. In Toyokawa-shi, north of the city, is a large naval arsenal erected in 1939. Believed to feed into the arsenal is the Toyo Tsushinki plant south of Toyohashi, located in a converted textile factory and reliably reported to be producing aircraft parts, combat radio equipment for aircraft.

Government buildings in the city include:

Government monopoly office
Military police station
Police station
City office
Court house
Tax office
Hospital
Subprefectural office
Army headquarters
Silk experimental station

Toyohashi-shi has been the recipient of air raids resulting in the destruction by 17 July 1945 of 1.7 square miles of the city.

3. Okazaki-shi.

Okazaki-shi, 1940 population 84,073, is the focal point of the Okazaki Plain subregion, is the southeastern portion of the Ise-wan Lowland; it lies just off the eastern bank of the Yahagi-gawa. The city is part of a new industrial area east of Chita-wan which has mushroomed as a result of the war.

The built up section of the city spreads in "L" shaped form along the northern bank of the Ohira-gawa and east of the Yahagi-gawa, northeast of the confluence of those two rivers. Westward of the city extends the rich agricultural area of the plain, and to the east of the city is a large mountainous area, broken only by narrow river valleys. The city covers about 1½ miles east-west and about the same distance north-south. At the southwest corner of the "L" is a concentration of governmental and commercial buildings, including the subprefectural office,prison, city office, post-office, police station, and court house. The castle site is at the extreme southwest corner and is now occupied by Okazaki-koen. The city has some significance as the birthplace of Tokugawa Ieyasu, the founder of the Tokugawa Shogunate. The industrial section of the city appears to be south of the Ohira-gawa, along the river and the Okazaki Line. The Okazaki station on the Tokaido Main Line is about 2 miles south of the center of the city.

4. Ichinomiya-shi.

Ichinomiya-shi, 1940 population 70,792, is located about 9 miles northwest of Nagoya-shi in the Nagoya Plain region. The city is connected with Nagoya by the Tokaido Main Line RR., the Meiki Electric RR. Line and the Gifu Highway. The built-up section covers about 1½ miles north-south and a mile east-west, and is principally on the east side of the railroads. The eastern boundary of the densely populated section is marked by the Oe Irrigation Ditch which runs south from the Kiso-gawa, north of the city. See AMS Map, Ichinomiya .

Prior to the war Ichinomiya contained numerous textile factories, most of which have since been converted to the manufacture of war products. Most of the plants are located on the outskirts of the city. The Dai Nippon Doseki KK Textile mill, east of the city, has been reported converted to aircraft parts by the Kawasaki Kokuki KK. Three other factories are in the northeast section. Showa Boseki KK and several other factories on the northwest outskirts are reported to have been converted to munitions production. The principal government buildings in the city are located in the central section. From north to south they include the post office, tax office, police station, city hall, and

court house. A shrine one block north of the police station is surrounded by open grounds.

5. Handa-shi.

Handa-shi, 1940 population 49,153. is located on the eastern shore of the Chita-hanto, midway along the coast of Chita-wan. Prior to the war the city was the center of a small textile industry, some of which has now been converted to the manufacture of war products. With the exception of the delta land to the shoreward side of the city, Handa is surrounded by low hills. Numerous lakes and ponds are among the hills of the peninsula, and the Agui-gawa runs along the northeastern edge of the city, emptying into the bay. There is a small harbor at the east central part of the city. See AMS Map, Handa.

The industries of the city are located on the outskirts. Recent reports indicate that the Nakajima Hikoki KK (Nakajima Aircraft Co.) has opened a branch factory at Handa; while the exact location is unknown, it may be the plant of the Toyo Boseki KK cotton spinning mill, a large factory east of the city. There is also some industrial activity at or near the site of a golf course west of H nda, and this site may also be the location of the aircraft plant. Two other factories are in the northern section. In Taketoyo-machi, south of Handa, is the large explosives plant of the Nippon Yushi KK (Japan Fats & Oil Co.), ranking third among Japan's propellant manufacturers. The buildings are located in the open country southwest of the town. There are also unconfirmed reports of a second powder plant near the town.

The government buildings in Handa are located along the Taketoyo Rail Line which runs along the east coast of the peninsula. They include the court house, post office, subprefectural office, police station, and city office. A hospital is in I'mori, northeast of the city.

6. Seto-shi.

Seto-shi, 1940 population 45,775, is located about 13 miles northeast of Nagoya-shi in a region of rolling hills, and is connected to Nagoya by the Seto Electric Car Line and the Seto Highway The city is the center of the porcelain industry of Japan and is the site of the first porcelain kiln in the country. In 1930 there were 642 factories in the city. The city has received some new industry since the war and now produces ordnance and munitions. To the southwest of Seto-shi is the Honjigahara Maneuver Area.

The small built-up section of the city extends east and

west along the Seto Highway and contains a police station, court house, city office, and post office. In the southwest section is a ceramics school. The principal new factory now in the city is the O uma Iron Works, Asahi Plant, put into operation in July 1940 and expanded in September of the same year. This is the most important new plant of the company and manufactures munitions and ordnance.

7. Toyokawa-shi.

Toyokawa-shi (population 30,455) was incorporated as a city in 1942 or 1943. The city is located about 4 miles north of Toyohashi and is part of the industrial region which centers around the latter city. The city is also important as the site of the Toyokawa Naval Arsenal, built in 1939. The arsenal, which manufactures heavy machine guns and cannon for aircraft, is reported to be under the jurisdiction of the Yokosuka Naval Arsenal, and to be fed by several satellite plants in the area. The built-up section of the city is very small and is located northwest of the Toyokawa station of the T yokawa RR., connecting the city with the Tokaido Main Line RR. to the southwest. Important buildings are the city office, post office, court house and a hospital.

8. Kasugai-shi.

Kasugai-shi (population 28,587) is the most recently incorporated city in the prefecture. It includes the old settlements of Toriimatsu, Takaki, Kachikama and Shinogi. The city, located close northeast of Nagoya, is on the Chuo Main Line; the main built-up section extends as a long "shoestring" settlement along the Shimo highway.

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CHAPTER III. ECONOMY.

A. LABOR.

1. Occupations.

The main occupations in Aichi-ken are manufacturing, agriculture and commerce (See Table 6). The leading airpalne construction plants are in Nagoya-shi. In manufacturing, in terms of employment, Aichi-ken ranks third in Japan proper. In textile workers it ranks first, and it ranks first in cramics third in manufacturing of machinery and tools.

Table 6
Occupations, 1930 & 1944, Aichi-ken.

	1930 Census		1944 Estimates **	
Occupation	Number occupied (in thousands)	Percent	Number occupied (in thousands)	Percent
Agriculture	439	36.6	425	29.9
Manufacturing	357	29.8	590	41.5
Commerce	216	18.0	190	13.3
Government & professions	83	6.9	100	7.0
Communications & transportation	47	3.9	66	4.6
Domestic	22	1.8	14	1.0
Fishing*	10	.8	9	.6
Mining	3	.3	11	.8
Others	21	1.9	16	1.3
Totals	1,198	100.0	1,421	100.0

* Fishing: Totals are corrected to 1938

** 1944 estimates are based on the changes in population between 1930 and 1944, taking into account the migration of workers and the reallocation and the redistribution of labor; as well as those in the armed forces. It is estimated that as of 1 April 1945 the labor force in Nagoya-shi was 655,000, of whom 369,000 were engaged in the various manufacturing industries. This is a slight decrease from the total number of laborers ingaged in manufacturing listed in Table 7 below; however it represents a gain of over 100 percent in those employed in 1930.

TABLE 7

Estimated Manufacturing Employment, July 1944, Aichi-ken.

Priority industries			Non-priority industries	
Aircraft total	100,000		Ceramics	15,000
Final assembly		9,000	Clothing	5,000
Mfg. engines		60,000	Construction	15,000
Component manufacturing assembly		31,000	Food products	10,000
Chemicals	15,000		Gas & Electric	4,000
Machinery: tools & instruments	100,000		Lumber, woodenwares	20,000
Metals	25,000		Printing	7,000
Ordnance	30,000		Textiles	15,000
Tanks and trucks	15,000		All other mfg.	4,000
	285,000			95,000

Total: 380,000

TABLE 8

Occupations, 1930, Nagoya-shi.

Occupation	Number occupied (in thousands)	Percent
Manufacturing	162.6	42.5
Commerce	126.9	33.2
Government & professionals	36.7	9.6
Communications & transportation	20.9	5.5
Agriculture	18.9	5.0
Others	16.0	4.2
Total	382.0	100.0

As indicated by Table 9 the following cities had a high proportion of gainfully occupied persons engaged in manufacturing. The proportion of the manufactruing employees was higher than that for most cities in Japan Proper. The cities are Okazaki-shi, Toyohashi-shi, Seto-shi, Handa-shi and Ichinomiya-shi.

TABLE 9

Occupations, 1930, Various Cities, Aichi-ken.

Occupation	Okazaki-shi		Toyohashi-shi		Seto-shi		Handa-shi		Ichinomiya-shi.	
	1000s	%	1000s	%	1000s	%	1000s	%	1000s	%
Manufacturing	13.0	42.7	26.9	51.7	9.4	58.4	3.7	48.6	10.1	51.0
Commerce	8.5	27.9	14.7	28.2	4.1	25.6	1.8	23.1	6.2	31.2
Agriculture	4.8	15.8	3.3	6.4	-	-	1.0	13.2	-	-
Government & professions	2.3	7.8	4.6	8.9	-	-	-	-	1.1	5.7
Others	1.9	5.8	2.5	4.8	2.6	16.0	1.1	15.1	2.4	12.1
Total	30.5	100.0	52.0	100.0	16.1	100.0	7.6	100.0	19.8	100.0

2. Industrial Employment.

In 1938 there were 11, 997 factories in Aichi-ken employing 5 or more employees. There were 300,361 employees of whom 57 percent were males. This was an increase over the 5,687 factories employing 149,014 employees (of whom 40 percent were males) reported in this prefecture in 1930. As indicated in Table 10 the principal industries in terms of employment were textiles (in particular the spinning, reeling and weaving of cotton and silk) and machinery and tools, particularly for the aircraft industries.

TABLE 10

Factories and Industrial Employment, 1938, Aichi-ken.

(For non-government factories employing 5 or more persons)

Industry	No. of factories	Employees Male	Female	Total
TEXTILES	4,826	21,729	100,042	121,771
Silk reeling				
Raw silk	212	1,712	16,684	18,396
Silk yarns	43	396	3,267	3,663
Spinning				
Cotton yarn	437	1,975	17,068	19,043
Silk thread	7	49	183	232
Woolen yarn	23	1,692	6,895	8,587
Stable fibre yarn	3	244	2,395	2,639
Twisted thread				
Cotton	47	65	283	348
Silk	29	35	194	229
Other twisted thread	541	363	3,071	3,434
Woven Goods				
Pure cotton	405	2,360	14,137	16,497
Other cotton	278	527	3,492	4,019
Pure silk	109	217	1,645	1,862
Synthetic silk fibre	7	9	80	89
Silk fabric and mixed cotton	7	9	60	69
Hemp fabric	2		10	10
Pure wool fabric	60	152	1,273	1,425
Other wool fabric	846	2,338	14,104	16,442
Pure synthetic silk	187	386	2,568	2,954
other synthetic silk	160	250	1,299	1,549

Industry	No. of factories	Employees Male	Female	Total
Stable fibre	382	885	5,421	6,306
Other fabric	2	10	65	75
Knitted goods Sochi	54	138	247	385
Manufactured goods	232	867	1,151	2,018
BRAIDED HEMP	42	51	534	585
OTHER CORD* BRAIDED	25	41	136	180
FLOSS SILK	9	126	86	212
COTTON REFINING	105	622	325	947
EMBROIDERY INDUS* TRY	12	40	129	169
OTHER TEXTILE INDUSTRIES	102	282	967	1,249
DYEING, REFINING BLEACHING				
Thread dyeing	143	754	210	964
Textile printing	9	318	96	414
Other textile printing	47	323	14	337
Patternless dyeing	117	2,903	1,026	3,929
Refining, bleaching, adjusting.	142	1,587	927	2,514
METALS	799	14,035	1,505	15,540
Metal smelting	26	3,640	192	3,832
Casting				
Pig iron	193	4,021	274	4,295
High grade wrought iron	8	437	146	583
Steel castings	4	1,207	244	1,451
Other castings	42	520	38	558
Metal Mfg. Goods				
Bolts, nuts, washers	62	878	163	1,041
Nails	8	97	15	112
Needles	9	51	19	70
Chains	1	4	-	4
Springs	8	103	32	135
Steel nets	11	54	10	64
Tin cans	13	111	53	164

Industry	No. of factories	Employees Male	Female	Total
Metal plate goods	83	569	48	617
Construction & furniture	40	205	40	245
Furniture & fixtures	9	61	-	61
Buildings & bridges	10	145	-	145
Metal tools	17	98	19	117
Pen points	1	16	9	25
Toys	7	54	33	87
Other metal mfg. goods	195	1,334	160	1,494
Plated goods				
Zinc	5	62	-	62
Nickel	34	247	9	256
Other plated goods	13	121	1	122
MACHINES AND TOOLS	1,699	90,429	7,930	98,359
STEAM BOILERS	7	95	-	95
GAS GENERATORS	2	48	-	45
Prime Movers				
Internal combustion engines	15	24,815	2,367	27,182
Electrical machines & Tools	41	3,529	539	3,868
Insulated electric wire & cable	5	36	34	70
Wireless & Wire comm.	3	37	5	42
Electric batteries.	3	18	82	100
Agriculture Mach. & tools	26	354	12	366
Engineering & construction machinery	2	15	-	15
Mining machinery & tools	5	893	78	971
Textile machinery				
Spinning use mach.	2	4,046	640	4,686
Weaving use mach.	11	904	139	
Dyeing use mach.	2	8	-	8

Industry	No. of factories	Employees Male	Female	Total
Cloth adjusting and treating machinery	9	245	18	263
Knitting use mach.	6	41	-	41
Other textile machinery	121	1,792	122	1,914
Ceramic machinery	13	93	-	93
Chemical industry mach.	7	74	-	74
Food products machinery	10	57	-	57
Printing & book-binding mach.	18	84	11	95
Other mfg. and treatment use machinery	45	900	32	932
Crane and derricks	7	204	-	204
Pump manufacturing	26	387	27	414
Hydraulic mach.	3	198	1	199
Weights & Measures				
Weights & measures	6	50	-	50
Gas and water meters	1	50	14	64
Measuring instruments				
Thermometers	1	18	16	34
Electric meters	2	13	7	20
Other instruments	5	80	2	82
Clock manufacturing	49	1,798	609	2,407
Medical instruments	5	21	1	22
Calculating machines	1	5	-	5
Cameras projectors etc.	1	43	-	43
Illumination machinery				
Electric light bulbs	2	17	13	30
Other illumination machinery & tool	5	34	3	37
Optical instruments.	1	-	-	-
Musical instruments.	11	171	34	205

Industry	No. of factories	Employees Male	Female	Total
Vehicle manufac't				
Bicycles	143	2,397	335	2,732
Other vehicles	15	97	-	97
Money safes	8	62	1	63
Gas apparatus	2	10	-	10
Water supply apparatus	5	27	-	27
Valves and corks	11	73	-	73
Pulleys & gear	30	364	3	367
Other machinery	1006	46,429	2,785	49,214
CERAMICS	999	13,820	6,819	20,639
Porcelainware	543	8,701	4,972	13,673
Glass & glass-ware	55	847	69	916
Bricks and fire-proof articles	54	1,272	313	1,585
Roof tile	191	846	379	1,225
Cement manufacturing	4	414	8	422
Cement products	19	272	44	316
Lime manufacturing	1	17	- -	17
Enamelled iron-ware	3	44	7	51
Other ceramics	12	119	59	178
Pottery painting	117	1,288	968	2,256
CHEMICALS	250	2,656	4,193	11,849
Medicines	27	120	280	400
Industrial drugs	24	969	33	1,002
Dyestuffs				
Natural dyestuffs	1	1	-	1
Sulphide dyes	2	19	-	19
Paints & Cosmetics				
Lacquer fluids	4	12	-	12
Other paints & cosmetics	7	22	3	25
Soap & Toilet art.	15	85	101	186
Explosives	5	437	196	633
Vegetable oils and resins	11	114	3	117
Candle manufacturing	8	33	57	90
Rubber products	27	176	98	270
Phenol resin products.	2	8	-	8

Industry	No. of factories	Employees Male	Female	Total
Phonograph records	1	18	2	20
Pulp manufacturing	2	58	3	61
Paper manufacturing	15	469	99	568
Celluloid manufactured articles	8	27	10	37
Synthetic silk thread	4	3,917	3,162	7,079
Fertilizers				
Vegetable matter	3	87	1	88
Animal matter	3	12	-	12
Mineral	7	128	2	130
Starch materials	11	52	2	54
Polishing materials	3	17	76	43
Carbon products	1	234	-	234
Other chemical industries	59	645	115	760
LUMBERING AND WOODEN WARE	980	8,555	758	9,313
Lumbering	289	3,427	266	3,693
Woodenwares				
Furniture & Fixtures	197	1,029	3	1,032
Wooden boxes barrels	120	1,952	157	2,109
Wooden pipes	15	195	93	288
Cork	2	6	-	6
Other woodenware	357	1,946	239	2,185
PRINTING AND BOOK BINDING	290	2798	253	3051
Printing	273	2,740	236	2,976
Bookbinding	17	58	17	75
FOOD PRODUCE	910	6,967	2,155	9,122
Natives wines	187	1,972	24	1,996
Beer	2	202	69	271
Soy sauce, been paste	162	1,300	103	1,403
Soft drinks	53	137	20	157
Sauces & Ketchups	1	71	93	164
Milling				
Starch manufacturing	2	12	3	15
Sugar Industry	3	57	7	64
Sweetmeats, breads	311	2,084	1,403	3,487
Canned goods	12	83	138	221
Livestock products	6	50	2	52
Marine products	54	257	83	340
Tea processing	1	1	2	3

Industry	No. of Factories	Male	Female	Total
Ice manufacturing	30	151	1	152
Wheat flour	7	33	5	38
Other food products	61	339	147	486
GAS & ELECTRICITY	18	4,438	-	438
OTHER INDUSTRIES	1226	6,022	4,257	10,729
Paper products	223	871	571	1,442
Bamboo products	23	84	71	155
Wisteria products	10	31	4	35
Vine & stalk products	2	13	7	20
Straw & hemp products	36	103	157	260
Wheat straw and wood shavings	11	38	8	46
Leather products	40	459	159	618
Brush manufacturing	7	33	23	56
Lacquer manufacturing	15	38	6	44
Cotton & hemp lines	114	579	1,153	1,732
Sewing industry	441	1,614	1,055	2,669
Felt Hats	3	165	79	244
Other hats	34	93	44	137
Waterproof fabric manufacturing	3	11	2	13
Medical materials	26	211	264	475
Asbestos products	2	34	27	61
Matches manufacture	9	74	134	208
Writing brush mfg.	6	34	-	34
Footgear manufacturing	14	20	24	44
Stone mason products	68	364	-	364
Other products	129	1,153	469	1,622

3. Wages.

Table 11 below shows wages in certain occupations in the Nagoya district in 1937. The working hours in these occupations ranged from 8 to 12 per day. In some cases the difference between lowest and highest wages in the same occupation was very great. For example, the range for bicycle makers was .061 to 9.31 yen; for iorn workers from 2.17 to 12.50 yen; and boiler makers from 1.48 to 7.67 yen.

TABLE 11

Hours & Wages, 1937, Nagoya-shi.

Occupation	Working hours (per day)	Wages (per day) Ordinary	Highest	Lowest
*Bakers	10	1.30	2.96	1.00
Bicycle makers	10	2.02	9.31	.61
Boiler makers	10	2.67	7.67	1.48

Occupation	Working hours (per day)	Wages (per day) Ordinary	Highest	Lowest
Clock makers	9½	2.68	3.63	1.99
*Clog makers wooden	10	2.30	3.45	1.84
*Clog makers thong	10	2.00	3.00	1.20
Decorators pottery glass	10	2.65	4.58	1.30
Electricians	9½	1.69	3.81	.80
Folding fan makers male	11	1.90	3.80	1.40
Folding fan makers female	11	1.10	2.00	.60
Iron workers	11	4.25	12.50	2.17
Lantern makers male	10	1.20	1.90	.80
Lantern makers female	10	.40	.80	.15
Lithographers	9½	2.30	3.00	1.30
Machine and tool finishers	10	2.52	7.24	1.44
Musical instrument makers	10	2.56	3.80	1.75
Rope makers	12	1.50	2.35	1.20
Tobacco makers male	8	2.91	4.28	1.67
Tobacco makers female	8	1.19	2.01	.78
Toy makers	12	1.30	1.80	.45
Type setters	9½	2.30	2.60	1.30
Weavers, cotton hand female	10	.73	.85	.42

* Receive allowances and other perquisites in addition to wages.

The following miscellaneous comments on working conditions are available. In the textile industry, mills were generally closed on the first and 15th of each month, while some mills closed 4 days a month. Many mills were decreasing working hours as a result of depressed industrial conditions in 1937, and consequently there was no overtime. Holidays were not paid for. Bonuses, amounting to from 10 to 20 percent of the wages during the year, were paid semi-annually.

Dormitories were provided free for both male and female employees; and from 10 to 15 sen for female employees and from 15 to 20 sen per day for male employees were deducted from wages for board. Houses at minimum rents were provided for married employees. Food was sold at minimum prices. Certain mills supplied uniforms below cost. Medical attention was supplied at minimum rates. Companies usually provided sick rooms, with

physicians, pharmacists, and nurses in attendance. Recreational facilities were also provided for games and sports, and annual field days were held by the companies. Some mills had employees' clubs, equipped with billiard tables, ping-pong tables, chess, checkers, and other indoor games. Free lessons in sewing and manual arts were given to female employees. Libraries and occasional lectures were provided in some plants.

Table 12 provides further and more recent information regarding wage rates.

TABLE 12

Wages & Monthly Income, Nov. 1940, Nagoya-shi.

Occupation	Wage	Working days	Monthly wage
Metal industry			
Flat furnace worker	-	-	-
Casting worker	2.87	25.0	72.50
Pressed steel worker	3.35	24.3	81.60
Platers	2.26	29.3	66.70
Machinery & tools			
Blacksmith	3.27	21.2	69.30
Woodform worker	3.62	26.6	97.20
Lathe operator	3.00	22.8	68.40
Milling mach. operator	3.77	24.7	95.00
Polisher	2.83	26.7	75.60
Welder	3.24	22.2	71.30
Riveter	2.46	19.1	47.50
Assembler	3.42	25.6	83.40
Finisher	3.06	22.9	70.38
Ceramic industry			
Cement mfg. worker	2.58	26.8	69.10
Glass mfg. worker	2.30	26.4	59.70
Chemical industry			
Sulphuric acid	3.04	25.4	76.00
Foreign paper maker (M)	1.67	27.8	46.70
Sulphate ammonia maker	2.35	25.4	60.00
Food products mfg. ind.			
Wheat flour maker	2.52	26.6	57.50
Beer brewer	2.59	23.7	61.30
Sugar refiner	-	-	-
Other industries			
Lumber worker	2.21	23.6	51.90
Type setter	2.31	28.6	65.80
Bookmaking (M)	2.05	26.2	53.30
Carriers (on land)	3.29	-	-

Occupation	Wage	Working days	Monthly wage
Textile industry			
Artificial silk thread (male worker)	1.95	21.4	41.70
Refining, bleaching, dyeing	1.83	22.9	41.40
Machine textile printing	2.07	21.4	44.30
Knitting, braiding	2.05	25.7	52.00

4. Labor Exchange.

There are 10 branches of the National Labor Exchange in Aichi-ken. Three of these branches are in Nagoya-shi, one in each Toyohashi-shi, Okazaki-shi, Ichinomiya-shi, Seto-shi, Handa-shi, Toyokawa-shi, and Kasugai-shi. These offices contain records of all employable persons with a history of their occupational skills, present and past employment. In cities, towns and townships which do not have labor exchanges, these records will be found in the city or town hall.

B. AGRICULTURE

1. Food Situation.

Including all food sources, this prefecture is a deficit producingarea, based on the estimated Japanes national intake of 2,150 calories per capita per day. There are no surplus food crops. Production of all foods provided a deficit of 200-1,000 calories per capita per day, in terms of average production for 1935, 1937 and 1939. The total deficit of foods produced in this prefecture, in terms of a caloric equivalent of brown rice, is estimated at 588,000,000 pounds annually. Based on the national consumption estimate of 372 pounds per capita per year, this prefecture has a normal estimated rice deficit of 135 pounds per capita per year.

The aggregate annual production of foodstuffs in the prefecture, on a caloric basis, is estimated at 1,331 billion calories.

2. Agriculture in Relation to Physical Factors.

Aichi- ken has a growing season of from 200 to 210 days. (For information on temperature and rainfall, see Chapter I, D. See also G-2 Vegetation Map.)

3. Farm Organization and Methods.

a. Farm population. The number of farm households in this prefecture in 1939 was 178,002, or 3.2 percent of the nation's total. The average amount of cultivated land was 2.2 acres per household.

b. Land utilization. In 1939, the total amount of cultivated land in the prefecture was 391,000 acres, of which 232,000 acres, or 59 percent, was used for rice. Scattered areas of grassland and scrub are found among the forested lands of the prefecture. A hereditary imperial estate (Danto Estate) containing 14,920 acres is located in Kitashidara-gun.

There are two rice growing areas of very great importance in this prefecture. The first occupies almost all the area north and west of Nagoya-shi. While some non-rice land is included in this area, by far the largest percentage of it is in rice. This area, including Nagoya-shi, is 13 to 17 miles wide and about 20 miles long. (Nagoya-shi occupies about 60 to 80 square miles.) From this main area three branches extend east and northeast of Nagoya-shi for a distance of 5 to 8 miles to Sakashita-machi, to Seto-shi, and to a point 9 miles northeast of Narumi-machi.

The second great rice area faces the waters of Atsumi-wan. Its east boundary is approximately on a north-south line between Koromo-machi and Okazaki-shi, and its west boundary is a north-south line between Obu-machi and Handa-shi. The width of the area is about 11 to 12 miles and it extends inland from the coast for about 20 miles. At Koromo-machi, branches from the main area extend to the north for 6 miles.

A smaller concentration of rice land lies at the east end of Atsumi-wan around Toyohashi-shi. The main body of rice land in this area is enclosed in a 7-mile square, with Toyohashi-shi at its center and western boundary on the coast. A limited amount of non-rice land is included in this area.

Four or 5 isolated rice areas of one to 2 square miles each lie in the Toyo-kawa valley northeast of Toyohashi-shi. On the northeast shore of Atsumi-wan, a belt of rice land one to 2 miles wide extends westward from Miya-machi. A belt of rice land about a mile wide and 7 miles long follows the shore line of the southern arem of Atsumi-wan to Tawara-machi.

c. Fertilizer requirements. The requirements for fertilizer in 1930 in the prefecture are shown in Table 13, while actual consumption of the principal commercial fertilizers during the years 1932-38 are shown in Table 14.

TABLE 13

Fertilizer Requirement, 1930, Aichi-ken.

Crop	Nitrogen (N)	Phosphoric acid (P_2O_5)	Potash (K_2O)
Rice, paddy	79	73	66
Rice, upland	84	78	70
Wheat	94	101	74

The allocation of fertilizers to prefectural fertilizer dealers and prefectural customer cooperatives from 1 August 1939 to 31 July 1940 in short tons was ammonium sulphate, 40,950; superphosphates, 42,824; lime nitrogen, 5,827; and potash, 3,080.

Statistics for 1937 show that 502 short tons of sulphate of potash and 522 short tons of muriate of potash were used in the prefecture.

TABLE 14

Fertilizer Consumption, 1932-38, Aichi-ken.
(in short tons)

	1932-36 Average	1935	1936	1937	1938
Cotton seed oil meal cake	12,125	14,527	16,458	10,432	3,554
Other oil meal cake	9,585	13,720	19,212	13,936	17,829
Ammonium sulphate	14,078	10,075	23,905	15,037	15,808
Nitro-lime	4,230	5,453	6,157	8,783	9,252
Superphosphate	18,341	17,788	19,057	18,918	13,768
Converted fertilizer	6,865	12,488	10,486	20,646	19,335
Mixed fertilizer	39,867	49,214	53,928	73,855	73,059

There were 62,548 short tons of ammonium sulphate and 21,908 short tons of superphosphate produced in the prefecture in 1938.

Agencies of the Japanese Suplha-Ammonia Corporation, with headquarters at 16 Akatsuka-cho, Higashi-ku, Nagoya-shi, were located in the prefecture in 1940 at::1-chome, Naya-cho, Naka-ku, Nagoya-shi; Nayashiki-cho, Nagoya-shi; 3-chome, Funaire-cho, Nishi-ku, Nagoya-shi; 2-chome, Funaire-cho, Nagoya-shi; 2-chome, Funaire-cho, Nagoya-shi; Shihoda Suho-cho, Showa-ku, Nagoya-shi; 9-Misachi Hon-cho, Nishi-ku, Nagoya-shi; 37 Motoyanagi-cho, Nagoya-shi; Yokosuka-machi, Chita-gun; Higashia-rako Hane-cho, Okazaki-shi; Doi Ohira-cho, Okazaki-shi; Toyoma Shitachi-cho, Toyohashi-shi.

4. Crops.

a. Field crops. The 1939 rice crop of 232,000 acres occupied 59 percent of the cultivated land in the prefecture and produced 365,000 tons of grain. Wheat ranks second among the grain crops. In 1939, this crop occupied 79,065 acres and the production was 76,322 short tons of grain. Barley is also an important crop as shown by the production of 44,936 short tons of grain in 1939. Field crop production is shown in Table 15.

Soybeans are the most important legume crop in the prefecture. In 1939, this crop occupied 4,512 acres and produced 2,974 short tons of seed. Production of all legumes in 1939 including soybeans, peas, broad beans, kidney beans and peanuts amounted to 5,732 short tons. "Dry" crops such as wheat, barley, vegetables, and "genge" (a legume for green manure), are grown on many paddy fields during the winter and spring.

The 1942 rice crop of 334,042 short tons was an increase of 9,865 short tons over the 5-year average (1937-41). Stocks of rice decline rapidly from spring to fall, as shown by the

following statistics for 1939:

Date	Rice in storage (short tons)
1 March	305,384.0
1 May	248,865.5
1 July	192,182.5
1 September	104,635.5
1 November	35,826.0

TABLE 15

Field Crops, Aichi-ken.

Crop	1935-37-39 Average Production (short tons)	1939 Acreage	1939 Production (short tons)	1943-44 Estimated Production (short tons)
Rice*	331,438	232,000	365,000	324,500
Wheat	63,060	79,065	76,322	49,000
Barley	42,472	44,442	44,936	34,500
Common	31,434	31,447	33,052	23,500
Naked	11,038	12,995	11,884	11,000
Rye	-------	15,725***	-------	-------
Soybeans	3,034	4,512	2,974	3,500
Millet	-------	2,664	1,851	-------
Proso	-------	1,448	1,034	-------
Foxtail	-------	1,173	779	-------
Barnyard	-------	43	38	-------
Peas	-------	2,034	1,432	-------
Broad beans	-------	1,291	957	-------
Buckwheat	-------	877***	-------	-------
Maize	-------	502***	-------	-------
Peanuts	436	294	290	-------
Kidney beans	-------	240	178	-------
Oats	-------	1	0.5	-------

* Rice production in 1942 was 334,042 tons or an increase of 9,865 tons from a 5 year average (1937-41 inclusive).
** 1936 figure.
*** 1937 figure.

b. Vegetables. As shown in Table 16, the production of white radishes far exceeds that of any other vegetable crop. The 13,580 acres devoted to this crop in 1939 produced 169,668 short tons. Although the sweet potato acreage was slightly larger, the total production was less than half that of white radishes. Other vegetables of major importance are watermelons, egg plant, taro, Irish potatoes, Chinese cabbage, tomatoes, pumpkins, and onions. There were many other vegetables whose production exceeded 10,000,000 pounds in 1939.

TABLE 16

Vegetables, 1936 & 1939, Aichi-ken.

Kind	1936 Production (short tons)	1939 Acreage	1939 Production (short tons)
White radishes	159,154	13,580	169,668
Sweet potatoes	94,759	15,088	82,935
Watermelons	35,678	3,956	32,122
Egg plant	20,271	2,695	24,675
Taro	26,627	4,049	24,287
Irish potatoes	25,376	4,991	24,207
Chinese cabbage	-------	2,576	17,503
Tomatoes	-------	1,410	15,109
Pumpkins	12,114	1,858	13,295
Green onions	13,623	1,970	12,833
Mixed onions	12,645	958	10,527
Carrots	7,955	1,148	8,363
Cabbage	6,169	767	7,881
Burdock	7,750	1,132	7,569
Lotus root	-------	1,071	7,555
Cucumbers	6,313	905	6,303
Turnips	-------	773	5,357
Cantaloupe	-------	1,125	5,209
White cucumbers	-------	772	4,732

c. Fruit. Fruits as a whole are of relatively minor importance in the prefecture. In 1939, oranges led other fruits with a production of 10,753 short tons. More than 85 percent of the oranges produced were of the mandarin type. The only other fruit of major importance was persimmons, with a production of 5,826 short tons, in 1939. Fruits of minor importance in the prefecture include pears, peaches, plums, grapes, and loquats. Insignificant amounts of apples, foreign pears, and citrus fruits other than oranges, are grown. Fruit production is listed in Table 17.

TABLE 17

Fruits, 1933 & 1939, Aichi-ken.

Kind	1933 Production (short tons)	1939 Production (short tons)
Oranges	8,603	10,753
Mandarin	6,956	9,260
Bitter(Natsumikan)	1,430	1,260
Navel	216	233
Persimmons	3,754**	5,826
Japanese pears	3,007	3,677
Peaches	3,300	3,115

Plums	-------	1,837
Grapes	759	1,035
Loquats	-------	793
Apple	19	84
Foreign pears	123	45
Citrus fruit*	-------	66

* Exclusive of oranges
** Does not include dried persimmons, of which there were 117.9 short tons produced in 1933.

d. Industrial crops. Silkworm cocoons are the most important industrial crop in this prefecture. The 60,772 acres in mulberry in 1939 represented 4.7 percent of the national acreage, while the production of 22,884 short tons of cocoons was 6.1 percent of the national production. There were 79,097 families engaged in silkworm production in 1936.

Other than silkworms, rape seed is the only industrial crop of major importance. The production of rape seed in 1936 totaled 173,314 hectoliters. In 1937, more than 23,000 acres were planted to rape. Industrial crops of minor importance include tea, tobacco, and rush. Very small quantities of pyrethrum and peppermint are produced. Industrial crops are shown in Table 18.

TABLE 18

Industrial Crops, 1936 & 1939, Aichi-ken.

Crop	1936 Production (short tons)	1939 Acreage	1939 Production (short tons)
Mulberry	20,532**	60,772	22,884
Rape seed	173,314*	23,753***	------
Tea	-------	720	485
Tobacco	149	257	------
Rush	187	------	------
Pyrethrum	19	------	------
Peppermint	10	------	------

* Hectoliters
** Cocoons
*** 1937 figures

5. Livestock.

This prefecture is one of the leading poultry farming sections of Japan. There were more than 6 million head of chickens and nearly 5,000 ducks in 1936. Rabbit production

is also of major importance. There was a marked increase in rabbits, from 125,197 in 1936 to 257,320 in 1939.

Hog numbers far exceed those for other farm animals except chickens and rabbits. There were 56,270 head of hogs in 1939 as compared to only 26,709 head of cattle. Horses numbered only slightly more than 7,000 in 1936. Goats increased by more than 3,000 head between 1933 and 1939.

There were 274 dairies in 1936 with 2,941 milk cows, or an average of 10.7 cows per dairy.

Livestock production for the years 1933, 1936 and 1939 is shown in Table 19.

TABLE 19

Livestock, Aichi-ken.

Type	Production (in head) 1933	1936	1939
Hogs	50,700	66,680	56,270
Cattle, total	22,902	24,950	26,709
Cows	------	------	19,537
Milk cows	3,169	3,230	------
Oxen	------	------	7,172
Horses	8,999	7,376	------
Goats	2,635	3,504	5,769
Sheep	490	904	1,187
Rabbits	------	125,197	257,320
Chickens	5,900,517	6,214,805	------
Ducks	19,962	4,672	------

6. Meat, Eggs, and Dairy Products.

Eggs are the most important animal product in the prefecture. The average annual egg production for 1935, 1937, and 1939 was 35,710 short tons. Milk is also a product of major importance. The average annual production for 1935, 1937 and 1939 was 9,856 short tons. The total production of meat from cattle, horses and hogs in 1936 was 8,174 short tons, of which more than 50 percent was from hogs. Meat, eggs and dairy production are shown in Table 20.

TABLE 20

Meat, Eggs, & Dairy Products, 1936, Aichi-ken.

Product	1936 Head Slaughtered	Quantity of Product (in short tons)
Hogs	66,525	4,786
Cows	11,413	2,519
Horses	4,294	854
Calves	380	14
Milk	------	9,856
Condensed milk	------	187
Butter	------	3.0
Eggs (chicken)	------	35,710*

* 1935,1937,1939 average figure.

7. Economic Position of the Farmer.

In 1939, of the total land cultivated in the prefecture, 167,000 acres, or 42.7 percent, were farmed by tenants. The average farm is small, as shown by the fact that 28.9 percent were, of less than one-half hectare (1.235 acres), and 72.5 percent, were of less than one hectare (2.471 acres) each in size, while only .0015 percent or 29 farms, were larger than 5 hectares (12.3 acres). In 1936, out of 242,558 acres under paddy rice production, 117,713 acres, or 48.5 percent, were cultivated by tenants. The situation with regard to dry crops was more favorable. Of a total 152,391 acres of dry land crops, 56,538 acres, or only 37.1 percent, were cultivated by tenants.

Distribution of total land tax by type of land in Aichi-ken in 1935 is shown in Table 21.

TABLE 21

Distribution of Land Tax, 1935, Aichi-ken.

Type of Land	Tax (yen)
Homesites	1,451,381
Rice land	967,868
Dry fields	375,642
Forests	32,545
Marsh land	5,113
Uncultivated land	1,872
Salt farms	1,063
Other	2,493
Total	2,837,977

8. Administration.

The following experiment stations, inspection stations and offices were engaged in agricultural work in the prefecture in 1935:

Farm Products Inspection Station, Prefectural Government Office, Nagoya-shi.
Sericultural Administration Office, Prefectural Government Office, Nagoya-shi.
Livestock Breeding Station, Miai-cho, Okazaki-shi.
Okazaki Poultry BreedingStation, Iga-cho, Okazaki-shi.
Agricultural Experiment Station, Anjo-machi, Hekikai-gun.
Sericultural Experiment Station, Hotei-machi, Niwa-gun.
Cocoon Inspection Station, Hamada-machi, Toyohashi-shi.

C.· FISHERIES

1. Production.

The average annual production of fish by Aichi-ken for the years 1935-1939 was 41,659,000 pounds. This amount represented 0.7 percent of the total Japanese fish production. The estimated production for the year 1943-1944, adjusted for war-time changes, was 34 million pounds. In 1936 there were 41,515 fishermen. Only 11,743 were considered as full time fishermen. For the same year there were 7,601 fishing vessels of which 3.905 were without motors and 3.696 were equipped with motors. No steam vessels were registered. The total number of motor vessels were gasoline operated. Of the motorless boats only 101 were over 5 tons. Of these only 4 were more than 20 tons. The fish production of the prefecture is normally sufficient for local needs. See also OSS Map 627. Table 22 gives the relative values of coastal and fresh water fisheries products of Aichi-ken for 1936.

TABLE 22

Fisheries Products, 1936, Aichi-ken.

Kind		Value (in thousand yen)
Fish		
Sardine	(iwashi)	532
Eel	(unagi)	328
Grey mullet	(bora)	314
Flatfish	(hirame, karei)	311
Sea bream	(tai)	266
Black sea bream	(kurodai)	215
Fresh water trout	(ayu)	86
Horse mackerel	(aji)	55
Carp	(koi)	33
Spanish mackerel	(sawara)	31
Mackerel	(saba)	23
Yellowtail	(buri)	13
Salmon trout	(sake)	8
Shark	(fuka)	2
Shellfish		
Prawn	(ebi)	1,088
Cuttlefish	(ika, surume)	276
Clam	(hamaguri)	151
Octopus	(tako)	142
Oyster	(kaki)	70
Abalone	(awabi)	1

Kind		Value (in thousand yen)
Seaweed		
Laver	(amanori)	54
Gelidium	(tengusa)	16
Gloiopeltis	(funori)	3
Others		1,999
Total		6,017

2. Ports and Fishing Centers.

The principal fishing ports of this prefecture are Fukue-machi, Miya-machi, and Morozaki-machi. Nagoya-shi is very important to the fisheries as a destination for aquatic products and as a transshipment point rather than as a fishing port. One of the larger exporters of sardines from Nagoya-shi is the Kato Bussan KK. For further details on ports and facilities see Chapter IV, A, 3.

3. Repair Facilities.

In Nagoya-shi are the following manufacturers of fishing nets and twine, manila rope, sail cloth, and all kinds of fishing requisites:

Amita Shoten, Komeraja-cho, 2-chome, Nishi-ku, Nagoya-shi.
Nagoya Fisheries Supply Co. Ltd. 23 Egawa- Yochamachi, Nishi-ku, Nagoya-shi.

Additional manufacturers are listed in Appendix I.

4. Coastal Fishing.

In Aichi-ken the varied products from the fisheries account for many varied local methods of fishing on a small scale. The fishing season extends throughout the year, but there are seasonal runs of fish, and peaks of activity in collecting of shellfish and seaweeds occur corresponding to shallow water periods. This accounts for the fact that over one-half the fishermen of the prefecture are part-time fishermen.

5. Deep Sea Fishing.

The deep sea fishing of Aichi-ken is relatively unimportant when compared with the coastal fishing. Some tuna are caught off the coast by the line trawl method, and bonito by hand rod and line.

6. Specialized Fisheries.

Aichi-ken is noted for its fish culture industry, which in 1932 yielded products with a value of 2,176,000 yen. This is one of the principal prefectures concerned with the rearing of

eels, accounting for approximately 25 percent of Japan's production. The bays of Aichi-ken have been cultivated for laver production, and during winter months farmers collect the seaweed. In Mikawa-wan is located a progressive laver farm, the Yoshida Asakusa Farm. Food carp and ornamental goldfish are also reared in this prefecture.

7. Processing.

Table 23 lists processed marine products of Aichi-ken and indicates that the principal products are dried laver (hosinori) valued at 1,579,000 yen; cooked and dried products of sardine (maiwashi) at 138,000 yen; and various fertilizers 52,000 yen.

TABLE 23

Processed Marine Products, 1936, Aichi-ken.
(less canned)

Product	Value (in thousand yen)
Dried laver	1,579
Cooked or boiled sardine	115
Dried prawn	42
Fish oils	30
Salt dried sardine	20
Small dried sardines	3
Salt preserved sardine	3
Quality laver	3
Salt dried mackerel	2
Dried scallop	1
Fertilizers	
Dried sardine	31
Pressed sardine & herring waste	5
Other fertilizers	16
Other processed products	3,208
Total	5,058

8. Marketing.

The agriculture and forestry ministry set up 4 official markets in the Nagoya district to bring distribution routes of fish under a completely controlled system. Shipments are made daily to these markets on a pre-planned quota basis from various points already specified for the collection of catches.

9. Government Fishing Industry Activity.

The Marine Industry Experiment Station with a staff of 9 men is located in the prefectural government building, Nagoya-shi. In Toyohashi-shi is a branch of the Imperial Fisheries Experimental Station for the raising of fresh water fish.

The aquarium near Tokoname-machi, Chita-gun, belongs to the fisheries laboratory of the Tokyo Imperial University and is the largest in the Orient as well as Japan. It exhibits freshwater and marine fish from all over the world and also many cultivated species.

D. FOREST RESOURCES.

1. Area and Composition of Forest Land.

Forests extend over nearly 1500 square miles in Aichi-ken, representing about 3/4 of the total land area. Large contiguous timber tracts are found in the Kiso Mountains of the central and northern portions of the prefecture, and additional stands occur in the southern part. At the lower elevations broadleaf evergreen trees, principally oaks, are prominent and are sometimes mixed with several important conifers such as sugi and hinoki. Red and black pine plantations have been extensively established over the rougher slopes in the lower areas. Higher on the mountains deciduous broadleaf timber mixed with conifers predominates. At sea level along the coast some semi-tropical species are found but not in sufficient quanity to be of commercial importance. The most important species in the commercial timber area are shown in Table 24. See also G2 Vegetation Map.

TABLE 24.

Commercial Timber, Aichi-ken

Species	Common Name	Uses
Fagus sylvatica(Buna)	Beech	Hardwood lumber, flooring, fuel
Quercus acuta(Aka-gashi)	Red Oak	Handles, furniture, fuel
Buxus sempervirens(Tsuge)	Boxwood	Utensils & woodenware
Zelkowa acuminata(Keyaki)	Zelkowa	Woodwork, furniture, fuel
Cryptomeria japonica(Sugi)	Jap. redwood	High grade lumber
Chamaecyparis obtusa(Hinoki)	Cypress	High grade lumber
Pinus densiflora(Aka-matsu)	Jap. red pine	Construction lumber
Pinus thunbergii(Kuro-matsu)	Black pine	Construction lumber

2. Forest Administration and Management.

Both private and public ownership of forest lands are important, with the latter amounting to nearly 40 percent of the whole prefecture. Most of the private forests are located in the areas adjacent to the agricultural valleys and the piedmont, whereas the extensive mountain forests are largely publicly owned. About 4,500 hectares have been set aside as protection forests. No data is available revealing the names or

or locations of the important government and Crown forests. All government forest land is under the direct supervision of the Bureau of Foresty (Sanri-kyoku) of the Ministry of Agriculture and Commerce (Nosho-sho). The Forestry Administration Office at Osaka-shi provides the overall direction at the regional level. The Forest Products Inspection office is located in the Prefectural Government Building in Nagoya-shi.

Private owners have organized 44 forestry cooperative associations with a membership of 3,800 to aid in reforestation, logging, milling and marketing associations. In Aichi-ken there are numerous small privately owned tracts of broadleaf trees managed mainly for charcoal and fuelwood production on the sprout or coppice system.

3. Forest Problems.

Fire presents a minor problem during especially dry spring months which occur rather infrequently. High precipitation together with an intensive system of fire control have combined to limit effectively the losses through fire. In those areas of pure conifers the risks are greater but fire damage limited by even more intensive protection methods. Floods cause some damage to low-lying timber, and snow breakage is a minor source of loss in the mountain forests. Insects, disease and high winds make further depredations.

4. Forest Products.

Aichi produced timber worth 2,200,000 yen in 1936, all of which was processed by its 289 saw and veneer mills and numerous other woodworking plants. Over 10,000 people were employed in these industries and several additional thousands in the woods on logging operations. Principal logging area is the Toyo-kama watershed, which provided 5,500,000 cubic feet of timber in 1934. (Part of this timber was derived from the extensive logging operations in Nagano-ken.) Fuelwood and charcoal in the amount 1,600,000 yen were also produced in 1936. Charcoal is made by small resident wood workers who operate the pit type of kilns and market the product in small quantities. Most of the fuel and charcoal comes from hardwood slabs and logging waste cut into small sizes and bundled in faggots. In addition bamboo, split pine and cedar shingles, bark for thatching material, and mushrooms are important forest products.

Woods labor is mainly recruited from part-time agricultural workers who seek off-season employment during the winter months. Full-time timber workers are usually employed on the larger logging operations.

E. MINING

Aichi-ken does not have extensive mineral deposits. Lignite is the most important mineral resource of the prefecture. Mining in the Nobi lignite field north and east of Nagoya-shi has been carried on for over 300 years. The lignite is used locally for fuel in factories and small textile mills. Silica sand and clay are also mined. Table 25 shows the known mineral deposits in the prefecture. See also OSS Map 7209.

TABLE 25

Minerals, 1945, Aichi-ken

Mineral	Location Found
Coal (lignite)*	Nobi Field, Higashikasugai-gun
Columbite	Yoshida-machi, Hazu-gun,
Kaolinite*	Chita-gun
Limestone*	
Orthoclase	Nishikamo-gun
Quartz (silica sand)*	Chita-gun
Tourmaline	Yoshida-machi, Hazu-gun

* Commercially important.

1. Non-metallic minerals.

a. Quartz.(silica sand) is mined from beach deposits on the Chita-hanto, Chita-gun, south of Nagoya-shi.

b. Clay. Clay is mined in Chita-gun and is used locally in making porcelain. Clay with a high alumina content is mined in Koromo-machi, Nishikamo-gun. The Japanese have tried to use this clay as a non-bauxitic source of aluminum.

2. Coal fields (lignite).

Nobi Field lies in Kasugai-shi, in Higashikasugai-gun, and in Chita-gun northeast, east and southeast of Nagoya-shi. The northern section of the field extends into Gifu-ken. The lignite is mined to meet local fuel requirements of porcelain, silk, and cotton factories. The coal is a low grade lignite. Table 26 below gives an analysis of this coal.

TABLE 26

Analysis, Nobi Coal, Aichi-ken

Constituent	Percentage
Water	14.77
Volatile matter	39.77
Fixed carbon	27.82
Ash	17.64
Sulphur	.28

In 1912 the field had a proven area of 10 square miles and a probable area of 26 square miles. In the same year actual lignite reserves were 14,300,000 short tons and probable reserves were 33,000,000 short tons.

Lignite production centers in 3 districts in the Aichi-ken section of the Nobi field:

a. The Toki or northeast section has one workable lignite seam 2.5 to 3 feet thick. The lignite beds dip from 5 to 25 degrees. Lignite reserves in this area in 1912 were 2,200,000 short tons.

b. The Kasugai district in Kasugai-shi and Higashikasugai-gun had the largest reserve of 10,400,000 short tons. Three horizontal lignite seams are found. The lowest of the 3 is the only one mined. In this seam the lignite varies from 1.5 to 5 feet in thickness.

c. The southernmost district is in Chita-gun on the Chita-hanto south of Nagoya-shi. Four lignite seams with a low dip to the east are found. Only one, the lowest, has a mineable thickness, one to 2 feet.

In 1933 there were 3 mines in the prefecture employing more than 50 workers. Table 27 shows mining employment figures in that year.

TABLE 27

Mining Employment, 1933, Aichi-ken

Type	Workers	
Coal mining	462	male
Coal mining	11	female
Mineral mining	26	male
Sand pits & stone quarries	1,990	male
Stone quarries	24	female
Total	2,513	

3. Mining Administration.

Aichi-ken is in the Tokyo Administration District of the Gunju-sho (Munitions Ministry). Headquarters for the district are in Tokyo. Mine maps, production records, and mining reports for mines in the district are maintained at District Headquarters.

F. MANUFACTURING.

Aichi-ken is a highly industrialized prefecture (See OSS Map 3892). It ranked sixth among the prefectures in reported 1938 value of manufacturing in non-government plants employing 5 or more workers, producing 7.3 percent of the value of the total for Japan. Textile production amounted to 2/5 of the prefecture's 1938 total. In view of subsequent conversion of textile factories to aircraft machinery and munitions production, the relative position of Aichi-ken among the prefectures may have risen. During the war Aichi-ken has been a significant producer of chemicals, iron and steel, and steel products. The prefecture's manufacturing is centered in Nagoya-shi, the third largest city in Japan. In recent years there apparently has been an increased tendency to build large factories in the smaller urban areas around Nagoya. This development has extended into Mie-ken and Gifu-ken. The Yokkaichi-Kuwana district of Mie-ken has become a major industrial complement of Nagoya-shi, e.g., in production of electrical machinery and antifriction and roller bearings. Similarly branch plants of Nagoya-shi factories are located in Gifu-ken, e.g., machinery and arsenal plants.

Available information on the size of Japanese factories is meager and erratic. Coverage of all manufacturing in Japan was made in a census in 1930. Subsequently, annual reports were issued on establishments employing 5 or more workers which were subject to the Factory Regulations (See Table 28). Not covered were the mining industry, municipal factories, and a number of other enterprises in addition to all shops employing less than 5 workers. The Japanese Municipal Yearbook (Nippon Toshi Nenkan) published certain post-1930 data on factories not required to comply with the factory regulations (as well as on those complying) which show that Nagoya-shi non-complying establishments numbered over 71 percent of the total factories for the city in 1935, employed over 19 percent of the workers, and produced 24.6 percent of the value of all factory production. The report for 1938 shows that these factories, including the small shops, numbered slightly over 68 percent of the total factories, employed only 5.2 percent of the workers, and produced only 3.4 percent of the value. The trend toward decreasing importance of small shops probably continued well after 1938.

In Nagoya, Tokyo and Osaka between 15 and 20 percent of all manufacturing workers are employed in establishments so small in size that they can hardly be distinguished from dwelling units. These workshops are scattered throughout the business, industrial, and residential areas. Small scale units very often serve as feeder plants and parts-manufacturers to large factories. There is considerable evidence

that small-scale units produce parts for airplanes, machinery, ordnance items and other war material. Designs, technical advice, credit and equipment are frequently provided by the larger prime contractors.

TABLE 28

Manufactures, 1938, Aichi-ken
(non-government plants employing 5 or more persons)

Industry	(Million yen)	(Rank among prefectures)	Percent of total for Japan Proper	Aichi-ken	Plants
Textiles	543.7	1	14.8	39.5	4,826
Machinery & tools	366.4	5	10.2	26.7	1,699
Ore & metal processing	97.0	7	2.1	7.0	799
Food processing	95.9	7	5.4	7.0	910
Chemicals	92.0	11	2.5	6.7	250
Ceramics	44.3	3	10.4	3.2	999
Lumber & woodenware	43.1	2	9.5	3.1	980
Printing	12.3	4	4.5	0.8	290
Other	82.1	3	11.8	6.0	1,226
Total	1,376.8	6	7.3	100.0	11,979

1. Food Products.

Aichi-ken was one of the most important food processing prefectures in Japan, ranking seventh in 1938 in value of processed foods produced. It furnished 5.4 percent of the national 1938 total. Within the prefecture itself, food processing accounted for 7 percent of the value of all industrial production.

The manufacture of wheat flour and feeds was the principal food industry of Aichi-ken, which in turn was the leading prefecture in this category. Its 12 flour mills produced 11.8 per cent of the national total of flour and feed in 1938. (See Table 29). Most of these mills are in the Nagoya area. Second in importance to Aichi-ken is the brewing and distilling industry. Its 189 plants produced 7.4 percent of all beer and 2.6 percent of all sake made in Japan. Again Nagoya-shi led all other cities in the prefecture.

Aichi-ken is a candy and candy materials manufacturing center, accounting in 1938 for 11.2 percent of Japan's total output. Soy sauce, bean paste (miso), condiments and vinegar as a group made up the fourth most important

item of processed food production in 1938, the prefecture supplying 33 percent of the Japanese vinegar, 11.5 percent of its bean paste and 4 percent of its soy sauce in that year. Aichi-ken has an important canning industry which, in addition to some beef and poultry, canned 10 percent of all vegetables put up in Japan in 1938. The prefecture also produced 7.3 percent of all flavoring syrups, 4 percent of all ice manufactured in Japan, 2.6 percent of all soft drinks, 2.2 percent of all processed wheat flour (vermicelli and macaroni).

Other products of lesser importance which are manufactured here include refined sugar, livestock and dairy products, liquor, drugs and starch (from potatoes). Since 1941 most of the plant facilities used in the manufacture of sake and distilled spirits and in confectionery manufacture have been converted to war industry needs.

TABLE 29

Processed Food Production, 1938, Aichi-ken.
(For non-government plants employing 5 or more persons)

Products	Plants	Value (thousand yen)
Flour & feed milling	12	27,881
Brewing & distilling	189	22,911
Confectioneries & pastries	311	22,604
Soy sauce, paste & vinegar	196	9,506
Sauces (tomato, etc.) & condiments	7	1,835
Canning	12	1,822
Marine products (not including canned fish)	54	1,201
Sugar mills	3	1,153
Soft drinks	53	1,051
Ice manufacturing	30	686
Livestock & dairy products	6	626
Wheat flour processing	7	180
Others (including liquor dregs)	64	4,443
Total	944	95,899

2. Textiles.

Aichi-ken is Japan's leading textile center. Osaka-fu is the only other area which approximates it in the degree of concentration of the textile industry. In 1938

Aichi accounted for 15 percent of the total value of textile production in Japan as against 14 percent for Osaka.

There were 4,826 textile factories in Aichi-ken in 1938, or 17 percent of the total for Japan. (See Table 30). Of this number, approximately half were weaving plants. Spinning and twisting plants come next in numerical importance.

TABLE 30

Textile Plants, 1938, Aichi-ken.

Branch	Number
Silk reeling	255
Spinning	
Cotton	437
Silk	7
Wool	23
Staple fibre	3
Twisting	617
Weaving	
Cotton cloth	383
Silk Cloth	109
Wool fabrics	906
Rayon fabrics	347
Staple fibre cloth	382
Knit goods	286
Dyeing, finishing, etc.	458

The greatest concentration is in the weaving branch of the woolen and worsted industry. In 1938 Aichi-ken produced 55 per cent total value of woolen and worsted fabrics in Japan. The figures for the value of production in 1938 for the different categories of the industry are shown in Table 31.

TABLE 31

Textile Production, 1930, Aichi-ken.

Product	Value (yen)
Woolen fabrics	120,817,439
Cotton fabrics	101,907,545
Cotton yarn	99,200,175
Raw silk	55,095,281
Wool yarn	48,423,117
Dyeing, finishing, etc.	44,655,844
Staple fibre fabrics	36,741,559
Staple fibre yarn	30,141,845

Rayon fabrics	14,893,166
Knit goods	8,544,793
Cotton batting	8,167,335
Thrown silk	5,354,057
Silk fabrics	4,302,925

The textile industry has been widely affected by the acute wartime shortage of raw materials. A considerable number of plants have been converted to production of war material; and there have been many consolidations and closings among the remaining companies. A detailed listing of converted textile factories is not available but the following large plants located in Aichi-ken are reported to have been shifted to war industry, particularly to production of aircraft and parts:

Converted to Aircraft and Parts:

Kondo Bosekisho KK, Nagoya-shi
Naigai Boseki KK, Nagoya-shi
Nippon Keori KK, Nagoya-shi
Nisshin Boseki KK, Nagoya-shi & Okazaki-shi
Toyo Boseki KK, Nagoya-shi (2) & Handa-shi
Toyo Boshoku Kogyo KK, Chiryu-machi
Toyoda Boshoku KK, Nagoya-shi (2)
Dai Nippon Boseki KK, Ichinomiya-shi & Otaka-machi
Moribayashi Boseki KK, Inazawa-machi
Nisshin Jinken KK, Okazaki-shi
Nippon Rayon KK, Okazaki-shi
Koa Boseki KK, Kochino-machi & Komaki-machi

Converted to Munitions and other War Industries:

Kureha Boseki KK, Nagoya-shi & Koda-mura
Shonaigawa Rayon KK, location unknown
Nagoya Boseki KK, Nagoya-shi
Fuji Gasu Boseki KK, Toyohashi-shi

3. Chemicals.

The production of chemicals in Aichi-ken is of above average importance. (See Table 32). Nagoya-shi is the center of the industry in the prefecture.

a. Ammonia synthesis. The Nagoya plant of the Yahagi Suiryoku KK. had an estimated annual capacity in 1943 of 25,000 metric tons of nitrogen.

b. Sulphuric acid. In 1942 it is estimated that the

Yahagi Suiryoku KK. plant in Nagoya had an annual capacity of 168,000 metric tons of 50°Be sulphuric acid or 3 percent of the total capacity of Japn proper. Another significant solphuric acid producer in Nagoya-shi is the Nissan Kagaku Kogyo KK.

c. Chlorine and caustic soda. Two major chlorine and caustic soda producers are known to be in operation in Nagoya. In 1937 the Shocoa Soda KK had an annual capacity of 13,300 metric tons of chlorine and the Tokai Soda KK had a capcity of 1,600 metric tons.

d. Coal carbonization and synthetic petroleum. Toho Gasu KK. and its subsidiary, Toho Kagaku Kogyo KK. in Nagoya-shi, are important producers of coal-tar by-products and synthetic oil. The former has 3 batteries of 64 coke ovens having a total annual carbonizing capacity of 211,600 metric tons. Its subsidiary has an estimated annual capacity of 200,000 barrels of synthetic oil.

e. Explosives. Two important explosives and propellant manufacturers are located in Nagoya-shi. Teikoku Kayaku Kogyo KK. and Nippon Kayaku Seizo KK. have estimated annual capacities of 25,000 and 18,500 metric tons of explosives, respectively, representing 9.6 percent and 7.1 percent of Japan's production.

TABLE 32.

Chemical Production, 1938, Aichi-ken.

Product	Value (million yen)
Rayon	29.0
Industrial chemicals (principally caustic soda, sulphates & compressed gases	16.9
Fertilizer (largely ammonium sulphate, & soybean refuse)	11.3
Coke (3 percent of Japan's production)	6.2
Paper & pulp	5.1
Explosives, blasting powder (12 percent of Japan's production)	4.1
Briquettes	3.7
Medicines & patent medicines	2.8
Vegetable oils (largely rape seed & sesame oil)	2.3
Carbon products	1.7
Soaps	1.1
Candles (10 percent of Japan's production)	.9

Glue	.5
Paints, lacquer (11 percent of Japan's production)	.3
Others (Of this item, coal tar by-products & petroleum possible accounted for 3,400,000 yen and were censored from source.)	4.3
Total	92.0

4. Metal Processing.

Aichi-ken ranked seventh among the prefectures of Japan in reported 1938 value of ore and metal processing production in non-government plants employing 5 or more workers. There is heavy concentration of these industries in a few prefectures so that the 799 plants reporting from Aichi-ken produced only a little over 2 percent (by value) of Japan's total for the year. Metal production and fabrication ranked third among the major categories of industry in the prefecture amounting to only 7 percent of the value of the products of all industries.

The metal industries of Aichi-ken were broad in scope, but smelter and rolling mill output was limited chiefly to iron and steel production. Finished metal products, in 1938, were valued at 50.6 million yen, of which well over half was in castings for the machine industry. The value of metals produced in the same year was about 46.3 million yen.

a. Iron and steel. Among the prefectures of Japan, Aichi-ken was eighth in pig iron and steel ingot capacity and ninth in finished rolled steel product capacity, according to 1944 estimates as tabulated in Table 33. These Aichi-ken capacities in terms of percentages of the totals for Japan proper are: iron, slightly less than one percent; steel, 2.5 percent; and finished rolled steel, nearly 2 percent. Much of Aichi-ken iron and steel capacity is controlled by companies whose chief activities are other types of manufacturing, e. g. machinery production. All steel of Aichi-ken is made in electric furnaces.

(1) Daido Seiko KK. The Daido Seiko KK (Daido Steel Co.) operates the largest electric steel plant in Japan and produces the largest tonnage of alloy steels in Japan. The Daido Seiko KK operates 3 steel producing and rolling mills in Nagoya-shi and in addition an iron and steel or iron and steel product plant in each of the following prefectures: Hyogo, Mie, Nagano, Iwate, Tokyo, and Kanagawa.

The Hoshizaki plant of Daido Seiko at Kuriide 66, Hoshizaki-machi, Minami-ku, Nagoya-shi is estimated to have a 86,900 short ton electric steel capacity per year. Steel furnaces include 6 Daido type (probably 7-ton) arc furnaces, each with an annual ingot capacity of 11,000 short tons, as of 1939, and 4 electric furnaces with a combined annual steel ingot capacity of 20,900 short tons. It is assumed that 2 of the latter are 5-ton arc furnaces and the other 2 are one-ton high frequency furnaces. In addition, 5 Daido electric fur-

TABLE 33

Iron, Steel & Steel Product Capacity, Aichi-ken.

(estimated at end of 1944, in thousands of metric tons)

Company	Location	Iron(rated*	Pig Other**	Steel furnace capacity Elec.***	Finished rolled steel products: Rails, structural shapes	Sheets, strip, tin-plate	Bars, rods, wire-rods	Misc.
Daido Seiko	Nagoya-shi			79		40	30	
	Minami-ku			30	15			
	Atsuda-ku			33			10	5
	Minato-ku			7				
Toho Seiko	Nagoya-shi			12				
Yatsukari Seitetsu	Nagoya-shi						25	42
Toyoda Seiko	Kariya-machi & Ueno-machi		11	90				
Toyoda Shiki Shokki	Shinkawa-machi		73	6				
Washino Seiki Shoji	Ango-machi			7				
Nippon Spindle Seizosho	Kariya-machi			25				
Toyoda Jidosha Kogyo	Koromo-machi			22				
Nagoya Tokushu-ko Seizosho	Nagoya-shi			6				
Aichi-ken total			73	317	15	40	65	47
Honshu total			4434	1728	712	1013	2068	465
Japan Proper total			8312	1952	1583	1487	3123	525

Notes to Table 33

* Capacity based on full operation for a 365-day year. No allowance has been made for maintenance and other operational factors to obtain effective iron capacity.

** Includes sponge iron and iron produced in electric furnaces or other equipment exclusive of blast furnaces.

*** An output readily maintainable from the equipment if raw material supplies are adequate.

naces of unspecified capacity were reported producing alloy steels at this plant in 1939. This plant is reported to have a second-hand, 2-high reversing blooming mill purchased in the United States in 1939.

The Hoshizaki plant is assumed to have a 44,000 short ton annual capacity sheet mill and a 33,000 short ton annual capacity rod mill. The company's 1937 spring steel production was reported as 22,000 short tons.

The Atsuda plant, located at 60, Maruyama-aza, Atsuda-higashi-machi, Atsuda-ku, Nagoya-shi, is assumed to have an annual ingot capacity of 32,800 short tons from nine Daido type electric arc furnaces, which were reported installed by 1939. A 3,850 short ton ferro alloy capacity was reported for this plant in 1937. A 16,500 short ton capacity is assigned to this plant's rail mill. The 1936 steel castings capacity reported for this plant was 6,600 short tons, but reported production was only 1,980 short tons.

The Higashi-Tsukiji plant located at 31-banchi, Higashi-Tsukiji, Minato-ku, Nagoya-shi, is assumed to have had a 1936 annual ferro alloy capacity of 3,860 short tons and a 1939 annual steel capacity of 35,750 short tons. The steel capacity was figured for 9 Daido type electric arc furnaces (2 of 2,200 short tons each and 7 of 3,300 short tons each in annual capacity) and for 3 one-ton induction furnaces with a combined annual capacity of 8,250 short tons. Forging capacity reported in 1936 was 3,300 short tons, but 1936 production was only 550 short tons. A 1939 bar mill capacity of 11,000 short tons and a miscellaneous rolled product capacity of 5,500 short tons have been assumed for this plant.

(2) Toho Seiko KK. Toho Seiko KK (Oriental Steel Manufacturing Company), in which Daido Seiko is a heavy stockholder, has a plant at Tomita-cho, Minami-ku, Nagoya-shi, which is assumed to have at least one 5-ton electric arc furnace with an annual ingot capacity of 7,700 short tons. There is no evidence that the company ever built the plant which was to have been located at Motohoshi-zaki, Nagoya-shi, according to 1939 plans.

(3) Toyoda Seiko KK. The Toyoda interests have holdings in several iron and steel producing concerns. In 1940, Toyoda Seiko KK (Toyoda Steel Co.) was established to take over the steel plant of its parent company, Toyoda Jido Shokki Seisakusho (Toyoda Automatic Iron Works). Other Toyoda concerns with iron and steel facilities established by the same parent interests are the Toyoda Jidosha Kogyo (Toyoda Automobile Industrial Co.) and the Toyoda Shiki Shokki KK (Toyoda Weaving Machine Co.).

The plant which Toyoda Seiko KK took over from the parent concern is located in 1 of 2 Aburaki-aza, Kuma-oaza, Kariya-machi, Hekikai-gun. Plans were made to move the steel producing facilities to a new plant at Ueno-machi, Chita-gun. Part of this transfer may have been effected. Estimated annual capacities of Toyoda Seiko in 1940 for the two plants together were 12,100 short tons of sponge iron, 99,000 short tons of electric steel and 73,700 short tons of secondary rolled steel. Steel was produced in 12 electric arc furnaces, each with an average daily capacity of 25 short tons. Ingot capacity may have been increased after 1940, as additional electric furnaces were planned for the Ueno-machi plant. The production of rolled steel is an estimated figure, derived from reports that the rolling mills and steel furnaces of this concern are completely integrated; this being true, rolling facilities sufficient to process the known steel facilities must be available. The Kariya plant had three arc furnaces for producing iron castings (total annual capacity 9,900 short tons) which were undoubtedly used for remelting, not for production of primary iron.

A new (1940) Toyoda Seiko plant of over 154,000 short tons annual capacity for steel of all types, reported in operation in Mie-ken, may be the Ueno-machi plant discussed above.

(4) Toyoda Jidosha Kogyo KK. Toyoda Jidosha Kogyo was one of the largest producers of automobiles in Japan before the war. The plant in Koromo-machi, Nishikamo-gun, produced 24,200 short tons of electric steel in 1940. Plant facilities included 8 Daido electric arc furnaces (total annual capacity 23,650 short tons) used for remelting purchased iron, and four 4-ton Heroult furnaces with a total annual steel ingot capacity of 24,640 short tons.

(5) Toyoda Shiki Shokki KK. Steel producing facilities of the Toyoda Shiki Shokki KK may be located at a Shinkawa-machi, Nishikasugai-gun, or a Nagoya-shi plant, or at both. The former location is more probable. In 1939, annual capacities in short tons were: pig iron, 80,800; electric steel, 6,000. It is believed that the plant has at least one 200-ton per day blast furnace. Pig iron produced at this plant is probably used for steel-making at other Toyoda-controlled plants. This company was producing iron castings in addition to steel; at least one Daido electric furnace for iron castings (3,300 short tons capacity) was installed, probably at the Nagoya plant, (1 Shimazaki-cho, Nishi-ku). In 1939, steel was produced in at least 2 electric arc furnaces. After that date, capacity may have been greatly increased.

(6) Washino Seiki Shoji KK. Washino Seiki Shoji KK (Washing Machine Manufacturing Company) produces special steels in addition to its chief products, which are machinery and machine tools. Its plant located at Imamura-oaza, Anjo-machi, Hekikai-gun, is assumed to have at least one electric arc furnace of 5-ton capacity with an annual steel ingot capacity of 7,700 short tons. The company's plant in Egoshi-cho, Shows-ku, Nagoya-shi, is not believed to be a steel producer.

(7) Nippon Spindle Seizosho KK. Nippon Spindle Seizosho (Nippon Spindle Company), in addition to a plant of 7,700 short ton electric steel capacity in Amagasaki-shi, Hyogo-ken, has a plant one mile west of the railroad at Kariya-machi, Hekikai-gun, Aichi-ken. The Kariya plant had an estimated 1940 steel ingot capacity of 26,450 short tons of Nitralloy steel from the following reported electric furnace equipment: two 6-ton Lectro-melt furnaces; one 4-ton Heroult furnace; and one 1½ ton Heroult. All were installed in 1940. This plant has 2 10,000-ton forging presses and 3 drop-forging hammers of large capacity.

It was reported that this company merged with Nippon Nainenki KK (Japan Internal Combustion Engine) in April 1941 and switched from production of textile machinery parts to steel alloys.

(8) Yatsukari Seitetsu KK. Yatsukari Seitetsu KK (Yatsukari Iron Manufacturing Company). Higashi-Tsukiji, Minato-ku, Nagoya-shi, in 1938 had one electric furnace with an ingot capacity of 5 short tons daily or 13,200 short tons annually.

(9) Nagoya Tokushuko Seizosho KK. Nagoya Tokushuko Seizosho (Nagoya Special Steel Works) whose address is 15 of 2, Egoshi-cho, Shows-ku, Nagoya-shi, has an estimated annual ingot capacity of 6,100 short tons from 2 electric furnaces (reported in 1938), one of 3-ton capacity and one of one-ton capacity.

b. Metal fabrication. The salient features of Aichi-ken metal fabrication, are shown in Table 34. Almost 90 percent of the value of castings in this table represents the value of cast machine parts. About 2/3 of the non-cast fabrication was devoted to parts and materials for use in construction and in other manufacturing.

The 2 large omnibus items headed "others" may represent items produced under military or naval contracts whose descriptions were censored for security reasons. They are too large

(15 percent of the prefecture's fabrication) to be bona-fide miscellany in a table which details such items as umbrella frames.

TABLE 34

Metal Manufactures, 1938, Aichi-ken.

Product	Value (thousands yen)	(percent of national total)	Value (thousand yen)	(percent of national total)
Castings			34,026	6.5
Cast iron	23,055	6.9		
Steel	6,474	7.1		
Wrought iron	1,763	7.7		
Others	2,734			
Non-cast products			15,971	2.6
Nuts, bolts, washers	3,058	5.3		
Sheet metal	2,902	1.6		
Builders' hardware & fixtures	2,146	1.7		
Nails & screws	1,092	2.9		
Springs	448	2.2		
Wire netting	417	4.2		
Rivets	402	3.9		
Aluminum wares	280	1.8		
Toys	268	7.1		
Umbrella frames	130	5.9		
Needles	53	1.2		
Badges & metals	17	2.9		
Others	4,758			

In addition to the products tabulated, Aichi-ken produced plated wares to the value of 592 thousand yen in 1938. This included 23.1 percent of the nickel plated wares produced in Japan, as well as minor quantities of zinc, tin and other plated wares. Aichi-ken ranked seventh among the prefectures reporting metal platings for that year.

5. Ordnance.

There are several outstanding ordnance and ammunition plants in Aichi-ken. Although statistics of ordnance production are not available, it is known that Fukuoka-ken, Hiroshima-ken and Osaka-fu surpass Aichi-ken in this field.

The Army Arsenal located in Nagoya-shi is the largest

arsenal in the prefecture and an important one in Japan. The Atsuda, Chikusa, Tokaki and the Toriimatsu factories make up the arsenal. The Chikusa factory is believed to be the third most important army plant in Japan. The Atsuda factory produces medium to heavy ordnance, flexible guns for aircraft and shell cases. Mitsubishi Jukogyo KK (Mitsubishi Heavy Industry Company) produces heavy artillery and Toyowa Jukogyo KK (Toyowa Heavy Industry Company) producesordnance parts, both in Nagoya.

The Toyohashi-shi region is an old Japanese military district. There are an army arsenal and a number of military schools in this city. The Dai Nippon Heiki KK factory, completed in 1941, is the most important of the new plants in Toyohashi. It produces special ordnance and precision tools.

A naval arsenal and a private ammunition plant are located in Toyokawa-shi. Subsequent to completion of the naval arsenal in 1939, a new industrial area producing machines and machine tools for the arsenal was reported developed in the Toyokawa-shi area.

6. Machinery, Tools and Appliances.

The production of machinery, tools and appliances in this prefecture is important. In 1938 it ranked fifth in value among Japanese prefectures in output of these items. It produced 9 percent of the construction, industrial and farm machinery; 3 percent of the auxiliary machinery, (pumps, blowers, compressors and hydraulic presses); 63 percent of the prime movers (excluding turbines); 18 percent of the machine tools; and 5 percent of the miscellaneous machinery parts manufactured in Japan Proper.

There are several important centers of machinery production, the most outstanding of which is Nagoya-shi. Kasugai-shi, Kusunoki-mura, and Asahi-mura (in Higashikasugai-gun) are less important, but have some significance because of the production of machine tools. Heisaka-machi is noted for the production of spark plugs.

The factories of several important manufacturing companies are located in Aichi-ken. The Okuma Tekkosho Co., is one of the major Japanese machine tool manufacturers, being rated in 1937 as the leader among the 5 big five machine tool makers. This company has 7 factories in Aichi-ken. Four are located in Nagoya-shi, and one each in Kasugai-shi, Kusunoki-mura, and Asahi-mura, Higashikasugai-gun.

The Mitsubishi Denki KK (Mitsubishi Electric Co.) is one of the largest producers of machine tools and electrical equipment in Japan. The Higashi-ku plant in Nagoya-shi is probably the largest machine tool plant in Japan. The plant specializes in the production of turret lathes, surface grinders and milling machines. It is believed that special machine tools required by the Mitsubishi aircraft factories in Nagoya-shi are made by this plant. It is also one of the leading producers of light electrical equipment. It is a key component producer for the Nagoya-shi aircraft and munitions industries. The factory is one of 6 in southwest Japan which together produce over 1/2 the total output of small generators in Japan.

Meidensha Denki KK (Meidensha Electric Co) in Nagoya-shi is an important producer of electrical equipment and motors. The plant manufactures 3 percent of all Japanese motor production. Nippon Gaishi KK (Japan Insulator Co.) in Nagoya-shi is reported to be the second largest producer of spark plugs in Japan. The factory had at least 12 kilns in 1938, including 4 tunnel kilns for making various kinds of porcelain.

The most important items of machinery, machine tools and appliances reported in 1938 are shown in Table 35.

TABLE 35

Machinery Production, 1938, Aichi-ken.
(for non-government factories employing 5 or more workers)

Product	1938 Value (in yen)	Percent for all Japan
Prime movers	93,415,153	48.7
Spinning machinery	24,617,026	22.2
Electric motors	12,778,449	13.0
Manufacturing & processing machinery	7,172,409	7.7
Bicycles, carts, parts & accessories	6,563,634	9.1
Clocks	4,923,063	22.0
Misc. electrical equipment	3,908,649	2.7
Wheels, axles, bearings	3,515,051	5.2
Mining machinery	1,936,304	3.6
Fans & blowers	1,729,500	65.0
Transformers	1,355,991	2.6
Calculating instruments	1,333,287	2.5
Insulated electric wire	1,221,581	0.9
Weights & measures	1,153,002	7.2

7. Transportation Equipment.

a. Aircraft. Nagoya-shi is one of the most important aircraft producing centers. In or near this city are the factories of Mitsubishi Jukogyo KK, Aichi Tokei Denki KK, and Nakajima Hikoki KK. The Nagoya engine plant of the Mitsubishi Jukogyo KK is reported to produce nearly 40 percent of Japanese aircraft engines, and it is estimated that the Nagoya Aircraft plant of the same company manufacturers 18 percent of the combat airframes. Aichi Tokei Denki KK manufactures an estimated 8 percent of Japanese airframes and 5 percent of the engines in its Eitoku plant.

Near by, at Kamihara-mura in Gifu-ken are important aircraft plants of Kawasaki Kokuki Kogyo KK and Mitsubishi Jukogyo KK. There are many smaller companies in this area who are subcontractors and parts manufacturers for the larger aircraft plants.

b. Motor vehicles. Before the war Toyoda Jidosha Kogyo KK produced 35 percent of Japan's motor trucks. In 1943 this would have amounted to about 7,000 trucks. This company is now reported manufacturing aircraft and aircraft engines.

c. Railroad equipment. Nippon Sharyo Seizo KK was formerly Japan's second largest manufacturer of boilers, steam and electric cars, locomotives, and freight cars. The company has plants in Nagoya-shi and Narumi-machi.

d. Shipbuilding. Nagoya Zosensho KK, a subsidiary of Uraga Senkyo KK, is an important shipyard in Nagoya. Eighteen other shipyards are known to be in Nagoya-shi. Many of these build wooden vessels and sampans.

8. Wood-using Industries.

Nagoya-shi is considered the oldest central lumber market in Japan. In 1938 Aichi-ken was second after Osaka-fu among the 5 largest wood processing centers of Japan.

In 1938, Aichi-ken accounted for 9.5 percent of the total value of wood products (not including pulp and paper) processed in Japan; but this was only 3.1 percent of the total industrial production of the prefecture itself. Estimates of 1944 employment in Nagoya-shi indicate that processing of wood products has expanded greatly in this locality during the war, though not in proportion to other war industry.

Aichi-ken has extensive forests to draw from, but they are not adequate to supply the large wood-using industries of the prefecture. Timber is imported from abroad, from adjacent

prefectures (especially Gifu-ken) and from other parts of Japan. Most of the large wood-using industries are located along the lower portion of Hori-kawa in Nagoya-shi, where there are many log storage ponds. Smaller wood-using industries, such as the smaller sawmills and wood-working shops, are scattered through the prefecture.

In 1939 there were 289 lumber and veneer mills reported in the prefecture (See table 36). They are of 2 types; those which produce a general run of rough lumber, and those which specialize in sawing wood panels down to 1/4-inch in thickness for home construction. Little information is available on the equipment of the many small lumber producers. Some of them may be simply lumber yards without much power equipment which do most of their sawing by hand. Even some of the larger establishments have some hand sawing done in their yards.

The veneer mills are a newer and more rapidly expanding phase of the wood-using industries in Aichi-ken. In 1938 the prefecture's 42 establishments together produced veneer valued at over 7,000,000 yen. This was 27½ percent of national production and was the largest veneer output reported for any prefecture. Much of it was produced from imported logs, and large quantities of veneer and veneer products were shipped to overseas markets. In 1935, veneer valued at 2,274,000 yen was exported from Nagoya-shi. The war has cut off some sources of supply and some markets. In spite of this, production has probably been expanded to fill wartime needs for veneer and plywood in the aircraft industry, for construction, and for boxes and crates.

In 1938 the wooden box industry was the largest wood-using industry in Aichi-ken, and this prefecture led the country in production of boxes. The 1938 output of Aichi-ken was valued at 12,500,000 yen, which was nearly 20 percent of national box production. In that year there were 102 firms engaged in box production. In 1938 exports of box boards and other packing materials from Nagoya-shi amounted to 2,700,000 yen. Chief sources of raw materials were the sawmills and veneer mills described above. In many cases, lumber and/or veneer production is combined in the same establishment such as in a box-making factory. Wartime demands for shipping containers are usually great and a high level of production has probably been maintained insofar as raw materials have been available.

1938 production of wooden toys in Aichi-ken was valued at 500,000 yen, or 36 percent of the national total. In the same year it ranked third among the prefectures of

Japan in the production of wooden clogs and fourth in unclassified wood products. Over 4,000,000 pairs of clogs were produced in Aichi-ken in that year. Other unclassified wood products amounted to nearly 6,000,000 yen in 1938.

Aichi-ken was not of great national importance in the general field of pulp and paper production in 1938. The largest pulp and paper mill was probably the Oji Seishi KK plant located beside the Hachigo log-storage pond near the mouth of Hori-kawa. This plant averaged 8,600 metric tons of pulp and 4,500 metric tons of paper annually between 1937 and 1939. There was one other producer of pulp (probably not large) and 14 other paper mills, some of them small. However, cellophane production was prominent, with at least one large establishment, the Dai Nippon Serofuan KK, which became one of the largest manufacturers of camouflage material, anti-gas coverings, and materials for the aircraft industry. Twenty-one percent of the 1938 Japanese cellophane production came from this prefecture. Production of wrapping paper, fibre board and fibre shipping containers made up most of the remainder of the paper mill output in Aichi-ken. (See Table 36.)

TABLE 36

Wood Products, 1938, Aichi-ken.

Type	Plants	Products	Production (in yen)
Lumber & veneer mills	289	Lumber	11,426,365
		Veneer	7,215,989
		Other	1,941,523
Sub-total			20,583,877
Wooden containers	120	Boxes	12,558,820
		Cooperage	398,504
Sub-total			12,957,324
Furniture & fixtures	197	Furniture	1,493,036
			733,979
Sub total			2,227,015
Other manufactured wood products	374	Wooden clogs	803,094
		Wooden toys	550,457
		Other	5,932,464
Sub-total			7,286,015

Type	Plants	Products	Production (in yen)
Pulp mills	2	Wood pulp	764,384
Paper mills	15	Cellophane	1,664,632
		Wrapping paper	1,277,515
		Paperboard	840,126
		Other	564,943
Sub-total			4,347,216
Grand total	997		48,165,831

Ihara Shoten, located in Nagoya-shi, specializes in production of veneer manufacturing machinery, box making machines, and other wood-working machines and metal fittings needed in the maintenance of wood-using industries.

9. Other Industries.

The lesser industries of Aichi-ken, like those of the other great manufacturing centers, produce a wide variety of commodities in considerable quantities. This is particularly true of the Nagoya-shi area, probably because of relatively easy access to port facilities at that city. Many of the prefecture's products are low-priced consumer goods of the type often termed typically Japanese. Of this type is the mass-produced procelain table and kitchenwares, of which Aichi-ken is the leading producer and Nagoya-shi is the leading port of export.

In the field of ceramics, Aichi-ken ranks third among the prefectures of the home islands. In 1938 its production was 10 percent greater than that of Tokyo, but about 1/3 less than that ascribed to Fukuoka-ken. Both the latter and Osaka-ken far outrank Aichi-ken in the ceramics field as a whole, but Aichi's porcelain industry in 1938 produced almost 4 times as much by value as did Osaka and Fukuoka together. Like Kyoto, Nagoya long has been famed for fine porcelain and cloisonne of great beauty. In more recent pre-war years it developed important mass-production of porcelain wares, based on clay and silica sand deposits in Aichi-ken and in nearby Gifu-ken.

Table 37 shows the scope and importance of Aichi-ken ceramics production, and the outstanding place of the porcelain manufacturers in particular.

TABLE 37

Ceramic Manufactures, 1938, Aichi-ken.

Product	Value in (thousand yen)	Percent of national total
Porcelain	30,875	44.4
Cooking & tableware	12,030	42.7
Electric insulators,etc.	6,348	40.5
Tiles, etc.	5,845	71.9
Acid & heat resistors	2,295	41.3
Sanitary wares	1,093	37.0
Toys	945	94.0
Pipes	870	45.7
Furniture & fixtures	630	27.4
Medical wares	89	15.2
Others	725	
Brick and Clay	5,778	8.2
Firebrick	3,547	7.1
Roof tiles	1,583	28.8
Common brick	340	6.6
Others	305	
Cement	4,425	4.0
Glass	1,588	1.5
Bottles	1,183	2.7
Cooking & tableware	140	2.1
Shades & globes	88	3.8
Acid & heat resistors	40	3.3
Others	134	
Cement Products	898	3.4
Pipe	93	1.0
Slate	240	2.1
Others	563	
Others	681	

Although its position in the field is not comparable to its pre-eminence in spinning and weaving. Aichi-ken has been a fairly important source of factory-produced clothing and other textile products. In 1939 it ranked sixth among the

home island prefectures in the value of its sewn or tailored manufactures. It produced 4.4 percent of the western type clothing, 2.5 percent of the tabi, and 2.4 percent of the handkerchiefs manufactured in Japanese factories. The total value of these items, together with "Other Tailored Articles" lumped in an omnibus item of 4,000,000 yen, was reported at 7,700,000 yen.

Knitwear was valued in that year at a total of 8,500,000 yen. That figure included knit shirts, drawers, shorts, gloves, hosiery and other items. Many yarns were used, the most important of which were cotton, wool and staplefibre. These made up respectively 42.6 percent, 36.1 percent and 10.4 percent (by value) of the knitwear produced in Aichi.

Aichi-ken stood fifth and eighth, respectively, in the factory production of leathers and non-leather footwear, but these ranks were earned with production valued at only 154,000 yen and 179,000 yen.

Hats of all kinds common in Japan were factory-produced in Aichi-ken, which stood fourth among the prefectures in the field, with manufactures valued at 1,248,000 yen or 6.4 percent of the national total.

Aichi-ken has been a center for minor textile specialties which are unimportant to the national economy as individual commodities, but taken together have been significant in domestic and foreign trade. In 1938 its factories produced, by value, 62.3 percent of the embroidery, 26.7 percent of the floss silk, 25.3 percent of the braided hemp and 22.5 percent of the cotton batting produced in Japan. In medical materials (cotton, gauze, bandages, etc.), Aichi-ken was the leading prefecture, manufacturing 6,700,000 yen worth, or 29.3 percent of the nation's production. Very small quantities of many other textile specialties were listed among Aichi-ken products for 1938. They included oilcloth, rubber-coated cloth, imitation leather, lace and others.

Paper goods factory-produced in Aichi-ken in 1938 were valued at 7,000,000 yen or 7.3 percent of the national total in this field. They included full lines of boxes, tags, toys, screens, fans, and lanterns, as well as many others.

In factory production of ropes and nets, Aichi-ken stood fourth among the prefectures of Japan, with 6,369,000 yen, or 10.5 percent of the nation's production. Important items in this total were 13 percent, or 3,627,000 yen in hemp rope; 5.7 percent, or 1,160,000 yen in fish nets; and 32.3 percent, or 537.000 yen in cotton rope.

The prefecture's manufacture of leather goods (including the shoes mentioned above) was valued at 600,000 yen, or 1.7 percent of the national production. This included 14.1 percent of the national total for luggage.

In 1938, Aichi-ken produced matches valued at 430,000 yen, or 3.2 percent of the nation's total in this closely controlled field, in which Osaka-fu accounted for about 80 percent of the national output of 13,300,000 yen, and 13 other prefectures shared the remainder.

With a production value of only 266,000 yen, it was the seventh prefecture of 10 reporting asbestos manufacture.

Aichi-ken has had its share of other light manufactures. Typical Japanese bamboo, straw, wood-shaving, wisteria, and palm products were reported in 1938. For these, and for lacquer and stone wares, the prefecture was among the 10 leaders.

G. CONSTRUCTION AND CONSTRUCTION MATERIALS.

1. Construction.

The types of construction in Aichi-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 brick and wood 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: Aichi-ken has stands of commercial timbers, but reserves of the best construction timbers are limited. The chief construction timbers in the prefecture are listed in Chapter III, D., 1. In 1938, 302 sawmills produced 8% of the total value of national production.

b. Cement. There are four major cement plants located in Aichi-ken.

(1) The Hokoku Semento K.K., has an annual capacity of 113,793 metric tons, located at 6 Oye-cho, Minato-ku, Nagoya-shi, it is equipped with 2 rotary kilns, 45.72 x2.43 and 45.72 x 2.72 meters. It uses the dry process and produces Portland cement. Its power equipment consists of one Edgemoor waste heat boiler, (evaporation 28,000 lb/hr), one horizontal turbine (2,300 HP), and one 1,500 kw. generator. The capacity of this plant may have been doubled.

(2) The Onoda Semento KK. Aichi Plant located in Nagoya-shi at 84 Higashi-machi Atsuda-ku. Has an annual capacity of 75,240 metric tons. It is equipped with one rotary kiln 45.72 x 2.74 meters. It uses the dry process and produces Portland cement.

(3) The Mikawa Semento KK. (now Toyo Sangyo KK.) Tawara Plant located in Toshima-Oaza, Atsumi-gun. Tawara-machi has an annual capacity of 96,000 metric tons. It is equipped with one Lepol rotary kiln. It uses the dry process and produces Portland cement. In May 1940, merged with Toyo Yokai, Nankai Tanko, and Nankai Kisen to form the Toyo Sangyo KK.

(4) The Tokai Semento KK. Takahama Plant, located in Tokai 1, Takehama-oaza, Takahama-machi, Aomi-gun, has an annual capacity of 120,000 metric tons. It is equipped with one lepol rotary kiln. It uses the dry process and produces ordinary cement. Limestone is procured from nearby quarries, and clay from Kamesaki on the opposite shore.

The machine repair shop of this plant has been converted into a machine works, and products of its machinery plant have been on the market since 1939.

c. Structural Steel. Aichi-ken has 4 principal active steel mills with capacity for rolled products. Their 1944 estimated rolled product capacities are shown in Table 38.

TABLE 38

Rolled Steel Product Capacity, 1944, Aichi-ken.

Plant	Location	Capacity (estimated). (metric tons)
Daido Seiko (Atsuta plant)	Nagoya-shi	10,000
Daido Seiko (Tsukiji plant)	Nagoya-shi	6,000
Daido Seiko (Hoshizaki plant)	Nagoya-shi	185,000
Toyoda Seiko KK	Kariya-machi	80,000

d. Brick. In 1938, brick yards located in Aichi-ken produced 7 percent of the total national production. In 1941, two major brick yards were reported located in Nagoya-shi and one in Heisaka-machi.

e. Roofing Tile. In 1938, plants located in Aichi-ken produced 31 percent of the total national production.

f. Building Stone. In 1938, quarries located in Aichi-ken produced 9 percent of the total national production.

g. Asbestos. In 1938, plants located in this prefecture produced 21 percent of the total national production.

h. Glass. In 1942, a major glass plant was reported located in Nagoya-shi.

i. Equipment. In 1938, equipment plants located in Aichi-ken produced 9 percent of the total value of national production of Construction industrial, and farm machinery.

H. TRADE AND COMMERCE

1. Foreign Trade.

a. Nagoya-shi. Nagoya rated fifth in foreign trade volume among Japan's 47 open ports. The trade volume (total imports & exports) was exceeded by that of Yokohama, Kobe, & Osaka, which together handled over 3/4 of Japan's foreign trade, and was exceeded only slightly by that of Moji. Nagoya's foreign trade was 3.4 percent of the national total of 6½ billion yen in 1939.

The principal imports of Nagoya-shi, before the war, were raw materials for the numerous industries of the region and the principal exports were processed and manufactured articles (textiles played an important part in Nagoya's trade). Table 39 indicates the volume of trade at Nagoya-shi.

TABLE 39

Foreign Trade, 1933-39, Nagoya-shi.

Year	Exports (yen)	Imports (yen)
1933	89,420,348	91,178,124
1934	115,515,093	88,526,006
1935	129,478,126	95,526,006
1936	131,500,961	108,777,074
1937	147,909,395	148,265,007
1938	115,101,115	74,126,005
1939	144,871,629	76,705,216
1939 (1st qtr.)	29,720,424	20,926,748
1940 (1st qtr.)	39,755,263	29,761,333

The most important exports ad valorem from Nagoya-shi in 1938 were: fabrics and tissues, 39,707,000 yen; pottery and glass, 30,059,400 yen; machinery, 15,685,000 yen; lumber, 6,000,000 yen; wheat flour, 4,692,000 yen; yarns, 3,675,200 yen; toys, 3,200,000, and food and beverages, 3,110,300 yen.

Other relatively important exports consisted of clothing, paper products and metal products.

Nagoya's imports accounted for 39 percent of her foreign trade and consisted chiefly of yarns and cordage, 23,576,900 yen, Indian corn, 5,285,300 yen; coal, 5,259,400 yen; bean cake, 5,213,400 yen; ores and metals, 5,210,800 yen; oils (probably mostly petroleum), 3,774,800 yen; beans, 3,715,000 yen; lumber, 3,540,000 yen. Also paper products, millet,

salt, fodder, machinery and ammonium sulphate.

Nagoya-shi's trade with Asiatci continues in 1938 and the first quarter of 1940 is shown in Tables 40 and 41.

TABLE 40

Asiatic Trade, 1938, Nagoya-shi.

Area	Exports (yen)	Imports (yen)
Northern China	10,235,856	1,716,268
Central China	2,882,826	303,896
Southern China	905	11,365
Total	13,119,587	2,031,529

TABLE 41

Asiactic Trade, 1st. Quarter 1940, Nagoya-shi.

Area	Exports (yen)	Imports (yen)
Northern China	3,354,246	963,915
Central China	2,179,254	848,341
Southern China	139,426	7,461
Total	5,672,926	1,819,717
Manchukuo	5,422,273	13,334,952
Kwantung Prov.	5,450,290	713,279
Hong Kong	416,238	

b. Taketoyo-machi. Taketoyo-machi rated 15th in volume of foreign trade among Japan's 47 open ports. The volume was less than one percent of the nation's total, however.

Table 42 indicates the value of exports and imports from 1933 to 1940 at Taketoyo-machi.

TABLE 42

Foreign Trade, 1933-40, Taketoyo-machi.

Year	Exports	Imports
1933	176,470	11,692,689
1934	219,795	13,356,227
1935	305,149	15,429,508
1936	451,957	18,790,859
1937	158,071	18,421,847
1938	75,535	21,502,364
1939	721,869	21,868,630
1939 (1st qtr.)	83,737	6,340,283
1940 (" ")	265,231	5,219,970

Taketoyo-machi's trade with Asiatic countries is shown in Table 43 below:

TABLE 43

Country	Exports	Imports
China	23,683	11,446
Manchukuo	----	4,417,089
Hong Kong	----	68,605

The most important exports ad valorem from Taketoyo-machi in 1938 were twines and cordage, 51,822 yen.

Taketoyo's imports accounted for over 99.996 percent of her foreign trade and consisted chiefly of grains, flours and seeds, 16,526,800 yen; and oils and fats, 1,883,100 yen.

2. Domestic trade.

a. Nagoya-shi. In 1936 Nagoya's domestic trade moving by water palced her tenth in volume among Japan's domestic trade ports, with exports of 1,021,000 metric tons, valued at 65,840,000 yen, of which ceramics, cereals and paper varieties were the principal items. Imports were 4,416,000 metric tons, 168,466,000 yen value, of which the principal products were coal, sugar and lumber.

The value of domestic trade in Nagoya-shi is shown in Table 44 as follows:

TABLE 44

Domestic Trade, 1933-38, Nagoya-shi.

Year	Exports	Imports
1933	41,596,840 yen	122,252,842
1934	47,397,255 "	137,081,837
1935	57,205,175 "	149,122,814
1936	65,839,589 "	168,466,005
1937	80,242,407 "	215,705,847
1938	83,957,100 "	238,679,555

b. Handa-shi. The position of Handa-shi in Japan's domestic trade in 1934 is shown in Table 45.

TABLE 45

Domestic Trade, 1934, Handa-shi.

Total tonnage of ships	1,068,403
steamships	630,692
sailing vessels	437,711
Total tonnage of exports	368,417
Total tonnage of imports	482,898
Total value (in yen) of exports	11,796,379
Total value (in yen) of imports	22,986,441

c. Taketoyo-machi. The position of Taketoyo-machi in Table 46.

TABLE 46

Domestic Trade, 1934, Taketoyo-machi.

Total tonnage of ships	820,157*
steamships	778,504*
sailing vessels	41,653*
Total tonnage of exports	409,458*
Total tonnage of imports	556,927*
Total value (in yen) of exports	13,848,146
Total value (in yen) of imports	9,743,441

*Probably includes foreign trade also.

d. Miya-machi. The position of Miya-machi in Japan's domestic trade in 1934 is shown in Table 47.

TABLE 47

Domestic Trade, 1934, Miya-machi.

Total tonnage of ships	674,033
steamships	164,294
sailing vessels	509,639
Total tonnage of exports	81,810
Total tonnage of imports	170,390
Total value (in yen) of exports	1,104,640
Total value (in yen) of imports	1,970,357

e. Other ports. The position of other ports in domestic trade in 1934 is shown i Table 48.

TABLE 48

Domestic Trade, 1934, Minor Ports of Aichi-ken.

	Yoshida-machi	Morozaki-machi	Nishiura-mura
Total tonnage of ships	449,673	411,602	273,994
Total tonnage of exports	20,897	54,417	125,031
Total tonnage of imports	167,447	23,977	24,523
Value of exports (in yen)	595,554	---	---
Value of imports(in yen)	2,664,220	---	---

3. Warehousing.

a. Aichi-ken warehouse companies include the following located in Nagoya-shi unless otherwise indicated:

Toyo Soko KK, 36, Tennozaki-cho, Nishi-ku: (building area, 23,000 tsubo).
Kawanishi Soko KK (branch) 1-chome, --29, Mizumo-cho, Naka-ku..
Nagoya Sambashi Soko KK, 5-chome,--3308, Dotokushin, Minami-ku.
Toshin Soko KK, 706, Chitose, Niniwari, Minami-ku.
Asahi Unyu KK Ltd., 2-chome, 3 Nayamachi, Naka-ku.
Handa Soko KK -- Handa-shi.
Mitsubishi Soko KK (Nagoya branch), Hirokoji-dori, Naka-ku.
Toshin Soko KK (Nagoya branch)14, 1-chome, Kako-machi, Naka-ku.
Yokkaichi Soko KK (Nagoya branch), 1, 1-chome, Tomikawa-cho, Nakagawa-ku.
Okazaki Soko KK, Mediaizi-machi, Okazaki-shi.

There are located in Nagoya-shi,state warehouses managed by the Rice Control Law connected with the Ministry of Agriculture and Commerce, and state warehouses under the Ministry of Transportation and Communications. The Nagoya freight yard (½ mile south of the Nagoya Station) is reported to have 2 roundhouses and several huge warehouses, and the Inazawa Shunting Yard (northwest of Nagoya-shi along the main line to Gifu-shi, about 4 miles NW of railroad crossing over the Shonai river) which is reported to be the primary shunting yard for rail traffic through the Nagoya region,has many warehouses and shops.

Port storage facilities in Nagoya-shi are reported to be abundant in the harbor area and also to the north along the banks of the Naka-gawa canal.

At the East pier, 6 warehouses have been proposed for construction; they would have a total ground area of about 244,000 sq.ft. About 200 yards northward from the root of this pier is located a large flour mill. Buildings on the west side of the pier and in the middle of the pier were to have been served by railroad.

On the West pier there are 2 one- story steel warehouses having a total area of 56,934 sq. ft. Four additional warehouses of the same size, and 2 slightly smaller ones were scheduled to have been erected. The warehouses now shown on charts indicate a total area of 172,125 sq. ft., but proposed construction indicates an area of 195.000 sq. ft. All the warehouses on this pier are served by railroad.

The Central pier has 3 warehouses having a total ground area of about 117,500 sq. ft., all of which are served by railroad.

It was reported in 1934 that there were 3 government warehoses in the port, covering an area of 44,586 sq. ft.; of this total 13,878 sq. ft. was bonded; private warehouses provided a storage space of 320,310 sq. ft , of this total 51,849 sq. ft. was bonded. The Rising Sun Oil Co. warehouses have a total floor area of 10,600 sq. ft. Whether this figure is included in the above total is not known. Many warehouses front the various canals in the port.

The Rising Sun Oil Co. has storage facilities for 73,600 barrels of white products (gasoline and kerosene), and 25,600 barrels of black products (fuel oil and diesel oil. There are at least 2 large tanks and several small tanks. These are conspicuous on the reclaimed ground at the end of the East breakwater. In 1938, the Mitsui Co. planned to build storage tanks for 1,087,500 barrels of fuel oil for the Rising Sun Oil Co.

The Japan Oil Co. has under construction two 6,900 barrel tanks, two 3,145 barrel tanks, and two 1,887 barrel tanks at Nagoya-shi; these tanks, for heavy oil, gasoline and light oil, were scheduled for completion in June 1938.

Naval oil storage is reported to be about 9 large tanks and 6 warehouse with a capacity of about 10,000 tons. The oil tanks were reported to be near the waterfront.

The Hatta Oil Storage consists of 3 tanks and several warehouses with a capacity of 166,258 gals. of oil and 103,000 gals. of gasoline. These are located on the west side of the city, just north of the railroad tracks to Yokkaichi and just

east of the Shonai river. There is a spur from the above mentioned tracks to the tanks

In Toyohashi-shi, the Standard Oil Co. maintained limited storage facilities, both for oil and other commodities. A commercial supply house in the northwestern part of the city has storage facilities.

4. Retail Trade.

Department stores in Nagoya-shi include:

Matsuzakaya, Ltd., 2-chome,--8, Minamiotsu-machi.
Juchiya, Ltd., 4-chome,--1 Sakae-machi.

In 1936-7 there were 14 public markets in Nagoya and their sales amounted to 2,811,619 yen. In 1937-8 the sales of these same markets were 2,920,157 yen.

The index of retail prices on seven goods of daily use (based on July 1937 as 100) had risen to 218.4 in July 1943, and to 261.3 by July 1944.

5. Govermental Agencies.

Names and addresses of governmental agencies in Nagoya-shi, engaged in trade and commerce include:

Nagoya Monopoly Bureau, 7-chome, Furuzawa-cho, Naka-ku.
Aichi-ken Commercial Museum, 3-chome, Shin Sakai-machi, Naka-ku.
Aichi-ken Analytical Bureau, 3-chome, Hanada-cho, Higashi-ku.
Export Silk Goods Conditioning Office, Dept. of Trade and Commerce, Kaminagoya-cho, Nishi-ku.
Aichi-ken Weights & Measures Testing House, Nanamagari-cho, Higashi-ku.

The Aichi-ken Commercial Museum, a 4 storied ferro-concrete building, is located just in front of the Nagoya castle. The museum is an official institution, managed by prefectural authorities for the following purposes: 1. Display of samples. 2. Assistance towards the opening & promotion of business relations. 3. Commercial and industrial investigations. 4. Publication of statistical reports and the results of researches. 5. Promotion of trade & industry.

I. FINANCE

1. Private Finance.

a. Relative position of Aichi-ken. Table 49 shows the relative position of Aichi-ken in private finance, as compared with the rest of Japan, for the dates indicated.

TABLE 49

Bank Deposits, Savings & Life Insurance, 1936 & 1944, Aichi-ken.

	Total for Aichi-ken	Percent of national total
Population (1936)	2,862,701	4.13
Total bank deposits (banks with head offices in prefecture) (1936)	667,402,000	5.2
Deposits in postal savings transfer accounts (1936)	48,084,000	3.59
Amount of ordinary life insurance in force (1936)	176,320,000	4.85
Savings goal* (1944)	1,900,000,000	5.3

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

b. Banking. As of 1940 there were 7 ordinary provincial banks in Aichi-ken, with 169 branches and 53 agencies. Of the branches, 129 were located in Aichi-ken and 40 were located outside the prefecture. Two ordinary provincial banks with main offices in other prefectures maintained 3 branches, and the 5 "big" banks operated a total of 13 branches in Aichi-ken. There were also 3 branches of 3 central banks and 2 branches of 2 special banks located in Aichi-ken as of 1940. These banks operated 29 branches and 4 agencies in the prefecture and 3 branches outside the prefecture. One savings bank with its main office elsewhere maintained 6 branches in Aichi-ken. As of 1942 there were 3 clearing houses in Aichi-ken located in Toyohashi-shi, Ichinomiya-shi and Nagoya-shi.

Following is a list of the banks and branches that were known to exist in Aichi-ken in 1940, with salient data as to their operations. 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 all, of the prefectural banks listed here have been merged.

(1) Provincial Ordinary Banks.

Nagoya Ginko (Nagoya Bank)
Main office: Naka-ku, Nagoya-shi.
Branches: of the 48 branches, 31 are located in Aichi-ken, as follows:
Naka-ku, Nagoya-shi (6)
Higashi-ku, Nagoya-shi (6)
Nishi-ku, Nagoya-shi (3)
Nakamura-ku, Nagoya-shi (2)
Atsuda-ku, Nagoya-shi (2)
Showa-ku, Nagoya-shi
Minato-ku, Nagoya-shi
Toyohashi-shi
Ichinomiya-shi
Seto-shi
Handa-shi
Kochino-machi, Niwa-gun
Okoshi-machi, Nakashima-gun
Tsushima-machi, Ama (Kaibu)-gun
Kanie-machi, Ama (Kaibu)-gun
Nishio-machi- Hazu-gun
Gamagori-machi, Hoi-gun

Total assets	366,354,000 yen
Securities	168,769,000 yen
Cash on hand	23,930,000 yen
Total loans	146,609,000 yen
Uncalled capital	6,650,000 yen
Total liabilities	366,354,000 yen
Deposits	321,595,000 yen
Reserves	14,131,000 yen
Net profit (6 mos)	955,000 yen
Paid-up capital	13,950,000 yen

Aichi Ginko (Aichi Bank)
Main office: Nishi-ku, Nagoya-shi.
Branches: Of the 47 branches, 24 branches together with 5 agencies are located in Aichi-ken, as follows:
Higashi-ku, Nagoya-shi (4)
Nishi-ku, Nagoya-shi (3)
Naka-ku, Nagoya-shi (6)
Nakamura-ku, Nagoya-shi (2)
Nakagawa-ku, Nagoya-shi (1)
Toyohashi-shi (1 branch, 1 agency)
Toyokawa-shi (1)
Ichinomiya-shi (1)
Handa-shi (1 branch, 1 agency)

Nishibiwajima-machi, Nishikasugai-gun (1)
Tsushima-machi, Ama(Kaibu)-gun (1)

Total assets	392,810,000 yen
Securities	132,052,000 yen
Cash on hand	46,239,000 yen
Total loans	187,687,000 yen
Uncalled capital	3,200,000 yen
Total liabilities	392,810,000 yen
Deposits	351,838,000 yen
Reserves	14,451,000 yen
Net profit (6 mos)	874,000 yen
Paid-up capital	11,800,000 yen

Okazaki Ginko (Okazaki Bank)
Main office: Okazaki-shi
All 25 branches and 11 agencies are located in Aichi-ken as follows:
Anjo-machi, Hekikai(Omi)-gun
Takahama-machi, Hekikai(Omi)-gun (1 branch, 1 agency)
Shinkawa-machi, Hekikai(Omi)-gun (1 branch, 1 agency)
Ohama-machi, Hekkikai(Omi)-gun (1 branch, 1 agency)
Tanao-machi, Hekikai(Omi)-gun (agency)
Yahagi-machi, Hekikai(Omi)-gun
Chiryu-machi, Hekikai(Omi)-gun
Kariya-machi, Hekikai(Omi)-gun
Asahi-mura, Hekikai(Omi)-gun (agency)
Meiji-mura, Hekikai(Omi)-gun (2 agencies)
Sakurai-mura, Hekikai(Omi)-gun (agency)
Mutsumi-mura, Hekikai(Omi)-gun (agency)
Nishio-machi, Hazu-gun
Heisaka-machi, Hazu-gun
Ishiki-machi, Hazu-gun
Yoshida-machi, Hazu-gun
Hazu-machi, Hazu-gun
Yokosuka-machi, Hazu-gun (agency)
Fukuoka-machi, Nukada-gun
Iwatsu-machi, Nukada-gun
Koromo-machi, Nishikamo-gun
Asuke-machi, Higashikamo-gun
Taguchi-machi, Kitashidara-gun
Inabu-machi, Kitashidara-gun
Miya-machi, Hoi-gun
Gamagori-machi, Hoi-gun
Katanohara-machi, Hoi-gun
Okazaki-shi (4 branches, 1 agency)

Total assets	37,176,000 yen
Securities	37,096,000 yen
Cash on hand	2,116,000 yen
Total loans	14,342,000 yen
Uncalled capital	1,220,000 yen

Total liabilities	37,176,000 yen
Deposits	50,901,000 yen
Reserves	1,599,000 yen
Net profit (6 mos)	90,000 yen
Paid-up capital	1,990,000 yen

Isawa Ginko (Isawa Bank)
Main office: Nishi-ku, Nagoya-shi
Branches: All 21 branches and 16 agencies are located in Aichi-ken as follows:
Nishi-ku, Nagoya-shi
Naka-ku, Nagoya-shi
Minami-ku, Nagoya-shi (2 branches)
Chikusa-ku, Nagoya-shi
Nakamura-ku, Nagoya-shi
Showa-ku, Nagoya-shi
Atsuda-ku, Nagoya-shi
Higashi-ku, Nagoya-shi
Handa-shi (1 branch, 2 agencies)
Yokosuka-machi, Chita-gun
Okada-machi, Chita-gun
Ono-machi, Chita-gun
Tokoname-machi, Chita-gun (1 branch, 2 agencies)
Nishiura-machi, Chita-gun (2 agencies)
Noma-machi, Chita-gun (1 branch, 1 agency)
Uchimi-machi, Chita-gun (1 branch, 1 agency)
Toyohama-machi, Chita-gun
Morozaki-machi, Chita-gun (2 agencies)
Kowa-machi, Chita-gun (1 branch, 2 agencies)
Taketoyo-machi, Chita-gun
Asahi-mura, Chiba-gun
Kosugaya-mura, Chiba-gun (2 agencies)
Fuki-machi, Chiba-gun (agency)
Shinkawa-machi, Hekikai(Omi)-gun (agency)
Ohama-machi, Hekikai(Omi)-gun

Total assets	99,731,000 yen
Securities	42,423,000 yen
Cash on hand	7,652,000 yen
Total loans	39,474,000 yen
Uncalled capital	500,000 yen
Total liabilities	99,731,000 yen
Deposits	89,336,000 yen
Reserves	1,730,000 yen
Net profit (6 mos)	130,000 yen
Paid-up capital	1,500,000 yen

Ono Ginko (Ono Bank)
Main office: Ono-machi, Yana-gun
Branches: All 8 branches and 12 agencies are located in

Aichi-ken as follows (location of 10 agencies unknown):
Toyokawa-shi (3 branches)
Toyohashi-shi
Miwa-mura, Kitashidara-gun (agency)
Shinshiro-machi, Minamishitara-gun
Tawara-machi, Atsumi-gun
Fukue-machi, Atsumi-gun
Akabane-mura, Atsumi-gun
Yamanoyoshida-mura, Yana-gun (agency)

Total assets	26,815,000 yen
Securities	17,069,000 yen
Cash on hand	2,435,000 yen
Total loans	5,245,000 yen
Uncalled capital	75,000 yen
Total liabilities	26,815,000 yen
Deposits	23,786,000 yen
Reserves	1,152,000 yen
Net profit (6 mos).	67,000 yen
Paid-up capital	1,075,000 yen

Inazawa Ginko (Inazawa Bank)
Main office: Inazawa-machi, Nakashima-gun
Branches: Of the 15 branches and 7 agencies, all are located in Aichi-ken. Location of known branches and agencies is as follows:
Nishi-ku, Nagoya-shi
Okazaki-shi
Komaki-machi, Higashikasugai-gun
Kiyosu-machi, Nishikasugai-gun
Shinkawa-machi, Nishikasugai-gun
Nishiharu-mura, Nishikasugai-gun
Inuyama-machi, Niwa-gun
Iwakura-machi, Niwa-gun
Chiaki-mura, Niwa-gun
Inazawa-machi, Nakashima-gun
Hagiwara-machi, Nakashima-gun
Sobue-machi, Nakashima-gun
Meiji-mura, Nakashima-gun
Chiyoda-mura, Nakashima-gun
Jimokuji-machi, Ama(Kaibu)-gun

Total assets	24,721,000 yen
Securities	14,399,000 yen
Cash on hand	2,549,000 yen
Total loans	5,519,000 yen
Uncalled capital	1,000,000 yen
Total liabilities	24,721,000 yen
Deposits	22,331,000 yen
Reserves	886,000 yen
Net profit (6 mos)	40,000 yen
Paid-up capital	363,000 yen

Aichi-ken Noko Ginko (Aichi Prefecture Farm and Industrial Bank)
Main office: Naka-ku, Nagoya-shi
Branches: Of the 5 branches and 2 agencies, all are located in Aichi-ken as follows:
Toyohashi-shi
Okazaki-shi
Ichinomiya-shi
Handa-shi
Tushima-machi, Ama(Kaibu)-gun (agency)
Hekikai (Omi)-gun
Koromo-machi, Nishikamo-gun (agency)

Nomura Ginko (Nomura Bank)
Main office: Osaka-fu. Branch in Aichi-ken is in Nagoya-shi.

Hyakugo Ginko (105th Bank)
Main office: Mie-ken. Branch in Aichi-ken is in Nagoya-shi.

(2) "Big" Ordinary Banks.

Teikoku Ginko (Imperial Bank)
Main office: Tokyo-to
Branches in Aichi-ken located as follows:
15 Kaya-machi, Toyohashi-shi
4 3-chome Hirokoji-dori, Naka-ku, Nagoya-shi.
12 4-chome, Iwai-dori, Naka-ku, Nagoya-shi.
16 5-chome, Iwai-dori, Naka-ku, Nagoya-shi.
2 6-chome Hirokoji-dori, Naka-ku, Nagoya-shi.
(Note: these were formerly branches of the Dai-Ichi (first) and the Mitsui Banks which merged to form the Imperial Bank.)

Mitsubishi Ginko (Mitsubishi Bank)
Main office: Tokyo-to.
Three branches in Aichi-ken:
12 7-chome Hirokoji-dori, Naka-ku, Nagoya-shi
14 1-chome Sawagami-cho, Atsuda-ku, Nagoya-shi
1 7-chome Hirokoji-dori, Naka-ku, Nagoya-shi
Note: these were formerly branches of Mitsubishi and Dai Hyaku (one-hundredth) Banks).

Yasuda Ginko (Yasuda Bank)
Main office: Tokyo-to
Branch in Aichi-ken at:
9 2-chome Minami-otsu, Naka-ku, Nagoya-shi

Sanwa Ginko (Sanwa Bank)
Main office: Osaka-fu
Three branches in Aichi-ken located in Nagoya-shi.

Sumitomo Ginko (Sumitomo Bank)
Main office: Osaka-fu. The 2 branches in Aichi-ken are located in Nagoya-shi.

(3) Central Banks.

Nippon Ginko (Bank of Japan)
Main office: Tokyo-to. Branch located at 1 6-chome, Sakae-machi, Naka-ku, Nagoya-shi.

Yokohama Shokin Ginko (Yokohama Specie Bank)
Main office: Yokohama-shi, Kanagawa-ken. The branch in Aichi-ken is at 1, Shin Yanagi-machi 5-chome, Naka-ku, Nagoya-shi.

Chosen Ginko (Bank of Chosen)
Main office: Chosen. The branch in Aichi-ken is in Nagoya-shi.

(4) Special Banks.

Nippon Kogyo Ginko (Industrial Bank of Japan)
Main office: Tokyo-to. The branch in Aichi-ken is at 1, 3-chome, Hirokoji-dori, Naka-ku, Nagoya-shi.

Nippon Kangyo Ginko (Hypothec Bank of Japan)
Main office: Tokyo-to. Branch located at 11 2-chome Saka-cho, Naka-ku, Nagoya-shi.

(5) Savings Banks.

Nippon Chochiku Ginko (Japan Savings Bank of Aichi-ken)
Main office: Naka-ku, Nagoya-shi
Branches: Of the 26 branches, 23 are located in Aichi-ken, together with 4 agencies, as follows:
Naka-ku, Nagoya-shi (4 branches)
Higashi-ku, Nagoya-shi (4 branches, 1 agency)
Chikusa-ku, Nagoya-shi
Nishi-ku, Nagoya-shi (4 branches)
Nakagawa-ku, Nagoya-shi (2 branches, 1 agency)
Atsuda-ku, Nagoya-shi (2 branches, 1 agency)
9 4-chome Hirokoji-dori, Naka-ku, Nagoya-shi.
Showa-ku, Nagoya-shi
Nakamura-ku, Nagoya-shi (agency)
Toyohashi-shi
Ichinomiya-shi
Handa-shi
Tsushima-machi, Ama(Kaibu)-gun
Total assets
Securities 210,032,000 yen
Cash on hand 10,845,000 yen

Total loans	3,738,000 yen
Uncalled capital	none
Total liabilities	
Deposits	218,130,000 yen
Reserves	5,034,000 yen
Net profit (6 mos)	282,000 yen
Paid-up capital	2,300,000 yen

Okazaki Chochiku Ginko (Okazaki Savings Bank)
Main office: Okazaki-shi.
Branches: All 3 branches are located in Aichi-ken as follows:
Toyohashi-shi
Anjo-machi, Hekikai(Omi)-gun
Nishio-machi, Hazu-gun

Total assets	17,144,000 yen
Securities	14,040,000 yen
Cash on hand	1,310,000 yen
Total loans	385,000 yen
Uncalled capital	100,000 yen
Total liabilities	17,144,000 yen
Deposits	15,858,000 yen
Reserves	477,000 yen
Net profit (6 mos)	28,000 yen
Paid-up capital	400,000 yen

Aichi Chochiku Ginko (Aichi Savings Bank)
Main office: Inazawa-machi, Nakashima-gun
Branches: All 3 branches are located in Aichi-ken as follows:
Hagiwara-machi, Nakashima-gun
Meiji-mura, Nakashima-gun
Inazawa-machi, Nakashima-gun

Total assets	7,465,000 yen
Securities	5,910,000 yen
Cash on hand	797,000 yen
Total loans	134,000 yen
Uncalled capital	375,000 yen
Total liabilities	7,465,000 yen
Deposits	6,689,000 yen
Reserves	149,000 yen
Net profit (6 mos)	11,000 yen
Paid-up capital	125,000 yen

Nippon Chochiku Ginko (Japan Savings Bank)
Main office: Tokyo-to.
Branches in Aichi-ken located as follows:
8 9-chome Misachi-motomachi-dori, Nishi-ku, Nagoya-shi.
Nunobukuro-machi, Niwa-gun

1 5-chome Hirokoji-dori, Naka-ku, Nagoya-shi
37 Hana-machi, Atsuta-ku, Nagoya-shi
75 Fudagi-cho, Toyohashi-shi
33 Kagota-machi, Okazaki-shi
(Note: This was formerly a branch of the Fudo Savings Bank which was merged into the new Japan Savings Bank, and should not be confused with the Japan Savings Bank of Aichi-ken.)

(6) Trust Companies.

As of 1940 there were two trust companies, the Yasuda and the Kansai, in Aichi-ken; however, by this time they may have been merged with banks, since that has been the trend throughout Japan.

c. Insurance. The following marine and fire insurance companies maintained branches in Aichi-ken in 1940; Dai-Ichi Fire and Marine, Fuso Marine and Fire, Hokoku Fire, Kobe Marine and Fire, Meiji Fire, Nippon Fire, Nippon Kyoritsu Fire, Nissan Fire and Marine, Okura Fire and Marine, Osaka Marine and Fire, Taikoku Fire and Marine, Taisho Marine and Fire, Teikoku Marine and Fire, Teikoku Fire, Toho Fire, Tokio Marine and Fire, Tokyo Fire. Also as of 1940, the following life insurance companies were known to be operating in Aichi-ken: Aikoku Life, Meiji Life, Mitsui Life, Nippon Life, Nisshin Life, Taihei Life, Teikoku Life, Yasuda Life. As of 1936 there were 1,235,570 ordinary life insurance policies in force in the prefecture with a total value of 176,320,000 yen.

It has been reported that all insurance companies in Japan have been merged into two 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 Aichi-ken totaled 682,046,000 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 492 associations operating in Aichi-ken with a total investment of 10,330,000 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	9
Branch offices	9
Authorized capital	1,550,000 yen
Paid-up capital	533,000 yen
Number of association accounts	1,591
Number of individual accounts	56,675

2. Public Finance.

a. Relative position of prefecture. Table 50 shows the relative position, in regard to public finance, of Aichi-ken compared with the rest of Japan as of 1938.

Table 50

Public Finance, 1938, Aichi-ken

	Total for Aichi-ken (in yen)	Percent of Total for All Prefectures
Prefectural revenue	26,870,000	4.5
Prefectural expenditures	26,870,000	4.5
National business profits tax collection		
(1) Individuals	1,880,000	7.0
(2) Corporations	2,716,000	4.2
Total taxable income	212,904,000	4.6
National income tax collections	12,078,000	4.46

b. Income of prefectural government. In the 1938-39 fiscal year the income of the prefectural government of Aichi-ken was derived from the following sources:

	Amount (in thousand yen)
Surtaxes on direct national taxes	
Land tax	2,930
Income tax	2,985
Other	1,553
Special land tax	316
House tax	1,502
Business tax	223
Miscellaneous taxes	2,704
Property income	45
Employment and handling fee	1,866
National grants in aid	2,621
Prefectural loans	2,108
Balance from previous fiscal year	1,376
Other	6,641
Total income	26,870

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

	Amount (in thousand yen)
Council expenses	60

Police expenses	4,329
Public works	6,379
Education	4,167
Encouragement of industry	5,068
Health and sanitation	714
Social welfare	466
Prefectural loan expenses	3,452
Handling of prefectural expenses	596
Official's expenses	1,198
Other	441
Total expenditures	26,870

d. Income of cities. Revenue of cities in Aichi-ken for the fiscal year 1938-39 were as follows:

	Amount (in thousand yen)
Surtaxes on direct national taxes	
Land tax	1,327
Income tax	783
Other	2,211
Surtaxes on prefectural taxes	
Special land tax	14
House tax	3,757
Business tax	218
Miscellaneous taxes	2,978
Special tax	50
Property income	136
Employment fee and handling fee	13,108
Delivery and subsidy	1,873
City loans	9,427
Balance from previous year	1,261
Other	8,044
Total revenue	45,187

e. Expenditures of cities. Expenditures of cities in Aichi-ken for the fiscal year 1938-39 were as follows:

	Amount (in thousand yen)
Council expense	148
Office expense	2,809
Public works	2,288
Education	6,799
Health and sanitation	7,731
Social welfare	1,096
Police	59
Encouragement of industry	508
Municipal loan expense	11,213

Liability expense	19
Planning	3,836
Maintenance expense (property)	650
Electric and gas construction	2,793
Other	5,239
Total expenditures	45,187

f. Income of towns and townships. Revenue of the towns and townships in Aichi-ken for the fiscal year 1938-39 were as follows:

	Amount (in thousand yen)
Surtax on national taxes	
Land tax	919
Income tax	29
Other	465
Surtax on prefectural taxes	
Special land tax	193
Personal property tax	866
Business tax	75
Miscellaneous taxes	1,048
Special taxes	3,784
Estate Incomes	353
Rents and commissions	307
Subsidies	3,533
Town and village loans	721
Amount carried forward from previous year	572
Other	2,409
Total revenue	15,274

g. Expenditures of towns and townships. Expenditures of the towns and townships in Aichi-ken for the fiscal year 1938-39 were as follows:

	Amount (in thousand yen)
Council expense	79
Office expense	1,982
Public works	2,621
Education	7,274
Health and sanitation	392
Social welfare	389
Police	210
Encouragement of industry	192
Public loan expense	519
Various taxes and burdens	37
Building funds	309
Electricity and gas enterprise	None

Other	1,270
Total expenditures	

h. Public debt. The local public debt in Aichi-ken as of 1936 totaled 164,301,00 yen. The following is a breakdown of this debt according to areas and objectives for which the debt was incurred:

	Amount (in thousand yen)
By area:	
Prefectural	38,961
Municipal	121,506
Town and townships	3,320
Water supply (district)	514
By objective:	
Education	20,224
Health and sanitation	29,982
Services expense	11,492
Disaster repair	6,273
Ordinary construction	64,229
Electric and gas works	27,326
Public welfare	2,423
Other	2,352

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:

Amount of tax	Individuals
Less than 10 yen	15,932
10 to 15 yen	9,661
15 to 20 yen	4,947
20 to 30 yen	5,639
30 to 50 yen	5,323
50 to 100 yen	5,296
100 to 200 yen	3,646
200 to 500 yen	2,303
500 to 1,000 yen	774
1,000 to 2,000 yen	477
2,000 to 5,000 yen	236
Over 5,000 yen	128
Total	54,362

j. Finance Offices in Aichi-ken. As of 1938 the Nagoya Revenue Office was located at Furusawa-machi, Naka-ku, Nagoya-shi. Tax Collectors Offices were located at:

Higashihachi-machi, Toyohashi-shi, Ansho-machi, Okazaki-shi, Oaza-Ichinomiya, Ichinomiya-shi, Handa-shi, Tsushima-machi, Amabe-gun, Taguchi-machi, Kifashidera-gun, Komaki-machi, Higashikasugai-gun, Ohama-machi, Hekikai (Omi) -gun.

The Nagoya Deposit Bureau was located at Chikara-machi, Higashi-ku, Nagoya-shi; and branches were located at Toyohashi-shi, Okazaki-shi, Ichinomiya-shi, Handa-shi, and at Shinshiro-machi, Minamishitara-gun.

The Nagoya branch of the Monopoly Bureau and the Nagoya branch of the Savings Bureau were both at 7 chome, Furusawa-machi, Naka-ku, Nagoya-shi. A custom house was located at 5-chome, Kaigan-dori, Minami-ku, Nagoya-shi; and the Tokai branch office of the National Financial Control Association was in Nagoya-shi.

IV. PUBLIC SERVICE.

A. TRANSPORTATION

1. Railroads.

a. Pattern and importance. In the western part of Aichi-ken the railroads in general radiate in all directions from Nagoya-shi across the Nagoya plain; in the southern and southeastern parts they follow the coastal region. The mountainous northeastern portion has few lines, and only one of these, the Sanshin RR, extends beyond the prefectural border. The city of Nagoya is well covered with municipal tramways and other lines connecting the main railroads with each other and with the harbor district south of the main part of the city.

Railroads of primary importance are: the Tokaido Main Line (3)*, which is a part of the main system connecting Tokyo with the southwestern part of Honshu and Kyushu, the Chuo Main Line (4), running northeast from Nagoya to Tokyo by way of Shiojiri-machi in Nagano-ken, and the Kansai Main Line (5), connecting Nagoya with Osaka and Kobe.

Railroads of secondary importance which aid in connecting Nagoya and other cities with areas outside the prefecture are Meiki RR (Inayuma Line) (1), Meiki RR (Hiromi Line) (2), Sanshin Electric RR (9), Horaiji RR (10), Toyokawa RR (12), Aichi Electric RR (Toyohashi Line) (13), Meiki RR (Meiki Line) (25), Meiki RR (Ichinomiva Line) (26) and Meiki RR (Osone Line) (37).

Railroads of tertiary importance which connect the various parts of the prefecture with service on the more important lines are Meiki RR (Bisei Line) (6), Mikawa RR (14), Aichi Electric RR (Nishio Line) (15), Taketoyo Line (19), Chita Electric RR (20), Aichi RR (Tokoname Line) (21) Okazaki Electric Line (22), Seto Electric RR (23), and Meiki RR (Tsushima Line) (24).

*Note: Numbers are keyed to route numbers shown on OSS Map 7209, to numbers in Table 51, and to numbers in Appendix II.

Information as to importance of the Futama Line (8) and the Kansai Kyuko RR (7) is not available. The other railroads, except for the Nagoya Street Railway system and interconnecting lines in the Nagoya-shi, are of minor importance in the overall system.

TABLE 51

Railroads, Aichi-ken.

Key	Railroad	Owner	Power#	Mi.in Pref.	Gauge	Track	Bridges and Overhds*	No. of Tunnels	Terminals
1	Meiki(Inuyama)	Priv	E	9.5	3'6"	2	1,--	-	Iwakura-Unuma (Gifu)
2	Meiki(Hiromi)	Priv	E	3.6	3'6"	1	--,--	1	Inayuma-Hiromi (Gifu)
3	Tokaido	Govt	Stm	67.2	3'6"	2	37,25*	1	Tokyo-Kobe
4	Chuo	Govt	Stm	18.8	3'6"	1	8, 8*	6	Nagano-Nagoya
5	Kansai	Govt	Stm	11.2	3'6"	1	9,--, --	-	Nagoya-Osaka
6	Meiki (Bisei)	Priv	E	17.3	3'6"	1	-, 2*	-	Kitagata-Yatomi
7	Kansai Kyuko	Prob	E	10.5	3'6"	1	- -	-	Nagoya-Kuwana (Mie)
8	Futama	Govt	Stm	2.5	3'6"	1	- -	-	Futagawa-Kakegawa (Shizuoka)
9	Sanshin	Govt	E	4.0	3'6"	1	- -	10	Miwa-Iida (Nagano)
10	Horaiji	Govt	E	8.0	3'6"	1	1, -	-	Nagashino-Miwa
11	Taguchi	Govt	E	13.6	3'6"	1	13, -*	24	Taguchi-Nagashino
12	Toyokawa	Govt	E	19.7	3'6"	1	17, 1*	-	Toyohashi-Nagashino
13	Aichi (Toyohashi)	Priv.	E	36.0	3'6"	2	16, 3*	-	Nagoya-Kozaki
14	Mikawa	Govt	E	49.3	3'6"	1	18, 3*	2	Ishino-Gamagori
15	Aichi (Nishio)	Priv	E	13.7	3'6"	1	3, -	-	Yoshida-Okazaki
16	Hekikai	Priv	E	8.8	3'6"	1	2, 4*	-	Anjo-Nishio
17	Heisaka	Priv	E	2.7	3'6"	1	- -	-	Heisaka-Nishio
18	Logging	Priv	Prob Stm	4.8	2'6"	1	- 1*	1	In Minami-shitara-gun
19	Taketoyo	Govt	Stm	10.9	3'6"	1	8, 1*	-	Obu-Taketoyo
20	Chita	Priv	E	17.3	3'6"	2**	-, 2*	-	Yokosuka-Kowa
21	Aichi (Tokoname)	Priv	E	18.2	3'6"	1	3, 1*	-	Nagoya-Tokoname
22	Okazaki	Prob Gvt	E	10.8	3'6"	1	4, 3*	-	Okazaki-Koromo

Key	Railroad	Owner	Power#	Mi.In Pref.	Gauge	Track	Bridges and Overhds*	No. of Tunnels	Terminals
23	Seto	Priv	E	12.7	3'6"	***	1, -	-	Seto-Nagoya
24	Meiki (Tsusima)	Priv	E	8.6	3'6"	2	9, -1*	-	Nagoya-Tsushima
25	Meiki (Meiki)	Priv	E	7.9	3'6"	2	3, -1*	-	Ichinomiya-Shinkawa
26	Meiki (Ichimoniya)	Priv	E	10.3	3'6"	2	3, -	-	Nagoya-Ichinomiya
27	Meiki (Komaki)	Priv	E	3.2	3'6"	1	1, -	-	Komaki-Iwakura
28	Meiki (Soto)	Priv	E	3.5	3'6"	1	1, -	-	Ichinomiya-Okoshi
29	Industrial	Priv	Prob	2.0	Prob	1	-, -	-	Taketoyo
			Govt		2'6"				
30	Freight	Govt	Stm	6.1	3'6"	1	3, 5*	-	Nagoya-Nagoya
31	Shimonoisshiki	Priv	E	3.9	3'6"	5	1, -	-	Nagoya-Nagoya
32	Tsukiji	Priv	E	4.4	3'6"	1	2, 1*	-	Nagoya-Nagoya
33	Shin Mikawa	Priv	E	3.2	3'6"	2	1, -	-	Nagoya-Nagoya
34	Atsumi	Prob	E	12.7	Prob	1	4, 2*	-	Tawara-Toyohashi
		Priv			3'6"				
35	Military	Govt	Prob	6.1	Prob	1	- -	-	Tatsuma-saki - Irako-saki (Atsumi-hanto)
			Stm		3'6"				
36	Sp. Purpose	Prob	Prob	1.6	Prob	1	- -	-	Tawara
		Priv	Stm		2'6"				
37	Meiki (Usone)	Priv	E	12.8	3'6"	1	5, 2*	-	Nagoya-Inuyama
38	Nagoya Street RR	Muni-ciple	E						Nagoya

\# E : Electric
Stm: Steam

* Partly tabulated from AMS Map L571.
** Over 50 percent double track
*** Single and double track

b. Administration. The regional offices for management and operation of government railways for the region of which Aichi-ken is a part are located in Nagoya-shi.

c. Yards and shops. The Nagoya freight yards (approx. 35°09'N, 136°53' E) are the largest in the area, 3,000 feet by 1,300 feet, and one of most important in Japan. The yards are of the flat switching type. There are 2 roundhouses at the north end of these yards. At Inazawa-machi, 3 miles southeast of Ichinomiya-shi, are the principal marshalling yards for the Nagoya area. These are the sixth largest in Japan, with a reported daily capacity of 2,500 cars, and are of the hump gravity type. The yard measures 2 miles northwest-southeast by 0.3 miles northeast-southwest and is marked by several overpasses. There are small shops and a roundhouse attached to the yard.

Nippon Sharyo Seizo KK maintains a factory on the east side of Fitsuda station in Nagoya-shi, reportedly for the manufacture of freight and passenger cars. Government Railway car repair shops are located at the southwest end of the Nagoya yards.

d. Construction. The Nagoya Station, Nagoy's principal passenger station, is a multi-storied ferro-concrete modernistic building set amid a network of elevated tracks. The Tokaido Main line has 100-pound rails through the prefecture.

2. Highways.

a. Importance and Pattern. Compared with most other parts of Japan, Aichi-ken is served with a good network of highways. The prefecture had in 1936 102.2 miles of national highways; 2,382.9 miles of prefectural highways, 3,138.5 miles of city roads, and 19,930.2 miles of rural roads and trails. Because of the relative unimportance of highway transportation compared with railway transportation, highways are designed almost wholly for local transportation. With few exception, the National Highways are the only ones serving more than local areas. See OSS Map 7209. It is reported that in 1940 within Nagoya-shi there were 15 miles of national highways, 60 miles of prefectural highways, and 2,100 miles of city streets.

b. Administration. The construction and maintenance of national highways in Japan is a function of the Ministry of Home Affairs and is uniform throughout Japan. Prefectural, municipal, town and village roads are planned, constructed and maintained by the local authorities concerned.

c. Construction. Except in reference to the National Highways, little detailed information is available as to construction and surfacing of highways. Most of the prefectural highways are gravel surfaced, and maintained by simply adding more gravel. Through irrigated rice fields the road bed is raised several feet above the inundated area and sloped down sharply, making the passing of vehicles difficult on the narrower roads. Because of the lack of hard surfacing on most of the highways, the movement of a large number of military vehicles would create a serious maintenance problem.

d. National Highways. The Tokaido National Highway running east and west through the southern part of the prefecture is one of the oldest and most important highways in Japan. It leads westward from Yokohama and Tokyo, entering Aichi-ken near Toyohashi-shi. It is a two-lane concrete road except in the vicinity of Nagoya, where it widens to four lanes. When not running through cities, it is generally tree-lined. It is a level road except between Toyokawa-shi and Okazaki-shi, where it passes over some hilly terrain rising to about 350 feet in elevation. North of Toyohashi-shi it crosses the Toyo-kawa on a medium-span steel bridge. West of Okazaki it crosses the Yahagi-gawa on a steel bridge approximately 1,000 feet long. Within Nagoya-shi and directly to its west, the highway crosses many rivers and an irrigation canal on masonry and wooden bridges. It crosses the Kiso-gawa and the Nagora-gawa reportedly on steel-frame, arch bridges, approximately 600 feet south of the railroad bridge. It leaves the prefecture to the west in the direction of Kuwana-shi in Mie-ken.

The Gifu National Highway from Nagoya-shi through Ichinomiya-shi to Gifu-shi in Gifu-ken is reported to be a 4-lane concrete road. It passes over level, dry rice fields. At the edge of Aichi-ken it crosses the Kiso-gawa on a steel bridge approximately 1,500 feet long, called the Kisogawa-bashi. Except for the Tokaido Highway bridge mentioned above, this is the only highway bridge crossing the river west of Nagoya.

e. Prefectural highways. Map sources show prefectural highways in Aichi-ken as primary and secondary. In general, primary highways connect cities and larger towns, or act as main connecting roads to areas outside the prefecture. Secondary roads connect primary ones. All of these highways are probably passable to small military vehicles, but in many cases larger vehicles would have difficulty on secondary roads.

(1) Motosaki Highway. From Tokaido National Highway west of Toyokawa-shi this highway runs east to the Shizuoka-ken border. From its western end to the intersection with the highway northeast from Toyohashi-shi it is straight and level, passing through rice fields. About two miles east of this intersection it starts over a range of steep hills and is very winding. At the prefectural border it passes through the Motosaka Pass and a tunnel about 300 feet long.

(2) Tawara Highway. Runs from Toyohashi-shi wouthwest through the Atsumi-hanto. Level and without sharp curves most of the way.

(3) Bessho Highway. Runs from Toyohashi-shi northeast to Nagano-ken, via Tomioka and Hongo-machi. This is an important inter-prefecture road. In Nagano-ken it becomes the Enshu Highway. The road gradually rises in elevation from Toyohashi-shi to about 5 miles north of Ono-machi. Its maximum elevation, 3,200 feet, is at the Nagano-ken border. At Shinshiro-machi it is possible to cross the Toyo-kawa into the town. North of Shinshiro-machi it follows the river through a narrow mountain valley for about 14 miles, then starts over the mountains. Just south of Hongo-machi it passes through a tunnel approximately 800 feet long. North of Hongo-machi the road is very curving.

(4) Ina Highway. Runs from Kozakai-machi northeast through Shinshiro-machi and Kamitsugu-mura to the Nagano-ken border. It passes over the same type of terrain as the Bessho Highway. At Neba-mura in Nagano-ken it joins the Sanshu Highway.

(5) Koromo Highway. Runs from Shinshiro-machi northwest through Koromo-machi to the Iida highway east of Nagoya. Rises rapidly out of Shinshiro-machi to about 1,200 feet elevation. Thereafter it is rather winding, but the grade is not steep. Just west of its intersection with the Asuke highway it crosses the Asuke-gawa on a short-span wooden bridge. East of Koromo-machi it crosses the Yahagi-gawa on a long-span wooden bridge, the Hisazumi-bashi. From Koromo-machi to the Iida highway the road is fairly level and straight.

(6) Iida Highway. Runs from Nagoya to Asuke-machi. It passes through rough terrain and is winding. Grades are not so very steep. North of Koromo-machi it crosses the Yahagi-gawa on a medium-span steel bridge, the Hirato-bashi.

(7) Asuke Highway. Okazaki-shi through Asuke-machi to Gifu-ken. Follows the east bank of the Asuke-gawa to 4 miles south of Asuke-machi, where it crosses the river on a short-span wooden bridge and then follows the west bank of the river. It rises north of Asuke-machi to an elevation of 1,200 feet at the prefectural border.

(8) Nagoya, east through Seto-shi to Neba-mura, Nagano-ken. From Nagoya to Seto-shi it is known as Seto Highway and is level and straight. East of Seto-shi it is a winding mountain road, and from Inabu-machi to Neba-mura it is steep. North of Inabu-machi it is known as the Sanshu Highway.

(9) Koromo-machi through Seto-shi to Gifu-ken. Passes through rough terrain but is not very steep. Excepting through cities it passes through sparsely populated areas.

(10) Kozakai-machi west through Gamagori-machi and Nishio-machi to Takahama-machi. A main road through this thickly populated area, it crosses the Yahagi-gawa on the Uezuka-bashi, a wooden bridge about 1,500 feet long. A ferry service runs from Takahama-machi to Handa-shi.

(11) Nishio-machi to Okazaki-shi. Passes through thickly populated rice fields. Crosses the Yahagi-gawa on a wooden bridge about 400 feet long, the Yonezu-bashi.

(12) Ohama-machi to Kariya-machi. Farily straight and level, through thickly populated area.

(13) Highway around Chita-hanto, south of Nagoya. All of the roads shown as prefectural highways here are over level ground and pass through thickly populated areas.

(14) Highways within the plain west and north of Nagoya-shi. These roads all follow the same pattern, passing through thickly populated areas with principal land use being rice fields. They all cross the many small streams and irrigation ditches on wooden and masonry bridges. However none of the prefectural highways cross the Kiso-gawa.

3. Waterways.

Total unloading capacity of prefectural ports accessible to ocean vessels is 18,500 short tons per 10-hour day. All prefectural shipping is under the jurisdiction of the Nagoya Marine Transport Bureau, a local branch of the Ministry of Transportation and Communications. Harbors are described in order, according to geographical position on coastline from east to west. (See AMS Map L571 and H.O. Charts Nos. 5679, 2476, 5335, 5542, 1637.)

a. Shino-shima
(1) Location: in entrance to Atsumi-wan, 4.75 miles west of Tatsuma-saki.

(2) Harbors: two small fishing harbors protected by breakwaters on north side of island.

b. Fukue-machi.
(1) Location: north side of Atsumi-hanto.

(2) Harbor: natural bay, opening north. Breakwater and training wall protects inner harbor. Shallow depths.

(3) Clearance: road.

c. Toya-kawa.
(1) Location: flows into head of Atsumi-wan, west of Toyohashi-shi. Mouth is obstructed by mudbanks that dry. Only small vessels can enter. Lighter service is maintained to Toyohashi-shi. Ferry crosses river just upstream from the city proper. Clearance at Toyohashi-shi is by rail and road.

d. Miya-machi.
(1) Location: north shore of Atsumi-wan, 9 miles northwest of Toyohashi-shi.

(2) Harbor. Small fishing harbor, protected by breakwaters.

(3) Clearance: by rail and road.

e. Gamagori-machi.
(1) Location: north shore of Atsumi-wan, one mile northwest of Miya-machi.

(2) Harbor: small harbor, protected by breakwaters.

(3) Clearance: by rail and road.

f. Yoshida-machi.
(1) Location: at mouth of Yahagifuru-kawa on northwest shore of Atsumi-wan, 9 miles west-southwest from Gamagori-machi.

(2) Harbor: fishing harbor on west side of river mouth.

(3) Clearance: by rail and road.

g. Ohama-machi.
(1) Location: east shore of Koromogaura-wan, northern extremity of Chita-wan.

(2) Harbor: harbor for small vessels; enclosed by breakwaters.

(3) Clearance: by rail and road.

h. Shinkawa-machi.
(1) Location: 1.5 miles north of Ohama-machi.

(2) Harbor: harbor for small vessels; enclosed by breakwaters.

(3) Clearance: by rail and road.

i. Handa-shi.
(1) Location: west shore of Koromogaura-wan.

(2) Harbor: in small river mouth. Channel dredged; shallow depths.

(3) Clearance: by rail and road. Several ferries cross Koromogaura-wan to Takahama-machi, Shinkawa-machi, and Ohama-machi.

j. Taketoyo-machi.
(1) Location: 4.5 miles south-southwest of Handa-shi. Naval oil storage and fueling depot.

(2) Harbor: inner harbor is 200 yards long and 175 yards wide, formed by a breakwater to the north and east and a pier to the south. Outer harbor, Taketoyo-ko, constitutes the northern part of Chita-wan. Entrance to the inner harbor, between breakwater and pier is 125 yards wide. Depths: inner harbor dries during low water; outer harbor is 19½ to 42 feet; entrance to inner harbor: shoal and encumbered with seaweeds. Tides: mean high water interval, 6 hours 6 minutes; springs rise 7.2 feet; neaps rise 5 feet.

There is ample anchorage in 19½ to 42 feet mudbottom, with two mooring buoys off the pier. There is a 1,500-foot oiling pier, forming the south side of the inner harbor, with less than 18 feet at head. Also one 200-foot and one 400-foot pier close south of the oiling pier, dry at low water. The

unloading capacity, based on past performance (1938) is as follows: steamers: 88 (276,435 tons) entered; 105 (322,002 cleared.. Bunker oil and kerosene is discharged through 6-inch floating pipeline from tankers which anchor about 1,500 feet from pier. Average rate of discharge is 700 barrels per hour. Case oil is discharged by lighter at the rate of 300 cases per hatch per hour.

(3) Clearance: by rail and road. Several ferry lines cross Chita-wan.

(4) Supplies and repair facilities. A water tank vessel is available. The naval oil fueling depot is used primarily by naval ships and oilers. Coal stocks are maintained. Lighters are available.

There is a drydock at Koromogama shipyard, exact location unknown Length, 250 feet; width, 42 feet; depth on sill during high water is 12.5 feet.

k. Kowa-machi.
(1) Location: east coast of Chita-hanto, 5.5 miles south of Taketoyo-machi.

(2) Harbor: small fishing harbor.

(3) Clearance: by rail and road.

l. Morozaki-machi.
(1) Location: southern tip of Chita-hanto.

(2) Harbor: small cove opening southeast. Shallow.

(3) Clearance by road.

m. Toyohama-machi.
(1) Location: southwest tip of Chita-hanto.

(2) Harbor: fishing harbor, protected by breakwaters, in shallow cove opening southwest.

n. Tokoname-machi.
(1) Location: west central coast of Chita-hanto.

(2) Harbor: harbor for light-draft vessels; protected by breakwaters.

(3) Clearance: by rail, close north of harbor, and by road.

o. Yokosuka-machi.
(1) Location: northwest coast of Chita-hanto, within Nagoya harbor limit.

(2) Harbor: shallow basin protected by detached breakwater and reclaimed land; dries.

(3) Clearance: by rail and road.

p. Nagoya-shi. (Refer: Nagoya city plan, AMS, 340594, 340595, 1945)
(1) Location. Head of Ise-wan. This is the fourth largest port in Japan.

(2) Harbor: consists of outer harbor, main channel, inner harbor, river-canal system.

Outer harbor: that part of Ise-wan outside breakwaters to the harbor limit, which is a line drawn with a radius of 2.9 miles from head of west breakwater. Depths, 6 to 30 feet.

Main channel: leads 4 miles from Ise-wan through outer harbor to the head of the west breakwater, and then 2.7 miles north between west breakwater and submerged jetty connecting to east breakwater. The channel narrows from 225 to 160 yards. The controlling depth is 27 feet.

Inner harbor: 2,115 acres protected by breakwaters and reclaimed land on south and southwest. The northern two-thirds of the inner harbor, 2100 x 1400 yards with depths of 24 to 35 feet, forms the main harbor for ocean-going vessels. The southeastern part of the inner harbor, protected by two detached breakwaters, forms a basin for anchorage of lumber ships in depths of 28 to 6 feet. A small tidal basin, with depth of 10½ feet adjoins the foot of the west breakwater.

River-canal system. 20.8 miles of navigable rivers and canals are described below by geographical location from west to east: The Nikko-gawa empties into the outer harbor. Depths: 1½ feet in entrance, 9 feet inside mouth. The Shin-kawa. An impassable lock is located 9 miles upstream. The river is canalized. Depth in mouth is 1½ feet. The Shonai-gawa. General depths: 3 feet from mouth around to the northeast side of the city proper. The Yata-kawa, with 1½-foot depth, joines Shonai-gawa at Shonaigawa-bashi north of the city proper. The Arako-gawa cannot be entered due to a railroad fill. The Naka-gawa is canalized for its entire length of 4 miles. It is 208 to 298 feet wide, 10 feet deep at ordinary water, 7 feet at low water. The lock at the lower end is 358 feet long and 35 feet wide. A barge basin at head adjoins Nagoya freight yards at Momofune-cho. A short canal 4½-foot

depth, connects Naka-gawa and Hori-kawa immediately north of Irifune-cho. The Hori-kawa is canalized for 6.8 miles. Depths: 15 feet in mouth to 3 feet general depth upstream. Shin-horigawa canal branches off Hori-kawa to the east 5000 feet above the river mouth and runs parallel to the river for about 2.8 miles. Depth is 3 feet. The Yamasaki-gawa is dredged to 4½ feet in the lower course for barge navigation. The Oe-gawa (Oko-gawa) is navigable for 2.5 miles. Sail anchorage in mouth is 9 to 10½ feet and protected by a small breakwater. A canal from the river surrounds a large rectangular tract of reclaimed land to the south (Showa-ku). Canal depth is 9 feet. The tempaku-gawa empties in the outer harbor. There are shoals in the mouth. Tides: lunitidal interval, 6 hours 08 minutes; springs rise 7.5 feet; neaps rise 5.5 feet.

For anchorage the inner harbor has 32 mooring buoys in 24 to 33 feet, mud bottom. Anchorage for oil tankers adjoins entrance channel to the east near its head in 19.5 to 30 feet The outer harbor, within the harbor limit, has about 260 300-foot anchorages in 15 feet or more. In Ise-wan, south of harbor limit, there is unlimited anchorage for large vessels.

(3) Landing facilities. The waterfront has been developed by reclaiming land on all sides, and is divided into large tracts separated by canals, the sides of which are quayed with masonry walls for a total length of 9.8 miles. The most extensive quay, 1000 feet along west bank of Hori-kawa, has 12 feet alongside.

Cranage: traveling cranes are possibly located on west, central, and east wharves; 2 floating cranes were available in 1934. Pipeline: 8-inch line for diesel oil at Rising Sun Oil Company, at Shiomi-cho, adjoining east breakwater.

Details for terminals are shown below in Table 52.

TABLE 52

Terminal Facilities, Yokosuka-machi

Location	Purpose	Depth (in feet)	Berthing Space (in feet)	Berthage
West wharf, head of inner harbor	General cargo	Face,30; East side, 24 to 30; West side 12 to 27	540+900+1150	2 vessels 450 ft. drawing 26 ft.

Location	Purpose	Depth (in feet)	Berthing Space (in feet)	Berthage
				2 vessels 450-ft. drawing 20 ft. 2 vessels 200-ft. drawing 12 ft.
Quay, between west wharf and central wharf	General cargo	24	500	1 vessel 450-ft. drawing 20 ft.
Central wharf, head of inner harbor	General cargo	Face and west side, 24 to 30; East side, 22.5 to 25.5	358•750•835	2 vessels 450-ft. drawing 20 ft. 2 vessels 300-ft. drawing 20 ft. 1 vessel 250-ft. drawing 16 ft.
Quay, between central wharf & east wharf	General cargo	19.5	450•240	1 vessel 250-ft. drawing 16 ft. 2 vessels 200-ft. drawing 12 ft.
East wharf, head of inner harbor	General cargo	Face, 25.5 West side, 20 to 25.5; East side 14	420•750•645	2 vessels 450-ft. drawing 20 ft. 3 vessels 200-ft. drawing 12 ft.
South end of coal handling area, west side of inner harbor	Coal	9 to 2	1050•975•975•1425	Barge

Location	Purpose	Depth (in feet)	Berthing Space (in feet)	Berthage
Cargo handling area, west side of inner harbor and north of coal handling area listed above.	General cargo	28 to 2	4 wharves similar to coal handling wharf proposed	Barge

The estimated unloading capacity is 18,000 short tons per 10-hour day (8,800 short tons per 8-hour day at known deep water berths). In 1938, 1404 steamers (5,124,020tons) entered and 1451 (5,091,699 tons) cleared. Six sailing vessels (1,574 tons) entered, none cleared.

(4) Clearance: by rail; excellent facilities for entire waterfront. There are tracks on main wharves and quays. Road facilities are adequate. Water. There is an extensive barge canal system. See Chapter III,A, (warehousing).

(5) Supplies and repair facilities. Water is available at wharves and from waterboat. Oil: vessels at the Rising Sun Oil Company lie stern-to at the wharf with anchors down and lines to shore. An 8-inch pipeline for handling diesel oil is available. Maximum bunkering rate is 300 barrels per hour. No tank lighters are available. Coal: 5000 tons available. Coal is loaded by lighters, using ships gear, at rate of about 10 tons per hour. Local craft: tugs and more than 500 lighters available.

Drydocks: one 178-foot dock at mouth of Oe-gawa on south bank, 46 feet wide, 10 feet on sill at mean high water. Additional drydock is reported, exact location and details unknown, but believed to be of 5000-ton capacity. Ship ways: three building ways are reported believed to be adjacent to Oe-gawa drydock. Reports indicate some shipbuilding activity and small shipyard on Hori-kawa.

(5) Administration. Port. The following offices are located in Irifune-cho, immediately north of east, central, and west wharves: harbor office, harbor police, pilots' office, customhouse, maritime office.

Shipping. Headquarters, Nagoya Marine Transport Bureau, a local branch of the national Maritime Transportation Section, having jurisdiction over the following prefectures: Aichi, Shizuoka, Mie, and Gifu. Branch office of national Vessel Transportation and Operation Society. Branch offices of NYK 9 chome 8, Gokohon-cho-dori Nishi-ku, Osaka Shosen KK,

Dairen Steamship Corporation, East Asia Sea Transportation Corporation, all being corporations organized and operated under the national Vessel Transportation and Operation Society.

q. Kiso-gawa.

(1) Location: empties into Ise-wan 12 miles southwest of Nagoya-shi. Forms western and northern boundaries of prefecture. It is navigable for shallow draft boats for 50 miles. Dredging is maintained. A jetty is located at mouth.

4. Air Facilities.

Table 53 shows that at the end of 1944 there were 16 "classified" airfields and seaplane stations in Aichi-ken. Nagoya East (Koromo) Airfield has 9 hangars and 3 runways. Kowa Seaplane Station has 5 hangars, 3 ramps and numerous shops. Toyohashi Airfield has extensive facilities for storage, maintenance and repair. It occupies an octagonal area about 5,000 feet across and has 3 paved intersecting runways, each 4,750 feet long.

As shown in Table 54 during 1936 two commercial air lines operating between Tokyo and Nagoya-shi and Osaka flew 818 trips for a total of 227,684 kilometers and carried 2,563 passengers, 7,769 kilograms of freight and 18,357 kilograms of mail.

TABLE 53

Airports & Seaplane Anchorages,1944,Aichi-ken*

Name	Type	Approximate Locations	Elevation (in feet)
Kamezaki(Handa)**	LG(u/c)	1 mi.NE of Handa-shi	
Kiyosu	A/D (u/c)	6 mi.NW of Nagoya-shi	
Komaki	A/D	7 mi.N of Nagoya-shi	
Kowa(Chita)	S	8 mi.S of Handa-shi	S.L.(est)
Meiji	L/G	4 mi.N.E of Ohama-machi	35(est)
Mitsubishi	A/D (u/c)	11 mi.S of Nagoya-shi	
Nagoya	A/D&S	7 mi.SSW of Nagoya-shi	S.L.
Nagoya-Aichi	S	6 mi.SSW of Nagoya-shi	S.L.
Nagoya East (Koromo)	A/D	8 mi.SSE of Seto-shi	248(est)
Obatagahara	A/D	1 mi.N of Nagoya-shi's center	328(est)
Oitsu(Oshimizu; Toyohashi South)	A/D (u/c)	5 mi.SSW of Toyohashi-shi	

Name	Type	Approximate Locations	Elevation (in feet)
Okazaki	A/D	3 mi.NW of Okazaki-shi	
Seto	A/D	4 mi.SW of Seto-shi	
Toyohashi	A/D&S	5 milSW of Toyohashi-shi	S.L.(est)

*The fields included in this list are those whose existence has been established by reasonably conclusive evidence.

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

Abbreviations

A/D = Airdrome with all-weather runway, or complete facilities, or both.

L/G = Landing ground without an all-weather runway and without complete facilities.

S = Fully or partly equipped seaplane station.

S.L. = Sea level or zero altitude.

u/c = Under construction.

TABLE 54

Civil Air Lines,1936,Aichi-ken.

Records of regular Flights by Lines

Names	Operating between	Distance (km.)	Trips	Distance flown	Pass.	Freight	Mail (kg.)
Tokyo-Dairen	Tokyo-Nagoya	296	636	188,256	1,956	6,624	16,348
Tokyo-Nagoya-Osaka	Tokyo-Nagoya	296	90	26,640	313	425	1,010
	Nagoya-Osaka	139	92	12,788	294	720	999
Total			818	227,684	2,563	7,769	18,357

B. COMMUNICATIONS

Aichi-ken is included with Fukui-ken, Gifu-ken, Ishikawa-ken, Mie-ken, Nagano-ken and Toyama-ken in a single administrative district under the jurisdiction of the Nagoya Bureau of Communications (Nagoya Teishin-kyoku) of the Ministry of Transportation and Communications (Unyu Tsushin-sho). The headquarters of the district are located at Nagoya-shi in the northern section of the city, 5 blocks east of Nagoya Castle Tower. The district, headed by a chief, who is responsible for all civilian communications activities, telephone, telegraph and postal, consists of 4 main departments: business, engineering, management and savings. As of the 1930 census there were 6, 396 communication employees in Aichi-ken, 4,141 of whom were male.

Actual operation of submarine cable, as well as radio-telegraph and radio-telephone, in Aichi-ken is nominally in the hands of the International Telecommunication Co. which is, however, entirely dependent on the Japanese Government.

1. Telephone.

Aichi-ken has one of the most extensive telephone developments of any prefecture in Japan. (See OSS Maps 5503 and 6474.) This condition is caused principally by a heavy concentration of telephones in Nagoya-shi. As of 1939 the prefecture had approximately 55, 450 telephones, an increase of 3,770 since 1937. This number has undoubtedly increased since that date as radio reports in April 1945 indicated that the Nagoya communication district was alloted 753 telephones of the 8,000 offered in the second telephone offering of February 1945. The number of telephones in 1939 represents an average of 1.73 telephone subscribers for every 100 persons, compared with 1.38 for all of Japan. The same figure for Nagoya-shi was 3.77.

In 1940 the total number of local and long distance calls for the Nagoya Communication District was 665,010,000 and 48,792,000 respectively. It is estimated that the daily average of calls handled in Aichi-ken for the same year was 739,950 local calls and 54,817 long distance calls. The local calling rate (number of calls per day per telephone) was between 18.0 and 20.0 which is extremely high in comparison with call rates in the United States but an average figure for Japan. All telephone messages are rigidly funneled. A telephone call from the Nagoya Communication District to another district must pass through the 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 particu-

larly vulnerable at exchanges and the expansion of the system is limited by the capacity of these installations.

Aichi-ken is also an important link in the land network. Nagoya-shi is a busy toll center with circuits radiating to the various sections of Honshu. The most complete cable in Japan is the Tokyo-Kobe cable which passes through Nagoya-shi. This cable enters the prefecture after crossing Hamana-ko north of Toyohashi-shi. Through this city the cable, mostly of aerial construction, follows the Tokaido National Highway to Okazaki-shi and to Nagoya-shi. From the city limits to the central office the cable is placed underground. It is possible that an alternate route circles Hamana-ko leaving the national highway at Toyokawa-shi and following the Motosaka prefectural highway across Mitosaka Pass to Hamamatsu-shi, Shizuoka-ken.

From Nagoya-shi the route parallels the Tokaido Main RR line to Ichinomiya-shi and then to Gifu-shi, Gifu-ken, and eventually to Osaka-shi and Kobe-shi. Another cable follows the Chuo main RR line northeast to Kasiugai-shi and continuing on to the west coast of Honshu. The fourth main route from Nagoya-shi extends to Kanie-machi and then continues to Yokkaichi-shi in Mie-ken. This route parallels the Kansai Main RR line.

During the last 10 years the Bureau of Communications has constructed, at the insistence of the army, an elaborate network of subterranean and submarine cables throughout Japan. For this reason it can be expected that these main communications routes in Aichi-ken are of cable construction rather than open wire. The underground cables are laid in ducts and they 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.

There are telephone repeater stations, very vulnerable points in the cable network, located at Nagoya-shi and Toyokawa-shi. These stations are so designed that the buildings and equipment can be accommodated to a second toll cable. The 2-wire repeaters are of the current type consisting of the usual vacuum tube 2-way amplifier. The 4-wire repeaters consist of 2 sets of amplifiers, each containing 2 vacuum tubes. One set is used for transmitting in each direction. Provision is made for auxiliary equipment such as current supply circuits, alarm circuits and intermediate signaling circuits.

Telephone service will be found in the majority of the other cities and towns not situated on the main routes if they are located on main highways or railroads. The open-wire feeder circuits from these cities and towns will be, in most cases, of 1.6 mm hard-drawn copper wire. Telephones will

be found in practically all police stations, police sub-stations and police boxes. The 261 (1936) public telephones in the prefecture are installed in booths on the streets of the business sections and in stores, railway stations and bus terminals.

Telephone rates are of 2 kinds, measured and flat rate. In Nagoya-shi the rate was 40 yen (1938) per year and the measured rate of 3 sen per call was surcharged. In all other exchanges a flat rate of 48.90 yen (1938) per year was charged, the exact rate being determined according to the number of subscribers.

With the exception of Nagoya-shi the telephone exchanges, along with telegraph installations, will be found in the same buildings as the post offices.

An estimate of the number of telephones and types of central office equipment is shown in Table 55.

TABLE 55

Telephone Exchanges, 1943, Aichi-ken.

City	Estimated telephones	Type of switchboard*
Nagoya	46,100	Dial and common battery manual
Toyohashi	3,500	Common battery manual
Okazaki	1,700	Series multiple magneto
Ichinomiya	1,400	" " "
Handa	600	" " "
Seto	500	" " "

(*. Note- other exchanges will be single position magneto switchboards).

Nagoya-shi is the fifth city in Japan with regard to the number of telephones but it still lacks adequate facilities. The public demand for service still greatly exceeds the supply. The comparatively low level of efficiency of telephone service in Nagoya-shi is largely due to a shortage of instruments and the great volume of calls. Long distance ser-

fice is very slow on unofficial business but official government calls have priority and calls are usually completed on a non-hang-up basis. There is one large modern central office and 4 branch offices in the city as shown in Table 56.

TABLE 56

Telephone Exchanges, 1935, Nagoya-shi.

Name	Address	Type	Manufacturer	Personnel
Nagoya Central (Honkyoku)	Nishi-ku Okaya-cho	dial strowger	Automatic Electric Co., Chicago	135
Higashi branch	Higashi-ku Kagura-cho	manual common battery	-----	15
Minami branch	Naka-ku Higashi Furuzawa-cho	manual common battery		14
Nishi Branch	Nishi-ku Kikui-cho	manual common battery		14
Naka Branch	Naka-ku Minami Takehira-cho	dial strowger	Automatic Electric Co., Chicago	9

Two of the above offices are further identified as follows: one office, believed to be the main central, is situated directly to the rear of the Tobacco Monopoly factory in the vicinity of the junctions of the Tokaido and Chuo Main RR lines. Another office is situated 11 blocks west of the prefectural office and 7 blocks east of the Nagoya railroad station.

As of 1939, there were 15 direct circuits to Tokyo-to and 26 direct circuits to Osaka-shi from the toll switchboard in the Nagoya Central office. In addition, there were direct circuits to other cities and towns in central Honshu. Call indicators are used for inter-office trunking for calls from the dial offices to the manual offices and "A" board dialing from the manual to the dial. Intra-office trunking from "A" board to "B" board in the manual office is by call circuit or straightforward.

The long distance cables as well as the main route of subscriber cables within the city limits are placed underground, whereas the branch and service lines are of aerial

construction. In sections, however, where subscribers are centralized and the aerial construction impairs the beauty and scenery, the branch and service lines are installed underground.

A large majority of the telephones are of the wall type and are largely individual lines. Private branch exchanges (PBX) will be found in most of the government offices and the larger industrial and business establishments. (see List of Manufacturers).

2. Telegraph.

Nagoya-shi is one of the zone centers of the telegraph network of Japan, and has direct wires to all other zone centers (Tokyo-to, Osaka-fu, Hiroshima-shi, Kumamoto-shi, Sendai-shi, and Sapporo-shi. It is also connected with the cities and town of Aichi-ken, and is therefore a key center for both national and local service. See OSS Maps 5503 and 6474.

Main trunk lines follow generally the network pattern of the telephone circuits. Three exceptions to this rule are: From Nagoya-shi, circuits run to Tokoname-machi via Yokosuka-machi and Okada-machi, following closely the route of the electrified railroad. Also from Nagoya-shi, circuits run to Kowa-machi, via Obu-machi, Kamesaki-machi, Handa-shi and Taketoyo-machi, following closely the route of another electrified railroad. From Kozakai-machi, there are circuits to Taguchi-machi, via Ushikubo-machi, Toyokawa-machi, Shinshiro-machi and Ebi-machi. Telegraph lines are of both aerial and underground construction.

The telegraph central for Aichi-ken is believed to be located in the main telephone building in Nagoya-shi, with 66 branch offices scattered throughout the city. In the rest of the prefecture however, telegraph service facilities are located in post offices or railroad stations. In 1936 telegraph service was available in 124 of the 136 third class post offices. Such combination offices are particularly strategic, as they usually contain telephone facilities as well. Ordinary telegrams dispatched from the prefecture in 1936 totaled 2,463,000, as against a total of 2,477,000 delivered for the same year. During this period, an additional 1,000 wireless telegrams were dispatched.

Equipment at the main office is reported to be modern and efficient, and to include Kana-printers, senders, automatic repeaters, photo-telegraph, etc. The most common types of printer equipment in use are: Western Electric Duplex, Morkum Double Duplex, Teletype, Baudot Multiplex, and the Japanese Letter printer. The outlying areas depend al-

most entirely on the hand key.

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.

Aichi-ken is well provided with broadcasting facilities. See OSS Map 5513. Stations are sufficient in number and power to serve not only the prefecture but the surrounding areas. Transmitting equipment is good and studio, relay lines and other related installations are adequate. The transmitter of the Middle Japan Radio Central is located in Yosami-mura, with the control station at Nagoya (see Table 57). Station JOCK, the Nagoya Regional Central Station, is likewise in Nagoya-shi.

The Yosami-mura transmitting station is located about 17 miles southeast of Nagoya-shi and 2.5 miles from the Kariya-machi railroad station. At first the station was intended only for long-wave communications, but, in the course of its construction, short-wave communications were developed so rapidly that, before the completion of the station in 1929, short-wave transmitters were installed and successfully operated. The land area covered by both long and short-wave antennas is about 356 acres (144 hectares). The long-wave antenna of inverted L type is suspended by eight 250 meter (825-foot) guyed insulated steel towers and a multiple ground is employed. The antenna constants are as follows:

Effective height:	183 meters (600 feet)
Total effective resistance:	1.18 ohms
Antenna capacity:	48,500 centimeters (53,900 micro-micro-farads)
Natural wave length:	9700 meters
Working frequency:	17.44 kilocycles (call JAD)

The long-wave transmitter comprises two 700-KVA Telefunken high-frequency alternators of the inductor type, which are employed alternately. For short-waves 13 beam antennas have been erected. Three antennas (for call letters JNJ, JNH, JNM) are suspended between towers which suspend the long-wave antenna and special devices are used to eliminate the voltage induced from the long-wave antenna. Five type-A

transmitters are installed in this station. The transmitters are all controlled from the Osaka Central Telegraph Office and the Nagoya Central Telegraph Office and the Nagoya Central Telegraph Office by means of D.C. signalling through land lines. All necessary apparatus for various tests is installed.

JOCK, the principal broadcasting station for the prefecture, is located in Nagoya-shi. It is likewise the key station of the Nagoya Regional Central. As such, it includes administrative offices, construction and maintenance crews and equipment, facilities for preparing and presenting programs, and a transmitter of 10,000 watts (a 100,000-watt transmitter is reported under construction). A net of local transmitters consisting of JOFG, Fukui-shi, Fukui-ken; JOJK, Kanazawa-shi, Ishikawa-ken; JOSG, Matsumoto-shi, Nagano-ken; JONK, Nagano-shi, Nagano-ken and JOIG, Toyama-shi, Yamaguchi-ken, is operated by the Nagoya Regional Central which is, in turn, under the general administration of Broadcasting House (the home studio of JOAK). The offices of the Broadcasting Corporation of Japan issued policy directives and maintained relay lines for the entire network, while routine matters were handled within the Nagoya Regional Central. The General Affairs, Program and Engineering Division of this central makes it, in effect, a miniature of the Broadcasting Corporation of Japan. JOCK can transmit programs originating in its own studios and the studios of JOAK. Programs from studios to transmitter are carried by underground cable. Electric current is obtained from local power sources, but the station is equipped with a motor generator for use in emergencies. Circuits for service messages necessary for synchronizing programs run parallel to the relay lines. These lines were reported in 1937 to be leased from the Communications Ministry. JOCK is equipped with a receiver generally tuned to a frequency of 6,125 kc to be used if the relay lines are interrupted. About 40 to 50 percent of the programs originate from this central, the remainder originating from JOAK, Tokyo.

In addition to the installations of the Broadcasting Corporation of Japan (see Table 57), there are various radio-telephone and radio-telegraph installations in Aichi-ken (see Table 58) which are used for communications from ship-to-shore, from land-to-plane, between nearby cities, in the event of failure of telephone and telegraph cables. It is likely that numerous fixed and mobile stations have been set up since the outbreak of war for local communications.

Public address systems being an integral part of Japanese life, can be found throughout the prefecture (see Table 57) in the parks, railroad stations, or schools; while private systems may exist in factories and department stores. Many of the municipal parks in the smaller cities throughout

the prefecture have small towers equipped with loud speakers for relaying various programs of general interest. Similar equipment is frequently installed near shrines or other places where crowds gather.

TABLE 57

Installations, Broadcasting Corp. of Japan, 1943, Aichi-ken

Location	Address	Description
Arimatsu-machi		Broadcasting station JOCK
Nagoya-shi	Minami Otsu-dori Naka-ku	Permanent information office
Nagoya-shi	Shinyanagi-machi Naka-ku	Business offices for Nagoya Central
" "	Minami-soto-bori-cho Nishi-ku	Nagoya Central offices and studios
" "	Tsuromae Park	Public address system; broadcasting through telephone wires reported in 1943
Okazaki-shi	Yasuo-cho	Temporary information office
Toyohashi-shi	Hirokouji	Permanent information office
" "	Sinsen-machi	Detached office

Radio broadcasting is one of the principal means of public instruction in Aichi-ken. As of April 1943, there were approximately 380,995 licensed receivers or 60.2 radios per 100 families in Aichi-ken, compared with 7,000,000 receivers, or an estimated 35 radios per 100 families, in all Japan. These receivers are similar to small table models manufactured in the United States. Short-wave reception is prohibited and there is only one band covering roughly 550 to 1,500 kc, or slightly less than the standard broadcast band. These sets are of 3 and 4 tubes and are designed solely for local reception. Edison screw-type sockets are used, but it cannot be assumed that any American plug will fit a given Japanese socket. Each receiver owner is required to post his license disc on the front door of his

house. As of April 1945, the license fee was 6.50 yen for 6 months, or 12 yen for the year. A continuous check is made by repairmen and consultants, who travel throughout the prefecture 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.

TABLE 58

Radio Stations, 1943, Aichi-ken.

Station	Call	Location	Freq.(kc)	Watts	Remarks
Morozaki-machi	JQD	34°42'00"N. 136°58'00"E.	-----	----	Unidentified
Nagoya-shi	JOCK	35°05'04"N. 136°58'02"E.	730 990	10,000 10,000	Medium wave broadcasting station.
Nagoya-shi		35°08'00"N. 136°55'00"E.	-----	----	Alternative control station for middle Japan Radio Central. Land line to Yosami-mura transmitter, Yokkkaichi-shi (Mio-ken) receiver, and Osaka-shi studios.
Nagoya-shi	JHY	35°05'19"N. 136°53'07"E.	454 500	100	Ship-to-shore radio-telegraph.
Shino-shima	JQE	34°40'05"N. 137°00'10"E.	-----	----	Unidentified

Station	Call	Location	Freq.(kc)	Watts	
Yosami-mura		34°58'15"N. 137°01'18"E.			Radio-telegraph transmitter for Middle Japan Radio Central. Receiver at Yokkaichi-shi; control stations at Nagoya-shi and Osaka-shi.
	JAF		13,400	10,000	
	JAC		17,840	10,000	
	JAC		17,885	10,000	
	JAI		9,215	10,000	
	JAJ		15,840	10,000	
	JAK		6,700	1,000	
	JAL		8,920	1,000	
	JAM		14,840	1,000	
	JAO		9,782.5	20,000	
	JAQ		8,050	20,000	
	JAQ2		8,055	20,000	
	JAS		18,360	20,000	
	JAW		17,400	20,000	
	JET2		18,365	40,000	
	JEN2		19,045	20,000	
	JNA		8,980	20,000	
	JNB		13,880	----	
	JNB2		13,875	20,000	
	JNC		17,960	20,000	
	JNC2		18,005	20,000	
	JND		17.4	50,000	
	JNE		10,160	5,000	
	JNF		15,720	5,000	
	JNG		19,120	5,000	
	JNH		7,820	5,000	
	JNH2		7,815	20,000	
	JNI		12,200	5,000	
	JNJ		13,945	20,000	
	JNJ2		13,940	20,000	
	JNK2		14,975	1,000	
	JNL		6,810	10,000	
	JNM		4,980	10,000	
	JNN		19,000	5,000	
	JNQ		15,790	20,000	
	JNS		5,100	40,000	
	JNS2		7,980	35,000	
	JNS3		10,925	30,000	
	JNS4		14,970	25,000	
	JNS5		18,445	20,000	
	JNT		18,355	40,000	
	JUA		5,770	10,000	
	JUC		4,900	10,000	
	JUC2		5,827.5	10,000	
	JUG		6,790	20,000	
	JUH		11,520	20,000	
	JUK		9,025	1,000	
			11,915	1,000	

Station	Call	Location	Freq.(kc)	Watts	Remarks
			12,037.5	1,000	
	JUS		12,010	1,000	
Unidentified	---	Nagoya-shi near barracks and south of Garrison Hospital in the northwestern part of the city.	---	----	Broadcasting station

AICHI-KEN

4. Postal Service.

Postal headquarters for this prefecture are located in Nagoya-shi.

In 1936 there were 373 post-offices in Aichi-ken, classified as shown in Table 59. The locations of these post offices are shown in Table 60.

Table 59

Classes of Post-offices, 1936, Aichi-ken

Class	Number
1. First class, administrative headquarters of communications district	1
2. Ordinary first class	2
3. Second class	8
4. Special third class	0
5. Third class, with telegraph and telephone	110
6. Third class, with telegraph only	2
7. Third class, with telephone only	0
8. Ordinary third class, without telegraph or telephone	5
9. Third class, no collection or delivery, with telegraph and telephone	19
10. Third class, no collection or delivery, with telegraph only	0
11. Third class, no collection or delivery, with telephone only	1

Class	
12. Third class, no collection or delivery, no telegraph or telephone	7
13. Sub-post office, collection and delivery, but no telegraph or telephone	12
14. Classification unknown	*206
TOTAL	373

* Includes branch and sub-post-offices.

TABLE 60

Location of Post Offices, 1936, Aichi-ken*

NAGOYA-SHI 1,2,3,3,3,5

TOYOHASHI-SHI 2,9

KASUGAI-SHI 5,9

OKAZAKI-SHI 3

ICHINOMIYA-SHI 3,5

SETO-SHI 3

HANDA-SHI 3,5,12

AICHI-GUN
- Narumi-machi 5
- Toyoake-mura 12
- Nisshin-mura 13
- Tempaku-mura 5
- Nagakute-mura 5
- Haruki 13

HIGASHIKASUGAI-GUN
- Komaki-machi 5
- Sakashita-machi 5
- Kosoji-machi 5
- Moriyama-machi 9
- Shinano-machi 5
- Asahi-mura 5
- Mizuno-mura 13

NISHIKASUGAI-GUN
- Nishibiwajima-machi 5
- Toyoyama-mura 9
- Nishiharu-mura 5

NIWA-GUN
- Hotei-machi 5
- Inuyama-machi 5
- Kochino-machi 5
- Iwakura-machi 5
- Gakuden-mura 11
- Haguro-mura 5
- Fuso-mura 5
- Chiaki-mura 12

HAGURI-GUN
- Miyata-machi 5
- Asai-machi 12
- Kisogawa-machi 5
- Kusai-mura 9

NAKASHIMA-GUN
- Inazawa-machi 5
- Oku-machi 5
- Okosni-machi 5
- Hagiwara-machi 5
- Sobue-machi 5
- Heiwa-mura 8

AMA (KAIBU)-GUN
- Tsushima-machi 5
- Jimokuji-machi 5
- Kanie-machi 5
- Yatomi-machi 5
- Kamori-mura 5
- Tomita-mura 9
- Eiwa-mura 9
- Jushiyama-mura 5
- Tobishima-mura 9
- Nabeta-mura 3
- Saya-mura 9
- Hakkai-mura 13
- Nishikawabata 13

CHITA-GUN
- Obu-machi 5
- Arimatsu-machi 5
- Otaka-machi 5
- Yokosuka-machi 5
- Okada-machi 5
- Ono-machi 5
- Tokoname-machi 5

- Nishiura-machi 5
- Noma-machi 5
- Uchimi-machi 5
- Toyohama-machi 5
- Morozaki-machi 5
- Kowa-machi 5
- Taketoyo-machi 5
- Agui-mura 5
- Ogawa 5
- Kamazaki 5
- Fuki-mura 13
- Himagashima-mura 9

HEKIKAI (OMI)-GUN
- Anjo-machi 5
- Takahama-machi 5
- Shinkawa-machi 5
- Ohama-machi 5
- Yahagi-machi 5
- Chiryu-machi 5
- Kariya-machi 5
- Yosami-mura 13
- Meiji-mura 5
- Sakurai-mura 5
- Mutsumi-mura 5
- Kamigo-mura 5
- Takaoka-mura 5
- Fujimatsu-mura 9
- Washizu 9
- Nishibata 9

HAZU-GUN
- Nishio-machi 5
- Heisaka-machi 5
- Teratsu-machi 9
- Ishiki-machi 5
- Yoshida-machi 5
- Hazu-machi 5
- Fukuchi-mura 9
- Muroba-mura 13
- Yokosuka-mura 5
- Sakushima-mura 9

NUKADA-GUN
- Fukuoka-machi 5
- Iwatsu-machi 5
- Fujikawa-mura 5
- Motojuku-mura 9
- Toyotomi-mura 5
- Miyazaki-mura 5
- Kawai-mura 13
- Katano-mura 8

NISHIKAMO-GUN
Koromo-machi 5
Miyoshi-mura 5
Homi-mura 12
Sanage-mura 5
Fujioka-mura 5
Obara-mura 5

HIGASHIKAMO-GUN
Asuke-machi 5
Matsudaira-machi 5
Morioka-mura 8
Shimoyama-mura 5
Kamo-mura 6
Asuri-mura 12
Sugimoto 5
Owatari 5

KITASHIDARA-GUN
Taguchi-machi 5
Hongo-machi 5
Damine-mura 5
Furikusa-mura 5
Miwa-mura 5
Toyone-mura 5
Tomiyama-mura 8
Nagura-mura 5
Nagaoka 9
Urakawa 6
Nakabe 5

MINAMISHITARA-GUN
Shinshiro-machi 5
Ebi-machi 5
Togo-mura 5
Nagashino-mura 13
Horaiji-mura 5

HOI-GUN
Goyu-machi 5
Kozakai-machi 5
Gamagori-machi 5
Katanohara-machi 5
Ichinomiya-mura
Maeshiba-mura 12

ATSUMI-GUN
Tawara-machi 5
Noda-machi 9
Fukue-machi 5
Kambe-mura 13
Akabane-mura 5

Irakozaki-mura 5
Izumi-mura 5

YANA-GUN
Ono machi 5
Yamanoyoshida-mura 5
Yana-mura 5
Kanazawa-mura 13
Ishimaki-mura 8

*Numbers indicate class of offices as shown in Table 59

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 daily from third class offices.

Known post-office locations within the cities are shown in Table 61.

TABLE 61

First Class Post-office Locations, Aichi-ken

Post-office	Address	City
Nagoya	3-chome, Sakae-cho, Naka-ku	Nagoya
Sasajima	Sasajima-cho, Naka-ku	Nagoya
**Toyohashi	Satsuki-cho	Toyohashi

Second Class

Atta	Atta Ichiba-cho, Minami-ku	Nagoya
Nagoya Akazuka	Akazuka-cho, Higashi-ku	Nagoya
Okazaki	Kosei-cho	Okazaki
Ichinomiya	Kosei-cho	Ichinomiya
Seto	Oaza-seto	Seto
Biwazime	Nishi Biwajima-cho	Nishikasugai-gun

** It is believed that the telephone and telegraph offices are located in the main post office which is situated on the street with the tramway, about one block south of the government office.

Postal Savings for this prefecture is included under Chapter III, Finance.

5. Newspapers.

As of 1937, there were 726 newspapers and magazines published in Aichi-ken. There were 80 publications with daily editions, 32 with more than 4 editions per month and 614 which

had less than 3 editions per month. In 1938 the number of daily newspapers was reduced to 61, a number which may have been further reduced by mergers since that date. In 1943, newspapers in Aichi-ken had a circulation of 592,791 with a population ratio compared to distribution of 5.3

The Osaka Asahi and the Osaka Mainichi have built modern steel and earthquake-proof branch plants in Nagoya-shi. The walls are of glass brick. These branch offices have much better equipment than the head offices in Osaka-shi. Each has a fine modern air-conditioned auditorium seating about 1,500 people. Another Nagoya-shi newspaper is the Shin Aichi with a circulation of about 200,000. Its plant is similar to that of the Nagoya Shimbun. The Nagoya Shimbun is owned by a local family and is well established. It has fairly good equipment in a 3 story building.

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.

C. UTILITIES

1. Gas.

In 1939, 4 public utility gas enterprises operated in Aichi-ken, serving Inuyama-machi, Okazaki-shi, Handa-shi, Ichinomiya-shi, Nagoya-shi, and Toyohashi-shi. These companies supplied 106,332 consumers with a total of 67,118,000 cubic meters of gas.

Table 62 lists the number of consumers, annual sales and length of mains as of 1938.

TABLE 62

Public Utility Gas Enterprises, 1938, Aichi-ken.

City	Company	Consumers	Annual Sales (cubic meters)	Length of mains (km)
*Inuyama	Inuyama Gasu KK	400	40,000	2.8
Okazaki	Okazaki Gasu KK	1,100	400,000	8.3
Handa	Tohu Gasu KK	1,000	200,000	---
Ichinomiya	Tohu Gasu KK	1,300	1,200,000	19.2
Nagoya	Tohu Gasu KK	94,000	45,100,000	795.8
Toyohashi	Toyohashi Gasu KK	3,400	1,100,000	34.3

*Figures as of 1936.

2. Water supply and distribution.

Water is generally abundant in Aichi-ken. The mean annual precipitation is 65 inches. Communities with adequate waterworks will seldom have difficulty in obtaining ample supplies of water except during prolonged drought. There are, however, only 9 known waterworks systems in the prefecture, of which 6 are owned by cities, one by a town, and 2 by town and village unions. The number of houses supplied with water in 1937 was 234,079 or 41 percent of the total as compared with 27 percent for Japan. In 1937 Aichi-ken had 163,473 outlets of which 6,179 were private, 552 common, 73 public, 149,430 metered, and 7,132 firehydrant. See OSS Map 5363.

The following communities in Aichi-ken are known to have waterworks: cities: Nagoya, Toyohashi, Okazaki, Ichinomiya, Seto, and Handa. City, town 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 waterworks when the community is unable to do so.

Available data concerning waterworks in Aichi-ken are as follows; (figures are for 1937 unless otherwise stated):

a. Nagoya-shi. (waterworks completed 1914.) - See OSS Maps 5971 and 5975.

Population served	931,100
Percent of total population	75.8
Number of households supplied	175,687
Percent of total households	67.1
Average daily supply (gallons)	38,600,000
Maximum daily distribution (gallons)	50,783,000
Percent metered	55.5
Average daily per capita consumption (gallons)	39

The basic plan for the waterworks system provides for service to 1,500,000 people, a daily supply of 42 gallons per capita, and a maximum daily total of 63,000,000 gallons.

(1) Source of supply. The source of river water is the Kiso-gawa, one of the 3 largest rivers in Japan. This stream furnishes an abundant year-round water supply. At the Kiso-gawa intake (located near 35°23'N, and 136°57'E) raw water passes through 3 hand-operated sluice gates into a tunnel which conducts the water by gravity for a distance of about one mile in a south-southwesterly direction to the Inuyama-machi settling reservoir located on the south bank of the Kiso-gawa. The sluice gates are each 2.5 by 3.5 feet, but of unknown capacity. The tunnel, of concrete construction, is 6 by 5.5 feet wide, and 4,700 feet long with a gradient of 1:2,000. The estimated maximum carrying capacity of the tunnel is 82,000,000 gallons per day and the minimum 46,000,000 gallons per day. The Inuyama reservoir is reported to be large but its size is unknown.

(2) Supply line installation. Water flows from the Inuyama-machi reservoir south in an open canal called the Inuyama-Toriimatsu aqueduct to the Toriimatsu district settling basin located about 4 miles northeast of Nagoya-shi near the Toriimatsu district of Kasugai-shi.

The open canal has a top width of 11.5 feet, a bottom width of 3 feet, a depth of 5 feet, and length of 9.25 miles. It has a 6-inch concrete lined bottom. Approximately 4.22 miles of the canal are excavated and 4.8 miles are formed by levee embankments. The minimum carrying capacity is es-

timated at 46,000,000 gallons per day. The gradient is 1:3,000. At unknown points along its length there are 6 sand settling basins, (11.9 x 5.8 x 5.6 feet each), 4 inverted siphons crossing under obstructions (72, 107.4, 155.2, and 99.6 feet long, respectively), and one open canal bridge (59.7 feet long).

The Toriimatsu settling reservoirs are 5 in number each basin being 450 x 240 x 16.4 feet, with an estimated capacity of 49,000,000 gallons. At the outlet there is a hexagonal shaped water tower of brick and stone with an inside diameter of 6 feet serving as a pressure regulator on the aqueduct to the Nagoya filtration plant. At the Toriimatsu plant there are 10 electric driven turbine pumps. Six pumps have a maximum capacity per day of 6,800,640 gallons against a head of 113.8 feet. Two pumps have a maximum capacity of 3,421,400 gallons per day against a head of 113.8 feet. Two pumps have a maximum capacity of 710,950 gallons per day against a head of 230 feet.

From the Toriimatsu district water is pumped to the Nagoya filtration plant through 2 or possibly three 36-inch cast iron pipes 4.75 miles long. Crossings under the Shonai-gawa and Yata-gawa are made by inverted siphons. The pipe lines are laid underground the entire distance.

The Nagoya-shi filtration plant is in the northeastern part of the city in the immediate vicinity of the Mitsubishi Aircraft Engine Works. The installations at this plant include 4 settling reservoirs, 14 slow sand filters, 14 rapid sand filters, and a high lift pumping plant. Two of the settling reservoirs are 150 x 150 x 17.2 feet, having a combined capacity of 3,694,400 gallons and 2 are circular of 170.6 feet diameter with an unknown depth having a combined capacity of 5,808,000 gallons. Eight of the slow sand filters measure 249 x 155.5 x 8.2 feet, and 6 measure 248 x 129 , 8.2 feet having a total surface area of 11.4 acres and an estimated maximum daily filtration capacity of 34,200,000 gallons. The 14 rapid sand filters measure 41 x 22.6 x 10.4 feet having a total maximum daily filtration capacity of 37,500,000 gallons. The rapid sand filters are housed in a building 75 x 200 feet. The total estimated maximum daily filtration capacity of the plant is 71,700,000 gallons.

(3) Distribution system. Filtered water from the plant is forwarded by pumping to 6 distribution reservoirs about 4,000 feet to the southeast. There are 5 pumps. Three of them are electric turbine, one of 373 kilowatt demand with a capacity of 17,107,200 gallons per day against a head of 125 feet, one of 224 kilowatt demand with a capacity of 10,264,320 gallons per day against a head of 125.0 feet, and one of 74

kilowatt demand with a capacity of 1,419,200 gallons per day against a head of 250 feet. Two of the pumps are diesel driven volute turbines with a capacity of 31,680,000 gallons per day each against a head of 42 feet.

At least 4 reservoirs, and probably all 6, are covered and landscaped. Two of them measure 192 x 112 x 15.7 feet with a combined capacity of 4,628,000 gallons. Two measure 202 x 166 x 15.9 feet with a combined capacity of 7,703,500 gallons. One is 288 x 212 x 18.6 feet with a capacity of 7,920,000 gallons. One is small of unknown dimensions and has a capacity of 82,900 gallons. The combined capacity of the 6 reservoirs is 20,344,400 gallons.

Pure water is distributed to the entire city by gravity from these reservoirs. Distribution mains, varying in size from 12 to 43 inches, form a grid pattern through the central part of the city, and probably are interconnected in many places. Water pressures in mains vary from a maximum of 65 pounds to a minimum of 16 pounds per square inch; average pressure is about 40 pounds. The suburban and port area are served by extended trunk mains in which pressures ar known to fall below 20 pounds per square inch.

In 1937 trunk mains and service lines within the city totalled about 628.4 miles. Indicated below are the lengths of the various sizes of pipe lines.

Size pipe (in inches)	Length (in miles)
4	397.2
6	118.3
8	34.3
10	10.3
12	13.9
16	23.6
20	8.3
24	9.7
28	5.2
35	1.6
43	6.0
Total	628.4

In 1937, there were a total of 150,453 outlets of which, for domestic use, 530 were free and 110,120 were metered, and for public bathhouse and general industrial use, 14,930 were metered. In 1927 there were 3,829 fire hydrants. Later 10,023 outlets were closed.

(4) Water Storage capacity. Storage facilities play a minor role in the Nagoya-shi water system because the Kisogawa provides a dependable year-round supply of water. Table 63 gives estimates of known storage capacities.

TABLE 63

Water Storage Facilities, Nagoya-shi.

Name	Capacity (in gallons)
Raw water	
Inuyama reservoir	unknown
Toriimatsu, 5 settling basins	49,022,000
Nagoya filtration plant, 4 settling basins	9,502,000
Nagoya filtration plant, estimated storage in 14 filter beds*	21,500,000
Total raw water	80,024,000
Pure Water	
Nagoya distribution plant, 6 reservoirs	
Total pure water	20,344,000
Grand total	100,368,000

* Estimated 6 feet depth of water in beds at any one time.

(5) Quality of water. In 1927 the bacterial count per cubic centimeter was as follows: Raw water at source: maximum, 1,010; minimum, 10; mean, 99. Finished water in mains: maximum, 15; mean, 3.

(6) Administration. The Nagoya-shi waterworks are administered by the city. Officials responsible for the administration in 1939 were the chief of water works bureau, section chief of Fee Collection Section, section chief of General Affairs Section, chief engineer of Water Supply Section, 5 engineers, 2 assistant engineers, 2 superintendents, 7 assistant superintendents, 65 clerks, and 65 inspectors.

b. Toyohashi-shi. (Waterworks completed 1927).

Population served	49,800
Percent of total population	44.8
Number of households supplied	9,231
Percent of total households	44.8
Average daily supply (gallons)	1,490,000
Percent metered	49
Average daily per capita consumption (gallons)	30

The basic plan for the waterworks system provides service to 120,000 people, a daily supply of 30 gallons per capita, and a maximum daily total of 3,500,000 gallons.

(1) Supply, treatment and distribution. There is little information about the source of the city's supply but it is believed to be the Toyo-gawa and a drilled well 105 feet deep. In addition to the city system there are 7,495 private wells.

There are about 110 miles of distribution mains. Water pressure in 1927 was reported to be 60.6 pounds per square inch. In 1937 there were 8,824 outlets of which 5,833 were for domestic use and metered and 4 were metered for public bathhouse and general industrial use. Later, 1,936 outlets were closed of which 1,538 were metered domestic use outlets and 2 were for public bathhouse and general industrial use. The Toyohashi-shi waterworks system is administered by the city. In 1939 it was headed by a chief of Waterworks Section.

c. Okazaki-shi. (Waterworks completed 1938).

Population served	35,400
Percent of population	43.2
Number of households supplied	7,433
Percent of total households	43.2
Average daily supply (gallons)	2,750,000
Average daily per capita consumption (gallons)	78

The basic plan for the waterworks system provides for service to 80,000 people, a daily supply of 37 gallons per capita, and a maximum daily supply of 4,438,000 gallons.

There are 83 miles of water distribution mains. In 1937 there were 7,475 outlets of which, for domestic use, there were 4,062 free and 1,264 metered, and 441 metered for public bathhouse and general industrial use. In 1945, 1,326 of all types of outlets were closed of which, for domestic use, there were 961 free and 262 metered, and 50 metered for public bathhouse and general industrial use.

The Okazaki-shi waterworks system is administered by the city. The official responsible for administration in 1939 was the chief of Waterworks Section.

d. Ichinomiya-shi

Population served	17,732
Percent of total population	30.1
Number of households supplied	3,351
Percent of total households	30.2

Average daily supply (gallons)	670,000
Average daily per capita consumption (gallons)	38

Information available in 1937 indicated that the waterworks would be fully completed in 1940.

The basic plan provides for service to 60,000 people, a daily supply of 34 gallons per capita, and a maximum daily total of 2,060,000 gallons.

In 1937, there were 67 miles of distribution mains. There were 3,674 outlets of which, for domestic use, 1,897 were free and 978 metered, and 217 were metered for public bathhouse and general industrial use. Later, 311 outlets were closed of which, for domestic use, 253 were free and 48 metered.

The Ichinomiya-shi waterworks is administered by the city with the chief engineer of waterworks as the responsible official.

e. Seto-shi. The Seto-shi waterworks was completed in 1931. In 1937 it served 2,543 households and 13,261 people. The basic plan for the system provides for service to 35,000 people, a daily supply of 30 gallons per capita, and a maximum daily total of 1,570,000 gallons. The system is administered by the city with the chief engineer of waterworks as the responsible official.

f. Handa-shi (Waterworks completed 1930).

Population served	7,300
Percent of total population	43.8
Number of households supplied	1,459
Percent of total households	45.5
Average daily supply (gallons	282,000
Average daily per capita consumption (gallons)	34

The basic plan provides for service to 20,000 people, a daily supply of 30 gallons per capita and a maximum daily total of 588,000 gallons.

In 1937 there were 14 miles of distribution mains. There were 1,397 outlets of which 859 were metered for domestic use and 168 metered for public bathhouse and general industrial use. Later, 140 outlets were closed, of which 125 were metered for domestic use and 4 metered for public bathhouse and general industrial use.

The waterworks system is administered by the city with the chief engineer of waterworks as the responsible official.

3. Sewage Disposal.

The cities of Nagoya, Toyohashi, Okazaki, Ichinomiya, and Seto are the only communities in Aichi-ken which have sewerage systems. Even in these cities, night soil removal is still generally handled by primitive methods. The figures given for night soil collection are not considered accurate but may be used for yardstick purposes.

a. Nagoya-shi. Nagoya-shi has an extensive and adequate sewerage and sewage disposal system. Begun in 1907, it has been extended several times since. There are 22 square miles inhabited by 1,094,800 people within the drainage area. The 489 miles of sewers are combined, conveying both domestic sewage and stream water. Of the 83,885 flush toilets in Japan in 1938, 14,870 were in Nagoya-shi.

In 1930 in order to correct the pollution in the canals of the cities, 2 activated sludge sedimentation and chlorination treatment plants were constructed, the Horidome plant and the Atsuda plant. A third plant was to have been constructed in 1933, but according to information at hand, this had not been done by 1939.

Tables 64 and 65 give technical data on the Horidome and Atsuda sewage disposal plants for 1933.

TABLE 64

Horidome Sewage Disposal Plant, Nagoya-shi.

Population served	300,000
Area of plant (acres)	2.5
Area served (square miles)	5.01
Capacity (million gallons per day)	11-33
Site of discharge	Mouth of Tempaku-gawa
Preliminary treatment	
Grit chambers (number)	2
Settling tanks (number)	6
	(3 high, 3 low, 45 x 31 x 13 feet)
Aeration tanks	
Number	8
	(4 high, 4 low)
Size (feet)	157 x 52 x 15
Travel (feet)	468
Rate of travel (feet per minute)	High, 1.6 Low, 1.5
Type	Spiral flow

Detention (hours)	High, 4.8; Low, 5.3.
Sludge (percent)	25
Diffusion ratio (5 percent)	8.3
Air pressure (pounds)	9
Air comsumption (cubic feet per gallon)	2
Settling tanks	
Number	16 (4 high, 4 low)
Size (feet)	20 x 20 x 16
Detention (hours)	High, 1.9; low, 1.7.
Re-Aeration tanks	
Number	4 (2 high, 2 low)
Miscellaneous data	
Sludge storage tanks	2
Sewage, chamber (number)	1 (This chamber is capable of holding 3 times the dry weather flow.)
Pumping and air blower station (number)	1
Cost	
Total	$581,000.00
Per capita	1.90

TABLE 65

Atsuda Treatment Plant, Nagoya-shi.

Population served	130,000
Area of plant (acres)	2.4
Area served (square miles)	2.07
Capacity (million gallons daily)	4.8 - 14.3
Preliminary treatment	
Grit chambers (number)	1
Settling tanks	yes
Aeration tanks	
Number	2
Size (feet)	168 x 41 x 17
Travel (feet)	503
Rate of travel (feet per minute)	1.4
Type	Special flow
Detention (hours)	5.9
Sludge (percent)	25
Diffusion ratio (5 percent)	8.3
Air pressure (pounds)	9
Air consumption (cubic feet per gallon)	1.1

Cost	
Total	$241,000
Per million gallons	50,000
Per capita	1.80

The total construction cost of the Nagoya-shi sewage system was 21,144,000 yen.

In 1939, 218,086 houses in Nagoya-shi received night soil collection service. The total amount removed was 96,000,000 gallons. The amount of sludge used as fertilizer was 25,420 tons. In 1927, an average of 364 gallons was removed from each house.

Sewage affairs are administered by the chief of the Waterworks Bureau, aided by a chief engineer of sewage works, a chief plant engineer, 8 assistant engineers, a chief of sanitation, 2 superintendents of sanitation, and 10 supervisors of sanitation.

b. Toyahashi-shi. In Toyohashi-shi an area of 3 square miles, inhabited by 203,200 people, is drained by a conduit system of 70.8 miles aggregate length. The city is equipped with a model treatment plant considered to be one of the most modern installations in the country. This plant is of the activated sludge treatment type and is situated near the seashore. Table 66 gives the technical data on the Toyohashi-shi sewage treatment plant for 1933.

TABLE 66

Sewage Treatment Plant, Toyohashi-shi.

Population served	86,000
Daily waste water (gallons per capita)	44.2
Maximum dry weather sewage flow (million gallons per day)	4.2
Area of plant (acres)	2.72
Site of discharge	Toyo-kawa
Preliminary treatment	
Grit chambers (number)	3
Sedimentation basins (number)	2
Aeration	
Aeration basins (number)	24
Detention (hours)	6
Sludge	20
Settling	
Sedimentation basins (number)	2
Re-Aeration	
Reactivation basin (number)	1 (160 diffusers)

Miscellaneous data	
Sludge digesting tank (number)	1
Open sludge, drying beds (number)	8
Supplementary chemical dosing basin which is used for chlorination only in exceptional cases (number)	1
Pump house (number)	1
Total construction cost	595,100 yen

The total cost of the entire sewerage system of Toyohashi-shi was 3,437,000 yen.

In 1937, 26,000,000 gallons of night soil were collected in Toyohashi-shi. In 1939, 883 tons of sludge were used as fertilizer.

c. Okazaki-shi. Okazaki-shi in 1940 had a sewerage system consisting of 37 miles of sewer mains draining an area of 909.3 acres inhabited by 90,400 people. The raw sewage is discharged into a river. The original cost of the system was 937,000 yen.

In 1939, 2,707 houses received night soil collection service with an average of 369 gallons collected from each house. The amoung of sludge used as fertilizer was 1,359 tons.

The sewage system is administered by the chief of a Sanitary and Sanitation Section.

d. Ichinomiya-shi. In 1940, Ichinomiya-shi had a sewerage system consisting of 42 miles of sewer mains draining an area of 667.2 acres inhabited by 66,300 people. The original cost of the sewerage system was 1,469,000 yen.

In 1937, 18,000,000 gallons of night soil were removed.

e. Seto-shi. In 1935, Seto-shi received permission for the construction of a sewerage system.

In 1937, an average of 676 gallons of night soil was removed from each house.

Sewage affairs are administered by an engineer of sewage works and a superintendent of sanitation supervisors.

4. Electric Power.

At the end of 1943, the electric power generating plants of Japan had an estimated total capacity of 11,500,000 kilowatts and an estimated annual production of 46,700,000,000

kilowatt hours. The Osaka-Nagoya Supply Area, comprising the prefectures east from Hyogo, to and including Aichi, Gifu, Fukui, Toyama, Ishikawa and the western parts of Shizuoka, Yamanashi and Nagano, had , in 1943, an estimated 36 percent of the electric power capacity of Japan proper and produced approximately 32 percent of the national total. Aichi-ken accounted for some 8 percent of the kilowatt hours produced in the supply area. See OSS Maps 3303, 2966 and 3014.

In Aichi-ken approximately three-fourths of the total energy capacity is represented by 2 large, modern steam plants located near Nagoya-shi. These plants, together with a 14,000 kilowatt steam plant in the same area, supply not only the power required for Nagoya-shi's industries but also, via high voltage lines, supply the Chita and Atsumi peninsulas, and Hamamatsu-shi in adjoining Shizuoka-ken. Although there are 15 hydro-electric plants within Aichi-ken, they are of small capacity and has only about one-tenth of the prefecture's electric power capacity.

Aichi-ken is a part of the Osaka-Nagoya transmission network and can interchange power with the Osaka-Kobe section of the grid. Further, the Osaka-Nagoya grid is interconnected with the Tokyo grid even though they operate at different frequencies (60-cycles for Osaka-Nagoya and 50-cycles for Tokyo) by means of a string of double frequency hydro-electric plants situated between the 2 areas and tied into both grids. The amount of power that can be delivered through this interconnection ranges from 490,000 kilowatts during the wet season to 205,000 kilowatts during the dry season.

a. Capacity and production. Aichi-ken has 23 electric generating plants, ranging from 1,000 to 212,000 kilowatts in capacity. Of these plants, 8 are steam plants and 15 are hydro-electric. The total capacity of these plants at the end of 1941 was 459,369 kilowatts (400,200 kilowatts steam and 59,169 kilowatts hydro-electric). Estimated production in 1941 was 1,220,000,000 kilowatt hours (880,000,000 public thermal, 319,000,000 public hydro-electric and 21,000,000 private thermal). Approximately 810,000 metric tons of coal (of thermal content of 11,500 BTU per pound) are estimated to have been required for Aichi-ken's thermal plants in 1943. Table 67 lists the electric generating plants of Aichi-ken (1,000 or more kilowatt capacity). Appendix III gives details on these plants.

TABLE 67

Electric Generating Plants, 1944, Aichi-ken.
(1,000 or more kilowatt capacity)

Plant	Location	Type & Frequency*	Capacity (in kw)	Rank in Prefecture
Asahi	Ushiji-oaza, Asahi-mura, Higashikamo-gun	H-60	1,105	22
Asuke	Asuke-oaza, Asuke-machi, Higashikamo-gun	H-50	1,565	19
Asuri	Okawara-oaza, Asuri-mura, Higashikamo-gun	H-60	4,000	13
Atsuda Karyoku	Hanaomote-machi, Atsuda-ku, Nagoya-shi	S-60	10,000	4
Chita Factory	Handa-shi	S-60	1,000	23
Dozuki	Dozuki-oaza, Obara-mura, Nishikamo-gun	H-50	5,380	10
Fujisawa	Nishikamo-gun	H-U	3,840	14
Hirose	Nishikamo-gun	H-U	4,050	12
Koshido	Koshido-oaza, Sanage-mura, Nishikamo-gun	H-60	7,500	7
Kuroda	Inabu-machi, Kita-shidara-gun	H-60	3,100	17
Mayumi	Inabu-machi, Kita-shidara-gun	H-60	5,100	11
Meiko	Minato-ku, Nagoya-shi	S-60	212,000	1
Nagoya Higashi	Showa-machi, Minato-ku, Nagoya-shi	S-60	14,000	3
Nagoya Karyoku	Oe-machi, Minato-ku, Nagoya-shi	S-60	144,000	2
Ohama Karyoku	Ohama-machi, Hekikai-gun.	S-50	10,000	4
Okazaki Karyoku	Okazaki-shi	S-50	6,200	8
Okazaki Factory	Nigo-machi, Okazaki-shi	S-150/120	3,000	18
Osaeyama	Inabu-machi, Kita-shidara-gun	H-60	3,200	16
Sasado	Sasado-oaza, Asahi-mura, Higashikamo-gun	H-60	9,000	6
Shirase	Shirase-oaza, Morioka-mura, Higashikamo-gun	H-60	1,119	21
Tokise	Tokise-oaza, Asahi-mura, Higashikamo-gun	H-60	5,560	9
Tomoegawa	Yotsumatsu-oaza, Morioka-mura, Higashikamo-gun	H-60	1,200	20
Toyone	Komatachi-oaza, Toyone-mura, Kitashidara-gun	H-50	3,450	15

* S = Steam H = Hydro-electric U = Unknown Frequency

b. Transmission and distribution. Electric energy in Aichi-ken is generated as 3-phase alternating current and transmitted by lines varying in voltage from 154 to 11 kilovolts. Since the transmission network of the Osaka-Nagoya grid is highly developed, and further, since the greater part of the power of Aichi-ken is generated near Nagoya-shi, a large number of transmission lines are to be found in the prefecture. Two 154 kilovolt transmission lines carry the developed power of the hydro-electric plants of the Tenryu-gawa, Kurobe-gawa and Sho-gawa in north-central Aichi-ken westward to Nagoya-shi. A third 154-kilovolt line connects Osaka-shi and Nagoya-shi. In addition, numerous transmission lines of voltages of 77 and 66 kilovolts tap the power of the small hydro-electric plants within the prefecture and feed their power into the grid of the Osaka-Nagoya Supply Area. A 66-kilovolt line goes out from the large Nagoya Karyoku steam plant at Nagoya-shi via Toyohashi-shi, where a substation taps the line for Toyohashi-shi's power, and terminates in Hamamatsu-shi. Connection with the Tokyo network is accomplished by a 154-kilovolt transmission line which reaches Nagoya-shi from the northwest through Gifu-ken.

Transformer substations are numerous throughout the prefecture. Two of the 3 largest substations, located at Inuyama-machi and Iwakura-machi, serve as receiving stations at the terminus of the 154-kilovolt transmission line, stepping down to 77 kilovolts for further transmission to secondary substations. Other substations are located at strategic load centers along the transmission line and used for the ordinary purpose of supplying distribution voltage to these load centers. Appendix III lists the principal substations in the prefecture.

Electric distribution throughout Aichi-ken is accomplished by means of 2.3 to 11 kilovolt circuits. Service to commercial and residential consumers is at standard voltages of 110 and 220, while 440-volt 3-phase service is available for industrial consumers.

Transmission lines indicated on OSS Map 7209 are schematic and are shown for approximate location only. Altnough incomplete the map indicates individual circuits and in general, the network or grid arrangement within the prefectural boundaries.

c. Utilization. In Aichi-ken, the largest block of electric energy before the war was used by the textile industry, accounting for approximately 35 percent of the total kilowatt-hours used in the prefecture. Chemical manufacturers were the next in rank in electric energy consumption, taking 15 percent, while the metal and machine tool industries consumed equal amounts, together taking another 15 percent. Other important

users of power are the ceramics industry, using some 12 percent of the consumption and the food and wooden item manufacturers, taking somewhat lesser amounts.

d. Administration. Electric generation and transmission facilities in Aichi-ken as in the rest of Japan, are owned and operated by the government-controlled Nippon Hassoden KK (Japan Electric Generation and Transmission Company). Headquarters of this company are in Tokyo. A main branch office of this company is maintained in Nishi-ku, Nayoga-shi. Distribution of electric power throughout Aichi-ken is accomplished through the government-controlled regional distribution company, the Chubu Haiden KK (Chubu Electric Distribution Co). Both companies are under the direct control of the Munitions Ministry.

V. SOCIAL ORGANIZATION & CULTURAL INSTITUTIONS.

A. GOVERNMENT AND ADMINISTRATION.

1. Prefectural Government.

a. Governor (Kenchiji). The Governor of Aichi-ken is of "ordinary" chokunin rank. Prefectural governors are appointed by the Emperor 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 Ministry of Home Affairs (Naimu-sho). Under the present regional organization of Japan, they are accountable also to the Superintendent General (Chiho Sokan Fu) of the region in which the prefecture is located.

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

Investigations Section (Chosa-ka)
Accounts Section (Kaikei-ka)
Business Affairs Section (Shomu-ka)
Secretariat Section (Hisho-ka)
Buildings and Repairs Section (Eizen-ka)

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

Internal Administration Department (Naisei-bu)
  Military Affairs Section (Gunji-ka)
  Local Affairs Section (Chiho-ka)
  Promotion Section (Shinko-ka)
  Education Section (Kyogaku-ka)
  Welfare Section (Kosei-ka)
  Metals Collections Section (Kinzoku Kaishu-ka)
  Sanitation Section (Eisei-ka)
Economics Department (Keizai-bu)
  Commerce and Industry Section (Shoko-ka)
  Agricultural Administration Section (Nosei-ka)
  Agricultural Affairs Section (Nomu-ka)
  Adjustment Section (Chose-ka)
  Silk Section (Sanshi-ka)
  Forestry Affairs Section (Rinmu-ka)
  Marine Products Section (Suisan-ka)
  Cultivated Land Section (Kochi-ka)
Public Works Department (Doboku-bu)
  Intendence Section (Keiri-ka)
  Planning Section (Keikaku-ka)

Rivers Section (Kasen-ka)
Roads Section (Doro-ka)
Harbors Section (Kowan-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 Aichi-ken assembly was as follows:

From cities (shi)	27
From counties (gun)	31
Total	58

e. Council (Ken Sanjikai). Prefectural councils act for assemblies when they are not in session. Councils consist of members of the assemblies elected by them, the prefectural governor as chairman, and 2 high officials of the prefecture. In 1935, the membership of the Aichi-ken council was 12.

f. Administrative personnel. In 1936, there were 139 classified civil service employees of sonin rank and 928 of hannin rank in the Aichi-ken administration.

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

In 1945, Aichi-ken had 17 representatives in the Imperial Diet. They were elected in 1942 from the following election districts:

First	5
Second	3
Third	3
Fourth	3
Fifth	3

Table 68 is an analysis of the 1937 and 1942 elections of representatives to the Imperial Diet from Aichi-ken:

TABLE 68

Election Analysis, 1937 & 1942, Aichi-ken

	1937	1942
Number of representatives	17	17
Candidates for election	28	37
Qualified voters	586,289	640,979

	1937	1942
Valid votes cast	440,312	--
Invalid votes cast	4,306	--
Voters per 1,000 population	196.38	--
Population represented per member	175,618	--

3. Tokai-Hokuriku Superintendency-General.

Aichi-ken is in the Tokai-Hokuriku Superintendency-General (Sokan-fu) which contains, in addition, the prefectures of Gifu, Shizuoka, Mie, Toyama, and Ishikawa. See OSS Map 6254. The office of the Superintendent General of the Tokai-Hokuriku Superintendency-General is in Nagoya-shi in Aichi-ken. The Superintendencies-General, established in 1945, are the successors of the Administrative Regions which were instituted in 1943 as a war-time measure to control Japan's economy. The regions were started as a means of achieving decentralization of administration while retaining centralization of policy-making and control. They, and the Superintendencies-General, have come to be regarded as an integral part of the present war-time governmental organization of Japan.

4. Local Government.

a. Cities (shi). There are 8 municipalities in Aichi-ken with the legal status of cities: Nagoya, Toyohashi, Toyokawa, Kasugai, Okazaki, Ichinomiya, Seto and Handa.

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

Mayors	5
Deputy mayors	6
Treasurers	10
Committees	72
Ward heads	4
Deputy & honorary ward heads	75
Other officials(salaried)	1,532
Total salaried personnel	1,704

(2) Assemblies (Shikai). In 1937, the combined membership for the 6 city assemblies of Aichi-ken was 236. The number of voters was 285,421.

(3) Councils (Shi Sanjikai). In 1935, the combined membership of the city councils in Aichi-ken was 55.

(4) Nagoya-shi administration. Nagoya-shi is one of the 6 major cities of Japan. While its government is basically similar to that of a smaller city, its administrative structure

is considerably more complex and in 1943 consisted of the following officials, departments, bureaus and sections:

Mayor (shi-cho)
Deputy mayors - 2 (joyaku)
Assistant treasurer (Fuku shu nyu yaku)
Intendence Department (Keiri-bu)
  Purchasing Section (Kobai-ka)
  Geography Section (Chiri-ka)
General Affairs Section (Somu-ka)
  Personnel Section (Shokuin-ka)
  Secretariat Section (Jisho-ka)
  General Affairs Section (Somu-ka)
  Statistics Section (Tokei-ka)
Planning Department (Kikaku-bu)
  Financial Affairs Section (Zaimu-ka)
  Planning Section (Kikaku-ka)
  Auditing Section (Kansa-ka)
East Asia Surveys Department(temporary) (Rinji Toa Chosa-bu)
Defense Department (Boei-bu)
  Defense Section (Boei-ka)
  Installations Section (Shisetsu-ka)
  Business Affairs Section (Shomu-ka)
Operation Department (Sagyo-bu)
  Business Affairs Section (Shomu-ka)
Electricity Bureau (Denki-kyoku)
  Transportation Department (Unyu-bu)
    Operations Section (Jigyo-ka)
    Automobile Section (Jidosha-ka)
    Engineering Section (Komu-ka)
    Electric Car Section (Densha-ka)
    Vehicles Section (Sharyo-ka)
    Investigation Section (Chosa-ka)
    Business Affairs Section (Shomu-ka)
    Intendence Section (Keiri-ka)
Water Works Bureau (Suido-kyoku)
  Rates Section (Ryokin-ka)
  Business Affairs Section (Shomu-ka)
  Sewers Section (Gesui-ka)
  Expansion Section (Kakucho-ka)
Public Works Bureau (Doboku-kyoku)
  Parks Section (Koen-ka)
  Business Affairs Section (Shomu-ka)
  Control Section (Kanri-ka)
  Construction Section (Kensetsu-ka)
  Engineering Section (Komu-ka)
  Buildings Section (Kenchiku-ka)
Public Health Bureau (Kemmin-kyoku)
  Business Affairs Section (Shomu-ka)
  Guidance Section (Hodo-ka)
  Military Assistance Section (Gunji Engo-ka)

Health Section (Hoken-ka)
Physical Culture Section (Tairyoku-ka)
Wartime Economics Bureau (Senji Keizai-kyoku)
Rationing Department (Haikyu-bu)
Rationing Section (Haikyu-ka)
Fresh Foods Section (Seisen Shokuhin-ka)
Business Affairs Section (Shomu-ka)
Organization Section (Seibi-ka)
Promotion Section (Shinko-ka)
Industrial Affairs Section (Kogyo-ka)
Education Bureau (Kyoiku-kyoku)
Primary Education Section (Shoto Kyoiku-ka)
Youth Education Section (Seinen Kyoiku-ka)
Physical Education for Schools Section (Gakko Taiku-ka)
Culture Section (Bunka-ka)
Business Affairs Section (Shomu-ka)

Nagoya-shi is divided into 10 wards (ku), each of which in 1939 had the following 4 sections:

Business Affairs Section (Shomu-ka)
Military Affairs, Census and Registration Section (Koseki Heiji-ka)
Tax Affairs Section (Zeimu-ka)
Social Education Section (Shakai Kyoiku-ka)

b. Towns (machi) and townships (mura). There are 79 towns and 135 townships in Aichi-ken. (See Appendix IV for list of names).

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

Mayors:	honorary	225
	salaried	3
Deputy mayors:	honorary	205
	salaried	46
Treasurers		227
Committees		1,489
Buraku heads and deputies		4,001
Other officials (salaried)		1,557
Total personnel		7,753

(2) Town assemblies (chokai). The following are figures for 1937, at which time there were 79 towns in Aichi-ken:

Number of town assemblies in prefecture	76
Total membership	1,494
Voters	141,039

(3) Township assemblies (sonkai). The following are figures for 1937, at which time there were 149 townships in Aichi-ken:

Number of township assemblies in prefecture	149
Total membership	2,213
Voters	151,818

B. PUBLIC SAFETY

1. Police.

The civil police of Aichi-ken in 1938 consisted of the prefectural police chief (keisatsubu-cho), 15 police superintendents (keishi), 50 police inspectors (keibu), 190 assistant police inspectors (keibuho), 406 police sergeants (junsabu-cho) and 2,677 policemen (junsa). This total personnel of 3,399 represents a ratio of one police officer for each 930 persons, compared with a national ratio of one policeman for each 1,000 persons.

Administration centers from the prefectural police bureau in Nagoya. In 1943, this bureau contained the following administrative sections:

Name of Section	Rank of Official in charge
Special Higher Police (Tokubetsu Koto Keisatsu-ka)	Superintendent
Police Affairs (Keimu-ka)	Superintendent
Criminal Affairs (Keiji-ka)	Superintendent
Police Defense (Keibi-ka)	Superintendent
Air Defense (Boku-ka)	Superintendent
Economic Peace Preservation (Keizai-hoan-ka)	Superintendent
Buildings (Kenchiku-ka)	Specialist
Labor Administration (Rosei-ka)	Administrative officer
Occupations (Shokugyo-ka)	Administrative officer
External Affairs (Gaiji-ka)	Superintendent
Insurance (Hoken-ka)	Administrative officer

As of 1938, there were in the prefecture 34 police stations (Keisatsusho), 230 police sub-stations (keibuhu junsabu-sho) and 533 police boxes (junsa chuzai).

Following are the police stations in Aichi-ken, with ranks of higher ranking police officials:

Nagoya-shi: (1) Shinei Police Station, Naka-ku, Shinei-cho, one superintendent, one inspector and 11 assistant inspectors. (2) Nabeya Police Station, Tsutsui-cho, Higashi-ku, one superintendent, one inspector and 7 assistant inspectors. (3) Egawa Police Station, Tenjinyama-cho, Nishi-ku, one superintendent, one inspector and 8 assistant inspectors. (4) Sasajima Police Station, Nakino-cho, Nakamura-ku, one superintendent,

one inspector and 8 assistant inspectors. (5) Monzen Police Station, Ura-Monzen-cho, Naka-ku, one superintendent, one inspector and 8 assistant inspectors. (6) Gokisyo Police Station, Eikin-cho, Showa-ku, one inspector and 6 assistant inspectors, (7) Atsuda Police Station, Ichiba-cho, Atsuda-ku, one superintendent, one inspector and 9 assistant inspectors. (8) Chukuji Police Station, Chukiji-Kaigan-Dori, Minato-ku, one inspector and 2 assistant inspectors. (9) Nagoya Water Police Station, Chukiji-Kaigan-Dori, Minato-ku, one inspector and 2 assistant inspectors.

Toyohashi-shi: Nakaha-cho, north part of city on south side of army drill grounds; one superintendent, one inspector, 6 assistant inspectors and one sanitation technician.

Okazaki-shi: Kosei-cho, central part of city, between prison and sub-prefectural headquarters; one superintendent, one inspector, 7 assistant inspectors, one police secretary and one sanitation technician.

Seto-shi: Seto-oaza, west end of town, on highway leading west from city; one inspector, 4 assistant inspectors and one sanitation technician.

Ichinomiya-shi: (1) Yanaga-cho, central part of city 600 yards east-northeast of railway station; one superintendent, 7 assistant inspectors and one sanitation technician. (2) Haguri-machi, one inspector and one assistant inspector.

Handa-shi: west side of city, near railway station on Taketoyo Railway Line; one inspector, 4 assistant inspectors and one sanitation technician.

Kasugai-shi: Kachikawa-machi, one inspector and 3 assistant inspectors.

Niwa-gun: (1) Hotei-machi, one inspector and one assistant inspector. (2) Inuyama-machi, north end of town 300 yards southeast of river; one inspector, 2 assistant inspectors and one sanitation technician.

Nakashima-gun: Inazawa-machi, one assistant inspector.

Ama-gun: (1) Yatomi-machi, one assistant inspector. (2) Tsushima-machi, east side of town, 300 yards southwest of Tsushima railway station, one inspector, 4 assistant inspectors and one sanitation technician.

Chita-gun: Yokosuka-machi, central part of town, on highway leading east from town; one inspector and 2 assistant inspectors.

Hekikai-gun: (1) Anjo-machi, one inspector, 3 assistant

inspectors and one sanitation technician. (2) Ohama-machi, one inspector and 2 assistant inspectors.

Hazu-gun: Nishio-machi, south central part of town on east-west highway through town; one inspector, 3 assistant inspectors and one sanitation technician.

Nishikamo-gun: Koromo-machi, west end of town, 200 yards east of railway station; one inspector, 2 assistant inspectors and one sanitation technician.

Higashikamo-gun: Asuke-machi, southwest end of town, 200 yards east of river; one inspector and one assistant inspector.

Kitashidara-gun: Taguchi-machi, one inspector, one assistant inspector and one sanitation technician.

Minamishitara-gun: Shinshiro-machi, east end of town, 400 yards east of railway station; one inspector, 2 assistant inspectors and one sanitation technician.

Hoi-gun: Goyo-machi, south end of town, on northwest-southeast highway; one inspector, 3 assistant inspectors and one sanitation technician.

Atsumi-gun: Tawara-machi, central part of town, 200 yards north of Atsumi RR; one inspector, 2 assistant inspectors and one sanitation technician.

Yana-gun: Tomioka Police Station, in Tomioka section of Yana-mura; one inspector.

In the city of Nagoya, as of 1940, there were 10 police headquarters, 197 branch stations and 1,869 policemen.

2. Prisons.

The most important prison in the prefecture is located in Chikusa hon-cho in the west-central part of the city of Nagoya near the Chikuso railway station on the Chuo Main Line. In 1938, administrative personnel of this prison consisted of one governor of prisons, one assistant governor, 12 chief wardens, 2 doctors, one interne, one pharmacist, 3 chaplains, 2 experts for industrial work, 13 assistants for industrial work, 3 matrons, 170 warders and 30 hired help, or a total personnel of 239. This would indicate a prison population of approximately 2,200 inmates, and the employment of matrons would indicate a women's section.

Another prison of importance is the Okazaki Juvenile Prison located in the central part of Okazaki-shi about 200 yards northwest of the sub-prefectural office building. In 1938, administrative personnel of this prison consisted of one assistant governor of prisons, 3 chief wardens, one doctor, one chaplain, 2 instructors, 5 assistants for industrial work, 46 warders and 9 hired help, a total personnel of 68. This would indicate a prison population of approximately 600 inmates. In 1938 the Okazaki Juvenile Prison had a small branch located at Toyohashi-shi with administrative personnel consisting of one chief warden, 5 warders and one hired help.

In March 1944, the Japanese announced the establishment of a Youth's Training Hall in Okazaki-shi to replace the Okazaki Juvenile Prison. The new institution would accommodate 300 delinquents sent there from juvenile courts who were to be employed on various work projects at Okazaki-shi. The outcome of this experiment is not known.

Table 69 gives the reported ratio of prisoners to 100,000 population in Aichi-ken as compared with Japan Proper:

TABLE 69

Prisoners, 1929-1938, Aichi-ken

Year	Aichi-ken	Japan Proper
1929	234.5	153.2
1930	252.6	166.8
1931	238.5	170.9
1932	252.0	188.6
1933	262.9	199.6
1934	293.4	202.2
1935	238.3	190.8
1936	232.0	197.5
1937	213.8	177.4
1938	199.5	157.5
Average	241.8	180.5

3. Incidence of Crime.

Table 70 shows the number of arrests for criminal offenses in Aichi-ken during the year 1937 as compared with the rest of Japan.

TABLE 70

Arrests of Criminals, 1937, Aichi-ken

Crime	Aichi-ken	All Japan
Theft	28,987	436,775
Dispossession	4,182	209,886

Crime	Aichi-ken	All Japan
Interfering with the execution of official duties	16	489
Incendiarism and fires thru negligence	415	12,245
Obstruction of traffic	41	831
House-breaking	249	9,268
Forgeries of currencies, documents or seals	388	18,526
Obscenities, illicit intercourse & bigamy	170	3,566
Gambling and lotteries	1,740	40,204
Malfeasance & bribery	38	2,731
Murder & attempted murder	125	2,211
Assault and battery	1,039	26,590
Accidental injuries, fatalities & occupational accidental injuries	1,147	21,638
Abortion	10	472
Interfering with capture & imprisonment	5	130
Kidnapping and abduction	19	1,040
Defamation of honor & character	48	1,725
Burglary	81	1,603
Fraud, embezzlement & blackmail	18,094	280,874
Others (miscellaneous)	1,023	24,624
Sub-total: arrests for violation Penal Code	57,817	1,095,838
Army and Navy Criminal Code Violations	14	502
Violations within police court jurisdiction		
Departmental ordinance	2,322	163,919
Prefectural regulation	40	10,598
Violation of prefectural regulation	6,488	333,104
Other criminal law violations	18,182	503,026
Grand total	84,863	2,106,987

4. Firefighting and Control.

As of 1937, fire-fighting stations, personnel and equipment in Aichi-ken consisted of 10 special fire stations (police); 2,396 special fire stations personnel (police); 242 fire brigades (volunteer); 62,458 fire brigade personnel (volunteer); 52 automobile pumps; 7 motorcycle pumps; 367 other type gas powered pumps; 942 hose carts; 1,201 hand pumps; and 3,769 reservoirs for fire use. Equipment attached to special fire stations included 18 rescue ladders; 12 rescue nets; 10 watch towers; and 504 fire alarms. There were no fire boats, steam engine pumps or mechanical ladders at that time.

Nagoya was the only city in 1938 with fire-fighting personnel as regular members of a fire department under the jurisdiction of the police. In other towns and villages fire guilds were maintained at the expense of local governments with volunteer firemen under police supervision.

There are 2 principal fire stations in Aichi-ken, located as follows: (1) Naka Fire Station, Takehira-cho, Higashi-ku, Nagoya-shi; (2) Minami Fire Station, Umekawa-cho, Naka-ku, Nagoya-shi. The chiefs of these stations are both superintendents (keibu).

5. Civilian Defense.

The local civilian defense organization is built around the neighborhood associations to which every Japanese belongs, with its activities supervised by the police. In 1944, the Japanese announced that air raid defense squads of police had been formed in Aichi-ken.

At the prefectural level, civilian defense supervision in the prefectural police bureau was reorganized in 1943 under 2 administrative sections, air defense (bokuka) and police defense (keibika). The air defense section supervises civilian defense and evacuation, under police supervision. The police defense section supervises a newly-established unit within the police force (keibitai) which is responsible for the maintenance of peace and order during emergencies. Full details are not available, but it was stated that personnel would not engage in ordinary police activities, but would undergo training on military lines. They are organized in the following groups: (1) Brigade consisting of police superintendent and 150 members; (2) Battery consisting of police inspector and 74 members; (3) Section consisting of assistant police inspector and 35 members; (4) Subsection consisting of police sergeant and 10 members.

In December 1943, an evacuation program affecting important cities was projected. Nagoya-shi was named as a dispersal district. Persons working in plants outside the dispersal district and living in the dispersal district, persons affected by the factory decentralization program and all other persons who did not need to live in the dispersal district were to be evacuated. Schools, public institutions, many control organizations, and some industrial plants were to be evacuated. Evacuees were provided for by accommodations with relatives elsewhere, offers of free house lots elsewhere, conversion of shops and storehouses outside the dispersal district to living quarters, special procedures for change of schools or enrollment in new schools, and special controls established for transacting business in evacuee property. In January 1944, an Urban Decentralization Headquarters was set up under the Ministry of Transport in Nagoya-shi to organize evacuation. Evacuation was apparently stepped up during 1944 and the early part of 1945.

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. Court of Appeals (Koso-in)

Below the Supreme Court (Daishin-in), which sits only in Tokyo, are 7 collegiate courts of appeals, one of which is located in Chikaro-cho, Higashi-ku, Nagoya-shi. Attached to this court is a public procurator.

The court of appeals of Aichi-ken handles appeals from 6 district courts and their 9 branches, 5 of these district courts, together with their branches, being located in neighboring prefectures in which there is no court of appeals.

2. District Courts (Chiho Saibansho)

In general there is one district court in each prefecture of Japan, the Aichi District Court being located in Chikaro-cho, Higashi-ku, Nagoya-shi.

3. Local Courts (Ku-Saibansho)

There are 6 local courts in Aichi-ken with 42 branches, located as follows:

Nagoya Local Court (Chikaro-cho, Higashi-ku, Nagoya-shi)
- Furusawa Branch Court (Furusawa-cho, Naka-ku, Nagoya-shi)
- Hiroji Branch Court (Hiroji-cho, Showa-ku, Nagoya-shi)
- Seto Branch Court (Seto-shi)
- Kachikawa Branch Court (Kasugai-shi)
- Komaki Branch Court (Komaki-machi, Higashikasugai-gun)
- Shippo Branch Court (Shippo-mura, Ama-gun)
- Kanie Branch Court (Kanie-machi, Ama-gun)
- Isushima Branch Court (Tsushima-machi, Ama-gun)
- Yatomi Branch Court (Yatomi-machi, Ama-gun)
- Arimatsu Branch Court (Arimatsu-machi, Chita-gun)

Ichinomiya Local Court (Ichinomiya Oaza, Ichinomiya-shi)
- Inazawa Branch Court (Inazawa-machi, Nakashima-gun)
- Sobue Branch Court (Sobue-machi, Nakashima-gun)
- Hotei Branch Court (Hotei-machi, Niwa-gun)
- Inuyama Branch Court (Inuyama-machi, Niwa-gun)
- Haguri Branch Court (Haguri-machi, Haguri-gun)

Handa Local Court (Handa-shi)
- Uchimi Branch Court (Uchimi-machi, Chita-gun)

- Tokoname Branch Court (Tokoname-machi, Chita-gun)
- Ono Branch Court (Ono-machi, Chita-gun)
- Yokosuka Branch Court (Yokosuka-machi, Chita-gun)
- Ogawa Branch Court (Higashiura-mura, Chita-gun)

Okazaki Local Court (Okazaki-shi)
- Toyotomi Branch Court (Toyotomi-mura, Nukada-gun)
- Fukuoka Branch Court (Fukuoka-machi, Nukada-gun)
- Anjo Branch Court (Anjo-machi, Hekikai-gun)
- Chiryu Branch Court (Chiryu-machi, Hekikai-gun)
- Shinkawa Branch Court (Shinkawa-machi, Hekikai-gun)
- Nishio Branch Court (Nishio-machi, Hazu-gun)
- Ishiki Branch Court (Ishiki-machi, Hazu-gun)
- Yokosuka Branch Court (Yokosuka-mura, Hazu-gun)
- Asuke Branch Court (Asuke-machi, Higashikamo-gun)
- Onuma Branch Court (Shimoyama-mura, Higashikamo-gun)
- Koromo Branch Court (Koromo-machi, Nishikamo-gun)
- Fujioka Branch Court (Fujioka-mura, Nishikamo-gun)

Toyohashi Local Court (Higashi-hachi-cho, Toyohashi-shi)
- Takashi Branch Court (Takashi-cho, Toyohashi-shi)
- Tawara Branch Court (Tawara-machi, Atsumi-gun)
- Fukue Branch Court (Fukue-machi, Atsumi-gun)
- Goyo Branch Court (Goyo-machi, Hoi-gun)
- Toyokawa Branch Court (Toyokawa-shi)
- Gamagori Branch Court (Gamagori-machi, Hoi-gun)

Shinshoro Local Court (Shinshiro-machi, Minamishitara-gun)
- Taguchi Branch Court (Taguchi-machi, Kitashidara-gun)
- Hongo Branch Court (Hongo-machi, Kitashidara-gun)
- Ono Branch Court (Ono-machi, Yana-gun)
- Tomioka Branch Court (Yana-mura, Yana-gun)

4. Police Courts (Keizai-Saibansho)

Police courts are presided over by police officers and are generally held in police stations. (For location of police stations, 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.

5. Juvenile Courts (Shonen-Shimpansho)

Separate from the ordinary court system, 7 juvenile courts have been established in Japan to investigate and try cases involving juveniles (boys and girls under 18). One such court is in Nagoya-shi and includes one or 2 juvenile arbitrators (Shonen Shimpan Kan), who may be concurrently judge or judges of the ordinary court system; probation officers (Shonen hogoshi); secretaries and clerks.

6. Observation Institute. Important Protection (Shuyo Hogo Kansatsusho)

According to 1944 sources, the above bureau has been added to the Ministry of Justice, apparently as a wartime emergency measure, but its functions are not defined. It has 7 branch offices, one of which is located in Nagoya-shi.

D. HEALTH AND SANITATION

1. Public health organization and services.

In Aichi-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 Health Section, the specific functions it serves, and the nature of the public health activities of the Police Department, including the Civilian Defense Section (Keibo-ka), are not definitely known. Although detailed information is not available for Aichi-ken on the organization of public health in cities, towns and villages, it is believed to be the same as in other urban prefectures.

Numerous semi-official and private organizations such as the Aichi medical and dental societies, the Aichi 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 emergency conditions.

As of 1938, in contrast to rural prefectures, Aichi-ken had a large Imperial University Medical School and other medical education facilities, numerous hospitals, sewerage systems in 3 cities (Nagoya, Toyohashi and Ichinomiya, and proportionately more doctors in practice than Japan as a whole. Notwithstanding these advantages, Aichi-ken had a high incidence of deaths from preventable diseases and a high infant mortality rate, both indicative of inadequate public health control measures.

Apparently the relatively recent rapid urbanization and industrialization of this area had not been paralleled by an equally rapid and adequate installation of sanitary and other health facilities.

However, there is evidence that the public health status of Aichi-ken has been improved appreciably since 1938. Two large tuberculosis sanatoria with a total of 1,250 beds were opened in 1939. At the end of 1941, Nagoya-shi, at a cost of 11,800,000 yen, completed additional waterworks.

Seto-shi was granted permission in 1938 to construct a sewerage system and one was in operation in Okazaki-shi in 1940.

2. Medical Facilities.

An incomplete list of hospitals for 1938 shows Aichi-ken as having 4 public hospitals with a total of 500 beds and 152 private hospitals with 5,491 beds. For 1934, the corresponding figures were 4 public hospitals and only 102 private hospitals. The lists referred to do not include leprosaria or charity, mental, tubercular and prostitute hospitals. As would be expected, Nagoya-shi has the largest concentration of medical facilities in Aichi-ken. Institutions in this city, important because of their size, equipment or staff, include at least the following: The Imperial University Hospital, the new (1939) Municipal Tuberculosis Sanatorium, and the Koseikan (private) Hospital. Other institutions of importance in the prefecture are the Seishin Byoin, one of the public mental disease hospitals in Japan (1938), the new Aichi Sanatorium for Wounded Soldiers, the new (1939) Prefectural Sanatorium and the Ichinomiya Health Center.

It is likely that industrial hygiene facilities are available in the Nagoya-shi area, particularly at aircraft and other large industrial plants. These facilities would include dispensaries with medical personnel in attendance, as well as staffs of inspection personnel (sanitary and safety engineering).

Because of the population and importance of this area, it can be assumed that an appreciable number of the following institutions, reported in large numbers for Japan as a whole (1938), will be found here: communicable disease hospitals, isolation wards, medical clinics (shinryojo), dental clinics, trachoma treatment centers, medical stations and infant health centers. It can also be assumed that there are a number of military hospitals in the prefecture.

Medical institutions in Aichi-ken are listed below:

Nagoya-shi

a. Nagoya Imperial University Medical College Hospital.
b. Red Cross Hospital
c. Municipal Tuberculosis Sanatorium. Constructed 1937-8, in operation 1939. 750 beds.
d. Joto Hospital; Uchiyama-machi, Chikusa-ku.
e. Prefectural Mental Hospital; Tashiro-machi, Chikusa-ku.
f. Yaba Clinic; Yaba-machi, Naku-ku.
g. Hygiene Laboratory; Shinsakae-machi, Naka-ku.
h. People's Hospital; Enko-machi, Showa-ku.
i. Yagoto Clinic; Kawanayama-machi, Showa-ku.

j. Hyakunin-machi Clinic; Hayakunin-machi, Higash-ku.

k. Second Nagoya Army Hospital. (May be the Garrison Hospital located in the northern part of the city between the radio broadcasting station and Nagoya Castle).

l. Children's Clinic; Nagoya Medical Academy. (Additional information about this "academy" is not available.)

m. Railway Hospital (Government). Reported in 1926, but there has been no recent reference to it.

n. Koseikan Hospital. A large private hospital.

o. Fujii Hospital (private).

p. Asakawa Icho Hospital (private).

Municipal hospitals, sanatoria, clinics and health advice offices were as follows in 1939. (See Table 71).

TABLE 71

Medical Facilities, 1939, Nagoya-shi.

	No.	Beds	Doctors	Nurses	Pharmacists
Hospitals (general)	2	239	69	170	21
Hospitals (infectious diseases)	1	208	4	20	2
Sanatoria	2	424	10	60	4
Clinics (ordinary)	4	---	4	8	4
Clinics (trachoma)	13	---	6	15	1
Health advice offices	8	---	4	12	---

It will be noted that some of the municipal institutions in (a) & (p) above are not included in this tally, e.g, the new (1939) Tuberculosis Sanatoria (c).

Toyohashi-shi

a. Higashita Prefectural Hospital; Higashita-machi.

b. Garrison Hospital; below the Military Schools and ordnance depot in the southern part of the city.

c. Hospital; Northern outskirts of Azumada-cho.

Municipal hospitals, sanatoria and clinics were as follows in 1939. (See Table 72).

TABLE 72

Medical Facilities, 1939, Toyohashi-shi.

	No.	Beds	Doctors	Nurses	Pharmacists
Hospitals	2	220	15	41	3
Sanatoria	1	60	3	4	1
Clinics	1	---	1	3	-

Okazaki-shi

a. Prefectural East Hospital, Naka-machi. Municipal hospitals and clinics were as follows in 1939. (See Table 73.)

TABLE 73

Medical Facilities, 1939, Okazaki-shi.

	No.	Beds	Doctors	Nurses	Pharmacists
Hospitals	1	50	1	3	1 (temporary)
Clinics	4	5(rooms)	4(temp.)	4	--

Ichinomiya-shi

a. Ichinomiya Hospital, 28 beds, 8 doctors, 15 nurses, and 2 pharmacists (1939).

b. Ichinomiya Health Center.

Handa-shi

Municipal hospitals and health advice officers were as follows in 1939. (See Table 74.)

TABLE 74

Medical Facilities, 1939, Hahda-shi.

	No.	Beds	Doctors	Nurses	Pharmacists
Hospitals	5	52	3	3	---
Health advice offices	2	--	6 (temp.)	4	---

Miscellaneous*

a. Seishin Byoin. Public Hospital for the Insane; one of the 7 reported in Japan in 1938. 100 beds.

*In 1938, Aichi-ken was reported to have a total of 8 mental disease hospitals, 5 tuberculosis sanatoria (this has most likely been increased to 7 by the addition of the Nagoya Municipal Sanatorium and the Prefectural Sanatorium, 11 venereal disease clinics, one charity hospital, and 2 to 4 bacteriological laboratories.

b. Aichi Sanatorium for Wounded Soldiers. One Chief Medical Officer (fourth grade), one Commissioner (seventh grade), 6 medical officers (4 fifth grade and 2 sixth grade) (1943). (Exact location unknown).

c. Prefectural Tuberculosis Sanatorium. Constructed 1937-38, in operation 1939. 500 beds.

3. Medical Personnel and Schools.

The ratio of practicing physicians to population in Aichi-ken in 1938 was one doctor to every 1,353 persons (7.4 per 10,000). This figure is slightly higher 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 areas. In Aichi-ken, there were 8.7 practicing physicians per 10,000 urban population and 5.8 per 10,000 rural population. For the same year, 1938, corresponding national figures were 11.9 and 4.7, respectively.

There were more midwives and more than twice as many practitioners of traditional treatments (acupuncture, moxa and massage) than there were doctors in actual practice (1936) in this prefecture. Also, there was a slight decrease in the total number of doctors in Aichi-ken from 1936 to 1938.

One of the 9 Imperial University Medical Schools in Japan, (1938), is located in Nagoya-shi. This large diversified school, the Nagoya Teikoku Daigaku, had 88 students admitted, (1941); a total enrollment of 346, (1941); and a graduating class totalling 77, (1940). An emergency (short) course given here had 81 students admitted, (1941), and an enrollment of 239, (1941).

The Aichi Medical College, a prefectural school, believed to have been taken over by the Nagoya Imperial University, was located at Gokiso-machi in Nagoya-shi, (1940).

The Nagoya Medical Academy, reported in 1944, may be the same as either of the 2 schools noted above or it may be a new institution.

Early in 1945, it was reported that a special 2-year course in nursing would be taught at government medical universities throughout Japan. Under this program it is likely that nurses are being trained at the Nagoya Teikoku Daigaku.

There was a pharmacy college in Nagoya-shi, the Nagoya Pharmaceutical College, which is believed to have been absorbed by the Imperial University in 1939. No further data is available about this institution. It is reported that qualifying examinations for pharmacists in Japan are given in Tokyo, Shizuoka, and Aichi prefectures.

The Ichinomiya Health Center, established under the National Health Center Act in 1937, provides intensive training for public health personnel needed for local health programs.

Medical personnel in Aichi-ken are shown in Table 75.

TABLE 75

Medical Personnel, Aichi-ken.

Year	Doctors	Dentists	Pharmacists	Veterinaries	Midwives	Nurses	Practitioners of, acupuncture, moxa, & massage
1934	2368	852	1145	---	2394	---	---
1936	2591	968	1416	---	2516	3565	2754
1938	2569*	1031	1668	227	2758	4483	---

*Of this number 170 are women. Of the total 2,569 there were 2,250 in actual practice. These were distributed as follows: 1,432 in urban and 818 in rural areas.

4. Vital statistics.

Birth reports (shussho todoke-ide) and death reports (shibo todoke-ide) are registered at the ward (ku) offices in Nagoya-shi, and, for the rest of Aichi-ken, at the municipal, town and township office where the individual identification registers (koseki) are kept. Reports are then forwarded through the prefectural office in Nagoya-shi to national agencies.

Birth and death rates for Aichi-ken are shown in Table 76.

TABLE 76

Vital Statistics, 1920-38, Aichi-ken.
(per 1,000 population)

	Birth Rates Average yearly rate (intercensal periods) 1920-25	1925-30	1930-35	Yearly rates 1937	1938
Aichi-ken	35.20	34.12	31.87	30.45	26.44
Japan Proper	34.82	33.70	31.75	30.61	26.70
U.S.	22.7	20.0	17.4	17.1	17.6
	Death Rates				
Aichi-ken	22.62	19.91	17.78	16.46	17.19
Japan Proper	22.22	19.50	17.98	16.95	17.44
U.S.	12.1	11.9	11.00	11.3	10.6

Infant mortality rates in Aichi-ken have been slightly higher than the national rates. For the period 1934 to 1938, yearly rates per 100 live births in this prefecture were 14.4, 10.1, 12.0, 11.0, and 12.0, respectively. Corresponding national rates were 12.5, 10.7, 11.7, 10.6, and 11.4. U.S. infant mortality rates are considerably lower (e.g., 2.9 for 1940). Leading causes of death in Aichi-ken are shown in Table 77.

TABLE 77

Leading Causes of Death, 1938, Aichi-ken, & Japan.

Cause	Aichi-ken Deaths	Aichi-ken Rate per 100,000	Japan Deaths	Japan Rate per 100,000
Tuberculosis (23-32)*	6618**	217.1	148,827	207.9
Pneumonia (107-109)	5466	179.3	118,153	165.1
Cerebral hemorrhage (82)	4471	146.7	126,861	177.2
Senility (162)	4140	135.8	98,772	138.0
Diseases of early infancy (157-161)	3446	113.0	79,246	110.7
Diarrhea and enteritis (120) (over one yr. of age)	3184	104.4	58.491	81.7
Meningitis (79)	2149	70.5	36,748	51.3
Disease of the heart (90-95)	1955	64.1	47,460	66.3
Cancer (45-53)	1917	62.9	50,447	70.5
Nephrities (130-132)	1897	62.2	61,996	86.6
Diarrhea and enteritis (less than one yr. of age) (119)	1864	61.1	58,465	81.7
Cause of death ill defined or unknown (200)	1328	43.6	36,255	50.7
Bronchitis (106)	1191	39.1	26,178	36.6
Beri beri (61)	904	29.7	12,712	17.8
Pleurisy (110)	894	29.3	20,980	29.3
Ekiri (13b)	841	27.6	16,416	22.9
Non-specific diseases of stomach (duodenum) (118)	632	20.7	16,858	23.6
Total deaths all causes	52,344		1,259,805	

* Numbers refer to diseases in the "International List of Causes of Death".
**For 1935, the 3 leading causes in Aichi-ken were tuberculosis (5,703 deaths), pneumonia (4,682) and cerebral hemorrhage (3,749). Total deaths for that year were 44,878.

Respiratory diseases are of prime importance among the leading causes of death in Aichi-ken. Tuberculosis, pneumonia, bronchitis, and pleurisy accounted for 25 percent of all deaths (1938). Tuberculosis and pneumonia were the 2 leading causes of death (1938) and data for 1935 shows no change in their relative importance in the 3-year interval. Of much less military significance, the major degenerative diseases--cerebral hemorrhage, heart diseases, cancer and nephritis, were responsible for 19

percent of all deaths (1938). In all likelihood, this latter figure would be much larger were it not for the inadequate diagnosis reflected in such vague categories as "senility," "Cause of death ill-defined, etc." and "Non-specific Diseases of the Stomach and Duodenom." There were 6,100 deaths attributed to these vague causes.

Among the causes of death not shown in the table are syphilis (137 deaths), puerperal diseases (156), diabetes (157), liver and gall bladder diseases (487), and suicide (571).

5. Communicable Diseases.

As shown in Table 78, epidemic, contagious and parasitic diseases accounted for 19 percent of all deaths in Aichi-ken in 1938, which represents no change in percentage from the preceding year.

TABLE 78

Deaths from Communicable Diseases, 1938, Aichi-ken.

	Deaths	
	Aichi-ken	Japan
(Population)	(3,045,036)*	(71,570,244)
Intestinal typhoid fever (1)**	282***	7,819
Paratyphoid fever (2)	13***	297
Relapsing fever (4)	1	2
Undulating fever (5)	1	1
Measles (7)	185	4,997
Scarlet fever (8)	10	398
Whooping cough (9)	500	8,871
Diphtheria (10)	131***	4,135
Influenza (11)	281	7,646
Dysentery (13a)	197***	5,550
Ekiri (13b)	841	16,416
Erysipelas (15)	118	3,409
Meningitis cerebrospinal epidemic (16)	23	715
Sleeping sickness (17)	11	1,088
Cerebrospinal meningitis (18)	6	580
Tetanus (22)	68	1,775
Tuberculosis of Respiratory organs (23 a,b,c)	4,797	107,442
Tuberculosis of other organs (24-32)	1,823	41,385
Tuberculosis, all forms (23-32)	6,618	148,827

Leprosy (33)	22	337
Syphilis (34)	137	4,412
Gonococcus infection and other venereal diseases (35)	1	47
Sepsis (non-puerperal) (36)	294	9,203
Malaria (38)	1	207
Other diseases due to protozoa, helminths and hemorragic jaundice due to spirochaeta (39)	14	1,545
Bacterial diseases of duodenum (40)	5	280
Other diseases of helminths (42)	4	493
Mycosis (43)	13	418
Other epidemic or parasitic diseases (44)	2	149
Epidemic, infectious and parasitic diseases (1-44)	9,783	229,708
Total deaths	52,344	1,259,805
Percentage of deaths caused by (1-44)	19	18

* By interpolation: 1935 and 1940 populations.
** Numbers refer to diseases in "International List of Causes of Death."
***Another source lists 234 deaths for typhoid fever, 15 deaths for paratyphoid fever, 111 deaths for diphtheria, 200 deaths for dysentery and 744 deaths for ekiri. Corresponding national figures are similarly in disagreement.

There is no history of cholera or bubonic plague epidemics reported for Aichi-ken. Both mite-borne and louse-borne typhus are said to occur in the prefecture. Of the 25 to 50 cases of murine typhus which occurred annually up to 1940 in Japan, some were reported for Aichi-ken. Dengue fever is listed as prevalent here and malaria occurs in the low-lying districts of the prefecture. Neither filariasis nor schistosomiasis are reported as endemic in this area. In routing examinations for liver fluke infections, (clonorchis), conducted under the law for the prevention of parasitic diseases, there were 32 carriers of clonorchis eggs found among approximately 125,000 persons examined in Aichi-ken (1938).

No deaths from small-pox were reported here in 1938. Vaccination against small pox is compulsory and is given in 2 periods: (a) within 6 months after birth, and if negative, repeated before the following June; and (b) in the tenth year after birth. For 1936, in Aichi-ken, first period vaccinations totalled 95,299 and second period vaccinations 68,873. In all, 156,457 persons were

vaccinated one or more times in that year.

Whooping cough caused proportionately more deaths (500) in Aichi-ken (1938) than in Japan as a whole.

There was also a relatively large number of deaths (290) from this disease in 1935.

Morbidity data for certain communicable diseases are shown in Table 79.

TABLE 79

Morbidity Data, 1938, Aichi-ken.

	Cases		Fatality rate per 100		Morbidity rate per 100,000*		Crude deaths rate per 100,000	
	Aichi	Japan	Aichi	Japan	Aichi	Japan	Aichi	Japan
Diphtheria	915	28,420	12	14	30.0	39.7	3.6	5.4
Typhoid fever	1,547	42,132	15	17	50.7	58.9	7.7	9.7
Paratyphoid fever	216	6,117	7	5	7.1	8.5	0.5	0.4
Dysentery (including ekiri)	2,713	80,221	35	25	89.0	112.1	31.0	28.2
Ekiri	1,334	32,728	56	47	43.8	45.7	24.4	21.7**

* Population for 1938 determined by interpolation: 1935 and 1940 population.
Data for this table taken from a source which differs from that used in Table 78. (See footnote *, Table 78).

It will be noted that the incidence of the 5 diseases shown in Table was lower for Aichi-ken than for Japan as a whole in 1938.

Results of physical examinations of children in public and private elementary schools (1935) showed that 10.9 percent of those examined had trachoma and 0.2 percent had one or more contagious diseases. Comparable national percentages were 10.3 and 2.9. The size of the sample was not reported.

Venereal disease incidence data is not available. However, since 11 "substitute" venereal disease clinics out of a total of 200 for all of Japan were located in Aichi-ken (1938) and since 137 deaths were attributed to syphilis (1938), it may be assumed that the incidence of these diseases is at least fairly high.

6. Medical Supply.

Large drug manufactuers in Aichi-ken (1944) are listed below:

a. Arakawa Chotaro Gomei, Nagoya-shi, Higashi-ku, Kyo-machi, 2-chome 5. Type of drugs manufactured not specified.

b. Yoshigawa Seiyusho, Nagoya-shi, Nishi-ku, Kikui-cho, 2-chome. Manufacturers of castor oil.

c. Dai-Nippon Biiru KK., Nagoya-shi, Higashi-ku, Takamatsu-machi, 1-chome 30. Another plant of the same firm is located at Handa-shi. These are branches of the Tokyo firm of the same name. Manufactures ebios (a yeast preparation which is a by-product of beer) and vitamin 1 injection solution.

d. Nagoya Seiyaku KK., Nagoya-shi, Higashi-ku, Kyo-machi, 4-chome 10 and another plant in the same city at Higashi-ku, Shokeu-cho, 1-chome 18. Manufactures Amino-pyrin tablets.

Chemical plants in Aichi-ken which produce items essential for the manufacture of drugs and medicinals are listed in Appendix I.

There were 302 medicine manufacturers (small establishments) in this prefecture in 1936. For the same year there were 15,197 retailers of patent medicines and 4,361 peddlers of patent medicines in Aichi-ken.

It is believed that medical supplies will be found at military and naval establishments, in the warehouse and storage areas in the harbor and Naka-gawa canal districts of Nagoya-shi, in underground warehouses reported to have been constructed recently throughout Japan, and in the larger hospitals.

Aichi-ken, like other prefectures, has been dependent upon Tokyo and Osaka laboratories for its vaccines and sera.

7. Sanitation, Port Quarantine and Public Health Laws.

(Water supply and sewage disposal are covered in Chapter IV.)

There were 20 slaughterhouses in Aichi-ken (1938). Of these, 6 were established by cities, 10 by towns or villages and 4 by private persons or organizations. For the same year there were only 227 veterinarians in the prefecture. Specific data on food inspection and other phases of sanitation in Aichi-ken, as distinguished from other prefectures, are not available.

Of the 11 permanent and 5 temporary port quarantine stations in Japan (1938), one, a temporary station, is located at Nagoya-shi. Medical and veterinary inspection were provided (1938) here and facilities were available for disinfection and rat and insect extermination. In 1938, of the 1,476 inspected ships at the Nagoya Port Quarantine Station, none were disinfected but 16 were subjected to rat and insect extermination procedures. A total of 16 rats were caught. No cases of infectious diseases were found among the 76,320 persons inspected at the station in that year.

Although data are available for ports other than those at which permanent and temporary stations were located, it can be assumed that quarantine activities, including medical inspection, are conducted at the other large ports in Aichi-ken.

Public health laws and regulations applicable to all of Japan; narcotics control, epidemic disease control, food and water sanitation, sewage disposal, public hospitals, etc., obviously apply to Aichi-ken as well. Except for the City Planning Law of 1919 (limiting the height of buildings in Nagoya-shi to 65 feet in some quarters and 100 feet in others) the substance of local ordinances is unknown.

E. PUBLIC WELFARE.

1. Organization.

The public welfare program in Aichi-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 (Shakai-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 and in turn are assisted by paid welfare directors in most cities. There are 182 welfare districts (homen) in the urban areas of Aichi-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. Nagoya-shi. Nagoya has a central welfare office with a paid welfare staff in addition to the voluntary welfare workers. The city is divided into 73 relief districts served by 439 volunteer social workers. There are 15 public children's institutions (capacity 1,209), one old peoples' home (capacity 100), 7 public lodging-houses (capacity 560), 5 public pawn shops, 14 public markets and one personal consultation agency. Statistics indicate that the relief expenditures for Nagoya-shi are slightly less than those of the other "big six" cities and that its institutional relief is considerably less. Since April 1944, all elementary school children attending national schools have been served free lunches at government expense. Facilities for this are located in the individual schools.

The following agency names and addresses are known:

Nagoya Yoroin (home for the aged and infirm): capacity 100, address unknown.

Pio Jissei-kan (Pius XI hostel for boys): 6 Gokenya-cho, Showa-ku. Catholic.

Ryujo Yochien (kindergarten and mothers' welfare center): Gokiso Branch, Gokiso-machi, Showa-ku. Episcopal.

Ryujo Yochien (kindergarten and mothers' welfare center): Habashita Branch, Nagoya-shi. Episcopal.

Nagoya Y.M.C.A.: 30 Minami Karawa-cho, Naka-ku.

Christian Hospice and Tea Room for the Poor: 7 Nichome, Minamikaji-machi, Naka-ku. Universalist General Convention.

St. Mary's Nursery: 65 of 3 Arae-machi, Nakagawa-ku. Cahtolic.

Atsuda Public Boarding House: Higashi-machi, Atsuda-ku. Municipal.

Hioki Public Boarding House: Nisi-hioki-machi, Nakamura-ku. Municipal.
Misono Tenshi-en Ikujin (orphanage and nursery): 11 of 3 Toyoda-machi, Minami-ku. Catholic.
Katorikku Kyusaibu (relief and rescue center): 233 Matsushita, Toyoda-machi, Minami-ku. Catholic.
Y.W.C.A.: 254 Moto-furui, Chikusa-machi, Chikusa-ku.
Y.W.C.A.: Dormitory: 2-chome, 8 Chikara-cho, Higashi-ku.
Misono Yoikuen (orphanage): 155 Yakushizan, Narumi-cho, Aichi-gun, just east of Nagoya. Catholic.
Koromo Rural Center: Koromo-machi, near Nagoya-shi. Lutheran.

b. Toyohashi-shi. The city is divided into 9 relief districts served by 48 volunteer welfare workers. There are 8 private children's institutsions (capacity 960), 20 private day nurseries and one public pawn shop.

c. Okazaki-shi. The city is divided into 5 relief districts served by 37 volunteer social workers. There is one private children's institution (capacity 90), 8 private day nurseries (capacity 480), and one correctional institution. In Kosho-machi there is the Okazaki Detention Home for Boys.

d. Ichinomiya-shi. Ichinomiya-shi is divided into 5 relief districts served by 25 volunteer welfare workers. There are 6 private children's institutions (capacity 750), 5 day nurseries (capacity 300) and one pawn shop.

e. Seto-shi. Seto-shi is served by 16 volunteer welfare workers operating in the one relief district. There are 4 public day nurseries (capacity 400) one private children's institution (capacity 150), one pawn shop and one correctional institution. In Oaza-ima there is the Seto Detention Home for Boys.

f. Handa-shi. Handa-shi is served by 20 volunteer social welfare workers operating out of a central office. There are 9 private day nurseries (capacity 90).

2. Kinds of Assistance.

a. Poor relief: for the aged and infirm over 65, children under 13, persons ill or disabled; maternity cases. Application is made through the volunteer social workers at the municipal offices. Financial support is divided equally between the national and prefectural governments. Available statistics indicate that relief expenditures in Aichiken are slightly higher than the national average and are consonant with other prefectures having cities of more than a million population.

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

c. Veteran's 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 is entirely national.

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

e. Minimum cost services: 11 public boarding houses, 26 public markets, 6 public dining halls, 4 public baths and 14 public pawn shops.

f. Institutions: 15 public children's institutions, 15 private children's institutions* (3 receive government subsidies), 43 private day nurseries* (4 receive government subsidies), 4 public day nurseries, 2 correctional institutions, 3 relief institutions for adults, 7 settlements, one personal consultation agency.

*Not counting Nagoya Institutions for which data was not available.

F. EDUCATION.

1. Education 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 technical institutions under the jurisdiction of other government offices) are under the control of the national Ministry of Education (Mombu-sho). These schools may be classified into 3 groups, according to the establishing authority, as follows:

a. National government schools.

b. Public schools.
   (1) Those established by prefectures.
   (2) Those established by cities.
   (3) Those established by towns and townships.

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 (Kyogaku-ka) 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 townships.

2. Elementary Schools.

In 1935 there were 222,809 boys and 216,314 girls of elementary school age (6 to 14 years) in the prefecture. Of this number 1,061 boys and 1,072 girls were exempted from attendance at school.

There were at this time 713 primary schools, including 251 ordinary elementary schools, jinjoshogakko, and 462 higher elementary schools (jinjo koto shogakko) including detached classes or branch schools (bunkyojo). There were 8,636 elementary school classes in the prefecture.

In 1935 there were 9,675 elementary school teachers in the prefecture or an average of 11.3 teachers per school, as follows:

a. Regular elementary school teachers:		8,053
	Ordinary:	6,761
	Higher:	1,292
b. Teachers holding licenses for special subjects:		656
	Ordinary:	502
	Higher:	154
c. Assistant teachers:		324
	Ordinary:	323
	Higher	1
d. Substitute teachers:		642
	Ordinary:	583
	Higher:	59

Each town and township in the prefecture had at least one elementary school.

TABLE 80
Public Schools, 1938, Aichi-ken.
(Exclusive of technical schools)

	Ordinary Elementary Schools (6 Grades)	Ordinary Higher Elementary Schools (8 Grades)	Detached Classes	Middle Schools	Girls' High Schools T = technical
NAGOYA-SHI	40	57	-	6	6, 1(T)
TOYOHASHI-SHI	12	12	1	2	1, 1(T)
TOYOKAWA-SHI	1	5	4	-	1(T)
KASUGAI-SHI	4	4	-	-	-
OKAZAKI-SHI	3	5	2	1	1
ICHINOMIYA-SHI	5	4	0	1	1
SETO-SHI	4	2	0	-	-
HANDA-SHI	2	5	-	1	1
AICHI-GUN					
Narumi-machi	1	1	-	-	-
Toyoake-mura	-	2	-	-	-
Togo-mura	-	1	-	-	-
Nisshin-mura	-	3	-	-	-
Tempaku-mura	-	1	-	-	-

Idaka-mura	-	1	-	-	-
Nagakute-mura	-	1	-	-	-
Hatayama-mura	-	2	-	-	-
HIGASHIKASUGAI-GUN					
Komaki-machi	2	2	-	1	-
Sakashita-machi	1	1	-	-	-
Kosoji-machi	-	1	1	-	-
Morijama-machi	-	2	1	-	-
Shinano-machi	-	3	1	-	-
Ajioka-mura	-	1	-	-	-
Shinooka-mura	1	3	-	-	-
Shidami-mura	1	1	-	-	-
Asahi-mura	1	1	-	-	-
Mizuno-mura	-	1	-	-	1
NISHIKASUGAI-GUN					
Nishibiwajima-machi	-	1	-	-	-
Kiyosu-machi	-	1	-	-	-
Shinkawa-machi	-	1	-	-	-
Yamada-mura	-	1	-	-	-
Kusunoki-mura	-	1	-	-	-
Toyoyama-mura	-	1	-	-	-
Kitazato-mura	-	1	-	-	-
Shikatsu-mura	-	1	-	-	-
Nishiharu-mura	-	1	-	-	-
Kasuga-mura	-	1	-	-	-
NIWA-GUN					
Hotei-machi	1	1	-	-	1
Inuyama-machi	-	2	-	-	1
Kochino-machi	-	4	-	-	-
Iwakura-machi	1	1	-	-	-
Oguchi-mura	-	2	-	-	-
Gakuden-mura	-	1	-	-	-
Haguro-mura	-	1	-	-	-
Ikeno-mura	-	1	-	-	-
Joto-mura	2	1	-	-	-
Fuso-mura	2	1	-	-	-
Chiaki-mura	2	1	-	-	-
Tanyo-mura	2	1	-	-	-
HAGURI-GUN					
Miyata-machi	-	1	-	-	-
Asai-machi	1	1	-	-	-
Kisogawa-machi	-	2	-	-	-
Kusai-mura	-	1	-	-	-
Kitagata-mura	-	1	-	-	-
NAKASHIMA-GUN					
Inazawa-machi	2	1	-	-	-
Imaise-machi	-	2	-	-	-
Oku-machi	-	1	-	-	-
Okoshi-machi	2	1	-	-	-

Hagiwara-machi	1	1	-	-	-
Sobue-machi	5	1	-	-	-
Yamato-mura	-	2	-	-	-
Asahi-mura	1	1	-	-	-
Meiji-mura	3	1	-	-	-
Nagaoka-mura	-	1	-	-	-
Heiwa-mura	-	3	-	-	-
Chiyoda-mura	-	1	1	-	-
Osato-mura	-	1	2	-	-
AMA (KAIBU)-GUN					
Tsushima-machi	2	1	-	1	1
Jimokuji-machi	-	1	2	-	-
Kanie-machi	2	1	1	-	-
Yatomi-machi	-	1	-	-	-
Saori-machi	4	1	-	-	-
Kamori-mura	2	1	-	-	-
Shippo-mura	-	1	-	-	-
Miwa-mura	2	1	-	-	-
Oharu-mura	-	1	-	-	-
Tomita-mura	4	1	-	-	-
Nanyo-mura	-	1	-	-	-
Eiwa-mura	2	1	-	-	-
Jushiyama-mura	1	1	-	-	-
Tobishima-mura	-	1	-	-	-
Nabeta-mura	-	2	-	-	-
Ichie-mura	-	1	-	-	-
Saya-mura	-	1	-	-	-
Tatsuta-mura	-	2	1	-	-
Hakkai-mura	2	1	-	-	-
CHITA-GUN					
Obu-machi	3	1	-	-	-
Arimatsu-machi	-	1	-	-	-
Otaka-machi	-	1	-	-	-
Ueno-machi	-	2	-	-	-
Yokosuka-machi	1	1	-	-	1
Yawata-machi	3	1	-	-	-
Okada-machi	-	1	-	-	-
Ono-machi	-	1	-	-	-
Tokoname-machi	-	1	-	-	-
Nishiura-machi	-	2	-	-	-
Noma-machi	-	2	1	-	-
Uchiumi-machi	1	1	-	-	-
Toyohama-machi	-	2	-	-	-
Morozaki-machi	-	2	-	-	-
Mowa-machi	-	3	-	-	-
Taketovo-machi	-	1	-	-	-
Agui-mura	-	4	-	-	-
Higashiura-mure	4	1	-	-	-
Asahi-mura	2	1	-	-	-
Miwa-mura	1	1	-	-	-
Onizaki-mura	-	2	1	-	-
Kosugaya-mura	-	2	-	-	-
Shinojima-mura	-	1	-	-	-

Himagashima-mura	-	1	-	-	-
Fuki-mura	-	1	-	-	-
HEKIKAI (OMI)-GUN					
Anjo-machi	4	1	-	-	1
Takahama-machi	2	1	-	-	-
Shinkawa-machi	-	1	-	-	-
Ohama-machi	-	1	-	-	-
Tanao-machi	-	1	-	-	-
Yahagi-machi	4	1	-	-	-
Chiryu-machi	2	1	-	-	-
Kariya-machi	-	2	-	1	1
Yosami-mura	-	4	-	-	-
Asahi-mura	2	-	-	-	-
Meiji-mura	4	1	-	-	-
Sakurai-mura	2	1	-	-	-
Mutsumi-mura	1	2	-	-	-
Kamigo-mura	-	3	-	-	-
Takaoka-mura	4	1	-	-	-
Fujimatsu-mura	-	2	-	-	-
HAZU-GUN					
Nishio-machi	2	1	-	1	1
Heisaka-machi	2	1	-	-	-
Teratsu-machi	-	2	-	-	-
Ishiki-machi	2	1	-	-	-
Yoshida-machi	2	1	-	-	-
Hazu-machi	1	1	-	-	-
Fukuchi-mura	1	1	-	-	-
Miwa-mura	-	1	-	-	-
Toyosaka-mura	-	1	-	-	-
Muroba-mura	-	1	-	-	-
Yokosuka-mura	2	1	-	-	-
Sakushima-mura	-	1	-	-	-
NUKADA-GUN					
Fukuoka-machi	-	1	-	-	-
Iwatsu-machi	1	4	-	-	-
Koda-mura	2	-	-	-	-
Ryugaya-mura	1	-	-	-	-
Fujikawa-mura	1	-	-	-	-
Yamanaka-mura	-	1	-	-	-
Motojuku-mura	-	1	-	-	-
Toyotomi-mura	2	1	-	-	-
Miyazaki-mura	2	1	-	-	-
Kawai-mura	1	1	-	-	-
Katano-mura	-	1	-	-	-
Shimoyama-mura	1	1	-	-	-
Tokiwa-mura	-	1	-	-	-
NISHIKAMO-GUN					
Koromo-machi	3	1	1	-	1
Miyoshi-mura	-	3	-	-	-
Homi-mura	-	2	-	-	-

Sanage-mura	1	2	-	-	-
Fujioka-mura	2	2	-	-	-
Obara-mura	1	4	-	-	-
Ishino-mura	1	3	-	-	-
Takahashi-mura	4	1	-	-	-
HIGASHIKAMO-GUN					
Asuke-machi	-	1	-	-	-
Matsudaira-machi	5	-	-	-	-
Morioka-mura	1	3	-	-	-
Shimoyama-mura	2	4	-	-	-
Kamo-mura	4	1	1	-	-
Asahi-mura	-	5	-	-	-
Asuri-mura	-	3	1	-	-
KITASHIDARA-GUN					
Taguchi-machi	1	3	1	-	-
Hongo-machi	-	1	-	-	-
Inabu-machi	1	4	1	-	-
Damine-mura	2	1	-	-	-
Furikusa-mura	1	3	-	-	-
Mitono-mura	1	1	-	-	-
Miwa-mura	-	3	-	-	-
Shimokawa-mura	-	1	-	-	-
Sono-mura	1	3	1	-	-
Toyone-mura	-	4	2	-	-
Tomiyama-mura	-	1	2	-	-
Kamitsugu-mura	-	1	-	-	-
Shimotsugu-mura	-	1	-	-	-
Nagura-mura	1	1	1	-	-
MINAMISHITARA-GUN					
Shinshiro-machi	-	1	-	-	1
Ebi-machi	1	1	-	-	-
Chisato-mura	-	1	-	-	-
Togo-mura	-	2	-	-	-
Nagashino-mura	-	2	-	-	-
Horaiji-mura	1	3	-	-	-
Tsukude-mura	4	3	-	-	-
HOI-GUN					
Goyu-machi	-	1	-	-	-
Akasaka-machi	-	1	-	-	-
Kozakai-machi	-	2	-	-	-
Mito-machi	-	2	-	-	-
Miya-machi	-	1	-	-	-
Gamagori-machi	3	1	-	-	1
Katanohara-machi	-	1	-	-	-
Nagasawa-mura	-	1	-	-	-
Hagi-mura	-	1	-	-	-
Ichinomiya-mura	-	2	-	-	-
Maeshiba-mura	-	1	-	-	-
Otsuka-mura	-	1	-	-	-
Shiotsu-mura	-	1	-	-	-
Nishiura-mura	-	1	-	-	-