

Winter

CONDUCT OF THE PUBLIC DURING AN AIR RAID

1. Introduction. Since KYOTO was not bombed in the sense that TOKYO, OSAKA, KOBE and other cities were bombed, little information on this subject was obtainable. KYOTO had but two raids causing relatively minor damage, but had innumerable alerts which were caused by planes headed for other destinations.

2. Local Regulations. Local regulations as to how the public should conduct itself ^{were} patterned after the regulations issued by the Ministry of Home Affairs, and described rather fully in the OSAKA and KOBE ^{Field} Reports, that is, upon the sounding of the alert normal activities were to be continued as far as practical, ^{ple} only those unengaged, the smaller children, sick and aged were to start to move towards shelters; factories, offices and stores were to continue as usual. Upon the sounding of the raid alarm people were to move to shelters, ^{and} schools, offices and stores were to close, but factories were to continue working until the last possible moment. It was not mandatory that people enter the shelters at any time, even when the planes were overhead.

3. Traffic. Traffic rules also were similar to ^{those} that reported in the OSAKA ^{Field} Report except ^{that} in KYOTO street cars were permitted to run through the alert period and even through part of the raid period, being required to stop only when the planes were actually overhead. Traffic ^{generally} increased shortly after the alert and raid signals were sounded due to people starting to move to shelters, ^{or} to their homes, and civilian defense workers ^{to} going towards their posts, but ^{it} thinned out rather soon and ~~it was supposed to have~~ ceased by the time planes were overhead.

4. Guiding The Public To Shelters. Public shelters were all marked with

signs prepared by the city government. These signs were flat boards measuring around six inches by 14 inches and were hand-lettered "Public Shelter Capacity -- People", with black paint on the raw wood. The only markers to guide people at night were the occasional use of several daubs of white paint on each side of the entrance at door knob height, ~~to mark its location.~~ No one guided strangers to the shelters except watchmen of ~~these~~ public buildings opened at night, ^{who} generally remained near the entrance of the building to indicate the location of the shelter. No one was required to seek shelter and few actually did except at ~~these~~ times when there was a mass fear of raids. ~~At other times people stood in the streets to see the planes go by.~~

5. General Comments. The people of KYOTO were very lax in their air [—] defense discipline compared to the other cities studied to date. Alerts were frequent, particularly late in the war due to planes headed for other destinations, and when raids did not develop people became convinced that KYOTO, due to its cultural reputation, would not be bombed. Violations of blackout were frequent, people did not enter shelters and traffic frequently continued to move even though the raid alarm had sounded.

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CAMOUFLAGE

1. Introduction. Local regulations on camouflage (Giso) were first released on ¹⁹ August ~~19~~ 1941, ^{which} ~~and they~~ were reprints of ^{the} ~~those~~ pertinent sections of the national regulations released at ^{the same} ~~that~~ time by the Ministry of Home Affairs (~~Naimusho~~). As in OSAKA, these regulations were classified "secret" and were distributed only to chiefs of the local police, managers of factories, and owners of principal buildings. A copy of these regulations, ^{freely translated} ~~was secured and is attached as Reference Item T-1.~~ ^{are included in the Osaka Field Report as Exhibit 5} Since this was found to be ~~practically~~ a duplicate of the regulations issued in OSAKA and translated (freely) for that report, no additional translation was made. ~~For details refer to Exhibit 5 of the Osaka Field Report~~

2. Local Situation. Theoretically, the decision as to which buildings, factories or localities should be camouflaged was the responsibility of the Prefectural Governor. Actually, ^{his} ~~this~~ responsibility was ~~delegated~~ ^{delegated} and in KYOTO ~~it was delegated~~ to the ~~auxiliary~~ Police and Fire Section (Keiboka) and the technical help on camouflage was obtained by borrowing engineers from the ^{and} Building ~~Main-~~ ^{construction} ~~tenance and Inspection~~ Section (Kenchikuka) of the Prefectural Government. These engineers actually made the decision as to which factories, buildings and other points were to be camouflaged and their decisions were based solely on ~~this~~ ^{for} one pamphlet issued by the Ministry of Home Affairs and on their own engineering ~~training~~ "good common sense". None of these "experts" had ^{had} any special training, none had any information on camouflage tactics or technique worked out in Europe or elsewhere other than ^{what he} ~~that~~ picked up from an

occasional item or picture appearing in the newspapers. None had ever flown over the locality to study the city and the surrounding terrain or had ^{had} access to aerial photographs to make this study. The Ministry of Home Affairs had one camouflage expert who did fly over KYOTE once to study it from the air and on the basis of his flight suggested the darkening of one or two additional buildings. ~~The only other outside suggestions or requests received was a request by the military for information as to how the observatory on the top of the mountain a couple of miles east of KYOTO could be most successfully hidden. Their suggestion to paint the roof a dark green to blend it into the color of the surrounding forest and to plant trees and shrubs up close to the building to mask straight line edges and shadows was followed. (In view of the importance placed on this building it is suspected, and reported for investigation, that the building housed important military installations.)~~

3. Types of Camouflage. Only three types of camouflage were found in KYOTO and vicinity: (a) the use of paint to darken buildings and blend them into the background; (b) the use of nets to screen a possible target; and (c) the use of trees and shrubs to form a natural camouflage. Painting was the means most extensively used and there was a great variety of types of patterns used, ranging from huge solid blocks of one or two colors to checker-board and spiral or stripped patterns. There was only one use of nets and that was ~~their use~~ to hide the characteristic rectangular pattern of the filtration ponds at the ^{waterworks} ~~Water Works~~. Plantings of shrubs

were used as far as practical ^{file} at factories to help to break up the straight lines of the edges of the buildings and their shadows. The Ministry of Home Affairs' ³ publication did not mention possible use of artificial fogs or smoke to achieve a camouflage and such possibilities had never occurred to ^{local officials} them. ~~The local experts~~ ^{They} had conceived the idea of ~~the use of~~ ^{using} a light pattern a few miles down the valley to attempt to fake the location of the town but ^{it was} never carried ^{to the} ~~this beyond~~ ^{planning} ~~the dream~~ stage.

4. Local Topography and Features. KYOTO ^{was} ~~is~~ located on a flat valley floor, almost at the head of the valley, a few miles above the point where the Uji, Kamo and Katsura ^{Rivers} unite to form the Yodo ^{River}. It ^{was} ~~is~~ only a few miles north of a small lake and a few miles west of the end of Biwa Lake. It ^{was} ~~is~~ surrounded on the northeast and west by hills covered with verdant growth and the valley floor below KYOTO ^{was} ~~is~~ patterned with ~~the~~ typical rice paddies. A large race track and fair grounds just above the river junctions, the ^{Emperor's} palace and grounds occupying several blocks almost in the center of the city, the several shrines and the "Y" shaped railroad yards were all distinctive features marking KYOTO. No attempt was made to camouflage any of these ^{except} the race track where the grandstands were darkened but ^{characteristically} nothing was done to change the appearance of the oval track.

5. Factory Camouflage. Sixty out of approximately two hundred factories were camouflaged in varying degrees, mostly by painting in a patterned ^{effect} and with attempts made to

hide the straight lines of the edges of the buildings and building shadows by plantings of shrubs and trees. ~~These~~ plants located at some distance outside the city in an area where rice paddies might be expected had the paint applied in block patterns to imitate the geometric patterns of the rice paddies, while others within the city used the block pattern to imitate the ~~pattern~~^{appearance} of the surrounding slum area roof tops. Many factories located on the outskirts of the town used checkerboard and other types of patterns, some ~~quite contrasty~~^{vividly contrasting in a manner which} to achieve what the "experts" thought would be effective.

6. Other Camouflage. Outside of factories there was very little additional camouflage used except ~~the~~^{on} the water works, observatory and race track already mentioned. Only two of the fifteen larger office buildings were camouflaged ~~both by~~ Block patterns of dark green, dark brown and black to hide the whiteness of their ceramic tile finish^{were used}. No camouflaging was attempted on the three hospitals, fifty-five schools or eight ^{major} shrines within the city.

7. General Comments. Camouflage as worked out by the Ministry of Home Affairs was designed for the type of raids ~~the~~ Japanese expected, ~~if any~~, namely, the sporadic type ~~and~~^{is} typified by the Doolittle attack ~~with attacks centering on a few vital targets within the city~~. No attempt was made or contemplated to hide the city or any of the very distinctive landmarks mentioned above or ~~to~~^{to even} study the problem of camouflaging the city as a whole. They studied only the

the treatment of parts of it, individually, hoping to prevent those parts from being singled out for attack. It was apparent that no one in authority had visualized mass attacks over JAPAN, despite the English and German experience, until shortly before they actually happened, and by then it was too late. Local authorities recognized the inadequacy of their camouflage protection after hearing about the size and scope of the attacks on TOKYO in the fall of 1944, and felt it acutely after the raids on OSAKA and KOBE in the spring of 1945, but ~~due~~^{owing} to shortages of manpower and materials, plus the magnitude of the job of achieving real camouflage for the entire town, ~~even if it had been possible,~~^{they} were unable to do anything. ~~Contrasted to this,~~^{with} ~~the little man in the street feeling that what camouflage they had might be at least partially responsible for the absence of bombing, put more faith in it and wanted to camouflage his home or his business. Advice and help was given as it was found to be a morale booster and the advice was of a type to use the minimum of their very scarce materials.~~

Written

SHELTERS

1. Introduction. The purpose of this report is to describe the shelter policy handed down by the Ministry of Home Affairs, to explain the manner in which KYOTO followed ^{the} ~~this~~ policy, to emphasize any deviations from ^{it} ~~this policy~~, and to depict the ^{several} various types of shelters constructed for family and public use in KYOTO. The channel of directives and authority followed the same lines as in OSAKA and KOBE. The general trend was from the uncovered trench type to the covered trench type and then to the tunnel type.

2. Development.

a. The responsibility for planning the shelter program in KYOTO was vested in the planning section of the prefectural government, while the enforcement of ^{was} ~~this~~ program, vested in the prefectural police department.

b. City officials concerned with the construction of shelters claimed that shelter space was provided for every individual in KYOTO. ^{got} ~~This~~ conclusion was based on a count of family, public, and factory or business concerns' shelters.

c. With the exception of the six shelters constructed by the city of KYOTO in 1941, very little construction of ~~shelters~~ was accomplished until late 1943 and the beginning of 1944 when an effort was made to ^{accelerate} ~~increase~~ the construction of the covered trench and tunnel type shelters. This ^{hardiness} ~~lateness~~ in the construction program was due mainly to the general belief that KYOTO would not undergo any heavy air attack ^{and that} ~~thus precluding~~ the need for a great number of shelters. ^{therefore,} ~~was~~ ^{negligible.}

d. The financial plan for the construction of public shelters was for the city to construct and ~~completely~~ pay for the shelters and then be reimbursed for two-thirds of the cost by the National Government, but up to ^{November, 1945} ~~the present time~~ the National Govern-
ment has not paid any part of the cost of construction.

3. Types of Shelters.

a. Home. The same type of home shelters as described in the OSAKA and KOBE field reports ~~were~~ ^{was} generally constructed in KYOTO. Each family had ~~constructed~~ ^{built} a shelter under the home or in a nearby open space.

b. Semi-Public Shelters. Basements of the more heavily constructed buildings were used as shelters for employees and the general public during daytime raids. Officials stated that they were not used at night as too few people were away from their homes and sufficient shelter space was available in public shelters.

c. Public.

(1) Uncovered Trench. This type of shelter was about 12 feet long, five to six feet deep, and three to four feet wide. They were constructed along the pavements, in the areas which had been made into fire breaks, and in any other available open spaces. Most of this type were reinforced with wooden beams. The capacity was from 10 to 15 persons and there were approximately 11,000 ~~of this type~~ in KYOTO. The shelter planning section had drawn up plans to place roof coverings on these shelters but construction was never carried out.

(2) Covered Trench. These were the same general type of

construction and capacity as described in the OSAKA and KOBE field reports. The city had ^{built} ~~constructed~~ 6,600 of these shelters.

(3) Stations of Subway Railroad. The stations of the subway railroad were not permitted to be used as shelters because the depth covering over the subway structure was not considered to afford ample protection inasmuch as it was not heavy reinforced.

(4) Underground Reinforced Concrete Pipe. This shelter was constructed of reinforced concrete pipe four inches thick with a diameter of five feet ^{It was} placed on a concrete base of four inches and was buried so that the top of the pipe was at least five feet below the surface of the ground. In addition, two feet of earth ^{was} placed on top of ~~this~~, making a total roof coverage of seven feet of earth. Four sections of pipe were joined to give the shelter an overall length of approximately 50 feet. A wooden floor was ^{installed} ~~placed in the~~ pipe and benches ^{were} placed along each side which provided seating capacity for 50 to 60 persons. Entrance was provided by a concrete stairway leading from the surface of the ground, all of which was enclosed by a concrete structure eight inches thick. At the bottom of the stairway was an arrangement of double wooden doors, six inches thick and heavily reinforced which led

into the pipe section of the shelter. At the other end of the shelter was a vertical escape shaft, four feet by four feet, of 12 inch concrete walls, equipped with an escape ladder. This vertical escape shaft also served as a means of ventilation. The shelter was equipped with electric lights and sanitary facilities. The City of KYOTO financed and constructed six of ~~this~~ ^{these} ~~type~~ ^{they} shelter^s in 1941. ~~These shelters~~ afforded excellent protection against incendiary bombs. (See ~~Exhibit R7~~ ^{page} and Reference Item ~~23~~ ^{No. 23}, Plans and Specifications of Reinforced Concrete Pipe Shelter.)

- (5) Tunnel. In late 1944 and early 1945, two tunnel type shelters were constructed by the prefecture for KYOTO City in two hills located within the boundaries of the city. These tunnels were approximately eight feet wide, six and a half feet high, with the length varying according to the location. The main tunnels were excavated from one side of the hill to the other with branch tunnels constructed at right angles and so extended as to provide entrances on all sides of the hills. In addition, other branches were built off the main and branch tunnels to a distance of about 25 feet. Heavy timbers reinforced the ~~entire~~ ^{entire} structures,

the capacity of each ~~structure~~^{being} was about 2000 persons. The roof coverage of each was from 60 to 75 feet of earth. The shelters had electric lights but were not provided with seating or sanitary facilities. ~~Exhibit R-2~~^{Page} shows an entrance to this type shelter. ~~(Reference~~^{See} Item ~~no 24~~^{no 24} entitled, Specifications of Tunnel Type Air Raid Shelter).

- (6) Special Shelters. The prefectural government constructed shelters on the grounds occupied by its buildings to provide protection only for prefectural officials, while the clerical workers were compelled to seek protection in nearby public shelters of the covered trench type. The most common of these shelters ~~were~~^{were} rectangular in shape, constructed of concrete approximately eight inches thick, placed below the ground surface and covered with three to four feet of earth. The inside dimensions were 15 feet long, 8 feet wide, and 6 feet high, with a capacity of about 35 persons. The shelter was equipped with electric lights and two small ventilating shafts. However, it had only one entrance and no seating or sanitary facilities. (See ~~Exhibit R-3~~^{Page}).

4. Comments.

- a. The outstanding fact, as in OSAKA and KOBE, was the

lateness in starting to construct sufficient and adequate shelter protection for the general public. This delay was again due to the propaganda of the national government that air attacks would never be made upon the Japanese homeland. Even after air raids had been made upon ^{the} Kyushu Islands, no concentrated efforts were made to construct shelters as, in addition to the reason stated above, high civilian defense officials firmly believed that KYOTO would not be bombed because of its historical and cultural background.

b. Statements obtained from investigations gave conclusive evidence that, with the exception of the six reinforced concrete pipe and the two tunnel shelters, the shelters afforded no protection against high explosive bombs and very little or no protection against the heavier incendiary bombs.

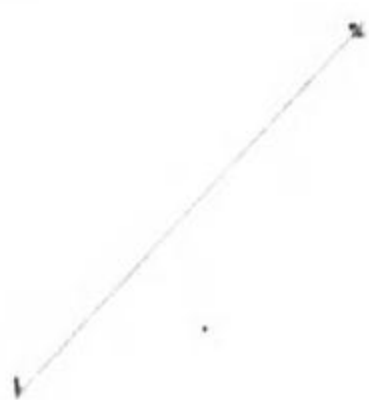
~~Exhibit R-1~~
Insert in Sept

CONCRETE PIPE BURIED IN ~~THE~~ OPEN LOT.
BUILT FOR THE PUBLIC BY Kyōto CITY.

caps

~~EXHIBIT. B-2~~
Front in West

TUNNEL TYPE PUBLIC SHELTER DUG INTO THE SIDE OF
A MOUNTAIN. BUILT BY KYOTO PREFECTURE.
(Kyoto City.)
— escape



~~Exhibit P-3~~

Zusatz in Text

CONCRETE BOX TYPE SHELTER DUC IN THE
FRONT YARD OF THE ~~GOVERNMENT~~ ^{prefecture} ~~OFFICIAL~~
BUILDING, BUILT FOR ~~THE~~ ~~BY~~ ~~THE~~ OFFICIALS ✓
(KYOTO CITY.)

Walter

GAS PROTECTION SERVICE

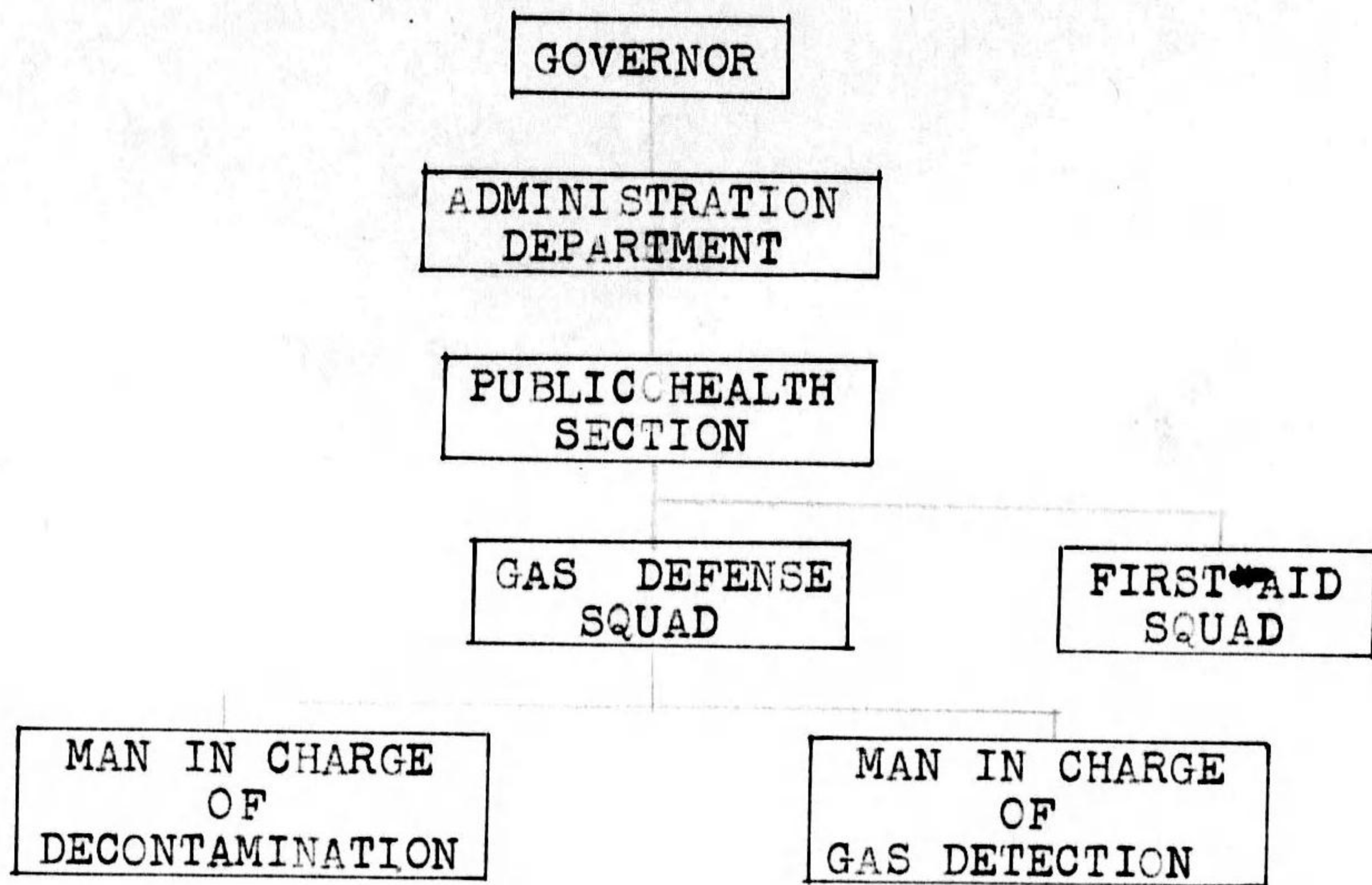
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1. Introduction. ~~Mr. Koze Imamura, a pharmacist, had been~~
~~in charge of the gas defense activities since June 1944.~~ Prepara-
tions ^{in KYOTO} ~~began~~ ^{began} for gas defense in 1934, three years after the beg-
inning of the "Manchurian Incident". ~~Realizing that gas was used~~
~~in the First World War, the Japanese were apprehensive of its use~~
~~by the Chinese.~~ The entrance of the UNITED STATES and BRITAIN
~~into the war did not create any additional fear of gas attacks.~~
After several years of war, ^{with the Allied forces} when there was no indication that the
use of gas was intended, interest waned to such an extent that
even paper plans for defense were not worked out in any compre-
hensive detail. In fact, ~~one gains~~ ^{was gained} the impression that no
defensive measures of any kind were seriously considered up to
the time the outer perimeter of Japanese defenses was cracked at
SAIPAN. At KYOTO even the devastating raids upon OSAKA, KOBE and
TOKYO did not seem to stir the authorities to a broad scale
defensive program. Although these raids inspired some interest
in protection against ^{incendiary} ~~fire~~ bombs, the interest in protection
against gas was overshadowed by the more imminent menace..

2. Organization and Personnel. Plans for gas defense were
vested in the Sanitation Section which was originally in the
Police Department but ^{was} later transferred to the Health Department.
(See ~~Exhibit No. S-1~~ ^{page}). It was the plan, however, for ^{the leader of} ~~Mr. Imamura~~
^{gas-defense activities} to work in close liaison with the Police Department. The entire
gas defense organization consisted of the administrative director

Exhibit ST-
Insert in text.

GAS DEFENSE ORGANIZATION
FOR
KYOTO PREFECTURE



Much confusion developed from the fact that the sanitation section was transferred from the police department to the health department but the police still continued to exercise some measure of control, either officially or unofficially, and the gas defense service consequently received orders from both sources.

Insert

and two assistants, all of whom were pharmacists. One assistant was in charge of a section on gas detection, and the other of a section on gas decontamination. The organization had no branches below the prefectural level, and consequently no personnel either actual or contemplated. In case of a gas attack, it appears that any definitive measures would have been carried out by the ~~Auxiliary~~ ^{Police} ~~Fire~~ ^{and} ~~Police~~ ^{Fire} Unit^s (Keibodan) in the district police offices. ~~Much confusion developed from the fact that the Sanitation Section was transferred out of the Police Department into the Health Department. Orders came from prefectural government to both the Health Department and Police Department, so that there was a duplication of authority.~~ ^{because} ^{Police} ^{orders} ^{came} ^{from} ^{pre-} ^{fectoral} ^{government} ^{to} ^{both} ^{the} ^{Health} ^{Department} ^{and} ^{Police} ^{Department,} ^{and} ^{consequently} ^{so} ^{that} ^{there} ^{was} ^a ^{duplication} ^{of} ^{authority.} Insert

3. Equipment and Training. Except for gas masks, the report on this subject is almost wholly negative. It ^{was} ~~is~~ said that there ^{was} some protective clothing but ^{that it} ~~this~~ was used for demonstration only by members of ~~gas defense~~ ^{first-aid} squads within the ~~Auxiliary~~ ^{Police} ~~Fire~~ ^{and} ~~Police~~ ^{Fire} Unit^s. There were no gas detection kits and no decontamination equipment. It was stated that 60% of the population provided themselves at their own expense with gas masks. The gas defense section, however, gave no instructions to the public in the proper use of gas masks. Such instructions as were given came from the district J police headquarters, ~~at~~ though the informant was not clear as to how this was done. The result was that a large portion of those who owned gas masks ~~did not~~ ^{not} know how to use them. ^{So that} ~~None~~ ^{None} were available for children, ^{Red} In case of attack they would have ^{to} rely upon damp towels over the face.

4. Comment. After a ^{strenuous} ~~heroic~~ effort to elicit cogent information descriptive of plans at least in schematic form, the end result was next to nothing. The informant ultimately admitted that no real preparations were made for protection in case of a gas attack.

Done written

POST-RAID CLEARANCE

1. Introduction. The general pattern of prefectural and city planning for clearing streets and highways, repairing roads and bridges, and for executing restoration measures in KYOTO follows the broad outline described for OSAKA and KOBE. Minor differences in emphasis reflecting the attitudes of KYOTO officials will be pointed out below, together with brief accounts of the ~~air raid protection~~ clearance and repair plans made there in order that basic uniformity of preparations in the three localities will be made evident. At the end of the discussion, there will follow a commentary on the estimated effectiveness of the plans had KYOTO been obliged to put them into full operation.

2. Post-Raid Clearance.

a. Preparation for Mass Air Raids.

(1) Administrative Organization. In the prefecture, the entire public works organization was included in the table of organization for air defense, with no change ^{except in} ~~beyond that of~~ the name of the public work department (DOBOKUKA); under the air-defense set-up, it was called Department of Construction with the head of the department made a member of the air-defense staff. The sections thereunder, operations (KANRIKA), roads, (DOROKA), rivers and port (KAKOKA), embankment (SABOKA) and city planning (TOSHI KEIKAKUKA) remained the same in operations and personnel. ^{In the city the} ~~The city~~ public works office ^{was placed on the city's air-defense table of organization but it} made no changes of any kind, ~~except to be placed~~ on the city's air defense table of organization. The

city public works bureau (SHISTSU KYOKU) had the following sections: general affairs (SHOMUKA), civil works (SHISETSUKA), operations (GYOMUKA), and city water (JYOGESUIKA). In the air-defense arrangement of prefectural offices, the public works operations were subject to control by the police when necessity demanded, and the city forces automatically became subject to the same authority at the will of the prefecturally controlled police. The prefecture anticipated no need for emergency road clearance in the 17 districts outside KYOTO City and MAIZURU ⁵⁻¹¹⁻⁴⁰ and held these cities fully responsible for clearing their own streets as a result of air raids.

(2) The Emergency Public Works Construction Group (OKYU DOBOKU KOSAKU DAN). The prefecture public works department required each of its 17 branch offices to organize the emergency public works construction group in January, 1944. It informed the local heads of the group that they were to take orders from their respective local police authorities, and transmitted the plan ^{which provided for organization} of ~~of~~ the workers into brigades, battalions and companies. There was no follow-through by the prefecture, however, either on the organization recommended or the "training" suggested by the Ministry of Home Affairs ~~for these workers~~. There were no "maneuvers" held and no reports made beyond those of normal peacetime operations. The city ^{held} ~~did hold~~

maneuvers once a year, but considered them of little value, and regarded ~~the~~ training ~~as~~ a matter of going through motions to conform with instructions from the Ministry of Home Affairs. Neither the prefecture ^{nor} the city added any new personnel to the road clearance forces with the one exception of civil engineering students from ~~the~~ RITSUMEIKAN University, who organized to assist in clearance and repair emergencies. It was stated, however, that the motive for this student help was that of providing laboratory experience for the students rather than ~~the~~ assistance to harrassed road crews. The city provided for one company of the emergency public works construction group, 25-30 men, in each of the seven wards. There were no more than ²⁰ actually listed for each ward and of these some were only names, ^{of persons which} ~~for~~ they had been kept on the rolls even after ^{the individuals} ~~they~~ had been conscripted by the ~~Army~~. The city officials stated that in August, 1945, had there been an emergency, hardly ^{to} 5-10 men ^{in a ward} could have been called upon because "the shortage of food made it impossible for the men to work hard". In addition, it was found that road laborers were working one week out of four for the city, and the rest of the time for factories ^{through} private arrangements with the ward road boss. Such men were discharged when this fact was discovered by the city authorities.

(3.) Equipment. The prefecture owned 15 rollers in January 1943

of which ~~only six were usable~~ ^{nine were unusable} because of lack of spare parts ^{for the trucks} and ^{the six still in service} these were taken by the army for airfield construction. The army likewise borrowed the city's pneumatic drills, as well as its six rollers ~~though the latter were recovered at the end of the war, all in unusable condition.~~ The remaining equipment consisted of hand tools, of which there was a sufficient supply, ^{greater in fact} than the equipment requirements recommended by the Ministry of Home Affairs as the minimum necessary for road clearance and repair.

(4) Mutual Aid. That mutual aid was not considered ~~an~~ important ^{part of preparations for} mass air raids ^{was} indicated by the ^{mutual} disregard ^{on the part of} by the public works department ^{of the prefecture and city} of the prefecture of the training maneuvers suggested by the Ministry of Home Affairs. ~~The city carried out the suggested maneuvers, but they were described as having been done in a perfunctory manner.~~ It was the feeling of the city officials that each ^{ward} section of the city ^{was} ~~would be~~ fully capable of handling its ^{own} street clearance problems, and that, ^{if}, by any chance, ^{additional aid were needed in a given} ^{ward} section, help could be summoned from another ^{ward} section without making any more elaborate arrangements than those already in effect for peacetime operation. ~~It was further stated that, in the event of a major disaster from a mass air raid, the devastation would be so great as to make clearance of the streets futile and unnecessary.~~ ^{likewise} In their planning for street clearance, as in street repair, the city officials did not contemplate calling upon the prefecture for help.

(5) Role of the police. The general rule regarding clearance throughout the city and the prefecture was that, if a job of clearance were a small one, the local police authorities ~~should~~^{would} handle it with help immediately at hand, ^{i.e.,} auxiliary police and fire units (KEIBODAN) or neighborhood group (TONARI GUMI) ~~people~~^{personnel}. If the problem were serious, the emergency public works construction group was to be called out ^{through} a call from the local police station to the ^{prefectural} police headquarters ~~in the prefectural office and by order from there~~^{which issued the necessary orders} to the public works officials.

b. Operations. In none of the minor bombing incidents was there any post-raid emergency clearance necessary beyond ~~unofficially~~^{the} ~~reported~~^{routine} activity of the local auxiliary police and fire units.

3. Emergency Repair of Roads and Bridges. ~~In organization, personnel, training, equipment and police authority over the public works air-raid protection effort of both prefecture and city there~~^{The prefectural and city repair set-up was the same as that for clearance in organization, personnel, training,} ~~was the same set up for repairs as for clearance.~~ Materials were gathered by the prefecture for emergency purposes, but ~~not~~^{were} distributed to strategic points as in the case of KOBE. The city made no effort along this line whatsoever on the grounds that there ~~was~~^{were} no materials to be gathered ^{and dispatched}. As in OSAKA and KOBE, the police organized and were authorized to call out the emergency repair organization (KINKU KOSAKA TAI) for road or bridge repair. It was felt that auxiliary police and fire units were quite capable of making temporary repairs to roads since "no training is needed for temporary restoration". No bridges were hit, either in the city or outside of it, no roads were damaged

in the areas outside of the city, and ~~these~~ city streets receiving slight damage were repaired by the regular city road crews without more than the ordinary amount of delay.

4. Emergency Repair of Other Installations. The prefecture held itself responsible for repairs to roads and bridges ^{outside of the cities of KYOTO and MAIZURU} ~~outside of the city.~~ ~~Repairs to city roads and bridges as well as to~~ ~~there is no story to tell about any repairs planning or operations~~ ~~outside of the city, city.~~ However, the municipal water system and street car system were city responsibilities. Each of these public utilities set up its own emergency public works construction group, organized along the same lines as that for roads and bridges. No new personnel ^{was} ~~were~~ added, and no special training was given to the regular maintenance men. The only incident requiring the emergency services of either of these groups was that of a bomb hit on the UMAMACHI section of the city. The story as told by the chief of the city water works section follows: "When the firemen noticed a drop in their pressure as they were fighting a fire in the area, it was thought that a water main might have been hit, but since it was at night, and there were no lights, it was difficult to see. Someone was sent to investigate. There was a river nearby and the sound of water flowing from a broken pipe was mistaken for the sound of the river. The water from the ruptured main flowed all night, but it was turned off the next morning and the damage was repaired by noon". This was the only hit on the water system, ^{and} there were no hits on street car installations. No plans were made for the repair of buildings necessary to the public welfare. It was thought that in the absence of repair materials, it would be best to plan for use of ~~the~~ buildings that escaped damage.

5. Demolition. Demolition was left to the auxiliary police and fire units and, under police supervision, to the emergency repair organization. No training was provided for anticipated emergency demolition, but it was thought that the practice gained by the ~~these~~ auxiliary police and fire men who had helped in the demolishing of houses for the fire-breaks operations would be adequate. Since the structures in KYOTO were mainly of wood, the planning contemplated little need for demolition. No thought was given to the use of dynamite because it was unobtainable.

6. Salvage. There was no city official ~~concerned~~ ^{agency} for the salvaging of materials from buildings destroyed or damaged by air attack, but there was a section for collection of usable materials (SHIGEN KAISHU) in the prefectural department of commerce, ~~whose~~ ^{of which} the responsibility included post-raid salvage. There was no post-raid salvage accomplished after the three small raids on KYOTO city, but the section operated a program of scrap collection prior ~~to them~~ ^{thereto}. In October, 1942, a metals collecting control company (KINZOKU KAISHU TOSEI KAISHA) was set up under the authority of the section, with about 200 laborers and 70 office workers. Up to March, 1945, some 5,000 tons of metal ~~were~~ ^{had been} collected (temple bells, statues, cooking utensils, stoves, bridge railings, radiators) and sent to war industries. ~~From September 1944 and March 1945, the section was~~
~~closed.~~ The law respecting scrap remaining unclaimed on burned property, quoted in the KOBE report, would have been put in ^{operation} ~~force~~ had there been heavy raids on KYOTO, but there was nothing salvageable from the light raids on the city.

7. Comments.

a. The attitude toward air raid precautions as observed in KYOTO two and one half months after the end of hostilities among officials charged with the responsibility of restoring roads and bridges as well as public utilities, ~~gives~~^{gave} the impression, at first glance, of indifference to the calamitous possibilities of mass air attack that ~~became~~^{had become} actualities incited hardly ten minutes away by ~~air~~^{air}. Part of this attitude may ~~be~~^{have been} a post-war development springing from the fact that KYOTO escaped serious bombing and may not ~~accurately~~^{have} reflect the feelings ~~that~~^{of} the officials ~~had~~ while the war was still in progress. One city official, when asked why no effort was made to obtain extra personnel or equipment for street clearance and repair emergencies, stated that "we had no need of them here". However, the ~~type~~^{manner} of projecting present knowledge backwards to explain previous inadequacies cannot be taken at its face value, and the lack of preparation, ~~fully within the power of public works to have made~~, must be further explained. It is perfectly true that road building and bridge repairing equipment was scarce, and that conscription made labor hard to find, but far more could have been done by way of training

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It is probable that, after viewing the destruction wrought in neighboring cities, officials felt that further preparations were useless, for a spirit of resignation was observed in all of the officials interviewed. Such an attitude may have been furthered by the conviction, quite prevalent in KYOTO, that the city would be spared. In that connection it was stated that persons who had formerly headed for shelters began to stand in the streets to watch the passing parade of B-29's.

~~OSAKA and KOBE as to what mass air raids do to a Japanese city, and since their preparations were essentially the same as those in the cities mentioned, the chances were small that their fate would be any easier. To be sure, the fire raids did not wreak the damage to roads and bridges that high explosive raids would have caused, but there was no assurance that high explosives would not be mixed in with the incendiaries on their city if attacked by a major force of aircraft. It is more probable that the third and fourth reasons ^{were} ~~are~~ the true ones, for there was noticed a spirit of resignation among all of the officials interviewed. One official stated that "there was nothing to do but to pray". The passage of several months of fire-raids on Japan without harm to KYOTO probably did give rise to private opinion that the city would be spared, and it was stated that persons who had earlier headed for shelters began to stand in the streets to watch the passing ~~parades of B-29's,~~ ^{on the other hand,} ~~but~~ the rule that members of the emergency public works construction groups, with the few trucks they had, should assemble at ward headquarters upon the sounding of the air-raid warning was never relaxed, and it was stated that the members of the groups always responded immediately to the calls.~~

b. Both in the city and in the prefectural government, however, there was a marked depreciation of the air-raid precautionary measures advocated by the air defense general headquarters of the Ministry of Home Affairs in TOKYO. The city officials went out of their way to make it plain that the city operated "independently" of advice from TOKYO, and took its injunctions as "^suggestions and not orders". The public works officials of the prefecture said that the national government was of no help to them. They sent an observer to

watch practice maneuvers of the emergency public works construction group in OSAKA prefecture, but did not think them sufficiently worthwhile to repeat the performance with the groups in KYOTO prefecture. The air-defense authorities planned for auxiliary police and fire units to take care of immediate post-raid clearance and repairs, but even elementary information required to effect these, available from the public works specialists, ^{were} were never transmitted. Officially, the policy seems to have been, ~~"Sufficient unto the day is the evil thereof"~~

c. On 9-10 October 1945, a flood damaged several bridges in the vicinity of KYOTO, and in an effort to determine whether the prefectural repair crews had gained anything from their wartime alert, the public works officials were questioned on this point. They said that there was no perceptible difference in efficiency than as though the war had not occurred, and as though the emergency public works construction group had not been organized at all. The net result of the wartime planning centering around this group in the three cities studied seems to boil down to three results: (1) the giving of a new name to public works personnel; (2) the establishing of possibilities for mutual aid (though only half-heartedly carried out in KYOTO planning); and (3) the extension of police authority over the groups, ~~such that the latter could be called out on police demand.~~ There was nothing to indicate that either the city or prefecture had made preparations that would have rendered the effect of a mass raid on KYOTO any less destructive than those inflicted upon OSAKA or KOBE.

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RESCUE

1. Introduction. The purpose of this report is to present a study of the organization authorized and formed to carry out rescue services, the training procedures employed, and the methods of rescue technique advocated in KYOTO. The same program of development of the rescue service occurred in KYOTO as in both OSAKA and KOBE, with the date of the establishment of the guard rescue unit (Keibitai) definitely established as 1 May 1944.

^{caps} Guard Rescue Unit (Keibitai)^{caps}

2. Organization. The directive which authorized the formation of this unit afforded the ^prefectural governments considerable latitude in ~~the~~ ^{its} organization ~~of this unit~~. Since the ^city of KYOTO was the only large city in the ^prefecture, the officials decided that one battalion would be sufficient to provide rescue services. The battalion had two companies, each company was divided into two platoons, with each platoon composed of three squads (See Exhibit #1). The unit was operated entirely from the prefectural level and its headquarters was established in the ^prefectural ~~Building~~. The only other city in KYOTO ^prefecture was MAIZURU, a naval base on the northern coast, where all rescue services were performed by naval personnel.

3. Personnel. The members of the unit were recruited mainly from applicants between the ages of 18 to 20 years with a few applicants accepted up to 25 years. The emphasis upon the low age was due to the military draft law which took the males from 20 years of age. In contrast to OSAKA and KOBE, no educational qualification was required of an applicant.

4. Table of Organization. Each squad was composed of one leader and ten men, each platoon had one leader, one orderly, and three squads; each company had two leaders, two orderlies and two platoons; and the battalion had two leaders, one orderly, and *an* orderly performed liaison and messenger service along with any other duties assigned to him by his commanding officer.

5. Training. Each selected applicant was sent to school for three months where he received training in rescue technique and minor police duties concerned with the operation of the police boxes scattered around the city. At the end of ^{at} this period, on the basis of their records, 30 men were selected to attend for 10 days a series of lectures and practical demonstrations on rescue operations at an engineering school (Kohetai) conducted in KYOTO by Army personnel. Upon the completion of this course of instruction, these men returned to their unit and trained all other members of ^{the} their units. Each company was on duty every other day and on the night of that duty day was billeted in a dormitory at the headquarters. Each duty day was devoted to continued training in rescue operations, since this unit, after the initial three-months training period, was assigned no duties except those directly concerned with rescue service. Some practical training was secured by assisting in demolishing houses to build firebreaks and in the construction of shelters. This complete training program was the responsibility of the leader of the unit.

6. Operational Control and Procedure. As soon as an air-raid alert was sounded, the entire battalion assembled at the head-

quarters from where its movements were directed from the control center. When an incident occurred which required the guard rescue unit, it was planned to relay the information to a police box, then to a police station, then to the control center where the decision was made as to disposition of the guard rescue unit. All other procedures and controls were carried out as described in the OSAKA and KOBE Field Reports.

7. Mutual Aid. On 13/14 March 1945, 60 men of the unit were dispatched to OSAKA City to aid in rescue operations. All requests for such mutual aid had to ~~channel~~^{go} through the ~~chiefs of police departments~~^{police chiefs} in each prefecture.

Guard Arm (KEIBIBU) of the Auxiliary
Police and Fire Unit (KEIBODAN).

8. Organization. Rescue service in this unit was assigned to the guard arm. (For a detailed description of the Auxiliary Police and Fire Unit see that section of this report). The lack of personnel precluded any specialization of the various responsibilities charged to ^{members of} this arm ~~among its members~~.

9. Personnel. The members of the guard arm were arbitrarily selected and assigned by the leader of the auxiliary police and fire unit.

10. Table of Organization. The guard arm was composed of one leader and 19 men, and ^{with} 140 auxiliary police and fire units in KYOTO, there were 2,800 members available, if needed, for rescue service.

11. Training. The leader of the guard arm usually received his training in schools conducted at police stations, but in a few instances, he was trained by the leader of the auxiliary police and fire unit. It was then his duty to instruct the members of his arm.

12. Operational Control and Procedure. The method of maintaining operational control of the auxiliary police and fire unit in KYOTO was identical to the procedures described in the OSAKA Field Report.

Features Common to Both Organizations.

13. Location of Casualties. The same methods and procedures for locating trapped victims as depicted in the OSAKA and KOBE Field Reports were carried out in KYOTO. In addition, the statement was made that in the very few instances in which the guard rescue unit performed actual services, the leader requested all persons in the immediate vicinity to be quiet so that the groans of trapped victims could be heard ^{in order to determine} ~~and thus facilitate~~ their location.

14. Rescue Technique. In KYOTO, as in OSAKA and KOBE, the only method used for extricating trapped victims was the debris clearance method.

15. Equipment. The identical, simple and crude equipment as described in the OSAKA and KOBE Field Reports was standard rescue equipment in KYOTO. In the early part of the war, the guard rescue unit had only two trucks, each capable of transporting 16 persons, so to alleviate this deficiency an agreement was made with the

trucking association to provide transport^{ation}, but the poor mechanical condition and lack of replacement parts for the trucks compelled the unit to depend principally upon bicycles and their own feet.

General Comments

16. The guard rescue unit and the auxiliary police and fire units did not perform rescue services in factories as this service was carried out by fire and first-aid units (Refer to Factory Air-Raid Protection Section of this report).

17. The complete lack of heavy rescue equipment and of transport^{ation} was observed in KYOTO, as it was in OSAKA and KOBE.

18. The guard rescue unit with a complement of 151 men, and the auxiliary police and fire units with approximately 2,800 men were in a good position to handle rescue operations as far as manpower was concerned, convey the impression that KYOTO was well fortified to handle any ~~type of rescue operation.~~ However, the lack of proper rescue equipment, transport^{ation}, and specialized training in rescue techniques greatly offset any advantage which might^{have} accrued from the large complement. Statements by KYOTO leaders in the rescue service readily confirmed what has already been stated in the OSAKA and KOBE Field Reports, namely, that the rescue services would never have been able to perform satisfactorily if KYOTO had been hit by such devastating raids as OSAKA and KOBE were compelled to undergo. The demolition of heavily constructed buildings by high explosives bombs would have created a situation far beyond the capabilities of the rescue services.

Done

FIRE SERVICES
FIRE PROTECTION *le + underline*

1. Introduction.

a. The information in this report of KYOTO City was obtained by interviews with officials of the fire and water departments; by checking fire ~~brigade~~ ^{department} records; ^{by} inspecting fire equipment and fire stations; by observing fire drills; and, in addition, by ~~an inspection~~ ^{inspecting} of several types of buildings. (For list of persons interrogated see Exhibit ~~number~~ ^F).

b. Size and Population of KYOTO City. KYOTO, one of JAPAN's historical cities, and the former seat of the government, covers ^{ed} 115.66 square miles (299.44 square kilometers), much of which ~~is~~ ^{was} mountainous and thinly populated. In 1940 the population was 1,089,726, but there was a gradual decline in number until ~~at~~ ^{in November, 1945} ~~present~~ ^{was} there ~~are~~ 832,364 persons in the city.

c. Industrial Area. The industrial areas were located on the south and west sides of the city, where silk spinning mills, pottery manufacturing, and dye making were the pre-war industries. The manufacturing of airplane parts and submarine batteries ~~were~~ ^{were} the principal war industries ^{added} to the city.

2. KYOTO Prefecture Fire ~~Brigade~~ ^{Department} Section.

a. Organization. KYOTO firemen, during the war, were under the police protection department of the prefectural police bureau. This department had in addition to the fire section, auxiliary police and fire unit (^{caps} Keibodan) training, planning (plant fire brigade) and personal affairs sections. ~~At the present~~ ^{At the time of this survey} ~~the~~ ^{was} the fire section ~~is~~ under the public welfare department of the prefectural police bureau. The public welfare department directed ^{ed}

also, the business section, the peace maintenance section and the personal affairs section. The fire department in KYOTO rated only a sub-section position of a principal department of the prefectural police bureau, whereas, ⁱⁿ TOKYO, OSAKA, and KOBE ~~are~~ ^{they were} on a departmental level, which raised their fire fighting organization from 1 fire section to 4 fire departments.

b. Maizuru Village Fire Departments. The only other full-time fire department in KYOTO Prefecture ^{was} located at **MAIZURU** Maizuru City (Naval Base), approximately 70 miles northwest of KYOTO City. In this secondary naval base city of 88,061, there ~~are~~ ^{were} 10 pumpers and one battalion district. (See Reference Item No. ~~11~~ ⁷). The fire department in **MAIZURU** City was also under the direction of the police protection department (now public welfare department) of the police bureau. Thirty-seven villages throughout the prefecture had volunteer fire departments which were not under the police bureau. The villages purchased their own gasoline pumping equipment (350 to 500 gpm), fire hose and appliances, and they operated very similar ^{ly} to volunteer fire departments in the ^{UNITED} ~~United~~ **STATES**. Before the war the prefectural office assisted these organizations once a year by detailing firemen from the KYOTO City department to conduct a week's fire-fighting training program in each village. In April, 1944, all motorized fire pumps were borrowed from the villages and assigned to KYOTO City fire stations and important war plants in the prefecture. ~~These pumpers have been recently returned to their respective villages.~~

c. Fire Department Personnel. In December, 1941, there were 700 regular firemen employed by **KYOTO** Prefecture and assigned to KYOTO City. In April, 1944, the chief of the fire department.

2

asked that the personnel be increased to 1,211, but only 329 men were added to the department. ^{In November, 1945,} ~~At present~~ ^{were} there ~~are~~ ^{employed} 821 firemen in all grades, ~~employed~~. (See Reference Item No. ~~H-25~~ ⁷¹).

d. Fire Department Recruits. Prior to the war, applicants for the fire service were required to be between 20 and 35 years of age. After war was declared the minimum age for firemen was reduced to 17 years and the maximum age increased to 40 years. The physical and educational requirements were practically the same as in ~~the~~ OSAKA Prefecture.

e. Working Conditions. The two platoon system (24 hours on duty and 24 hours off duty) was in effect for firemen. Their wages, advancement in rank, medical aid, and pension benefits were about the same as for firemen in OSAKA and HYOGO Prefectures, except ^{that} ~~the~~ salaries were slightly lower owing to cheaper living conditions in KYOTO.

3. Auxiliary ^{Police and Fire Units} Firemen (Keibodan) ^{caps}

a. Organization. The police department exercised overall supervision of the auxiliary police and fire units. The police department trained these units for guard duty and in fire-fighting technique. In actual operation the police and fire sections of the police department could call upon these units for reinforcing service. There were 140 ~~of these~~ units with 9,740 members. (For detailed organization see "Auxiliary Police and Fire ^{unit"} Report).

b. Duties. The duties of the auxiliary units ^{were to} assist ^{the} police and fire sections ^{were more or less uniform} ~~in much the same manner~~ throughout the Empire.

c. Training. KYOTO started training its auxiliary police and firemen along the standard lines, except that three or four firemen would attend the meeting place of the auxiliary unit once each

month and train them in fire-fighting technique. Each training period lasted from one to three hours, and consisted of lectures, demonstrations and drills. After the heavy air-raids on OSAKA and KOBE, officials from KYOTO visited these devastated areas and studied the effectiveness of fire-fighting. When the results of their studies became known most training of auxiliary groups stopped. It was their opinion that the type of fire-fighting training being given was of little value against American air-raids. The fire chief stated that after witnessing the devastating effect of air-raids on neighboring cities he had expected little, if any, assistance from the auxiliary units.

d. Equipment. Auxiliary police and fire units had, in addition to their usual small ^{hand pumps and} fire-fighting equipment, 208 hand-drawn, 120 gpm gasoline-driven pumps; nine 120 gpm pumps on small Datsun cars; and five 450 gpm motorized trucks.

e. Affiliates. Block associations (^{Seikai} Chokai) were equipped with hand pumps and received some training from the auxiliary firemen. The neighborhood groups in KYOTO were ~~not~~ ^{neither} equipped ^{nor} trained to fight fire as they were in OSAKA and KOBE. However, many families did ^{provide} ~~equip~~ themselves with small concrete ^{static} water tanks, from 40 to 70 gallons in size, for fire-fighting.

f. Private Fire Brigades. Many manufacturing plants maintained fire-fighting units which received some training from the fire department. Their equipment consisted of hand pumps; a 120 gpm gasoline-driven pump on a hand-drawn cart; a 450 gpm motorized pumper; all depending on the size of the plant and the attitude of the management. These units, because of their inadequate training program, would

not have been effective on large fires. The best private fire brigade observed was maintained by the Shinjo Gokurakuji Temple, which has 54 buildings within its area. All priests, gardeners, janitors, in fact, all employees, ~~are~~ ^{were} members of ~~the~~ ^{the} fire brigade. Special fire mains and hydrants ~~have~~ ^{had} been installed within the premises, with a 500 gpm ^{also} electric driven stationary pump, and a gasoline standby engine for use in the event of power failure. (See Reference Item No. ~~8~~ ⁸). Fire hose was ~~installed on~~ ^{provided at} all hydrants and an outside water curtain was installed on the exposed end of the main temple building. As there were no incendiary raids or fires in this area the effectiveness of the temple fire brigade could not be ascertained. The priest in charge of the temple stated ^{that} the fire protective measures ^{including} the fire brigade, the automatic alarm system, the water system, water storage, stand-pipes and extinguishers, were instituted eight years ago, after a building valued at a million dollars had burned. The fire-protective installations ^{provided} ~~are~~ little more than ^{preliminary fire-fighting} ~~emergency~~ ^{equipment}, as the fire mains ^{were} ~~are~~ small, not properly looped or valved, and the fire hose used ^{was} ~~is~~ 1-1/4 inch in size.

4. Fire Stations.

a. Number Prior to and During War. In December 1941 there were six battalion stations and 21 sub-stations. Only three sub-stations were added during the war, making a total of 24, and they ~~are~~ ^{were} all still in operation. (See Reference Item No. ~~8~~ ⁹ map of KYOTO fire stations). The city ^{was} ~~is~~ divided into six battalion districts, ~~with~~ ^{with} the Shimo district being the highest valued and most important from a fire-protection standpoint.

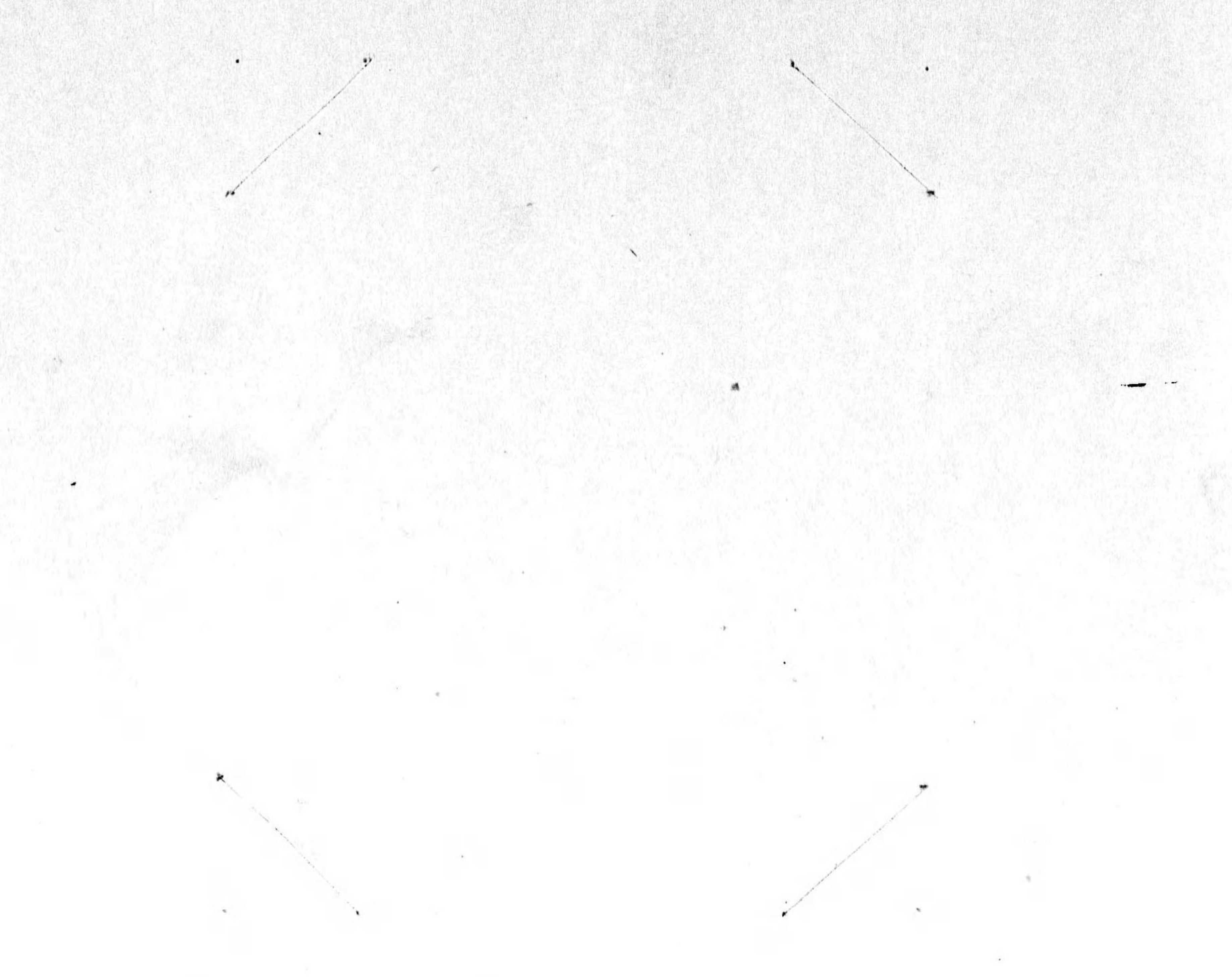
Aerial Truck ~~located at Shimobata~~

located at Shimo^{caps} battalion headquarters.

This 85-foot aerial truck ^{was} also equipped by
with a 500 gpm pump, but ^{had} no hose ~~nor~~ standard
ladder equipment. ~~is carried on this~~

~~apparatus.~~

(lighter print may be
made from neg.)



Kyoto's Aerial truck extended 65 of
its 85 feet with a $2\frac{1}{2}$ inch hose line
playing a stream through a $\frac{7}{8}$ inch nozzle tip
made secure to the fly ladder, ~~playing a~~
stream from the fly ladder

5. Fire Equipment.

a. Motorized Apparatus. In December 1941 there were 35 pumpers rated at 350 and 500 gpm. This number had been increased by May, 1945, to 80 pumpers, 54 of which were rated at 350 gpm and 26 at 500 gpm. (See Reference Item No. ~~10~~¹⁰ Make and Number of Fire Pumps). The increase of 45 pumpers during the war consisted of 12 new 500 gpm Nissan's in addition to 33 fire trucks appropriated from villages in the Prefecture. The borrowed apparatus had been returned and the city now ~~had~~^{has} 47 pumpers, 17 of which ~~are~~^{were} rated at 500 gpm and 30 at 350 gpm. (See Reference Item No. ~~H-7~~⁽¹⁰⁾). One-third of the equipment in service ~~is~~^{was} from five to 20 years old.

b. Types of Fire Apparatus. A Japanese-built 85-foot aerial ladder, mounted on a 1939 White truck, ~~is~~^{was} the only ladder equipment in the department, except the usual 18 to 20 foot extension ladders carried on pumpers. The aerial truck ~~is~~^{was} also equipped with a 500 gpm pump, but it had no hose, rescue gear, forcible entry tools, electric wire cutters, rope, extra ladders, heavy jacks, salvage covers, life net, shovels, saws, axes, or other small tools usually found on an average ladder truck in the United States. It ~~is~~^{was} a bare truck carrying only the aerial ladder and pump. (See pages ~~10~~^{illustrations of aerial truck demonstration} ~~Demonstrations of Aerial Truck~~). A small nozzle, 7/8 inch tip, ~~is~~^{was} secured to the top of the fly ladder and ~~can~~^{could} be used to throw a small stream into windows of the taller buildings. The fire chief stated he had never had an occasion to use the aerial ladder. The fire department ~~is~~^{was} not adequately trained in the use of ladder equipment, and could not be expected to get the most out of ~~it~~^{it} ~~equipment~~. Pumpers ~~are~~^{were} the only other type of fire apparatus in the

fire department and they ~~are~~^{were} equipped the same as those in OSAKA and KOBE.

c. Maintenance of Fire Apparatus. The fire apparatus observed in the KYOTO ~~fire department~~^{fire department} ~~is~~^{was} in much better mechanical condition than ~~is~~^{was} the equipment in OSAKA and KOBE. Electric starters ~~were~~^{were} used on all motorized equipment. Motor repair and overhaul jobs ~~were~~^{were} done by public garages which ~~are~~^{were} selected at the discretion of the battalion chiefs. Spare parts ~~are~~^{were} scarce and delays in repair jobs ~~are~~^{were} frequent. No stand-by apparatus ~~is~~^{was} available for temporary use while equipment ~~is~~^{was} out of service.

d. Fire Hose. The Japanese standard fire hose (2-1/2 inch unlined linen), equipped with a snap type coupling, ~~is~~^{was} used in KYOTO Prefecture. A total of 1,400 sections (65.5 feet per section) of fire hose, up to 10 years of age, ~~is~~^{was} in service. Each pumper ~~is~~^{was} supplied with a complete change of linen hose, in addition to 2-1/2 - inch and 4-inch hard suction (rubber) for hydrant connections and drafting.

6. Training of Firemen.


a. Training School. Prior to the war, firemen recruits were given two months training in the police and fire training school before being assigned to a fire station. They were given lectures on fire-fighting; practical drills in hose evolutions; pump operations; and military drill. During the war all training was reduced to one month and at ~~present~~^{the time of this report} ~~there is~~^{was} no training. The fire chief stated the war^{time} firemen were poorly trained and he expected to reopen the school for the purpose of giving these men a three to four-weeks refresher course.

b. Fire-Station Drills. Practical drills ^{were} ~~are~~ conducted in fire stations five times a month for a period of one to two hours each. A series of drill evolutions were observed at the Shimo ^{caps} Battalion Headquarters, the most important station in the city. The raising and lowering of an 85 foot aerial ladder; pumping water to the secured nozzle on the fly of the 85 foot aerial; climbing ropes to a height of 25 feet; sliding ropes and empty hose lines from an elevation of 25 feet; and finally, sliding through a 60-foot canvas fire escape chute attached to a watch tower were the series of drills performed. (See pages ~~11, 12, 13~~). Fire escape chutes ^{were} ~~are~~ not carried on fire apparatus but ^{were} ~~are~~ recommended by the ^{Ministry of Home Affairs} ~~home office~~ as equipment for all limit-height buildings. The fire chief stated that some department stores, office buildings, and hospitals ^{do} have fire escape chutes, but he ^{did} ~~does~~ not know where they ^{were} ~~are~~ kept nor who owns ^{ed} them.

7. Fire Alarm System.

a. Electric Alarms. In 1928, the city installed 70 fire alarm boxes (Matsumoto MM type) at ~~various~~ locations in the Shimo ^{caps} Battalion district. These boxes were connected to the nearest fire station and did not record in a central office. The electric alarm system ^{had} been out of service ^{for} more than five years, and the fire chief stated it ^{had} ~~was~~ never ^{been} dependable. Most of the street boxes ^{had} ~~have~~ had the electrical mechanism removed.

b. Telephone Alarms. The telephone number 119 ^{was} ~~is~~ used exclusively for reporting fires. The telephone exchanges in the ^{several} ~~various~~ districts ^{had} one trunk line to their nearest battalion headquarters station. The battalion station, in turn, ^{called} the nearest sub-station by direct phone. There ^{was} ~~is~~ no central fire



Shimo ^{caps} Battalion Headquarters.
at rear of station
Personnel lined up for inspection before
beginning a series of company drills.

Canvas fire escape chute,
attached to SHIMO station.
Used for drill purposes
only. It was not fire
department gear, but was
recommended by the Minis-
try of Home Affairs as
equipment for limit-height
buildings, particularly
department stores and
office buildings.

Canvas Fire Escape chute
being used for drill purposes by
firemen.

(Lighter print may
be made from neg.)

Canvas Fire Escape attached to ^{shrine} station
Watch tower and used for
drill purposes only. It is ~~not~~ fire department
gearment, but ~~was~~ recommended by the ^{Ministry} ~~Ministry~~ of Home Affairs
~~Home Office~~ as equipment for limit-
height buildings - particularly department
stores and office buildings.

alarm office for dispatching fire apparatus. Each battalion station function^{ed} in its district independent of other districts. In 1943, ~~Shimo Battalion District~~^{Shimo Battalion District} received a total of 56 fire alarms, which were recorded as follows:

- | | |
|--|----|
| (1) Fire Phone (119)) | 46 |
| (2) Ordinary Phone
(Business phone in station) | 2 |
| (3) Police Phone
(Relayed through police dept.) | 1 |
| (4) Watch towers | 5 |
| (5) Still alarms (man runs ^{near} to
fire station). | 2 |

c. Watch Towers. Located within the city ~~there are~~^{were} 16 watch towers, one at each battalion headquarters and one at each of 10 sub-stations. One of the towers ~~is~~^{was} 130 feet high, located on top of a building near a fire station, but the other towers ~~are~~^{were} steel frame, much like an oil derrick. Thirteen of the steel towers ~~are~~^{were} 40 feet in height and one ~~is~~^{was} 60 feet ~~high~~. A 24-hour fireman watch ~~is~~^{was} maintained on these towers and the watch changed every hour. Fires ~~are~~^{were} spotted and reported in the same manner as described in the OSAKA and KOBE ~~Target~~ Reports.

8. Water Systems.

a. Source of Water. Ninety per cent of KYOTO's water supply ~~is~~^{was} secured from two parallel canals, each nine miles long, which ~~bring~~^{brought} water direct from Biwa Lake to KYOTO City purification plants, while 10% of the water ~~is~~^{was} picked up from the Uji River within the city at the Momoyama and Shin Momoyama purification plants. Fifteen pumps ~~are~~^{were} used to lift water from the intakes to the five purification plants. There ~~is~~^{was} an abundant supply of water

flowing through these plants to small distribution reservoirs. There ~~are~~ ^{were} no large reservoirs in the system and the largest purification plant (KEAGE) ~~can~~ ^{could} be by-passed in an emergency. (See ~~Reference Item No. 6~~ ^{Reference Item No. 6} Exhibit No. 4-2).

b. Water Mains. The mains from the five purification plants ~~are~~ ^{were} 12[^]-inch to 38[^]-inch cast iron pipe ~~and~~ ^{which} feed a grid distribution system. The network of pipes ~~are~~ ^{were} four-inch to 16-inch in diameter, well equipped with isolation valves, and had few dead ends. (See Reference Item No. ~~H-6~~ ^{H-6} and No. ~~H-7~~ ^{H-7}). Water ~~is~~ ^{was} supplied to this network by gravity, with the exception of two small areas in the northwest part of the city where the high ground required two pumping plants, each with two electric ^{ally} driven pumps to maintain pressure. The city pressure ~~runs~~ ^{ran} from 20 pounds to 80 pounds on all mains. Only one fire main was broken in ~~the~~ ^{the} air-raids on KYOTO ¹⁵ a six-inch cast iron main received ^{ing} a direct high explosive hit, but it was repaired within 24 hours.

c. Hydrants. There ~~are~~ ^{were} 7,341 public and 1,744 private hydrants in the city. Fire hydrants in industrial plants ~~are~~ ^{were} privately owned. (See Reference Item No. ~~H-1~~ ^{H-1}). Both public and private hydrants ~~are~~ ^{were} on four-inch risers and ~~are~~ ^{were} located about 110 yards apart. (See Reference Item ~~H-5~~ ^{H-5}). Approximately 9,065 of the hydrants ~~are~~ ^{were} flush type, located below the sidewalk with a steel plate cover ~~on~~ ^{on} them. They ~~have~~ ^{had} single 2¹/₂-inch outlets with snap-on connections. The remaining 20 hydrants ~~are~~ ^{were} post type and also ~~have~~ ^{had} one 2¹/₂-inch snap-on hose connection. All hydrant hose connections in JAPAN ~~are~~ ^{were} standardized. The fire department ~~is~~ ^{was} responsible for testing hydrants, ~~but~~ ^{but} there ~~is~~ ^{was} no regular schedule for flushing them.

d. Wells. There ~~are~~^{were} 183 wells listed as a possible source of water for fire fighting (See Reference Item No. ~~H-1~~⁷). The wells ~~are~~^{were} about six feet in diameter with water approximately 15 feet below the surface. KYOTO ~~does~~^{did} not use any wells to augment its city water supply. (See Reference Item No. ~~H-3~~¹³).

e. Other Sources of Water. KYOTO had 979 open water tanks, one 77,000 gallon underground tank and 47 swimming pools which ~~may~~^{might} be used for emergency fire-fighting. (See page ~~4~~). The fire department had made a survey of the canals and three rivers that flow ~~through~~^{ed} the city to determine where drafting of water ~~can~~^{could} be done. At the suggestion of fire department officials, ~~sumps~~^{sumps} with covers were sunk in the bed of shallow canals to receive the suction. (See Page ~~4~~). Small 40 to 70-gallon concrete tanks and 300 gallon barrel-type tanks were on the streets throughout the city for use by neighborhood fire fighters. KYOTO's water supply ~~appears to be~~^{was} adequate for normal fire-fighting. that is correct

9. Operations Under Air-Raid Conditions.

a. Pre-Arranged Plan. The plan was for each battalion district to protect the important areas in its district and forget others. Transportation centers, public buildings, munitions factories, storage warehouses, war plants and temples were classed as important areas. No particular effort was made to increase the size or ^{to} improve the fire department until the beginning of the Japanese calander year ¹ April 1944. At this ^{ret} time 37 pumpers (350 gpm ^{to} 500 gpm), and 118 hand-drawn 120 gpm gasoline pumps were appropriated from villages in the prefecture and turned over to the KYOTO fire department and industrial plants ~~to~~^{to} further strengthen their fire-fighting facilities. Before April 1944 the people had been


Emergency

1 Underground water tank (77,000 gal.)
at Bukkoji Temple with three openings
for drafting - two on street and third
inside temple grounds gate as indicated
above.

in Kiyamachi district,
Sample ~~from the site~~ covered with
stone slab, one of several in shallow
excavations for fire-fighting use.

led to believe that the war was going well and air-raids over the homeland were impossible. As B-29 bombers began flying over KYOTO on their way to TOKYO, more time and effort ~~was put forth in~~ ^{were devoted to the} training of fire fighters, both regular and auxiliary. Fire officials made trips to TOKYO and other cities after their disastrous raids, in an effort to learn how to cope with the incendiary bomb. The fire chief stated that after ~~the~~ 14 March 1945 incendiary raid over OSAKA, a city 30 miles away, he was firmly convinced that there was no way to keep KYOTO from suffering a similar experience, if bombers came over in an equal number and started thousands of simultaneous fires ~~over the~~ ^{throughout} ~~the~~ city. There ~~is~~ ^{was} no doubt that KYOTO would have burned to the ground by one concentrated incendiary bombing. The building construction, crowded conditions, narrow streets, from 12 to 20 feet wide in residential and small business areas, were ideal conditions for a conflagration similar to TOKYO, OSAKA and KOBE. ^(See Page 20, 21, 22) The fire department was inadequately trained to cope with a large fire under normal conditions. In observing ^{the} a drill of a typical fire company, it was noted that five minutes ^{time} was taken in spotting the pumper, connecting the two 10-foot sections of suction hose, and laying out one section of 2 $\frac{1}{2}$ -inch linen hose, ^{and} then the engineer became excited and could ~~not~~ lift water to his pump. With some help from the inspection party he finally got water but not until after another 10 minutes.

b. Lone B-29 Raid, 16 January 1945. At 2320, on 16 January 1945, a lone B-29 flew over the city, headed in the general direction of TOKYO, and the city was not alerted. After a few minutes it circled back over KYOTO and dropped several high-explosive bombs and a few incendiaries. Twenty-nine houses were



Typical residential street in Kyoto. Looking
east along Bukkoji Dori^(street) in Yanagi Bunka district.

completely destroyed; 112 half destroyed; 175 partially damaged, and two burned by incendiaries. Thirty-four ~~people~~^{persons} were killed; 23 seriously wounded; 33 slightly wounded; and 750 ~~persons~~ were made homeless. A section of water main was destroyed; police and public telephone lines in the area were put out of commission, but all were restored the following day. (See Reference Item No. ~~7~~⁷ page 3). The fire department encountered no serious difficulty in controlling the small fires which burned two houses. ~~The fire chief stated that after this experience the city was always alerted when enemy planes flew over, even though there was only one.~~

c. B-29 Air Raid, 26 June 1945. At 2141, on 26 June 1945, B-29's dropped high explosives in ^{the} KYOTO area, which destroyed 54 houses and ~~partially~~^{partially} destroyed 99 others. Forty people were killed, 19 seriously wounded, and 34 slightly wounded. These two raids were the most damaging of 11 small air-raids on KYOTO ^p Prefecture. (See Reference Item No. ~~7~~⁷ pages 2 through 5).


FIRE PREVENTION

10. Operation
Organization. No organized fire prevention bureau existed in KYOTO ^p Prefecture. One fireman was detailed each day from each fire station for a period of one to two hours for the purpose of inspecting his immediate area; ~~the~~ ~~checking~~ fire hydrants and other sources of water; condition of streets; and rubbish burning in hazardous locations. No inspections were made of buildings, factories or homes. Once each month a pressure test ^p by a static gauge ^p was taken on fire hydrants. The fire chief stated that the pressure in the mains ranged from 30 to 50 pounds, and during the early morning hours when domestic water was not being used, ^p the pressure increased to 80 pounds in some districts. He added that fire hydrants were used

more frequently than other sources of water in fire-fighting, ^{probably} ~~this~~
~~may be attributed to~~ ^{because of} the fact that KYOTO's water system was not
damaged.

11. Fire Regulations. The fire regulations in KYOTO Prefecture
~~are~~ ^{were} the same as in OSAKA and HYOGO Prefectures. They ~~are~~ ^{were}
sketchy and ~~are~~ ^{were} interspersed in the building regulations ~~set forth~~ ^{promulgated} by
the ~~home office~~ ^{Ministry of Home Affairs}. Firemen ~~have~~ ^{might} no authority to enforce fire regulat-
ions, but they ~~may~~ ^{might} file an official complaint with the district
police office, where action ~~is~~ ^{would} be taken if the police so desired.
Action on fire regulation violations ~~is~~ ^{was} ~~very~~ ^{however,} seldom taken by the
police, and firemen hesitate ~~to file~~ ^{to file} complaints. Fire extinguishers
~~were not required in most buildings and those observed were the soda-acid type,~~ ^{and}
12. Building Construction. The ~~home office~~ ^{Ministry of Home Affairs} regulated building
laws in all Japanese provinces. Some consideration had been given to
zoning for business, industrial and residential districts. Karasumara
Dori and Shijo Dori, 80 and 100 feet wide, respectively, ~~are~~ ^{were} the
principal streets of KYOTO, ~~and~~ ^{and} they had been zoned for only new
construction of reinforced concrete. (See Reference Item No. ~~H-9~~ ¹⁴).
A total of 363 concrete buildings from three to eight stories in
height ~~are~~ ^{were} now located on those two streets. The south and west
sides of the city ~~are~~ ^{were} known as industrial areas. ~~There are no~~ ^{and}
specific building regulations ~~in this area.~~ ^{for them.} In the residential area
dwellings ~~are~~ ^{were} bunched together, separated by a solid wall, with one
inch of plaster on each side, ~~of the wall.~~ The roofs ~~are~~ ^{were} tile and
slate. (See pages ~~24-25~~ dwellings and small stores in the central
part of the city). (See Reference Item No. ~~H-10~~ ¹⁵, Building Regulations).


poor condition or empty. (See page 23)



Soda-acid fire extinguishers in the modern, limit height, Sumitomo building, (Sixth Army Headquarters). None of these portable extinguishers ~~were~~ in an operative condition.

Crowded residential district looking
north east ^{toward industrial district} from roof of Asahi Press Building
on Kaharamachi Dori (street)

(Lighter print may be
made from neg.)



Residential and business ^{districts} as seen from
Asahi Press Bldg on Kabayamachi Dori (street)
looking southwest.

GENERAL

13. Annual Fire Loss. The last published KYOTO Prefecture fire department year book (1941) listed a total of 367 fires, 251 of which were in KYOTO City. (See Reference Item No. ~~H-12~~¹⁶⁶, page 27). The causes and frequency of fires ~~were~~^{were} given in detail in the year book. The fire chief stated that in his 18 years in the fire department, KYOTO had suffered only two large fires, one was 11 years ~~ago~~^{previously} when 36 houses burned, and the second was eight years ago when a building at Shinjo Gokurokuji Temple burned, causing a loss of more than a million dollars. The chief attributed the low fire loss in KYOTO City, as compared to other Japanese cities, to more cleanliness; better than average Japanese buildings; wider streets; a good water system; and public interest in the general welfare of ~~the~~^{the} historic city.

14. Mutual Aid. KYOTO dispatched 10 pumpers to OSAKA on 14 March 1945, to assist in combating the conflagration caused by an air-raid. The apparatus was late in arriving and required refueling before it could work on the fire. Two hours actual working time was credited to each pumper. No further attempt was made to dispatch fire equipment to subsequent fires.

15. Fire Barriers. The removal of houses for the purpose of building fire roads and creating fire breaks around important buildings and plants was first begun on 17 July 1944 when 677 houses were demolished. On 27 February, 18 March, and 21 July 1945, additional buildings were demolished, making a total of 6,068. (See Reference Item Nos. ~~H-12~~¹⁷ and ~~H-13~~¹⁸). (See pages ~~27-28~~²⁷⁻²⁸ area from which buildings were removed). The removal of these buildings would not have saved KYOTO from fire destruction in one large incendiary raid.

Fire break, widest in city, approximately 195 feet,
built by removing houses. Looking west toward
teramachi Dori^(street) from Kyoto City Hall.

~~Fire break created near important
building looking north, from Shijo Dori (street)
Takahara district, toward Daimaru department store.~~

One of many fire breaks created near
important buildings, looking north toward
Daimaru department store - from Shijo Dori
(street) Takahara district.

Written

EMERGENCY MEDICAL SERVICES

1. Introduction. The same grouping of subjects is followed in the Kyoto report as in those of OSAKA and KOBE. Briefly stated, the term ^{cases} Emergency Medical Services comprises three subdivisions: (1) Emergency Medical Service which includes first aid and hospital services; (2) Red Cross activities; and (3) mortuary services. The foregoing order will be pursued in the discussion of these subjects.

Emergency Medical Service

2. Organization. The Emergency Medical Service of KYOTO was organized under a combined municipal-prefecture plan. At the prefectural level the service was under the authority of the Health Section in conjunction with the police department, while at the municipal level the service was under the Health Department, a subsidiary of the Welfare Section. (See ~~Exhibit I~~ ^{page 1}). In a document, dated 7 July 1945, from the prefectural governor to the mayors of all large cities and towns of Kyoto prefecture, an air defense medical ^{organization} ~~setup~~ ^{was} plan ~~is~~ established. This document included the air-defense first-aid regulations, first-aid facilities, and functional classifications of medical personnel and their assistants. This plan represents ^{an} ~~the~~ ideal and differed to some extent from the plan that was in actual operation. Exhibit ~~II~~ ^G is a translation of the above-mentioned document.

3. Personnel In KYOTO there were 890 doctors, 216 dentists, 1,467 nurses, 484 midwives and 558 pharmacists. All of the above medical personnel were organized into their ^{several} ~~various~~ associations and assigned by ^{their professional} qualifications for specific duties in the air-defense medical setup. These assignments were classified into eight categories; first-aid stations, first-aid hospitals,

obstetrical first-aid stations, special first-aid hospitals, medical ~~groups~~^{army} of the auxiliary ~~fire~~^{police} and ~~police~~^{fire} units, gas-defense squads and two reserve sections. Pharmacists were assigned ~~into~~ the gas defense squads, midwives ~~into~~ the obstetrical first-aid stations and the old and physically weak physicians ~~into~~ the reserve sections.

4. Evacuation of Casualties. ~~When the air-raid alarm sounded,~~^{During the air-raid alert} all personnel reported to their pre-assigned location^s for duty. ~~ambulatory~~^{Ambulatory} casualties were to walk to the first-aid stations and all others were to be carried to the stations by stretcher bearers from the guard units of the prefectural police, the auxiliary ~~fire and police~~^{Police and} units, and volunteer workers of the neighborhood groups. At the first-aid stations the patients ~~would be~~^{were to be} separated into categories of injuries and either treated and dismissed^s or sent to the hospitals for further treatment.

5. Transportation of Casualties. The transportation unit of the municipal welfare section (Yosuka)^{zaps} maintained a pool of trucks and other vehicles for the removal of air-raid wounded from the first-aid stations to the hospitals. When transportation was needed, the chief of the ~~Public Health~~^{Public Health} Section notified the prefectural police who in turn instructed the transportation unit to dispatch vehicles to the necessary location. There were only two or three ambulances in KYOTO and they played a negligible part in the transportation of the wounded. There were no arrangements made with the army or navy for use of their vehicles in transporting air-raid casualties from first-aid stations to hospitals.

6. First-Aid Stations. There were 141 first-aid stations, each located at public elementary school buildings, ~~The stations were usually located in~~ the gymnasium ~~of the building,~~ but in a few instances, ~~were located in the~~

school nurses' office or in the basement. There were no specially constructed first-aid stations and none located within department stores or railroad terminals. Each large factory had a small first-aid station and dispensary for ^{its own} use of ~~their~~ employees. It was believed by the municipal and prefectural health authorities, after ^{their visit to} ~~visiting~~ OSAKA immediately ^{following} ~~after~~ the ¹⁴ March ¹⁹⁴⁵ ~~16th~~ raid, that the first-aid stations as planned would ^{have been} ~~be~~ insufficient in ^{the event} ~~case~~ of ^{heavy} ~~any~~ air raids on KYOTO. Based upon ^{this} ~~the~~ decision, the Japanese Red Cross was directed to assemble 20 supplementary first-aid stations to be used when ~~so~~ directed by the ^{Health Department}. These stations were to be located in tents in any part of the city that ^{might be} ~~was~~ in need of them. (See Red Cross ~~section~~ ^{section} ~~Activities~~)

a. Equipment of First-Aid Stations. The medical equipment in the first-aid stations was very meager and consisted mainly of cotton, gauze, bandages, disinfectants, and small amounts of opiates and stimulants. Surgical instruments were not furnished as standard equipment but ^{were} ~~was~~ brought to the stations by the physicians assigned there for duty. There was no sterilizing ^{equipment} ~~with~~ or any ^{facilities} ~~equipment~~ for administration of plasma, or ^{for} ~~an~~ blood transfusions. The army had taken over practically all anti-tetanus serum and none was available for use in the first-aid stations. There were ^{few} ~~no~~ available beds, and severely wounded patients were to be placed on the floor while awaiting treatment.

b. Reserve Personnel. After heavy air raids, if the assigned personnel ^{were} ~~was~~ insufficient to handle large numbers of casualties, supplementary aid ^{would be} ~~was~~ furnished by physicians in the reserve sections or by physicians assigned to first-aid stations in an undamaged section of the city.

7. Hospitals. Throughout the entire city of ^{Kyoto}, there were ^{Caps}

approximately 100 hospitals including all large and small, public and private institutions. Thirty-nine of the hospitals, with a total bed capacity of approximately 2100, were designated by the prefectural health authorities for use in treatment of air-raid casualties. ^{Thirty-seven} ~~37~~ of the hospitals, with a total bed capacity of 600, were designated as first-aid hospitals, while the other two hospitals, with a normal total bed capacity of 1,500 and emergency expansion capacity of 3,000, were designated as special first-aid hospitals. The latter two hospitals, the Imperial University Hospital and Prefectural University Hospital, were designated as such because they were the largest hospitals and were more adequately equipped to handle major surgical problems. When hospitals could not accommodate all of the casualties, schools, office buildings, large houses and churches in the near vicinity were to be converted into reserve hospitals.

a. Treatment in Hospitals. Patients were taken from the first-aid stations to the first-aid hospitals where definitive treatment was given. The most severely wounded patients, and those requiring some specialized form of treatment, were sent to the special first-aid hospitals.

b. Air-Raid Protection in Hospitals. When an air-raid alarm sounded, all ambulatory patients went directly to preassigned locations, either in the basement of the building or in dugout shelters on the premises outside the building. Bed patients were carried on stretchers into the basement or to the center of the lower floors of the building. Anticipating incendiary bomb raids, the larger hospitals, as a fire prevention measure, razed all wooden buildings which were used as hospital wards and patients were then placed in concrete or brick veneer buildings. These frame veneer buildings were shabbily constructed and were themselves a great fire hazard. Blackouts

were enforced during alarms and strategic points in the hospitals, such as operating and X-ray rooms, were equipped with special blackout curtains. It was believed by the health authorities that air-raid protection for hospital patients, as provided, was insufficient and that more adequate shelter space was urgently needed. There were two hindrances to proposed additional shelter facilities; ^{first,} there was no cement or wood obtainable for construction purposes; ^{Second,} and due to the close proximity of the hospital buildings, there was very little space for the building of shelters.

8. Medical Training. As in KOBE and OSAKA, a delegation of doctors, appointed by the chief of the Prefectural Health Section, was sent to the Tokyo Army Medical School for a course in emergency treatment of air-raid casualties. Upon their return from TOKYO, ^{the members of} this delegation gave a course of instruction to the leaders of the ^{several} various professional medical and allied associations ^{and they} in turn, gave a required course of instruction to all members of their respective associations. Primarily, medical information and instruction reached the people through the usual block association channels. Doctors who were assigned for duty with the first-aid stations and with the auxiliary ^{and fire} fire and police units were responsible for dissemination of medical information and instructions to the people. ~~(See Exhibit P-3)~~. Some elementary first aid was taught to the people by the Red Cross Association ^{but} ~~(see Red Cross Activities)~~. Because of the acute shortage of paper, printed first-aid instructions were not distributed to the public. The medical training actually received by the people was essentially the same as that in KOBE and OSAKA.

9. Medical Supplies. All medical supplies for KYOTO were received on a pro rata basis from the Ministry of Welfare in TOKYO and distributed to the municipal welfare section and to the professional associations of Kyoto Prefecture. The Health Section obtained supplies from the associations and ^{caps}

distributed them to the ~~various~~^{several} first-aid installations. As in KOBE and OSAKA, medical supplies were very scanty and it was known by the health authorities that they were definitely insufficient to give adequate treatment to all patients. The supplies were unobtainable because the army had taken over major portions of all drugs and equipment for exclusive military use.

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RED CROSS ACTIVITIES

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10. Introduction. The source of information relative to the Red Cross activities in KYOTO was ~~Mr. Kunitano Nakimura~~ the director of Red Cross for Kyoto Prefecture, who ~~should~~ ^{had} have an intimate knowledge of Red Cross procedure at the height of the air attacks, since he has been in his ~~present~~ position for nearly two years. It would be expected that the framework would be uniform in each of the prefectures, but in those surveyed so far, OSAKA, HYOGO and KYOTO, minor differences have been noted. These differences will be brought out in the analytical study of organization and procedure.

11. Organization. The principal departure ⁱⁿ from the organization plan of KYOTO ^{from that of} ~~as compared with~~ OSAKA and HYOGO ^{was} ~~is~~ the fact that the director of the ^pprefectural Red Cross branch ^{was} ~~is~~ appointed by Red Cross Headquarters in TOKYO, whereas in the case of the two latter prefectures, he ^{was} ~~is~~ appointed by the prefectural governor. In no instance has there been discovered any evidence pointing to local branches or chapters of the Red Cross in the separate municipalities.

12. Personnel. In the prefectural office the director had in addition to himself a clerical staff of 15 employees. The technical employees connected with the hospital and clinics averaged ^d about 50 doctors and 100 nurses, all of whom ^{were} ~~are~~ full-time paid workers. During the war, doctors and nurses were furnished to the ^aArmy upon demand from TOKYO headquarters of the Red Cross. There ^{was} ~~is~~ no accurate record of how many were thus furnished to the military and naval forces, but it is estimated that since the "Manchurian Incident" in 1931 the prefecture has sent 600 nurses into the armed forces. When doctors and nurses were taken into the military services their pay was assumed

entirely by the respective service^s. Also, when their duty with the military service ^{had been} ~~was~~ completed, they were discharged ^{and returned} ~~back~~ to civil life without any obligation on the part of the Red Cross for their reemployment. It is interesting to note that the Red Cross employ^{ed} only those nurses who ^{had} ~~have~~ been trained in Red Cross hospitals.

13. Functions.

a. Training.

- (1) Training of nurses ^{was} ~~is~~ one of the major functions of the Red Cross. Of the two Red Cross hospitals in KYOTO the larger, with a bed capacity of 300, conduct^{ed}s a training school which graduate^ds 100 nurses ~~annually~~ ^{annually} ~~per year~~. These nurses ^{were} ~~are~~ of two classifications, a and b. The a group consist^{ed}s of nurses who ^{had been} ~~have~~ graduated from high school and their course of training cover^{ed}s a period of three years. Candidates for the b group ^{were} ~~are~~ accepted ~~only~~ upon graduation from primary schools, and their course of training cover^{ed}s only two years. The a class nurses ^{were} ~~are~~ preferred, but ^s in order to meet ^s the demands of the army and navy, more attention was given to the recruitment and training of b class nurses.
- (2) Training of the public did not occupy a position of prominence in the Red Cross program. In girls' schools, a course of lectures and demonstrations was offered to those who wished to receive this instruction. The content of the course comprised a study of simple first-aid measures. The length of the course

was not clearly defined, but upon ^{its} completion ~~of~~
~~the course the~~ students were given certificates of
attendance, after which they were authorized to
teach first-aid to neighborhood groups. There is
no record ^{of} ~~as to~~ how many persons were reached by
first-aid instruction ^{given} in this way. Another method
of carrying first-aid instruction to the public
was by means of a team consisting of one doctor
and two or three nurses sent out from Red Cross
prefectural headquarters, who held mass meetings in
public places at no specified intervals, and gave
lectures and demonstrations. This was neither a
formal nor systematized plan of instruction and no
certificates were issued. Printed matter used in
the instruction program was furnished not to the
public but only to instructors. The fact that
there was no charge for the instruction pamphlet ^{was} ~~is~~
in contrast with the policy pursued in OSAKA and
HYOGO Prefectures.

b. ^{Sanction's} The Red Cross maintained no first-aid stations except at
the Red Cross hospitals and clinics, but worked in coordination with
the first-aid program of the Health Department. Upon call from the
latter it was planned that doctors and nurses would be sent to assist
the first-aid personnel at stations designated by the Health Department.
There were, however, Red Cross teams organized and held in readiness
to go to any point of need and set up temporary first-aid stations.
For ^{that} ~~this~~ purpose, tents and other equipment were assembled and held on
a stand-by basis.

(b) In contrast with the information received in KOBE, the Red Cross of KYOTO had no plans ~~whatever~~ for furnishing any kind of welfare service, e.g., food, clothing, or shelters.

(c) The preponderance of Red Cross activity in KYOTO was in the operation of Red Cross hospitals and clinics. There were two hospitals in KYOTO City, one with a bed capacity of 100, and the other with a capacity of 300. ~~At the present time the latter is taken over by the 6th Army, so that only the smaller hospital is accessible to the people of KYOTO.~~ In addition there were three clinics maintained by the Red Cross outside the city of KYOTO, ~~but no~~ patients were hospitalized in these institutions. Refugees who flocked in to KYOTO Prefecture did not add materially to the load carried by the Red Cross hospitals; first, because they were cared for principally in the clinics on an out-patient status; and second, because the Red Cross hospitals were reserved primarily for army and navy casualties. At all times, however, ^{some} civilians were accepted in these hospitals.

14. Finances, Although the Red Cross received no support from the government, ~~they~~ ^{it} did receive compensation on a per diem basis for the care of army and navy patients. ~~Also~~ ^{also} civilian patients who were able to pay for hospital care were ^{also} required to do so. As will be seen from the account of funds ^{derived} ~~divided~~ from membership and special contributions, ^{these} ~~sources of funds~~ were quite inadequate for the support of the annual budget, so that the major ^{account} ~~source~~ of revenue came from fees paid by patients. ^{Regarding} ~~As regards~~ membership fees, there were three classifications: (1) the usual fee of ¥3 per year for 10 years after which no further fees were charged or, as an alternative, a person might secure a paid-up life-time membership by the payment of ¥25 at one time; (2) honorary life-time membership by the payment of ¥200;

and (3) a super-honorary paid-up membership by the payment of more than ¥1000. All of these classes of membership are included in the total of 238,118 as of September 1945. Membership was not entirely voluntary, as the Red Cross headquarters in TOKYO set quotas which each prefecture was required to raise. For ¹⁹⁴⁴ last year the call was for 14,917 new members. Every family was expected to have at least one member. Although special donations ^{were} ~~are~~ sometimes demanded, e.g. for ^{the} construction of a new hospital, there was no emphasis placed on drives for support of the Red Cross current expenses. Ten percent of all funds collected for ~~Red Cross~~ memberships ^{was} ~~in~~ contributed to the national headquarters. The annual budget for all operating expenses of the Red Cross program in KYOTO Prefecture ^{for 1944} ~~last year~~ was ¥2,336,000.

15. Comment. The Red Cross program during the war was not greatly different from its peace-time activities. The principal difference ^{lay} ~~was~~ in the extra-mural training in first-aid that was conducted for the benefit of the general public. During the war, also, priority was given to military and naval casualties. On the whole, however, the Red Cross in KYOTO was not geared ~~up~~ for disaster relief.

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MORTUARY SERVICE *lc & underlined*

16. Introduction. Mr. Hideo Ichida, ~~the officer in charge of this function has been in office only since April 1945 and is not too well-informed about the program except from the standpoint of theoretical planning.~~ Since ~~this activity was~~ *the mortuary service was* not called into operation except on a very limited scale as a result of two raids by single B-29's, in which 34 were killed at one time and 43 at another, the program, for all practical purposes, did not develop beyond the planning stage, ~~but~~ *was somewhat* ~~one as being quite~~ *immature.* Even the program as planned ~~strikes~~

17. Organization. The ~~the~~ *lc* mortuary service differs ~~from~~ *fd* from that found in the other two cities surveyed thus far. In normal times the disposal of the dead was a function of the ~~Health~~ *h* Department. In anticipation of the necessity for handling large numbers of dead bodies, as judged from the experiences of Osaka and Kobe, it was decided that the job would be too much for the ~~Health~~ *h* Department ~~and this duty~~ *was* ~~was~~ *therefore* transferred to the Police Department, first to the auxiliary ~~fire~~ *fire* and ~~police~~ *police* units (Keibodan) but eventually ~~was placed under~~ *to* another section, ~~the~~ *the* ~~purpose~~ *which* ~~appeared~~ *to* be personnel management and accounting (Keimuka), as indicated by its duties which include ~~employment and training of police and firemen, the management of budgets and accounts, and planning for the guard section of the Police Department.~~ *was* It ~~is~~ *was* under this last ~~named~~ *named* function that the disposal of the dead was arbitrarily ~~assigned~~ *placed*. The ~~Personnel and Accounting~~ *Personnel and Accounting* Section was one of the 14 independent sections of the ~~Prefectural Police~~ *P* department, on the same level as the guard section which has figured frequently into the organizational charts. ~~Since~~ *at* the close of the war, ~~the~~ *when* the need for special plans for the disposal of the dead had ceased to exist, ~~and~~ *and* this function was transferred back to the health department. The principal difference

• between the management of this problem by the auxiliary ^{police} ~~fire~~ and ^{fire} ~~police~~ units and the Personnel and Accounting section was that the former was a voluntary organization whereas the latter was official.

18. ^{Duties} Duties imposed upon the Personnel and Accounting Section with respect to disposal of the dead did not contemplate that the work would actually be done by this section, but only that instructions ^{would be} ~~be~~ issued by it to the city of Kyoto specifying the place and manner of disposal. This section had no personnel and no equipment for disposal of the dead, ^{so that} whatever the emergency should require would have had to be done not by the Police Department, but by the city of KYOTO.

19. Identification. Identification of dead bodies ^{was} ~~is~~ a mandatory duty of the Police in peace time as well as in war. When identified, the body ^{was} ~~is~~ sent to the victim's family or friends. ^{Should} When casualties ^{be} ~~were~~ few, the plan was to leave the body where it fell, as ~~this~~ ^{that} would have made identification much easier, but when ~~bodies~~ ^{they} were removed from the site of death, a tag showing where the body came from formed a part of the plan. In the event of comparatively small numbers, these procedures would have been adequate, but ^{the authorities} ~~they~~ realized that larger numbers of dead would require more advanced planning. The contemplated procedure was to collect the bodies in a public place such as a temple or park, where they would be held for identification by friends and relatives for a period of 24 hours in hot weather and 48 hours in cold weather, after which the bodies would be finally disposed of. Should crematories be unable to handle the load, the plan was to burn them en masse, ^{but burial in a common pit would probably} ~~However, due to lack of coffin boxes, wood, and oil,~~ ^{have been necessary due to lack of coffin material, and wood or} ~~they would have had to dig a large common pit for mass burial.~~ ^{oil for burning.}

^{Personnel} 20. The personnel relied upon for the disposal of the dead were undertakers and their employees. ~~Also~~ Military personnel who had had experience

• with the disposal of dead bodies on the battlefields were counted upon as members of the operative force. The groups designated for discharging these duties could not be considered a systematized organization in the sense that they engaged in practice drills or any other formal ~~drills~~ ^{exercises}. If trouble had descended upon them on a large scale, they would ~~just~~ have had to "do the best they could" to meet the situation.

21. Transportation Facilities. Ambulances were ^{virtually} non-existent. The plan was to depend principally upon litter bearers to pick up the dead, and take them either to a home or a collection center, but should the distance, and the numbers to be transported be too great, trucks would be requisitioned through the Transportation Section of the Police Department.

22. Comments. After the great raids on OSAKA and KOBE, representatives were sent from KYOTO to observe the effectiveness of the ^{war emergency} defensive preparations. They saw at first hand that many of the ^{defense} ~~defense~~ measures broke down completely in the ^{air} presence of ~~here~~ and devastating ^{attacks} ~~emergency~~. They observed, for instance, that using basements of houses and buildings for air-raid shelters ^{often} resulted in ~~not a few instances~~ in suffocation from smoke and death

from intense heat. The effect of these observations demonstrated the futility of many relief and protective efforts. Presumably this should have stimulated of it all. The tendency was therefore to slacken rather than increase the ^{more intensive} ~~more intensive~~ preparations for disposal of the dead, because of the tempo of defensive measures, in some instances, even to the point of abandoning plans for protection. ^{increased} ~~increased~~ in proportion with the relaxation of defensive measures. It is, therefore, strange but apparently true, that plans for large scale operations in the disposal of dead persons pursued the same tendency to decline as did plans for certain other emergency projects.

KYOTO FIELD REPORT, C.D.D.

CONFIDENTIAL

ORGANIZATION EMERGENCY MEDICAL SERVICE
KYOTO, JAPAN

MUNICIPAL GOV'T

PREFECTURAL GOV'T

HEALTH DEPT. OF
WELFARE SECTION

POLICE DEPT

HEALTH SECTION

FEDERATION OF
BLOCK ASSOCIATIONS

AUXILIARY FIRE AND
POLICE UNITS

GUARD UNIT

PROFESSIONAL
ASSOCIATIONS

BLOCK ASSOCIATIONS

MEDICAL UNIT OF
AUX. FIRE AND
POLICE UNITS

GUARD DEFENSE
SQUADS

DOCTORS
DENTISTS
NURSES
MIDWIVES
PHARMACISTS

NEIGHBORHOOD
GROUPS

VOLUNTEER
WORKERS

RESERVE
PERSONNEL

FIRST AID
SECTION

RESERVE
PERSONNEL

SPECIAL FIRST AID
HOSPITALS
(2)

FIRST AID
HOSPITALS
(37)

FIRST AID
STATIONS
(141)

CONFIDENTIAL

ORGANIZATION EMERGENCY MEDICAL SERVICE
 KYOTO, JAPAN

MUNICIPAL GOV'T

PREFECTURAL GOV'T.

HEALTH DEPT. OF ¹⁴
 WELFARE SECTION ¹⁴

POLICE DEPT.

DEPARTMENT ¹⁰

HEALTH SECTION

FEDERATION OF ¹²
 BLOCK ASSOCIATIONS ¹¹

AUXILIARY FIRE AND
 POLICE UNITS ¹⁴

GUARD UNIT

PROFESSIONAL
 ASSOCIATIONS

BLOCK ASSOCIATIONS ¹¹

MEDICAL UNIT OF ¹³
 AUX. FIRE AND
 POLICE UNITS

GUARD DEFENSE
 SQUADS

DOCTORS
 DENTISTS
 NURSES
 MIDWIVES
 PHARMACISTS

NEIGHBORHOOD ¹²
 GROUPS ⁶

AUXILIARY FIRE

VOLUNTEER ⁷
 WORKERS ⁷

RESERVE
 PERSONNEL

FIRST AID
 SECTION

RESERVE
 PERSONNEL

SPECIAL FIRST AID
 HOSPITALS
 (2)

FIRST AID
 HOSPITALS
 (37)

FIRST AID
 STATIONS
 (141)

2

AIR RAID PROTECTION OF PUBLIC BUILDINGS

1. Introduction. The purpose of the survey of ~~the~~ public buildings in KYOTO was to determine the adequacy of ^{their} air-raid ^{protection} ^{preparations and} organizations in an area which had not been bombed and to make an estimate of the ^{probable} efficacy of such organizations in the event of ^{an} air-raid. ~~Four public buildings were selected to get a complete cross-section of such establishments and the~~ ~~included~~ ^J The Kyoto Imperial University, (see Exhibit ~~1-1~~), the Miyako ^K Hotel, (See Exhibit ~~1-2~~), the Daiken ^L Office Building (see Exhibit ~~1-3~~), and the St. Agnes Episcopal Church and Girls ^M School (see Exhibit ~~1-4~~) ^{were selected} ^{as representative examples of their particular classifications.} ~~establishments selected were the most impressive in their particular field,~~ and, therefore, ^{offered} an opportunity to study the most ^{complete} ~~complex~~ organization in each group or type represented.

a. ^{IMPERIAL} ^{was} Kyoto University ~~was~~ the largest institution of learning in JAPAN ^{AND COMPARED} ~~was~~ the Imperial Japanese University, included 227 buildings ^{COVERING} ~~spread~~ over an area of 140 acres.

b. The Daiken Office Building ^{was} the largest and most modern in KYOTO ^{IT WAS} ~~its~~ concrete and steel structure, housed 90 offices ⁱⁿ eight floors, ^{EACH FLOOR} ~~of~~ ^{HAVING AN AREA OF} 3856 square feet ~~on each floor.~~

c. The Miyako Hotel ^{was} an ultra-exclusive, ^{of} elaborate structure, equipped with extensive gardens, comfortable lounges, spacious dining and banquet rooms and a total of 95 American and Japanese ^{style} guest rooms, as well as many well equipped game and recreation halls.

d. The St. Agnes Church and Girls ^{School} School was an Episcopal ^{Missionary} unit, supported by American contributions. The church, school and rectory covered ^{ed} an area of approximately ^{one-quarter of a} block and included four wooden ^{buildings, and} ~~buildings~~, three brick, ^{one} concrete and steel structure.

2. Control and Responsibilities. The responsibility for air-raid protection was passed on from the prefectural government to the leader or president of each organization. In the case of Kyoto University a dual responsibility was evident and the school received instructions and directives from both ^{THE} Prefecture and ^{THE} Ministry of Education. Control in the case of the Miyako Hotel, and Daiken Office Building, was retained by the manager and president, respectively, while in the case of Kyoto University and the Church, control and administration ^{were} passed on to the business manager and a male ^{of the school} instructor, respectively.

Interest Interest in air-raid protection ranged from active in the case of the hotel, ^{to} mild in the case of the office building, ^{to} ~~apathetic~~ in the case of the church, to apathetic in the case of Kyoto university.

3. Organization. The university, being a large institution, employed ^{ing} over 900 instructors and having a student body of 7,000, naturally had ^a ~~the most~~ complex organization, which ~~organization~~ was broken down into 16 air-raid protection units, ~~called~~ ^(Boedan) ^{one for each of} the 16 departments of the university, ~~some of which were medicine, science, agriculture, and others.~~ ^{and hotel} The office building had ~~its~~ air-raid protection organization broken down into two squads, fire and first-aid. ^{and} The church had five squads, including fire, first-aid, guide, watcher, and liaison, ~~while the hotel organization was comprised of two, namely, fire and first aid.~~

what were
units
divided into?

X

Fire
Guard
E.M.
Liaison
Repair
gas

a. Fire-fighting Squads in general were inadequate, employing such crude auxiliary equipment as hand-pumps, fire beaters, mats, buckets and sand. In the case of the hotel and office building, fire hose units were located on each floor and were sufficient for a normal fire but would not have been sufficient to combat a conflagration. The ~~Hotel~~ University fire units were

poorly trained, their equipment was ~~miserable and inoperable~~ ^{often unusable} and even minor fires would have ~~burned unchecked.~~ ^{BEEN DIFFICULT TO CONTROL} The St. Agnes Church received instructions relative to air raid protection services too late to go out into the open market and compete with other buildings for satisfactory fire-fighting equipment. The result was that its equipment was negligible and the policy relative to fires was to let them burn rather than to attempt to fight a futile battle.

What do they spot?
b. Guard Squad. Guard squads at the University were charged with ^{and repairing air craft} spotting, guarding of dormitories and other important equipment, ^{light control} ~~and~~ guiding ~~the~~ such squads were non-existent in other public buildings.

c. Emergency Medical Squads ranged from excellent in the case of the university to poor in that of the office building. The university had an adequate system complete with doctors, nurses and equipment due to the fact that it could use ~~its complete~~ ^{THE ENTIRE} staff ~~from the~~ ^{OF THE} university hospital. At ~~the~~ St. Agnes Church, the girl students were well trained ^{in first aid} at the local Red Cross hospital, whereas personnel at the hotel and office building had little or no training and only crude equipment. *in first aid*

d. Repair Squad. Repair, in the case of the university, was handled by the official building and maintenance department, which was assisted by students who were assigned to that section. The same was true of the office building and hotel ^{AND} ~~though~~ no specific squad was organized to carry out the task of repair. The ~~P~~astor of St. Agnes Church had given no thought to repair and had no squad personnel for that purpose.

e. Liaison Squad. Liaison consisted solely of carrying messages, ^{between units and central centers} and there was an organized squad at the university and the church, but the office building and the hotel had no such units in their organization.

f. Gas Squad. Gas protection was handled by a gas squad at the university but not in the other three buildings. ^{Gas protection} equipment at the university, ^{however,} was poor to non-existent and personnel in the units were poorly trained.

4. Protective Equipment. Protective equipment ranged from fair in the case of the hotel and the office building to non-existent in the case of the church. Kyoto University had, in addition to ~~their~~ ^{its} mats, beaters and hand pumps and buckets, a unit of the city fire department stationed on the university grounds. This unit contained one power pumper, ^{mounted} on a 1926 Chevrolet chassis and two hand-drawn power pumps. Hose was non-existent at the time of the inspection and none of the pumps would operate. The Miyoko Hotel and the Daiken Office Building had fire hose and nozzle units on each floor, ~~which had a total length of approximately 65 feet.~~ This equipment and the ~~auxiliary~~ auxiliary equipment available, such as mats, beaters and hand pumps, were sufficient for ordinary fires but not sufficient for fires which could be expected from ~~any~~ direct hits in an incendiary raid. The fire equipment at the church included one hand pumper ^{with a} capacity ^{of} 20 gallons per minute, and 250 buckets (canvas), 40 wood beaters, 10 wood hooks, 10 grass mats, 10 ladders and 500 sand balls (see Exhibit ^M). This equipment was insufficient and would have been of little use even for extinguishing ordinary fires.

a. Water Supply. Water supply was, in general, adequate for ordinary fires but in all cases inadequate for fires that would have resulted from a full scale incendiary attack on the city. All buildings were dependent on local water supply which furnished pressure ranging from 40 to 70 pounds per square inch, depending upon the location of buildings. Static supplies were non-existent at the church; ~~100,000 gallons~~ ^{33,286 gallons (126,000 liters)} at the Miyoko Hotel, an inadequate 2,000 gallons at the Daiken Office Building, and none at the university that was usable. In general, even where static water supply was sufficient, there



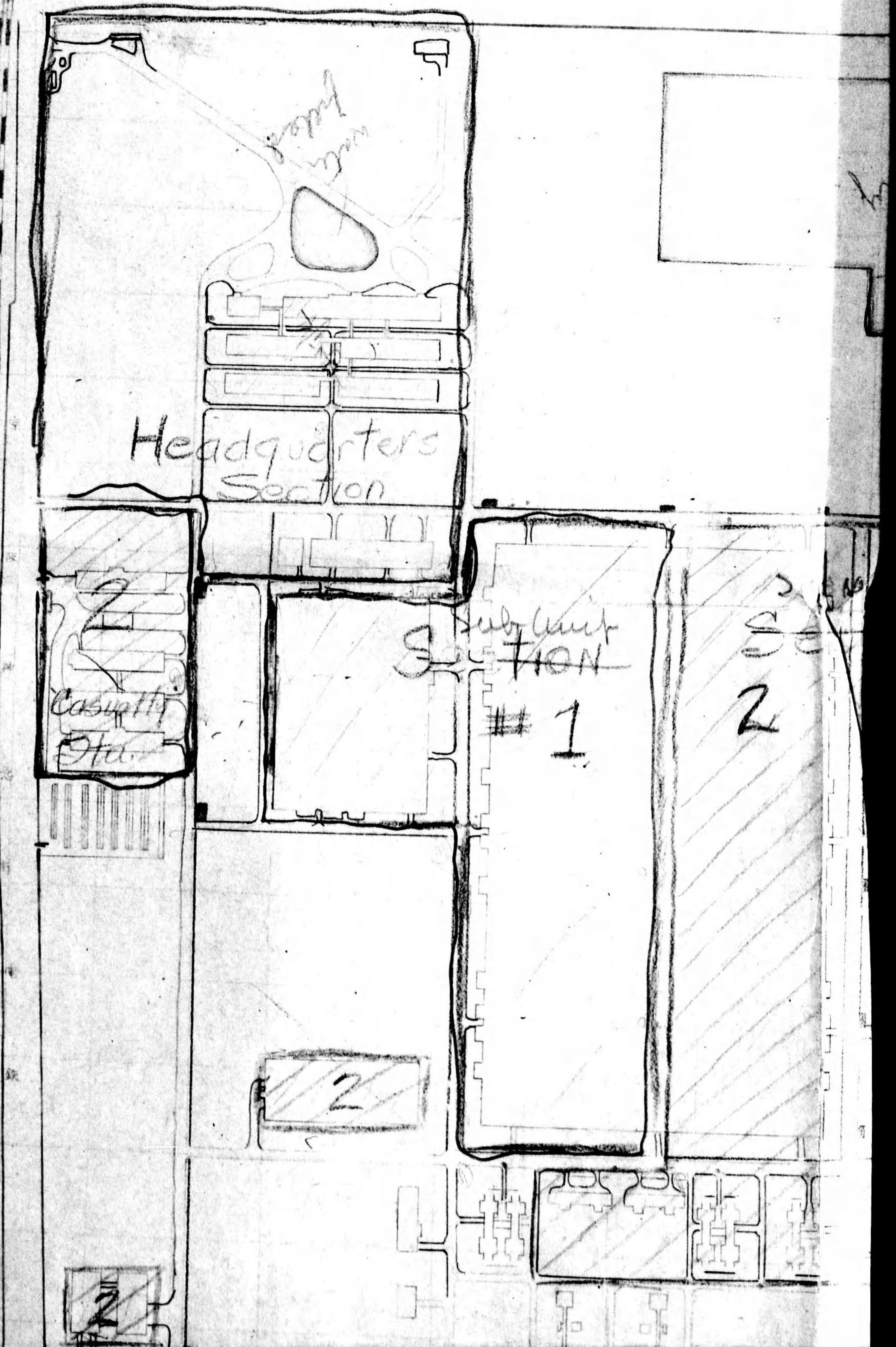
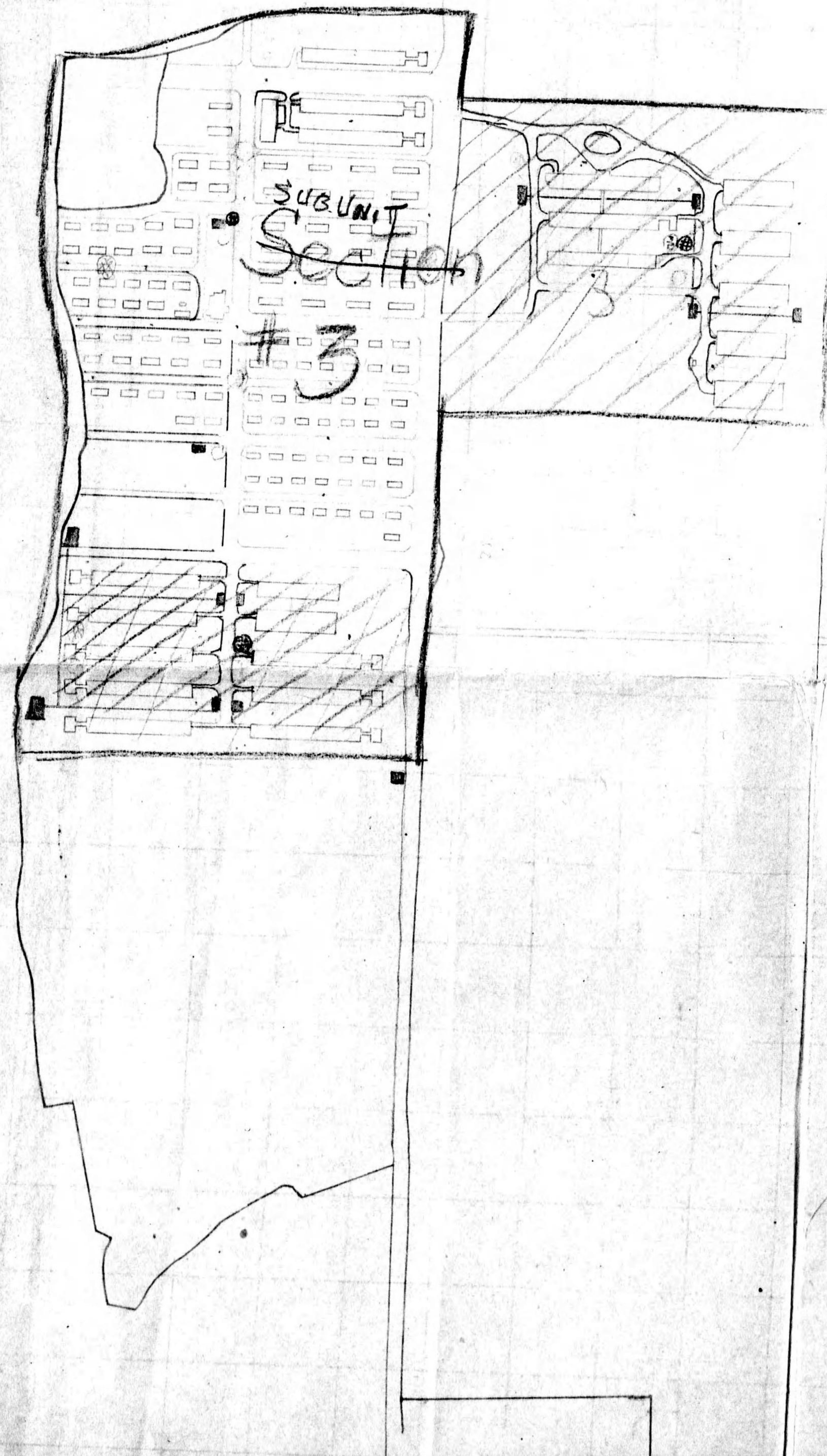
Blue Crosshatch
Sub Unit 3

MITSUBISHI AIRCRAFT ENGINE PLANT

三菱重工業株式會社第八製作所

~~XXXXXXXXXX~~
Areas of Sub-Unit Responsibility

Title 水路及貯水

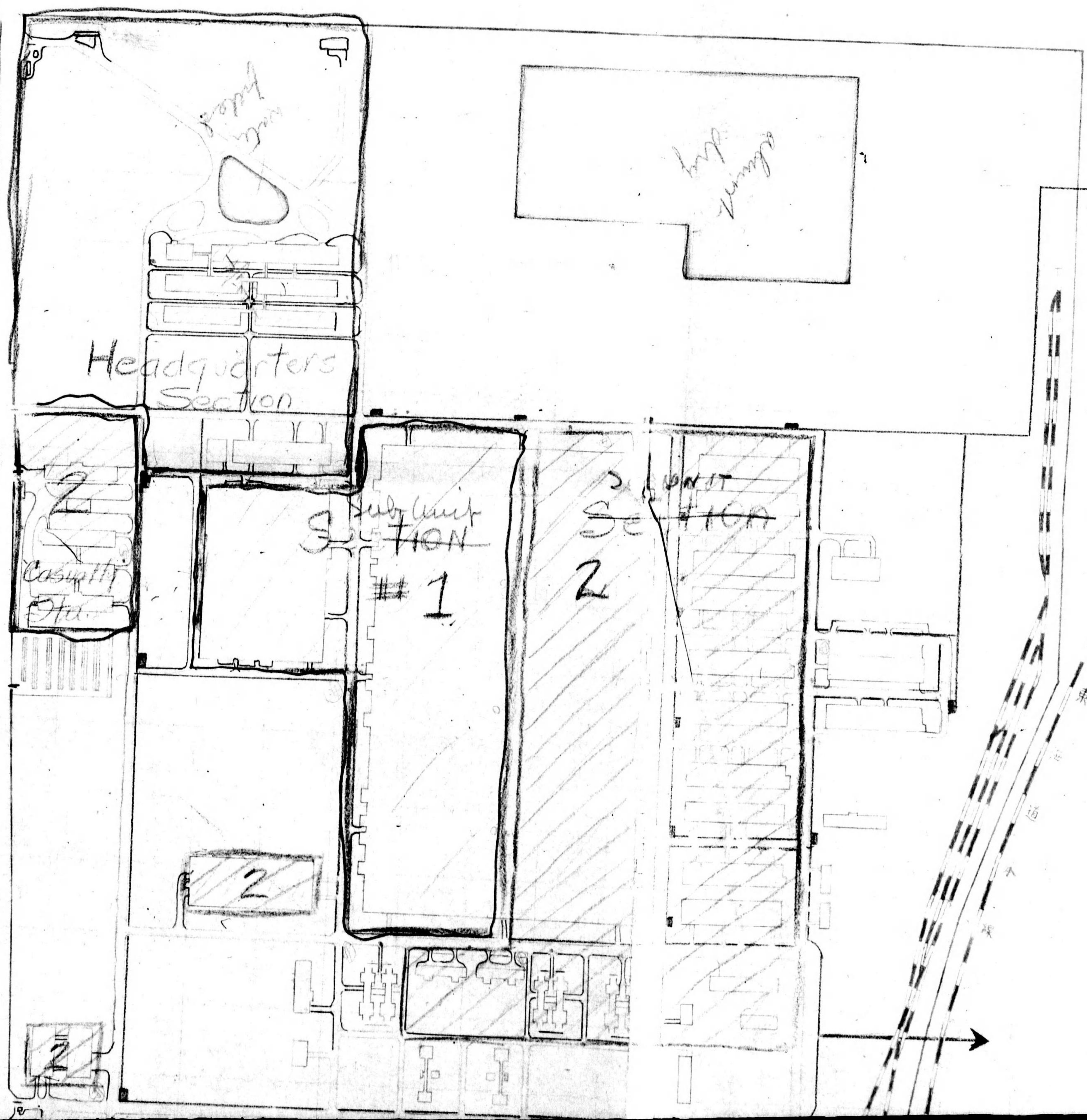


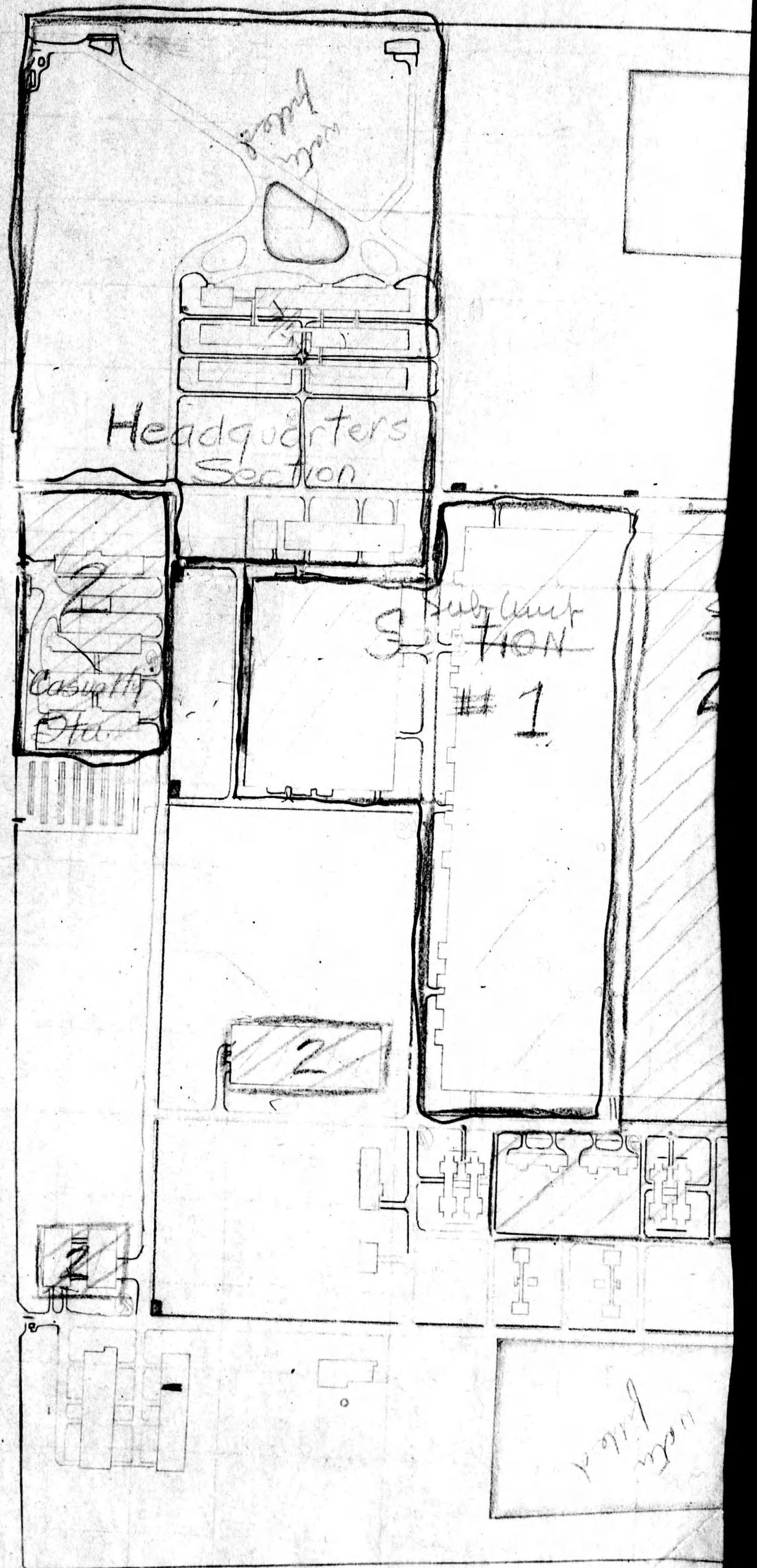
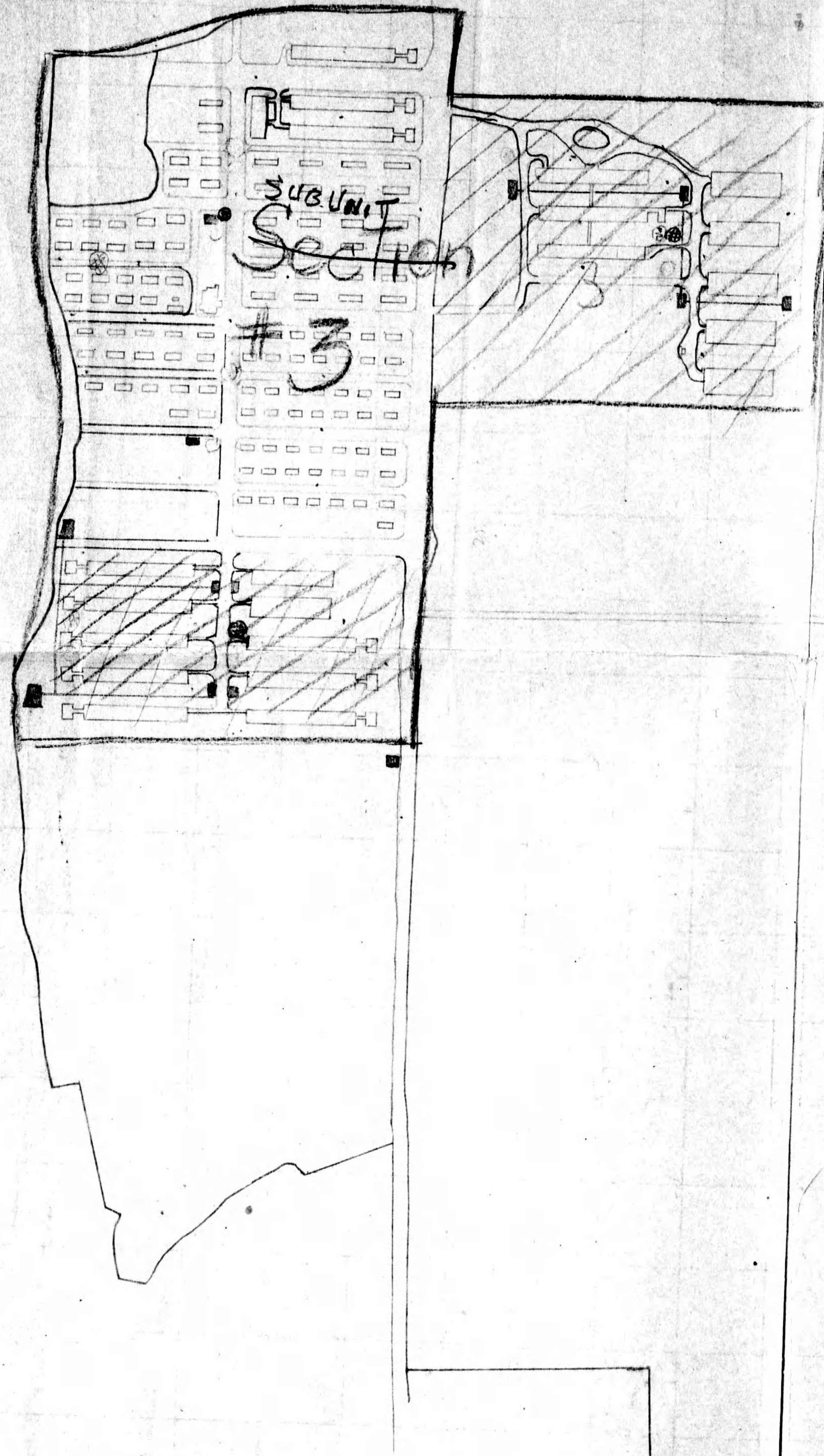
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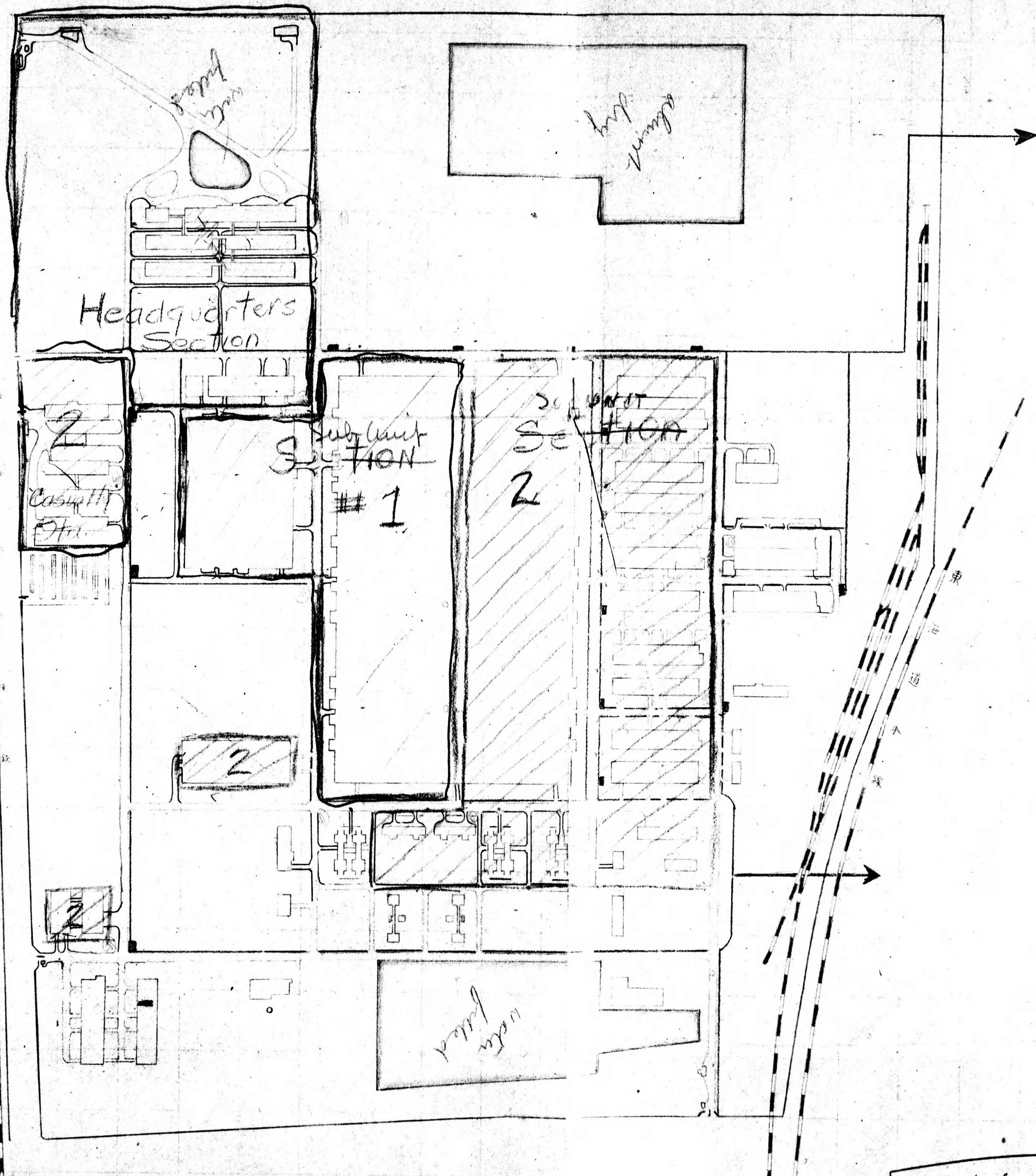
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~~SECRET~~
Areas of Sub-Unit Responsibility

Title 水路及貯水池







U S S R S
 CIVILIAN DEFENSE DIVISION
 KYOTO FIELD REPORT
 EXHIBIT I-