THE UNITED STATES
STRATEGIC BOMBING SURVEY

FIELD REPORT

Covering Air-Raid Protection and Allied Subjects in

KYOTO, JAPAN

Civilian Defense Division
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This report was written primarily for the use of the United States Strategic Bombing Survey in the preparation of further reports of a more comprehensive nature. Any conclusions or opinions expressed in this report must be considered as limited to the specific material covered and as subject to further interpretation in the light of further studies conducted by the Survey.

FOREWORD

The United States Strategic Bombing Survey was established by the Secretary of War on 3 November 1944, pursuant to a directive from the late President Roosevelt. Its mission was to conduct an impartial and expert study of the effects of our aerial attack on Germany to be used in connection with air attacks on Japan and to establish a basis for evaluating the importance and potentialities of air power as an instrument of military strategy for planning the future development of the United States armed forces and for determining future economic policies with respect to the national defense. A summary report and some 200 supporting reports containing the findings of the Survey in Germany have been published.

On 15 August 1945, President Truman requested that the Survey conduct a similar study of the effects of all types of air attack in the war against Japan, submitting reports in duplicate to the Secretary of War and to the Secretary of the Navy. The officers of the Survey during its Japanese phase were:

Franklin D'Olier, *Chairman.*
Paul H. Nitze, Henry C. Alexander, *Vice Chairmen.*
Harry L. Bowman,
J. Kenneth Galbraith,
Rensis Likert,
Frank A. McNamee, Jr.,
Fred Searls, Jr.,
Monroe E. Spaght,
Dr. Lewis R. Thompson,
Theodore P. Wright, *Directors.*
Walter Wilds, *Secretary.*

The Survey's complement provided for 300 civilians, 350 officers, and 500 enlisted men. The military segment of the organization was drawn from the Army to the extent of 60 percent, and from the Navy to the extent of 40 percent. Both the Army and the Navy gave the Survey all possible assistance in furnishing men, supplies, transport, and information. The Survey operated from headquarters established in Tokyo early in September 1945, with subheadquarters in Nagoya, Osaka, Hiroshima, and Nagasaki, and with mobile teams operating in other parts of Japan, the islands of the Pacific, and the Asiatic mainland.

It was possible to reconstruct much of wartime Japanese military planning and execution, engagement by engagement, and campaign by campaign, and to secure reasonably accurate statistics on Japan's economy and war production, plant by plant, and industry by industry. In addition, studies were conducted on Japan's over-all strategic plans and the background of her entry into the war, the internal discussions and negotiations leading to her acceptance of unconditional surrender, the course of health and morale among the civilian population, the effectiveness of the Japanese civilian defense organization, and the effects of the atomic bombs. Separate reports will be issued covering each phase of the study.

The Survey interrogated more than 700 Japanese military, government, and industrial officials. It also recovered and translated many documents which not only have been useful to the Survey, but also will furnish data valuable for other studies. Arrangements have been made to turn over the Survey's files to the Central Intelligence Group, through which they will be available for further examination and distribution.

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* See paragraphs headed "Comments" at the end of each titled subsection.

I. INTRODUCTION

1. *Relative importance of Kyoto.*—a Kyoto is the cultural center and one of the oldest of the cities of Japan. It was for centuries the capital, the primary metropolitan area, and the seat of the imperial court.

b. History has left a deep imprint on the city; the old imperial palace and grounds still occupy its central area; extensive and well established temples, libraries, museums, universities, and schools are to be found in larger numbers in Kyoto than in any metropolitan area of comparable size. It is thus the classical city and the recognized cultural center, a position which has been strengthened by the absence of heavy air raids, since it is the only important city in Japan that was not devastated.

c. Kyoto prefecture extends some 74 miles in a northwesterly direction from the city to the Sea of Japan. It is largely mountainous and includes no other cities of importance with the possible exception of Maizuru (population 29,908), a naval base town located on the small coastal plain bordering the Sea of Japan.

2. *Area and Population.*—The city of Kyoto is 112 square miles in area, in that respect being second only to Tokyo. In population, however, it ranked fourth prior to the air raids, being exceeded by Tokyo, Osaka, and Nagoya. The population figures for the city and the prefecture from January 1, 1940 to September 1, 1945 are given below:

Date	City of Kyoto	Kyoto Prefecture
Jan. 1, 40	1,089,726	1,729,993
Jan. 1, 41	1,088,700	1,749,500
Jan. 1, 42	1,054,266	1,718,127
Jan. 1, 43	1,022,594	1,693,462
Jan. 1, 44	964,466	1,616,035
Estimated population, Sep. 1, 45	832,364	1,628,331

3. *Distribution of the population during air raids.*—Theoretically, the manpower of the city was completely mobilized during an air raid through cooperative arrangements with various civilian-defense organizations. Those most directly concerned numbered approximately: (1) 1,400 policemen; (2) 825 firemen; (3) 9,740 members in 140 auxiliary police and fire units (*keibodan*); (4) 8,000 members of the school patriotic association; and (5) 7,500 members of first-aid units (*kyugodan*). The broad base on which this superstructure of civilian air defense rested consisted of 24,165 neighborhood associations (*tonari gumi*), representing the 212,000 households or families of Kyoto. Insofar as possible, women, children, and the aged were to be removed to "places of safety" (nearby air-raid shelters) in case of a mass raid.

4. *Industries.*—History and tradition have affected the industrial development of Kyoto. For centuries it has been recognized as the primary center for Japanese art and handicrafts. The term "factory," as used in Kyoto, often refers to a room in which 10 or 12 expert craftsmen are turning out cloisonne', lacquer ware, ivory carvings, or hand-woven silk of intricate design by semi-medieval methods. There are some large modern textile mills and steel plants, but handicraft production of a high quality occupies a more important place in Kyoto than in any other major city of Japan.

5. *Physical aspects.*—The nature of its industrial and cultural development has strongly influenced the physical character of the city, there being relatively fewer modern fire-resistant structures and more wooden frame buildings, wooden schools, temples and similar inflammable structures than in other Japanese cities of comparable size. Kyoto is partially surrounded by mountains and is built on a flat valley with no intervening ridges within the city to afford protection. This vulnerable position is partially offset by open spaces such as the palace grounds, temple yards, and parks, and the fact that Kyoto was less densely populated than other major cities.

6. *Effects of air raids.*—a. The Kyoto prefectural office reported 16 small raids (Exhibit A) between January and August, 1945, causing casualties and property damage as follows:

Total casualties:

220 killed.
176 seriously wounded.
366 slightly injured.

Property damage:

85 structures completely burned.
7 structures partially burned.

109 structures completely demolished.
243 structures partially demolished.

1 factory building completely demolished.
5 factory buildings partially demolished.

5 structures completely demolished (military).
13 structures partially demolished (military).

b. As compared with any other major Japanese city, raids on Kyoto were small and casualties, as well as property damage, were extremely light. Kyoto is less than 30 miles from Osaka, however, and is only about 60 miles from Nagoya and Kobe. Next to Tokyo, they were the three largest cities and were among the most completely devastated. The mass raids on Osaka, Nagoya, and Kobe made heavy demands upon Kyoto in terms of food, shelter, clothing and transportation for the victims. They also convinced Kyoto officials that air-defense measures which were moderately effective against small, short raids, would be entirely ineffective against prolonged mass incendiary raids, since Kyoto was fully as vulnerable to such raids.

c. As mass air raids on other cities increased, Kyoto officials abandoned many of the air-defense measures designed to save property, and concentrated on measures looking toward the saving of lives and providing emergency relief to victims. In view of the vulnerability of Kyoto and the nature of the equipment then available, that was a logical policy.

Auxiliary Police and Fire Units (Keibodan)

1. *Introduction.*—Since the organization, operations, and equipment of the auxiliary police and fire units of Kyoto were, for the most part, similar to what was found in Osaka and Kobe, this report will deal chiefly with the variations on the Osaka and Kobe units. There were in Kyoto 140 auxiliary police and fire units with a total membership of 9,700. Because of the small amount of actual damage in Kyoto, the equipment and personnel of these units were still intact and prepared for any natural calamity such as fire, flood, or earthquake. One interesting point developed was that there were in the rural areas of Kyoto prefecture auxiliary police and fire units which functioned much the same as those in the city. These rural units were formed from the rural volunteer fire departments (*shobo gumi*) which dated back to antiquity.

2. *Organization.* a. *Membership.*—As compared with the set membership of 197 in each of the Osaka auxiliary police and fire units, and with the 250 to 300 in the Kobe units, the minimum figure of 50 for Kyoto seemed at first glance insufficient, but as will be seen in the table of organization, the Kyoto units operated as a smaller, more closely knit organization. As in other cities, membership was on a purely honorary basis, officers and members receiving no salary. A compensation act, however, provided for members who were injured in the performance of duty.

b. *Area.*—As in Osaka, the area of an auxiliary police and fire unit was coterminous with that of a federated block association (*rengo chokai*). It had its headquarters in a grammar school, each grammar school district being considered the area of a single unit.

c. *Table of organization.*—Although there was no set table of organization for the Kyoto auxiliary police and fire units such as there was in Osaka, the numbers of members varied from 50 to 100, and consisted of a leader who was selected by the local police chief and recommended to the governor of the prefecture for appointment for a term of 2 years; 1 or 2 assistant leaders, recommended by the leader and appointed in the same manner; and three arms: fire, guard, and first aid. Early organization plans provided for a headquarters arm but it was later discontinued, and its duties were assumed by the guard arm.

d. *The Guard arm (Keibibu).*—The guard arm of the Kyoto auxiliary police and fire units consisted of approximately 20 members, divided into 2 or 3 squads according to the personal preference of the unit leader. The leader of the guard arm was appointed directly by the leader of the unit and he, in turn, chose his squad leaders. The members of all 3 squads were charged with identical duties rather than each squad being responsible for a specific duty as was the case in Osaka. The duties of the guard arm were as follows: traffic control; dissemination of air-raid signals; liaison with police and fire stations; enforcement of light control; guiding of citizens, chiefly the aged, infirm, and children to shelters; assisting the police in cordoning off areas rendered dangerous by unexploded bombs; rumor control; observation of enemy aircraft and fires occurring in their area; and debris clearance. The equipment of this arm consisted of tools, such as shovels, mauls, rope, and picks, which were necessary in the execution of the above-mentioned functions.

e. *Fire arm (Shobobu).*—The fire arm consisted of approximately 20 members, and was usually divided into squads according to the number of motorized pumps available; in most cases, 2. The leader was chosen in the same manner as the leader of the guard arm, and he, in turn, chose his own squad leaders. The duties of this arm were exclusively fire-fighting. A full account of its training and equipment will be found in the report on "Fire Services."

f. *The emergency first-aid arm (Kyogobu).*—This arm consisted of a squad of approximately 10 men. The leader was chosen by the leader of the unit as was an assistant leader who would take over the leadership of a part of the personnel in case it was found necessary to split into two groups. Besides first aid, this arm was also held responsible for gas protection, and, although some gas masks and decontaminating powder were available, investigations showed that training and equipment were extremely rudimentary. The first-aid arm

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usually set up a station at the headquarters of the auxiliary police and fire unit and either brought in casualties or had casualties brought in by lower echelons such as the neighborhood group and block association. After giving elementary first aid to casualties, this arm supervised their transfer to higher echelons of medical treatment. The equipment was mostly medicine, bandages, tourniquets, and stretchers, and was fairly complete.

3. *Operations.* a. *General operations.*—At times when an incident got beyond the control of the fire-fighting section of the block association, a call was made on the auxiliary police and fire units for assistance. This assistance was dispatched on the order of the leader of the unit. At the same time, in most cases, assistance would be dispatched from the regular police and fire services, and in that event the equipment and personnel of the auxiliary police and fire unit was considered at the disposal of the regular services. It should be remembered that raids on Kyoto were infrequent and comparatively light and at no time were the prefectural police and and fire services ever shorthanded. Consequently, there were few, if any, instances where the auxiliary police and fire units acted under their own command at an air-raid incident.

b. *Reporting of incidents.*—All block associations were required to report any incident occurring in their areas during an air raid to the headquarters of the auxiliary police and fire unit which held jurisdiction over their areas. This was accomplished by the fastest available means of communication, usually by telephone. The unit thereupon reported such incident without delay to the regular police and fire stations with which constant liaison was maintained during a raid.

4. *Comments.*—Since Kyoto did not suffer raids of saturation proportions, it was possible here to investigate and evaluate auxiliary police and fire units in a comparatively intact status. These units functioned satisfactorily in the raids, but it was evident again that neither their organization nor equipment was designed for anything more than an auxiliary service under light raid conditions. The limitation of the services of these units in raids of saturation proportions was brought home to local officials upon receiving reports of observers of the damage inflicted upon the neighboring cities of Kobe and Osaka, but at that date little could be done in the way of increasing personnel or in obtaining additional equipment.

Neighborhood Group (Tonari Gumi), Block Association (Chokai), and Federated Block Association (Rengo Chokai)

Neighborhood Group (Tonari Gumi)

1. *Organization.*—Before the heavy air raids of 1945 the neighborhood groups were lackadaisical in their air-raid interest, but the heavy raids on the Japanese mainland impressed them with the seriousness of their air-raid functions and aroused greater interest and activity. Their first efforts emphasized fire-fighting duties, but the dropping of high explosive bombs developed the need for planning and preparation for rescue as well. In Kyoto the neighborhood groups were generally smaller than those in Osaka and Kobe, there being 5 to 10 families in the group, depending upon the convenience of liaison among the families in the areas involved. Regular meetings were held once a month and special meetings were called by the leader at such time as he deemed necessary. No regular dues were paid by the members.

2. *Leader.*—The leader generally was selected by the vote of the group, as in Osaka and Kobe, each household voting as one unit. In some instances, however, the leader was appointed by the leader of the block association and, in other cases, by the members of the block association, who were themselves leaders of the neighborhood groups. In any event, the families in the neighborhood group determined in what manner their leader would be chosen. The leader was elected for a term of 1 year and received no salary. The specifically selected air-raid defense leader of the neighborhood group did not lead the group in fire-fighting operations during an air raid, those duties being the responsibility of the leader. The air-defense leader operated as a member of the block association under the guidance of the air-defense leader *(boku kakaricho)* of that association, discussed below.

3. *Functions.*—Inasmuch as the usual fire-fighting duties and equipment of the neighborhood group were the responsibility of the block association, the only air-raid duties of the group were the dissemination of air-raid signals and

the guiding of members to shelter, especially the children, the aged and infirm. Group leaders were assembled by the block association for air-raid instruction which was passed on to the members of the group.

Block Association (Chokai—Here Called Chonaikai)

4. *Organization and operation.*—Representatives, not necessarily the leaders, of 7 to 10 neighborhood groups formed a block association. The chief variation, from the standpoint of civilian-defense duties, between the block asassociation was charged with air-raid defense Osaka and Kobe was the fact that here the association was charged with air-raid-defense duties under the leadership of an air-raid defense leader *(boku kakaricho)* who was designated by the leader of the block association and who was trained in air-raid defense duties by the air-raid defense leader of the federated block association (*rengo chokai*). This leader and his assistant were responsible for the supervision of all air-raid duties in the area of the association and with the actual operation of the hand pumps with which the association was equipped by the prefectural government. In view of the assignment of fire-fighting duties to this association, it became the next higher echelon of air-raid defense above the individual households, replacing the neighborhood group which held this position in the cities previously investigated. The duties and functions of this association, other than air-raid defense, were similar to those of like associations in Osaka and Kobe, i.e., ceremonies, rations, collection of taxes, and savings.

Federated Block Association (Rengo Chokai—Here Called Chonai Rengokai)

5. *Organization and operation.*—There were 143 federated block associations in the city of Kyoto, 1 for each school district, composed of the leaders of 20 to 30 block associations. The leader of each, usually not a member, was elected by the members for a term of 2 years. His duties were chiefly liaison between the city and prefectural governments and the block associations under his jurisdiction, and general supervision of all functions including air-raid activities. Organization of this association included a defense section *(bogobu)* which was responsible for supplying the two-man hand pumps and other air-raid equipment to the block associations but no such equipment was maintained by this section for emergency use. During the period of air raids it was charged with the dissemination of air-raid signals and with the coordination and supervision of the air-raid activities of the block association over which it had jurisdiction. The leader of this section was chosen by all the members, with the concurrence of the leader, for a term of 2 years.

6. *Comments.*—The opportunity afforded at this target to study neighborhood groups unaffected by major air raids, confirmed the results of previous investigation to the effect that the type of aerial warfare waged by the United States against Japan was totally unexpected by the people, and, had Kyoto been hit by large-scale raids, the effectiveness of the neighborhood groups would have been essentially the same. The groups were active and performed creditable duties in the light raids suffered by this city.

Air-Raid Warning

1. *Introduction.*—Throughout investigations conducted thus far, it has been stated that the army was responsible for the detection of enemy raiders and for the authorization of air-raid warnings. Examination at this target revealed a departure from that general statement. In the northern part of Kyoto prefecture in the City of Maizuru was located the important Maizuru naval base. Here the Navy assumed the job of operating its own warning control for the detection of enemy aircraft and the dissemination of air-raid warnings throughout Maizuru City and the surrounding area. Reference Item No. 1 is a map of Maizuru City and vicinity on which the area of responsibility of the naval base is indicated. This map also shows the several civilian air-defense observation posts (indicated with red dots) and the headquarters (indicated by a dot within a circle) to which those posts reported information of enemy flights. Other than this departure in authority to authorize air-raid signals, the organization of the air-raid warning system in Kyoto followed closely the description of the procedure in Kobe. Inasmuch as the responsibility for detection of enemy aircraft rested with the Army, no discussion of the several sources of detection is included in this report. There is submitted, however, a map showing the location of air-defense observation corps posts and headquarters in Kyoto prefecture (Reference Item No. 3).

Air-Raid Signals

2. *Authority to sound signals.*—a. most of Kyoto prefecture was located in the area in which the Central Army Headquarters was responsible for the dissemination of air-raid warnings. Direct telephone lines ran from the Central Army warning headquarters in Osaka to Kyoto prefecture and to the city of Kyoto. The sirens in the city were sounded from the office of the secretary of defense in the defense bureau, and the directions to sound raid warnings were disseminated throughout the prefecture, with the exception of the area covered by the warning control of the Maizuru naval base, from the defense section of the police division of the prefectural government.

b. *The Maizuru Naval Base area.*—This base operated its own warning central into which channels of information of enemy aircraft were focused, and in which the decision was made to sound warnings in its area. Here too, the information obtainable from Army sources (see Osaka report) was received, i. e., from radio interception units, early warning radar stations on Chichi Jima and Haha Jima, offshore craft, Army radar stations, civilian observation corps, and naval radar stations. It would appear that the operation of this warning central was a duplication of the operation of that of the Central Army headquarters in Osaka and that it might well, therefore, have been served from that headquarters. An appreciation, however, of the geographic vulnerability of this base and of the possible delay in the transmission of air information from Maizuru to Osaka and in the receipt of authorization from Osaka to sound the warning signals was considered sufficient justification for the establishment of this separate warning central. Information sent from the air-defense observation posts in the base area to the headquarters of the posts was transmitted simultaneously to the base and to the Army headquarters in Osaka. The reports of enemy air activity picked up by the naval radar stations under the control of this base were sent to the Maizuru warning central and from there communicated to the Army headquarters in Osaka. This base operated four offshore picket boats which were not standard naval craft but were independently owned fishing boats, requisitioned by the Navy and manned by Navy crews. These boats were not equipped with radar or listening devices and the information obtained by visual means of detection was radioed to the shore base. In view of the fact that these boats operated only to a distance of 60 miles offshore, well within the range of coast-based radar, informants doubted their value, at least from the standpoint of early detection. This headquarters also controlled operation of the four municipal sirens in Maizuru City. Directions for sounding warnings throughout the area outside the Maizuru City controlled by this base were transmitted by telephone from

this warning central to the rural police stations from which the sirens were activated. Reference Item No. 4 is a chart of the air-defense channels of communication available to this base. Reference Item No. 5 is a diagram of the base air-defense-control center.

3. *Types of signals.*—Announcement of air-raid signals by sirens, flags, sleeves, bells, and lights, having been promulgated from the office of the Ministry of Home Affairs, was the same in Kyoto prefecture (including the area covered by the Maizuru naval base) as described in the Osaka report on page 24.

4. *Methods of announcing signals.* a. *Sirens.*—The sirens within the city of Kyoto were sounded from a warning central installed in the tower of the municipal building. Reference Item No. 2 is a map of the city of Kyoto showing the locations of the 17 large sirens controlled from this central, which were the same type as those used in Kobe. In addition to the large ones, 30 smaller sirens, averaging about ½ horsepower, were individually operated throughout the city. Exhibit B is an illustration of one of the large municipal sirens located on top of the municipal building, together with a close-up view of the same siren. Exhibits C and D are views of the control panels by which the 17 sirens in Kyoto were operated. Although these sirens were rated to cover an area having a radius of 1⅕ miles (2 kilometers), in order to compensate for adverse weather conditions they were spaced on a conservative calculation of coverage of a radius of ⅘ mile (1½ kilometers). On that basis, the adequacy of the coverage is evident (Reference Item No. 2). In the event of disruption of the power lines running from the warning central to the large municipal sirens, they could be sounded by an individual switch located at each siren.

b. *Other methods.*—Supplementary and auxiliary means of sounding signals, i. e., bells, flags, sleeves, lights, and cards, were also used. While the sirens were relied upon primarily, visual means were essential for communicating the warnings to the deaf, to those persons out of the range of siren coverage, and as an auxiliary means in the event of power failure.

5. *Comments.*—Because of the relatively minor nature of the raids suffered by Kyoto, little damage of equipment was suffered. The operation of its own warning central by the Maizuru Naval Base avoided any time lag in transmission of signals there and insured warning to this important installation in the event of disruption of communications between this base and the Central Army headquarters. At the time of investigation of this target, a new main control panel for operation of the municipal siren system was located in the siren room but had not been installed. Officials expressed satisfaction with the operation of the system as a whole but had planned to install the new board as a more certain means of central control and a more rapid method of telephone communication to individual sirens in the event of the disruption of central control of any or all of the sirens.

Control Centers

1. *Introduction.*—The investigation of air-raid procedure in Kyoto revealed the existence of two organized control centers from which varied air-raid services were dispatched, those of the auxiliary police and fire unit *(keibodan)* and of the prefectural control center (here called *sakusen shitsu).* There was also a smaller control center, that of the block association *(chokai),* from which only fire services were dispatched.

2. *Operation.* a. *The Block Association (Chokai).*—In the section of this report, entitled, "Block Associations," it will be seen that in Kyoto, differing from the target cities already examined, the fire-fighting duties of the neighborhood group *(tonari gumi)* were assigned to the block association. The headquarters of this association was alerted during raids and was available to receive requests for aid. From the viewpoint of the control center as generally conceived, this headquarters was not completely equipped (it had no operations map or equipment check boards), neither did it dispatch varied services (fire, police, first aid). The headquarters housed the hand pumps with which these associations were equipped, and served as an assembly point of the personnel during periods of air raid. Because of the comparatively small area covered by this association, fire equipment was frequently dispatched upon reports of its fire watchers even before requests for help were

received from leaders of the neighborhood groups.

b. *The auxiliary police and fire unit (Keibodan).*—When bombing incidents grew to proportions beyond the effective control of the householder and the assistance he received from the block association, calls for help were made to the control center of auxiliary police and fire unit. This was the first organized control center in the sequence of air-raid operations from which varied services were dispatched. The supervising personnel of this headquarters included the leader, two assistant leaders, and the leaders of the services (fire and first aid) which were dispatched from this control center. (A complete discussion of the organization of this unit is contained in another section of this report entitled "Auxiliary Police and Fire Units.") As reports of incidents were received from lower echelons, they were plotted on an operations map and forwarded immediately to the police and fire stations. In addition to the services dispatched from this control center, reinforcements from neighboring units might also be requested by the leader.

c *Prefectural control center. Personnel.*—In Kyoto, as in the other target cities, the main control center was well organized and manned by all the officials who might have any emergency duties during the period of a raid. There is attached hereto, as Exhibit E, a diagram of the control center showing the personnel present, the seating arrangement, and the equipment used (less communications). The following is a list of the personnel in the control center. (The letters used correspond to the letters shown on the chart—Exhibit E.)

(a) *Governor of the prefecture.*—The governor was titular head of the control center and exercised general supervision of all air-raid-defense activities in the prefecture.

(b) *Air-defense headquarters commander.*—Actual head of all air-defense activities in Kyoto prefecture.

(c) *Chief of operations of the control center.*—Assisted the air-defense headquarters commander and directed the actions of the control center.

(d) *Chief of general affairs division.*—In charge of emergency budgets, handling of air-raid casualties and homeless, and liaison between the several sections.

(e) *Chief of the public works division.*—Supervised the defense and repair of public utilities and roads.

(f) *Chief of the foodstuffs division.*—Directed the procurement and distribution of food to air-raid sufferers and the distribution of food supply in the event of disruption.

(g) *Chief of the matériel division.*—Directed the procurement and supply of matériel other than food.

(h) *Telephone maintenance clerk.*—Charged with the maintenance of communications to and from the control center.

(i) *Message clerk.*—Charged with the receipt and transmission of information from the watch tower on the roof of the prefectural building.

(j) *Information clerk.*—Concerned with the information received from civilian air-raid observation corps headquarters.

(k) *Information clerk.*—Supervised the gathering of information received from police and fire stations within the prefecture and from neighboring prefectures.

(l) *Transmission clerk.*—Transmitted the commands of the air-defense headquarters-commander to each police and fire station.

(m) *Liaison clerk.*—Supervised handling of messages to and from each police and fire station.

(n) *Recorder.*—Recorded permanently the information displayed on the operations map or blackboard.

(o) *Plotting clerk.*—Traced the route of approaching enemy planes.

(p) *Clerk.*—Entered on the blackboard information pertaining to incidents.

(q) *Operations map clerk.*—Plotted the disposition of the fire services.

(r) *Operations map clerk.*—Plotted incidents on operations map and indicated the disposition of the guard services.

(s) *Operations clerk.*—Kept a running inventory of the dispatch and availability of police and fire forces. There were tabs representing each piece of fire equipment available. As the equipment was dispatched for service, this man moved the appropriate tab showing dispatch of the service.

(t) *Message clerk.*—Received and recorded reports of fires and casualties. As information was received by this clerk it was written

on a form which was passed to the air-defense headquarters commander and to the governor after which it was placed on a blackboard for the information of all in the room (after plotting on the operations map).

Special staff members.—Head of the police affairs section (*Keimuka*) ; head of the secret police (*Tokutoka*) ; head of the economic peace preservation section (*Keizai Hoanka*) ; head of the criminal section (*Keijika*) ; head of the labor section (*Roseika*) ; head of the transportation section (*Yusoka*) ; head of the building section (*Kenchikuka*) ; head of the guard rescue unit (*Keibitai*) ; head of the information section (*Johoka*).

(2) *Services available.*—Services available for dispatch solely by the control center were as follows:

The guard rescue unit (Keibitai).—For a complete discussion of the organization and operation of this unit, see section of this report entitled "Rescue."

Fire arm.—In addition to the municipal fire equipment available for service (see section entitled "Fire Service") and that available from the auxiliary police and fire unit *(keibodan)* and block association *(chokai)*, there was also a central reserve of fire equipment at the sole disposition of this headquarters. This equipment consisted of motorized pumpers, sent to Kyoto from Osaka after many of the municipal fire stations in that city had been destroyed.

Damage evaluation squad.—This squad, composed of five or six men, was specially selected by the police department for the purpose of dispatch to large incidents for prompt assessment of bomb damage.

Telephone repair squad.—This squad of 15 men was charged with the maintenance of police telephone lines and equipment.

Truck pool.—Upon the sounding of the air-raid alert, there assembled near the control center a pool of 20 specially designated trucks for use in the transportation of emergency supplies and personnel.

Army personnel.—Request for assistance from the armed forces for rescue and emergency clearance of debris was made by the leader of the control center to the Kyoto Army division.

Utility repair squad.—There was included in the Kyoto air-raid organization plan a central pool of men for the sole purpose of repair to public utilities. However, it appears that this squad was never actually organized.

3. *Comments.*—The control centers in Kyoto, faced with only small raids, functioned smoothly. Officials were proud of their physical and personnel arrangement, but were doubtful regarding their functioning had destruction comparable to that of Osaka and Kobe occurred. Here, again, the location of the main prefectural control center was found in the basement of one of the prefectural buildings with little protection against bombing or fire, and with no thought given to the location of an alternate location.

Incident Control

1. *Introduction.*—Although the basic theory of control of bombing incidents was generally similar throughout the target cities investigated, differences in the organization and operation of the several services engaged necessitates the description of the methods employed. For illustration, in Kyoto it was found that the air-defense leader of the neighborhood group operated during periods of air-raid as a member of the block association under the immediate leadership of the air-raid defense leader of that association. That and other variations require the review of incident control practice in this report.

2. *Operation.*—The effect of bombing on a household is first attacked by the members of that home, using their air-raid equipment. These householders received prompt assistance from their neighbors. At the first public warning of an impending enemy raid, the leaders of each neighborhood group, trained in air-defense duties, assembled at the headquarters of the block association. This is the first evidence of such practice; in prior investigations the neighborhood group leader stayed with his own group of families and directed operations of the householders and neighbors who came to assist, as well as supervising the employment of the hand pump with which the group was equipped. In Kyoto, however, the hand pumps were under the control of the block association and not the neighborhood groups. As the neighborhood group leader, operating as a member of the block association, came to

the incident he assumed control. At or about that time, the hand pump of the block association arrived at the incident. The neighborhood group leader continued as the incident control officer and directed the employment of the pumper. If the urgency of the situation required reinforcement of other pumpers of the block association (and fire groups from neighboring block associations) the leader first on duty continued to command. If, at this time, the air-raid defense leader of the block association appeared at the incident, he assumed control of the operations. In the next higher echelon, the federated block association (*rengo chokai*), there was also an air-raid defense leader whose duties were generally to direct the shifting of air-raid services of the various block associations within his federated block association. When the incident grew to such proportions that his personal direction became necessary, he assumed control of the incident. A call for assistance was made to the auxiliary police and fire unit *(keibodan)* if the incident grew out of control. As assistance from this unit appeared, the control authority continued on through a new sequence —first the leader of the squad sent to the scene, then the leader of the particular arm, and finally the over-all leader of the unit. The authority of these men continued in spite of the arrival of reinforcements of equal echelons. By this time it was logical to assume that the fire watcher atop the nearby fire station had spotted the fire, reported to his chief in the fire station below, and that municipal fire equipment had been dispatched. Upon the arrival of the municipal pumper, the leader of that unit took over control, continued in control regardless of the arrival of like reinforcements, but was superseded by his chief or any succeeding officers in the channel of municipal command who might have come to the incident. This sequence was not disturbed by the arrival of any reinforcements from outside the city. It is to be noted that the general leader of the various organizations, because of his over-all authority, can supersede the leadership of the leaders of the services or the air-raid leader because of the special training given these arm and air-raid leaders. However, supervision of incidents was rarely, if ever, taken over by the general leader of the organizations referred to in the chain of incident control.

3. *Conclusions.*—In the discussion of incident control, the question arises as to the wisdom of using a specially designated incident control officer, one supervising the action of the various services from the time of the dropping of the bomb until the effect of the bombing has been handled—as in the British system—as compared with the Japanese system—of shifting control upon the arrival of higher echelons—used by the Germans. In the Kyoto investigation, this question was posed to five different officials well versed in air-raid practice. Their unanimous opinion was that the use of a single incident control officer presented certain advantages but that it was impractical, especially in a large raid, because of the unavailability of a sufficient number of trained men, prefectural or civic, for service at every incident.

Unexploded Bombs

Operations in bomb disposal procedure in Kyoto were limited to the reporting of such missiles and the precautionary measure of cordoning off a safe area prior to the arrival of the bomb disposal squad from the Army in which lay the sole responsibility for actual disposition of the bombs. While the size of the bomb and its position (on top of the ground or imbedded) determined the final size of the area considered to be safe, an arbitrary radius of 325 yards (300 meters) around the bomb was roped off prior to the arrival of the bomb disposal squads. Final determination of the proper area of safety, however, lay with the leader of the Army bomb disposal squad. The usual channel of reporting unexploded bombs was the same here as was described in the Kobe report, i. e., from the finder to the leader of the neighborhood group, to the leader of the auxiliary police and fire unit, or municipal police station, whichever was the closer. Reports received by the auxiliary units were sent by them to the police station. From the police station these reports were forwarded to the prefectural control center, and from there to the headquarters of the Kyoto Army division. Official records revealed the discovery and disposal of only three high-explosive bombs in Kyoto during the war. Early training in bomb identification was not continued to include later types, and this weak-

ness would have given rise to confusion in reporting if this area had suffered raids having a higher ratio of high-explosive bombs with a resultant increase in the number of duds.

Fire Services

Fire Protection

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 department records; by inspecting fire equipment and fire stations; by observing fire drills; and, in addition, by inspecting several types of buildings. (For list of persons interrogated see Exhibit F.)

b. *Size and population of Kyoto City.*—Kyoto, one of Japan's historical cities, and the former seat of the government, covered 115 square miles (299.44 square kilometers), much of which was mountainous and thinly populated. In 1940 the population was 1,089,726, but there was a gradual decline in number until in September, 1945, there were 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 prewar industries. The manufacturing of airplane parts and submarine batteries was the principal war industry added to the city.

2. *Kyoto Prefecture fire 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 *(keibodan)* training, planning (plant fire brigade) and personal affairs section. At the time of this survey, the fire section was under the public welfare department of the prefectural police bureau. The public welfare department directed, also, the business section, the peace maintenance section and the personal affairs section. The fire department in Kyoto rated only a subsection position of a principal department of the prefectural police bureau, whereas, in Tokyo, Osaka, and Kobe they were on a departmental level, which raised their fire-fighting organization from fire sections to fire departments.

b. *Maizuru fire department.*—The only other full-time fire department in Kyoto prefecture was located at Maizuru City (naval base), approximately 70 miles northwest of Kyoto City. In this secondary naval base city of 88,061 there were 10 pumpers and one battalion district. (Reference Item No. 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 g. p. m.[1]), fire hose and appliances, and they operated very similarly to volunteer fire departments in the 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.

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 asked that the personnel be increased to 1,211, but only 329 men were added to the department. In November 1945, there were 821 firemen employed in all grades. (Reference Item No. 7.)

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 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 salaries were slightly lower owing to cheaper living conditions in Kyoto.

3. *Auxiliary police and fire units (Keibodan).* a. *Organization.*—The police department exer-

[1] Gallons per minute.

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cised over-all supervision of the auxiliary police and fire units, and trained them 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 units with 9,740 members. (For detailed organization, see Auxiliary Police and Fire Unit report.)

b. *Duties.*—The duties of the auxiliary units of assisting the police and fire sections were more or less uniform 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 1 to 3 hours, and consisted of lectures, demonstrations, and drills. After the heavy air raids on Osaka and Kobe, officials from Kyoto visited those 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 g. p. m. gasoline-driven pumps; 9 120 g. p. m. pumps on small Datson cars; and 5 450 g. p. m. motorized trucks.

e. *Affiliates.*—Block associations *(chokai)* were equipped with hand pumps and received some training from the auxiliary firemen. The neighborhood groups in Kyoto were neither equipped nor trained to fight fire as they were in Osaka and Kobe. However, many families did provide 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 g.p.m. gasoline-driven pump on a hand-drawn cart; a 450 g.p.m. 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, were members of the fire brigade. Special fire mains and hydrants had been installed within the premises, with a 500 g.p.m. electrically driven stationary pump, and a gasoline stand-by engine for use in the event of power failure (Reference Item No. 8). Fire hose was 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, standpipes and extinguishers, were instituted 8 years ago, after a building valued at a million dollars had burned. The fire-protective installations provided little more than preliminary fire-fighting equipment, as the fire mains were small, not properly looped or valved, and the fire hose used was 1¼ inches in size.

4. *Fire stations.* a. *Number prior to and during war.*—In December 1941, there were 6 battalion stations and 21 substations. Only 3 substations were added during the war, making a total of 24, and they were all still in operation. (See Reference Item No. 9, map of Kyoto fire stations.) The city was divided into six battalion districts, the Shimo district being the highest valued and most important from a fire-protection standpoint.

5. *Fire equipment.* a. *Motorized apparatus.*—In December 1941, there were 35 pumpers rated at 350 to 500 g.p.m. This number had been increased by May 1945 to 80 pumpers, 54 of which were rated at 350 g.p.m. and 26 at 500 g.p.m. (*See* Reference Item No. 10, Make and Number of Fire Pumpers.) The increase of 45 pumpers during the war consisted of 12 new 500 g.p.m. Nissans in addition to 33 fire trucks appropriated from villages in the prefecture. The borrowed apparatus had been returned and the city had 47 pumpers, 17 of

which were rated at 500 g.p.m. and 30 at 350 g.p.m. (Reference Item No. 10.) One third of the equipment in service was from 5 to 20 years old.

b. *Types of fire apparatus.*—A Japanese-built 85-foot aerial ladder, mounted on a 1939 White truck, was the only ladder equipment in the department, except the usual 8- to 20-foot extension ladders carped with a 500 g.p.m. 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 was a bare truck carrying only the aerial ladder and pump (See p. 26 for aerial truck demonstration). A small nozzle, ⅞-inch tip, was secured to the top of the fly ladder and 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 was not adequately trained in the use of ladder equipment, and could not be expected to get the most out of it. Pumpers were the only other type of fire apparatus in the fire department and they were equipped the same as those in Osaka and Kobe.

c. *Maintenance of fire apparatus.*—The fire apparatus observed in the Kyoto fire department was in much better mechanical condition than was the equipment in Osaka and Kobe. Electric starters were used on all motorized equipment. Motor repair and overhaul jobs were done by public garages which were selected at the discretion of the battalion chiefs. Spare parts were scarce and delays in repair jobs were frequent. No stand-by apparatus was available for temporary use while equipment was out of service.

d. *Fire hose.*—The Japanese standard fire hose (2½ inch unlined linen), equipped with a snap-type coupling, 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 was in service. Each pumper was supplied with a complete change of linen hose, in addition to 2½-inch and 4-inch hard suctions (rubber) for hydrant connections and drafting.

6. *Training of firemen.* a. *Training school.*—Prior to the war, firemen recruits were given 2 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 1 month and at the time of this report there was no training. The fire chief stated the wartime firemen were poorly trained and he expected to reopen the school for the purpose of giving these men a 3- to 4-week refresher course.

b. *Fire station drills.*—Practical drills were conducted in fire stations 5 times a month for a period of 1 to 2 hours each. A series of drill evolutions were observed at the Shimo 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 (Pages 29 and 30). Fire escape chutes were not carried on fire apparatus but were recommended by the Ministry of Home Affairs as equipment for all limit-height buildings. The fire chief stated that some department stores, office buildings, and hospitals had fire escape chutes, but he did not know where they were kept nor who owned them.

7. *Fire alarm system.* a. *Electric Alarms.*—In 1928, the city installed 70 fire alarm boxes (Matsumoto MM type) at locations in the Shimo 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 5 years, and the fire chief stated it had never been dependable. Most of the street boxes had had the electrical mechanism removed.

b. *Telephone alarms.*—The telephone number 119 was used exclusively for reporting fires. The telephone exchanges in the several districts had one trunk line to their nearest battalion headquarters station. The battalion station, in turn, called the nearest substation by direct phone. There was no central fire alarm office for dispatching fire apparatus. Each battalion station functioned in its district independent

Above. Kyoto's aerial truck, located at Shimo battalion headquarters. equipped with 500 g. p. m. pump, but had no hose or standard ladder equipment.

Right. Aerial truck extended 65 of its 85 feet with a 2½-inch hose line playing a stream through a ⅞-inch nozzle tip made secure to the fly ladder.

of other districts. In 1943, the 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 department)	1
(4)	Watch towers	5
(5)	Still alarms (man ran to fire station)	2

c. *Watch towers.* Located within the city were 16 watch towers, 1 at each battalion headquarters and 1 at each of 10 substations. One of the towers was 130 feet high, located on top of a building near a fire station, but the other towers were steel frame, much like an oil derrick. Thirteen of the steel towers were 40 feet in height and 1 was 60 feet. A 24-hour fireman watch was maintained on these towers and the watch changed every hour. Fires were spotted and reported in the same manner as described in the Osaka and Kobe reports.

8. *Water systems.* a. *Source of water.*—Ninety percent of Kyoto's water supply was secured from two parallel canals, each 9 miles long, which brought water direct from Biwa Lake to Kyoto City purification plants, while 10 percent of the water was picked up from the Uji River within the city at the Momoyama and Shin Momoyama purification plants. Fifteen pumps were used to lift water from the intakes to the five purification plants. There was an abundant supply of water flowing through these plants to small distribution reservoirs. There were no large reservoirs in the system and the largest purification plant (Keaoe) could be bypassed in an emergency (Reference Item No. 6).

b. *Water mains.*—The mains from the 5 purification plants were 12- to 38-inch cast iron pipes which fed a grid distribution system. The network of pipes was 4 to 16 inches in

Shino Battalion Headquarters personnel lined up at rear of station 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 Ministry of Home Affairs as equipment for limit height buildings, particularly department stores and office buildings.

diameter, well equipped with isolation valves, and had few dead ends (Reference Items No. 11 and No. 12). Water 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 electrically driven pumps to maintain pressure. The city pressure ran from 20 to 80 pounds on all mains. Only one fire main was broken in the air raids on Kyoto, a 6-inch cast iron main receiving a direct high-explosive hit, but it was repaired within 24 hours.

c. *Hydrants.*—There were 7,341 public and 1,744 private hydrants in the city. Fire hydrants in industrial plants were privately owned (Reference Item No. 7). Both public and private hydrants were on 4-inch risers and were located about 110 yards apart (Reference Item No. 11). Approximately 9,065 of the hydrants were flush type, located below the sidewalk with a steel plate cover. They had single 2½-inch outlets with snap-on connections. The remaining 20 hydrants were post type and also had one 2½-inch snap-on hose connection. All hydrant hose connection in Japan were standardized. The fire department was responsible for testing hydrants, but there was no regular schedule for flushing them.

d. *Wells.* There were 183 wells listed as a possible source of water for fire fighting (Reference Item No. 7). The wells were about 6 feet in diameter with water approximately 15 feet below the surface. Kyoto did not use any wells to augment its city water supply (Reference Item No. 13).

e. *Other sources of water.*—Kyoto had 979 open water tanks, one 77,000 gallon underground tank and 47 swimming pools which might be used for emergency fire fighting (p 33). The fire department had made a survey of the canals and three rivers that flowed through the city to determine where drafting of water could be done. At the suggestion of fire department officials, sumps with covers were sunk in the bed of shallow canals to receive the suction (p. 34). 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 was adequate for normal fire-fighting.

9. *Operations under air-raid conditions.*
a. *Prearranged 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 calendar year, April 1, 1944. At that time 37 pumpers (350 to 500 g.p.m.), and 118 hand-drawn 120 g. p. m. gasoline pumps were appropriated from villages in the prefecture and turned over to the Kyoto fire department and industrial plants further to strengthen their fire-fighting facilities. Before April 1944, the people had been led to believe that that 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 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 March 14, 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 throughout the city. There 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 p. 36.) The fire department was inadequately trained to cope with a large fire under normal conditions. In observing the drill of a typical fire company, it was noted that 5 minutes time was taken in spotting the pumper, connecting the two 10-foot sections of suction hose, and laying out one section of 2½-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, January 16, 1945.*—At 2320, on January 16, 1945, a lone B-29 flew

Emergency underground water tank (77,000 gallons) at Bukkoji Temple with three openings for drafting, two on street and third inside temple grounds as indicated above.

Sump in Kiyamachi district, covered with stone slab, one of several in shallow canals for fire-fighting use.

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 completely destroyed; 112 half destroyed; 175 partially damaged; and 2 burned by incendiaries. Thirty-four persons were killed; 23 seriously wounded; 33 slightly wounded; and 750 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. (Reference Item No. 7, page 3). The fire department encountered no serious difficulty in controlling the small fires which burned two houses.

c. *B–29 air raid, June 26, 1945.*—At 2141, on June 26, 1945, B–29's dropped high explosives in the Kyoto area, which destroyed 54 houses and partially destroyed 99 others. Forty people were killed, 19 seriously and 34 slightly wounded. These 2 raids were the most damaging of 11 small air raids on Kyoto prefecture (Reference Item No. 7, pages 2 through 5).

Fire Prevention

10. *Operation.*—No organized fire prevention bureau existed in Kyoto 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; 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 by a static gauge was taken on fire hydrants. The fire chiefs stated that the

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

pressure in the mains ranged from 30 to 50 pounds, and during the early morning hours when domestic water was not being used, 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 because of the fact that Kyoto's water system was not damaged.

11. *Fire regulations.*—The fire regulations in Kyoto prefecture were the same as in Osaka and Hyogo prefectures. They were sketchy and were interspersed in the building regulations promulgated by the Ministry of Home Affairs. Firemen had no authority to enforce fire regulations, but they might file an official complaint with the district police office where action would be taken, if the police so desired. Action on fire regulation violations was, however, seldom taken by the police, and firemen hesitated to file complaints. Fire extinguishers were not required in most buildings and those observed were the soda-acid type, and in poor condition or empty (p. 38).

12. *Building construction.*—The Ministry of Home Affairs regulated building laws in all Japanese provinces. Some consideration had been given to zoning for business, industrial and residential districts. Karasumaru Dori and Shijo Dori, 100 and 80 feet wide, respectively, were the principal streets of Kyoto and they had been zoned for only new construction of reinforced concrete (Reference Item No. 14). A total of 363 concrete buildings from three to eight stories in height were located on those two streets. The south and west sides of the city were known as industrial areas and there were no specific building regulations for them. In the residential area dwellings were bunched together, separated by a solid wall with 1 inch of plaster on each side. The roofs were tile and slate (p. 39, dwellings and small stores in the central part of the city), and (Reference Item No. 15, Building Regulations).

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 (Reference Item No. 16, p. 27.) The causes and frequency of fires were given in detail in the yearbook. The fire chief stated that in his 18 years in the fire department, Kyoto had suffered only two large fires, one was 11 years previously when 36 houses burned, and the second was 8 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 historic city.

14. *Mutual Aid.*—Kyoto dispatched 10 pumpers to Osaka on March 14, 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 July 17, 1944 when 677 houses were demolished. On February 27, March 18, and July 21, 1945, additional buildings were demolished. Of these, 6,068 were houses in sparsely settled areas, and 19,308 were in built-up sections around important establishments, making a grand total of 25,376 buildings (Reference Items Nos. 17 and 18). The removal of these buildings would not have saved Kyoto from fire destruction in one large incendiary raid (p. 41, area from which buildings were removed).

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 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 author-

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

Residential and business district, looking southwest.

Crowded residential district, looking northeast. Views taken from roof of Asahi Press Building on Kaharamachi Dori (street), Kyoto.

Firebreak, widest in city, approximately 195 feet, built by removing houses. Looking west toward Teramachi Dori (street) from Kyoto City Hall.

One of many firebreaks created near important buildings. Looking north toward Daimaru department store, from Shijo Dori, Takakura district.

ity 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 (p. 43). In a document, dated July 7, 1945, from the prefectural governor to the mayors of all large cities and towns of Kyoto prefecture, an air-defense medical organization plan was established. This document included the air-defense first-aid regulations, first-aid facilities, and functional classifications of medical personnel and their assistants. This plan represented an ideal and differed to some extent from the plan that was in actual operation. Exhibit G is a translation of the abovementioned 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 associations and assigned by their professional qualifications for specific duties in the air-defense medical set-up. These assignments were classified into eight categories: first-aid stations, first-aid hospitals, obstetrical first-aid stations, special first-aid hospitals, medical arms of the auxiliary police and fire units, gas-defense squads and two reserve sections. Pharmacists were assigned to the gas-defense squads, midwives to the obstetrical first-aid stations and the old and physically weak physicians to the reserve sections.

4. *Evacuation of casualties.*—During the air-raid alert, all personnel reported to their pre-assigned locations for duty. Ambulatory air-raid 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 police and fire units, and volunteer workers of the neighborhood groups. At the first-aid stations the patients were to be separated into categories of injuries and, either treated and dismissed, or sent to the hospitals for further treatment.

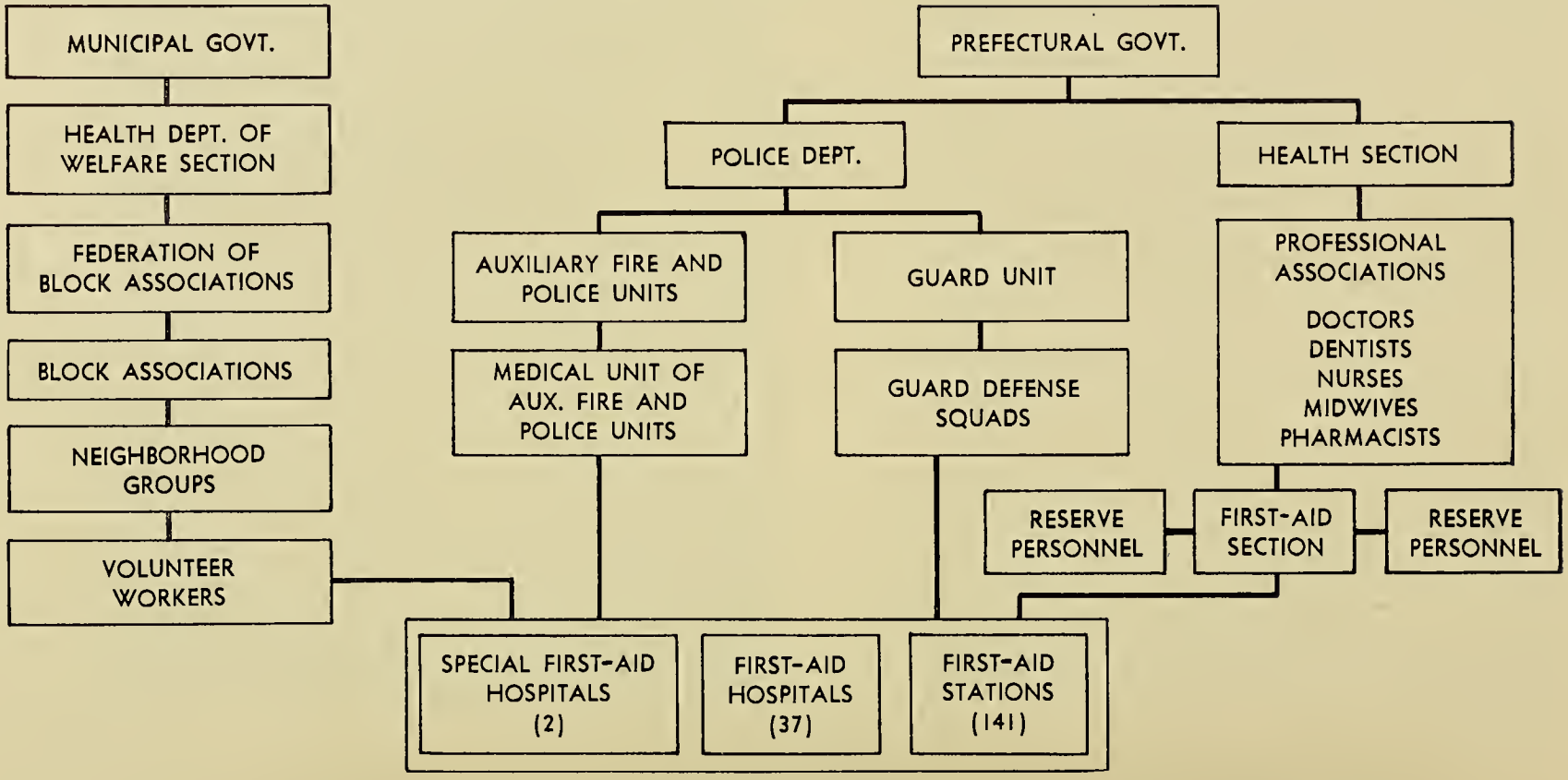
5. *Transportation of casualties.*—The transportation unit of the municipal welfare section (Yosuka) maintained a pool of trucks and other vehicles for the removal of air-raid wounded from the first-aid stations to the hospitals. When transportation was needed, the chief of the public health section 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 a public elementary school building, but, in a few instances, 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 the use of its own employees. It was believed by the municipal and prefectural health authorities after their visit to Osaka immediately following the March 14, 1945 raid, that the first-aid stations as planned would have been insufficient in the event of heavy air raids on Kyoto. Based upon that decision, the Japanese Red Cross was directed to assemble 20 supplementary first-aid stations to be used when directed by the health department. These stations were to be located in tents in any part of the city that might be in need of them. (See Red Cross section.)

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 brought to the stations by the physicians assigned there for duty. There was no sterilizing equipment nor any facilities for administration of plasma, or for 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 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 insufficient to handle large numbers of casualties, supplementary aid would be furnished by physicians in the reserve sections or by physicians assigned

ORGANIZATION OF EMERGENCY MEDICAL SERVICE
KYOTO, JAPAN



to first-aid stations in an undamaged section of the city.

7. *Hospitals.*—Throughout the entire city of Kyoto, there were approximately 100 hospitals including all large and small, public, and private institutions. Thirty-nine of the hospitals, with a total bed capacity of approximately 2,100, were designated by the prefectural health authorities for use in treatment of air-raid casualties. Thirty-seven of the hospitals, with a total bed capacity of 600, were designated as first-aid hospitals, while the other 2 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. Black-outs were enforced during alarms, and strategic points in the hospitals, such as operating and X-ray rooms, were equipped with special black-out 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; and, second, 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 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 police and fire units were responsible for dissemination of medical information and instructions to the people. Some elementary first aid was taught to the people by the Red Cross Association, but 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 association and distributed them to the 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.

10. *Comments.*—Plans were made to enlist all members of the medical and allied professions in the case of war casualties. For coverage of the city, 141 first-aid stations were placed in readiness, and the larger hospitals were designated to care for the severely wounded.

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Equipment and supplies were far below the level of the working ideal; first-aid training was carried out, but in a sketchy and perfunctory manner. Plans for protection of patients in hospitals in the event of air raids would have been reasonably successful in moderate raids, but, in view of the experiences of similar emergency medical services in heavily bombed cities, there is no reason to suppose that the Kyoto services would have proved to be any more adequate than elsewhere.

Red Cross Activities

11. *Introduction.*—The source of information relative to the Red Cross activities in Kyoto was the director of Red Cross for Kyoto prefecture, who had an intimate knowledge of Red Cross procedure at the height of the air attacks, since he had been in his position for nearly 2 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.

12. *Organization.*—The principal departure in the organization plan of Kyoto from that of Osaka and Hyogo was the fact that the director of the prefectural Red Cross branch was appointed by Red Cross headquarters in Tokyo, whereas in the case of the two latter prefectures, he was 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.

13. *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 about 50 doctors and 100 nurses, all of whom were full-time paid workers. During the war, doctors and nurses were furnished to the Army upon demand from Tokyo headquarters of the Red Cross. There was 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 had 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 services. Also, when their duty with the military service had been completed, they were discharged and returned 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 employed only those nurses who had been trained in the Red Cross hospitals.

14. *Functions.* a. *Training.*—(1) Training of nurses was 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, conducted a training school which graduated 100 nurses annually. These nurses were of two classifications, *a* and *b*. The *a* group consisted of nurses who had been graduated from high school and their course of training covered a period of 3 years. Candidates for the *b* group were accepted upon graduation from primary schools, and their course of training covered only 2 years. The *a* class nurses were preferred, but, in order to meet 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 students were given certificates of attendance, after which they were authorized to teach first aid to the neighborhood groups. There is no record of 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 in contrast with the policy pursued in Osaka and Hyogo prefectures.

b. *Operations.*—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 purpose, tents and other equipment were assembled and held on a stand-by basis.

(1) 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.

(2) 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. 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.

15. *Finances.*—Although the Red Cross received no support from the government, it did receive compensation on a per diem basis for the care of Army and Navy patients. 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 from membership and special contributions, those sources were quite inadequate for the support of the annual budget, so that the major amount of revenue came from fees paid by patients. Regarding membership fees, there were three classifications: (1) the usual fee of 3 yen per year for 10 years after which no further fees were charged or, as an alternative, a person might secure a paid-up lifetime membership by the payment of 25 yen at one time; (2) honorary lifetime membership by the payment of 200 yen; and (3) a superhonorary paid-up membership by the payment of more than 1,000 yen. All of those classes of membership are included in the total membership 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 the call was for 14,917 new members. Every family was expected to have at least one member. Although special donations were 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 memberships was contributed to the national headquarters. The annual budget for all operating expenses of the Red Cross program in Kyoto prefecture for 1944 was 2,336,000 yen.

16. *Comment.*—The Red Cross program during the war was not greatly different from its peacetime activities. The principal difference lay in the extramural 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 for disaster relief.

Mortuary Service

17. *Introduction.*—Since the mortuary service was not called into operation except on a very limited scale as a result of 2 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 even the program as planned was somewhat immature.

18. *Organization.* — The mortuary service differed 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 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 department and it was, therefore, transferred to the police department, first to the auxiliary police and fire units (*keibodan*) but eventually, to another section, the purpose of which appeared to be personnel management and accounting (*keimuka*), as indicated by its duties which included employment

and training of police and firemen, the management of budgets and accounts, and planning for the guard section of the police department. It was under this last-named function that the disposal of the dead was arbitrarily placed. The personnel and accounting section was 1 of the 14 independent sections of the prefectural police department, on the same level as the guard section which has figured frequently into the organizational charts. At the close of the war, when the need for special plans for the disposal of the dead had ceased to exist, this function was transferred back to the health department. The principal difference between the management of this problem by the auxiliary police and fire units and the personnel and accounting section was that the former was a voluntary organization whereas the latter was official.

19. *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 the section, but only that instructions would 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.

20. *Identification.*—Identification of dead bodies was a mandatory duty of the police in peacetime as well as in war. When identified, the body was sent to the victim's family or friends. Should casualties be few, the plan was to leave the body where it fell, as that would have made identification much easier, but when bodies 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 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 have been necessary due to lack of coffin material, and wood or oil for burning.

21. *Personnel.*—The personnel relied upon for the disposal of the dead were undertakers and their employees. 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 exercises. If trouble had descended upon them on a large scale, they would have had to "do the best they could" to meet the situation.

22. *Transportation facilities.* — Ambulances were virtually nonexistent. 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.

23. *Comments.*—After the great raids on Osaka and Kobe, representatives were sent from Kyoto to observe the effectiveness of the defensive preparations. They saw at first hand that many of the war emergency measures broke down completely in the presence of dire and devastating attacks. They observed, for instance, that using basements of houses and buildings for air-raid shelters often resulted 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 more intensive preparations for disposal of the dead, because of the probability that, as a result of major air raids, the fatalities would be 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.

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 procedues 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 May 1, 1944.

Guard Rescue Unit

2. *Organization.*—The directive which authorized the formation of this unit afforded the prefectural governments considerable latitude in its organization. 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 (exhibit H). 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 with Osaka and Kobe, no educational qualification was required of an applicant.

4. *Table of organization.*—Each squad was composed of 1 leader and 10 men, each platoon had 1 leader, 1 orderly, and 3 squads; each company had 2 leaders, 2 orderlies, and 2 platoons; and the battalion had 2 leaders, 1 orderly, and 2 companies. An orderly performed liaison and messenger service along with any other duties assigned to him by his commanding officer. The entire organization had a total complement of 151 men (Exhibit H).

5. *Training.*—Each selected applicant was sent to school for 3 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 that 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 *(koheitai)* conducted in Kyoto by Army personnel. Upon the completion of the course of instruction, these men returned to their unit and trained all other members of the 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 3 months' training period, was assigned to duties except those directly concerned with rescue service. Some practical training was secured by assisting in demolishing houses to build fire breaks 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 headquarters 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 March 13-14, 1945, 60 men of the unit were dispatched to Osaka City to aid in rescue operations. All requests for such mutual aid had to go through the police chief 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.

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 1 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 their locations.

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 transportation, 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.

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 factory fire and first-aid units (refer to Factory Air-Raid Protection Section of this report).

17. Both units were completely lacking in heavy rescue equipment and motor transportation which seriously affected rescue operations.

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. However, the lack of proper rescue equipment, transportation, 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-explosive bombs would have created a situation far beyond the capabilities of the rescue services.

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 followed 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 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 the name of the public works 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 public works office was placed on the city's air-defense table of organization but it made no changes of any kind. The city public works

bureau *(shisetsu kyoku)* had the following sections: general affairs (*shomuka*), civil works (*shisetsuka*), *operations* (*gyomuka*), and city water *(jogesuika)*. 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, and held those 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 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. There were no "maneuvers" held and no reports made beyond those of normal peacetime operations. The city held maneuvers once a year, but considered them of little value, and regarded training 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 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 assistance to harrassed road crews. The city provided for 1 company of the emergency public works construction group, 25 to 30 men, in each of the 7 yards. There were no more than 20 actually listed for each ward and of these some were only names of persons which had been kept on the rolls even after the individuals had been conscripted by the army. The city officials stated that in August 1945, had there been an emergency, hardly 5 to 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 1 week out of 4 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 9 were unusable because of lack of spare parts, and the 6 still in service were taken by the Army for airfield construction. The Army likewise borbowed the city's pneumatic drills, as well as its 6 rollers. 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 important in mass air raids was indicated by the virtual disregard on the part of the prefectural and city public works departments of the training maneuvers suggested by the Ministry of Home Affairs. It was the feeling of the city officials that each ward of the city was fully capable of handling its own street clearance problems, and that, if, by any chance, additional aid were needed in a given ward, help could be summoned from another ward without making any more elaborate arrangements than those already in effect for peacetime operation. 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 would handle it with help immediately at hand, i. e., auxiliary police and fire units *(keibodan)* or neighborhood group *(tonari gumi)* 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 which issued the necessary orders to the public works officials.

b. *Operations.*—In none of the minor bomb-

ing incidents was there and post-raid emergency clearance necessary beyond the routine activity of the local auxiliary police and fire units.

3. *Emergency repair of roads and bridges.*—The prefectural and city repair set-up was the same as that for clearance in organization, personnel, training, equipment, and the authority exercised by the police. Materials were gathered by the prefecture for emergency purposes, but were not distributed to strategic points as in the case of Kobe. The city made no effort along this line whatsoever on the grounds that there 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 *(kinkyu kosaku 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 the 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; the municipal water system and streetcar 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 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 streetcar 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 auxiliary police and firemen 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 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, the responsibility of which 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 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 had been collected (temple bells, statues, cooking utensils, stoves, bridge railings, radiators) and sent to war industries. The law respecting scrap remaining unclaimed on burned property, quoted in the Kobe report, would have been put in operation 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 2½ months after the end of hostilities among officials charged with the responsibility of restoring roads and bridges as well as public utilities, gave the impression, at first glance, of indifference to the calamitous possibilities of

mass air attack that had become actualities in cities hardly 10 minutes away by air. Part of this attitude may have been a postwar development springing from the fact that Kyoto escaped serious bombing and may not have accurately reflected the feelings of the officials 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, that manner of projecting present knowledge backward to explain previous inadequacies cannot be taken at its face value, and the lack of preparation 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 volunteer auxiliaries and perfecting plans for emergency service by personnel already at hand. 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. But, on the other hand, 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, was never transmitted.

c. On the 9th and 10th of 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 words personnel; (2) the establishing of possibilities for mutual aid (though only half-heartedly carried out in Kyoto planning); and (3) the extension of police autority over the groups. 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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IV. PROTECTION OF FACTORIES, UTILITIES, INSTALLATIONS, AND BUILDINGS DEVOTED TO PUBLIC USE

Factory Air-Raid Protection

1. *Introduction.*—The purpose of a brief industrial study in the Kyoto area was to observe in a given case, such as the Mitsubishi Aircraft Engine Plant, the plans for, and efficiency of, an air-raid protection organization of a factory located in an area upon which no extensive air-raid strikes were made. The above-mentioned plant was selected as an example study (exhibit I) for the reason that it had been badly damaged and moved from the Nagoya area to its present site as a part of the new Japanese plan of April 1945, for industrial dispersion. It was representative of the new wartime emergency type of construction and lay-out and was the sole assembly plant in Japan for a particular style of aircraft engine. It was built and owned by the Japanese government on its present site but operated as plant unit No. 8 of the powerful Mitsubishi Heavy Industries, Ltd., which owned the machine tools and equipment.

2. *Control and responsibility.*—While responsibility for adequate plant protection measures rested with the owner and operator, the Munitions Ministry, the Army and Navy and the prefectural government exercised control of plans and policy for air-raid protection, the latter governmental body supervising the execution of the plan.

a. Following the disastrous experience of this Mitsubishi plant in the early Nagoya raids and the bombing of a sister plant (No. 14) located 30 miles north of Kyoto, the management took a serious attitude toward the perfecting and training of a sizable factory protection organization in this plant. They did not share the illusion that beautiful Kyoto with its temples and shrines would be spared, as did the prefectural officials of Kyoto. The general manager of this important plant of 10,000 employees assumed personal charge of all protection matters and was chief of the air-raid protection organization.

3. *Organization.*—This plant followed the general plan and outline of a typical Japanese factory air-raid protection force, but introduced certain pertinent variations, adapting them to the peculiar needs of this type of industry, its geographical lay-out and its temporary wooden and steel-frame type of construction. Divided into four subunits under the direct control of the general manager of the plant and two assistants, it contained one innovation that was a departure from the commonly used plan, in that the permanent guard department, a strongly staffed and well equipped casualty and first-aid group and the repair department were held together in a permanent subunit rather than dispersed throughout the rank and file of subordinate war emergency air-raid groups of the organization.

a. *Subunit No. 1,* covering a relatively small but highly important group of buildings, was divided into three administrative sections only one of which, section No. 1, was organized and active. Sections No. 2 and No. 3 were planned and could be activated quickly if air-raid emergencies so dictated. Section No. 1 of this subunit was further divided into four groups, namely, the first aid, fire fighting, fire pumping, and liaison groups, organization and duties of which are fully described in exhibit I.

b. *Subunit No. 2* was organized similarly to subunit No. 1 except that it contained only two sections, No. 4 and No. 5, but with four groups in each section. It was charged with the protection of a large group of factory assembly buildings including several storage warehouses located in the central portion of the plant.

c. *Subunit No. 3,* comprising four sections, Nos. 6, 7, 8, and 9, was the largest unit in the plant protection organization and covered a wide area at the northwest corner of the plant property, comprising all of the assembly plants where new employees were trained in the art of part finishing and assembly, and also the dormitories which housed some 2,500 employees. Each section of this subunit was subdivided into the same groups as section 1 of subunit No. 1.

4. *Protective equipment.*—This plant possessed, both in type and quantity, the best fire-fighting equipment, casualty and first-aid station appliances and interior communication facilities that could be obtained in Japan for a high priority war production plant. Motor-

ized fire pumpers of 500 g.p.m. capacity, and the portable hand-drawn 120 g. p. m. gasoline-driven pumpers, as well as the large supply of Japanese fire-fighting tools of all kinds, while good, were not sufficient to provide adequate protection for the number of buildings included in this plant, or to cope with the conflagration that would certainly result from fires in this type of wood building construction. Proper interval was practiced in the erection of these buildings, which would prove of great assistance in fire fighting and control of an average fire, but a saturation raid of incendiary type bombs would have caused a complete loss in this plant area. The roof construction of the industrial saw-tooth type, covered with quarter-inch corrugated asbestos sheathing, would not have prevented perforation by incendiary bombs, but would have provided roof levels on which incendiary bombs could accumulate and make extinguishment by the fire-fighting forces difficult.

a. *Water supply* for fire-fighting purposes was supplied through 6-inch mains from the city of Kyoto and delivered through the yard grid system at not more than 15 pounds per square inch pressure. This was supplemented by the introduction of gasoline driven pumps set in the plant lines which brought the pressure in the hydrants up to 45 pounds per square inch. Even with the addition of some 27 static water-supply pools ranging from 500 to 100,000 gallons capacity, the water supply would have been insufficient to cope with a major fire, especially in view of the remote location of some of the statis supply.

b. *Automatic sprinkler protection,* generally recognized in American factories as the first line of protection, was not installed or even contemplated in the construction of this new factory.

5. *Training.*—Under the guidance of the 30 full-time paid firemen of the plant fire brigade, assisted by the firemen of the prefectural police, all employees of the plant engaged in fire-fighting and fire-pumping groups were given extensive training concerning their duties. Many employees in addition to those comprising the first-aid groups of each section of the air-raid protection force were taught the rudiments of first-aid practice. The fire-defense forces drilled three times weekly with their equipment and went through evolutions covering each of their posts of duty. The entire air-raid protection force of the factory practiced five times per month simulating actual air-raid conditions.

6. *Air-raid shelters.*—This plant had erected two shelters of reinforced concrete for the particular use of management and their immediate staffs which might have been considered to be up-to-date in design. (paragraph 9, exhibit I). The employees of the plant were afforded only the small, shallow dugout type of shelter, capable of holding not more than six to eight persons within the plant yard, but, in the case of apprentice workers and female employees, they could have taken to the nearby mountain foothills for protection on the first alert. This industry was just another example of Japanese disregard for adequate protection of human life against air raids even in a vital industrial plant where the safety of workers was tantamount to the continuity of production so badly needed to keep the war machine in motion. Such protection as was provided could not accommodate more than 2,000 persons at any one time of a total number of approximately 7,000 on a day shift and 3,000 on the night.

7. *Air-raid warning system.*—Due to the suburban location of this plant with respect to the nearest center of population, air-raid sirens and fire bells were not deemed necessary by the management for exterior use, the method employed for the alerting of employees being a direct telephone call from the control center to each subunit station which was relayed to all section posts. The personnel of these units, when alerted, would then sound small bells dispersed throughout the manufacturing areas of the plant. Air-raid intelligence was received over the public radio and by telephone from the central police headquarters of Kyoto prefecture. Although this plant did not suffer any air-raid strikes during the period of its operation, it did receive as many as 11 air-raid alerts, at which time the air-raid defense forces sprang into action and the employees took shelter, indicating the adequacy of the warning system for this type of industry.

8. *Protective lighting and concealment.*—This plant depended upon power supplied from the outside and its transformer station controlled all lighting and power from this central

point so that during night operations lighting could be completely controlled, as well as power to moving machines. Certain administrative offices as well as one room in the office group housing the air-raid control center were protected by means of black-out curtains and light baffles. Little attempt was made to conceal the plant by a pattern of camouflage painting, as it was easily distinguishable from the air by the pattern of its saw-tooth roof construction, although the stacks from the furnaces were painted a black and white color combination.

9. *Dispersal plans.*—This industry was one of those in the important system of war production plants selected by the Japanese Ministry of Munitions for dispersal to rural areas on April 4, 1945. On the following day, the movement of certain machine tool operations was started toward the surrounding foothills to be reinstalled in schools, small shops, and private warehouses. At the end of the war this plan had been 80 percent completed, but production suffered seriously as a result of the interruption.

10. *Comments.*—The attitude of complacency so prevalent in Kyoto was not shared by factory executives, nor had they resigned themselves to the futility of resistance as had some of their neighbors who had traveled to bombed areas. Many Kyoto factories had been transferred from stricken areas and plant personnel had a vivid picture of the potentialities of American air attack. As was usual in other areas, fire-fighting equipment was provided, but in insufficient quantity to be effective against large-scale incendiary raids. Although Kyoto had an excellent water supply, experience indicates that had the city been the object of a full-scale attack, the drain would have been so heavy on the system that plants on the outskirts of the city would have been left with only static supplies which were inadequate. The insufficiency of the Japanese plan for adequate shelters for industrial personnel was nowhere better demonstrated than in Kyoto. Shelters afforded were of flimsy earth and wood or slit trenches, and were insufficient in number to protect even a small portion of plant personnel. Instructions were generally to flee to the hills or rice paddies. Shortage of building material forced factories to rely on wood as a building material with the result that these structures were highly inflammable and vulnerable to incendiary raids.

Air-Raid Protection of Public Buildings

1. *Introduction.*—The purpose of the survey of public buildings in Kyoto was to determine the adequacy of their air-raid protection preparations and organizations in an area which had not been heavily bombed and to make an estimate of the probable efficacy of such organizations in the event of serious air raids. For those purposes, the Kyoto Imperial University (Exhibit J), the Miyako Hotel (Exhibit K), the Daiken office building (Exhibit L), and St. Agnes Episcopal Church and Girls' School (Exhibit M) were selected as representative examples of their particular fields.

2. *Types of buildings selected.*—Kyoto Imperial University was the largest institution of learning in Japan, composed of some 227 buildings covering an area of 140 acres. The Daiken building was the largest and most modern of its kind in the city. It was a concrete and steel structure, housing 90 offices distributed over 8 floors, each floor having an area of 3,856 square feet. The Miyako Hotel was of the ultra exclusive type, elaborate in design, and equipped with extensive gardens, comfortable lounges, spacious dining and banquet rooms, and game and recreation halls. It had 95 guest rooms, both Japanese and American styles. St. Agnes Church and Girls' School was an Episcopal missionary unit comprising 1 conconcrete and steel, 4 wooden, and 3 brick structures within an area of approximately one-quarter of a city block.

3. *Control and responsibility.*—The responsibility for air-raid protection rested with the administrative head of each of the institutions under discussion, over-all control being exercised by the prefectural government, except in the case of the university which received orders from both the prefecture and the Ministry of Education. Varying degrees of interest were evidenced among the responsible leaders: The university approached the problem in an apathetic manner, while the hotel made a conscientious effort to develop an effective protective plan. The office building and the church fitted somewhere in between the two extremes.

4. *Organization.*—The university, having

over 900 instructors and a student body of 7,000, had a fairly extensive organization with an air-raid protection unit *(bocidan)* for each of the 16 academic departments. Each unit was the responsibility of the head of one of the departments, and consisted of fire, guard, emergency madical, repair, gas defense, and liaison squads. The other institutions had less comprehensive organizations, the church, for example, having five squads, one each for fire-fighting, first aid, guiding, spotting, and liaison, and the office building and hotel providing only two squads, one for fire and the other for first aid.

a. *Fire-fighting squads.*—In general, fire-fighting squads were inadequately trained, and their equipment consisted largely of hand pumps, fire beaters, mats, buckets, and sand, scarcely the implements required to cope with even minor fires, to say nothing of conflagrations. The hotel and office building had interior standpipes equipped with linen hose on each floor, which would have served to combat normal fires only. The church was too late in attempting to secure fire-fighting equipment on the competitive open market with the result that its equipment was negligible.

b. *Guard squads.*—At the university the guard squads were charged with spotting and reporting enemy aircraft, with guarding dormitories and valuable equipment, with light control and guiding. Although these squads were not provided in the other organizations under discussion, some of their functions were delegated to other air-raid protection squads, e. g., the guiding and spotting squads in the church's set-up.

c. *Emergency medical squads.*—The university's emergency medical service was adequate in view of the fact that it had at its command the staff, equipment, and other resources of the university hospital. Likewise the squad of St. Agnes church was benefited by the fact that its girl students had been trained in first aid by the local Red Cross hospital, but the emergency medical personnel at the hotel and office building had little or no training and only crude equipment.

d. *Repair squad.*—In a sense, no repair squad was formally established as such in any of the subject air-raid protection organizations, repair being effected by the normal building and maintenance departments where they existed, although they were called repair squads in the air-raid protection table of organization. In the case of the university assistance was obtained from students who were assigned to the repair squads (maintenance department).

e. *Liaison squad.*—The duties of this squad consisted of carrying messages between air-rair protection services and control centers. Only the university and the church provided for such a squad in their organizations.

f. *Gas-protection squad.*—A gas-protection squad was included in the university's set-up but its equipment was meager and rudimentary and the training of its personnel was sketchy. The other institutions ignored gas protection entirely.

5. *Protective equipment.*—In addition to the ordinary fire-fighting hand implements and certain fixed installations already mentioned, there was some mobile fire-fighting apparatus available, although it was of questionable value in most cases. There was a unit of the city fire department stationed on the university's campus, which had a motorized pump, mounted on a 1926 Chevrolet chassis, and two hand-drawn motorized pumps, but none of the pumps was in operating condition at the time of this report and there was no hose visible. The church had one hand pump of 20 g. p. m. capacity, which was certainly incapable of extinguishing anything more than the smallest of incipient fires.

6. *Water supply.*—The water supply in all of the buildings was obtained from the municipal system which produced a pressure ranging from 40 to 70 pounds per square inch depending on location in city, which might have been considered adequate for ordinary fires. Static supplies were not plentiful, 33,000 gallons (126,000 liters) being available at the hotel, 2,000 gallons at the office building, and none at the university and the church. Even if there had been adequate water, the equipment would not have been able to make use of it.

7. *Training.*—Training was conducted 3 times a year at Kyoto University by 18 police and fire officials from the prefectural headquarters. Classes lasted 1 hour and 20 minutes and consisted of a 20-minute lecture and a 1-hour drill and demonstration period. Subjects taught were fire fighting, aircraft recog-

nition, and decontamination. Training of the city fire department unit at the university was infrequent and towards the end of 1944 was discontinued as a waste of time. In the case of the Daiken office building, the prefectural police visited it 3 times per year and conducted classes of 1 hour each covering basic fire-fighting techniques. Drills were held twice a year and were supervised by local fire department personnel. Both the Miyako hotel and St. Agnes' Church requested assistance from the prefecture on several occasions, and although they were never refused, no aid was ever forthcoming.

8. *Shelters.*—Shelters for the university were without exception inadequate and in some cases, dangerous. Material used for the few in existence was wood and earth and, at best, they were no better than vegetable storage cellars. The basements in a few of the buildings were used for shelters, but they could accommodate only 2,000 persons and the remainder of the people were told to flee to the hills in the event of a raid. Shelters in the St. Agnes Church compound were two in number, accommodated 10 persons each, and were constructed like the ones at the university. The basement of the one concrete building in the church accommodated about 200 persons and the remainder of the students were sent home or to the imperial palace grounds. The Daiken office building used two basements as shelters and the hotel used specially prepared rooms which were equipped with wood shutters. In general, shelters were inadequate in number and none was gas-proofed.

9. *Air-raid warning.*—Air-raid warning was received by means of the city sirens. This warning was supplemented in the case of the university and the office building by calls from the Central Army headquarters and the prefectural police. The interior alarms were handled by local siren in the case of the university; by an electric bell system in the office building; by telephones and shouting at the hotel; and by messengers at the school. All buildings used the radio to keep informed regarding the progress of the raid after the air alert signal was given. Control centers were informal and lacked special equipment. They were really only headquarters assembly points used for administration purposes. Air-raid warning systems could be considered adequate, and in all cases they included watchers and spotters who checked in at their control centers by telephone or by messengers.

10. *Camouflage and black-out.* Camouflage was nonexistent at three of the institutions and ineffectual in the case of the Daiken office building, the management of which had toned down the attractive light colored exterior of their building with a dull black paint, a procedure of dubious value. Black-out precautions were practiced and portions of all buildings had adequate black-out curtains.

11. *Local assistance.*—Arrangements were made with local auxiliary police and fire units *(keibodan)* and neighborhood groups *(tonari gumi)* for assistance in the case of the office building, but such arrangements were nonexistent as far as St. Agnes Church and the Miyoko hotel were concerned. The university expected no assistance but offered to send students to neighboring units, if needed.

12. *Comments.*—The air-raid protection of public buildings in Kyoto was inadequate. Equipment was totally insufficient and training was infrequent to nonexistent. Shelters that were sufficient in capacity were makeshift as far as construction was concerned and, in some cases, shelters were so few in number that it became necessary to send personnel to the hills for safety. Apathy was the keynote of most programs and futility was apparent in all organizations. The heavy raids on Osaka, Kobe, and Nagoya had had a profound effect on the persons interviewed and the general feeling was that resistance to the inevitable was foolish.

Protective Lighting

1. *Introduction.*—The Light Control *(toka ransei)* regulations issued in Kyoto were found to be practically the same as the regulations issued in Osaka and included in that report as exhibit N. This is understandable as local regulations were all patterned after or copied from the regulations put out by the Ministry of Home Affairs, and any changes made were to cover variations due to local conditions. The principal differences found between the conditions in Kyoto and those of the other two cities studied to date was in the time of the tightening of the regulations, and in the degree of public support of and cooperation with the program. Black-out violations were reported to be frequent in Kyoto, even after the major raids on Tokyo, while such violations were quite rare in the other cities. These differences may be attributed to the conviction of the average person, as well as the officials, that Kyoto would not be bombed.

2. *Training of the public.*—As in the other cities studied, Kyoto had cooperated in the Army's air-defense drills as far back as 1928 and at various times during the 1930's. These drills consisted almost solely of turning out the lights for a short period at some designated time. Similar drills using only the light control regulations as put out by the Ministry of Home Affairs (Osaka field report, Exhibit N), were held two or three times a year during the period from 1939 to 1941 inclusive. These drills gave the public a chance to practice light control, the details of which were given to them through newspaper articles, posters and pamphlets (Reference Item No. 19), also by literature, regulations, and talks handled through the prefectural police—neighborhood group channels (for organization of these distribution channels see section II of this report). Samples of the material distributed through these channels are submitted as Reference Item No. 21, and the table of contents of this reference together with an abstract of that portion of the material on light control is attached as Exhibit N.

3. *Enforcement.*—As in Osaka, there was no basic change in the light control regulations after they were released in 1938, only more rigid application and enforcement as time went on. In Kyoto, the first application of these regulations, other than the drills mentioned above, was immediately after Pearl Harbor. On December 8, 1941, all neon signs, all advertising signs and other lights for advertising purposes and all unnecessary park lights were to be extinguished. This regulation was not rigidly enforced and some advertising lights were burning up to as late as July 1944. The next important change was not made until February 28, 1943 when orders were given, on the basis of instructions received from the Ministry of Home Affairs, to extinguish all gate lights (the only street lighting in the residential district streets); and all lights between intersections; to reduce the brightness of all others by replacing 60-watt lamps with 20-watt lamps; or by other means to achieve this degree of brightness reduction; and to extinguish all lights used in show windows. This ruling was followed by a further restriction in April 1943, to have all indoor lighting units shielded to prevent direct light from striking the window and thereby to lessen sky glow.

4. *Street lighting.*—There were three systems of street lighting in Kyoto: (a) On those streets having streetcar lines, the lighting was the responsibility of the street railways department of the city government; (b) on other main streets, the lighting was the responsibility of the street lighting department of the city; and (c) on residential streets the only illumination was from lights located at the gate or entrance to each dwelling and maintained by the resident. The major streets in Kyoto were illuminated with a white glass globe unit, 2 to a pole, about 10 feet high, spread approximately 120 feet apart on the curb line in a staggered arrangement. Late in the war, these enclosing globe units were extinguished and a black-out unit confining the light within a 140° cone was installed as a replacement at certain essential points, such as intersection. One of these units is shown in exhibit O. Lesser important streets were illuminated with a metal reflector unit spaced in the same manner. An illustration of one of these units is also included in Exhibit O. Table 1 below gives data on the

street lighting provided by the street railways department.

Table No. 1[1]—Street lights in city of Kyoto along streetcar lines

Year-month	Number of lights	Average wattage per outlet
Oct. 30, 1939	49,589	16.8
Oct. 30, 1940	53,528	16.2
Oct. 30, 1941	45,604	15.7
Oct. 30, 1942	81,909	15.4
Oct. 30, 1943	11,798	15.2
Oct. 30, 1944	5,706	14.4
July. 30, 1945	1,007	14.0

[1] Extracted from original Japanese document which is included with this report as Reference Item No. 22.

Reduction of street lighting on the streets where the lighting was provided by the street railway company was accomplished by a reduction of the voltage on the lighting circuit from the normal 100 volts to 50 volts at the time of the alert. (This is the first use of voltage reduction found on street lighting systems.) This reduction plus the institution of the nightly black-out and the reduction of the number of units accounted for the drastic reduction of power. Kyoto was relatively well lighted even in July 1945, compared to Osaka and Kobe. Table 2 below gives data on the gate lights which were the only means of lighting the streets in the residential district.

Table No. 2[2]—Gate lights

Year-month	Number of lights	Average wattage per outlet
Oct. 30, 1939	44,537	20.1
Oct. 30, 1940	51,559	20.0
Oct. 30, 1941	53,815	18.8
Oct. 30, 1942	47,991	16.5

[2] Extracted from original Japanese document which is included with this report as Reference Item No. 22.

No statistics available after 1942, since gate lights were extinguished on February 28, 1943.

5. *Traffic lights.*—Lamp sizes in traffic signal units were not reduced, but the units were shielded from view from above and they were extinguished upon the sounding of the alert.

6. *Vehicles.*—Regulations governing vehicular traffic were identical with the regulations reported in the Kobe field report, namely, headlights were reduced in brightness around 1943, and, during the raid period, only those cars equipped with the black cover hoods were to use their lights and move. Streetcars had their lighting reduced one level as a dim-out measure and to a second level upon the sounding of the alert. All lights were to be extinguished upon the sounding of the raid signal. Data received from the engineers of the street railway department showing the types of street cars and the methods of securing these reduced lighting levels and their values are presented in Reference Item No. 22.

7. *Homes.*—As reported in the Kobe field report, minimum rate customers were not metered but charged on the basis of wattage of the lamp and the number of outlets. Other residential customers were metered, but with the rate charged dependent upon their maximum current demand. Both of these systems enabled the power company to furnish an accurate picture of the home lighting situation in Japan and the change in this situation as the war progressed. These data are given in tables 3 and 4 below.

Table No. 3[3]—Minimum rate residential customers, unmetered. Kyoto Prefecture

Year-month	Average wattage per outlet	Percentage
Oct. 30, 1939	25.8	100
Oct. 30, 1940	25.7	99
Oct. 30, 1941	25.2	98
Oct. 30, 1942	24.0	94
Oct. 30, 1943	24.0	94
Oct. 30, 1944	23.7	92
Oct. 1, 1945	20.5	79

[3] Extracted from original Japanese document which is included with this report as Reference Item No. 22.

Since the end of the war, it is believed that the average wattage per outlet has decreased even more than shown above.

Table No. 4[4]—Metered residential customers. Kyoto Prefecture

Year-month	Average kw.-hr. per month	Average kw.-hr. per 6 months	Average wattage per outlet
Oct. 30, 1939	2.6	16.0	39
Oct. 30, 1940	2.5	15.3	40
Oct. 30, 1941	2.1	12.3	37
Oct. 30, 1942	2.0	12.1	36
Oct. 30, 1943	1.5	9.2	34
Oct. 30, 1944	1.4	8.7	34
July. 30, 1945	1.3	7.7	33

[4] Extracted from original Japanese document which is included in this report as Reference Item No. 22.

The total consumption of electricity at the time the war ended (August 1945) was 52 percent lower than at the same period in 1939; and the average wattage per outlet had dropped to 83 percent. Most homes had blackout curtains installed by 1941; some had secured

residential lighting fixtures shields as early as 1941; others got them at the time the drive was put on in April 1943; and others did not get them until the time of the serious raids on Osaka and Kobe in the spring of 1945.

8. *Factories.*—Black-out curtains were installed in most factories and used rather religiously. There were no industrial fires in any of the industries around Kyoto so there was no worry over extinguishing that kind of guiding beacon.

9. *Comments.*—The feeling permeating Kyoto early in the war that they would be immune from bombing, coupled with later realization of the futility of their preparations as any defense against prolonged mass and area raids, produced a laxity in the application and enforcement of light control that made Kyoto a relatively well-lighted city compared to almost totally blacked-out nearby Osaka and Kobe. Public morale was helped considerably, and it is doubtful that the small amount of light escaping even at periods of greatest laxity would have been of much assistance to any enemy planes.

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 policy, to emphasize any deviations from it, and to depict the several 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 the program was 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. That 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 was accomplished until late 1943 and the beginning of 1944 when an effort was made to accelerate the construction of the covered trench and tunnel-type shelters. This tardiness in the construction program was due mainly to the general belief that Kyoto would not undergo any heavy air attack, and that the need for a great number of shelters was therefore negligible.

d. The financial plan for the construction of public shelters was for the city to construct and pay for the shelters and then be reimbursed for two-thirds of the cost by the national government, but up to November 1945, the national government had 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 was generally constructed in Kyoto. Each family had a shelter built under the home or in a nearby open space.

b. *Semipublic 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, 5 feet to 6 feet deep, and 3 to 4 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 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 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 of covering over the subway structure was not considered to afford ample protection, inasmuch as it was not heavily reinforced.

(4) *Underground reinforced concrete pipe.*

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—This shelter was constructed of reinforced concrete pipe, 4 inches thick, with a diameter of 5 feet. It was placed on a concrete base of 4 inches and was buried so that the top of the pipe was at least 5 feet below the surface of the ground. In addition, 2 feet of earth were placed on top, making a total roof coverage of 7 feet of earth. Four sections of pipe were joined to give the shelter an over-all length of approximately 50 feet. A wooden floor was installed, 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 8 inches thick. At the bottom of the stairway was an arrangement of double wooden doors, 6 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, 4 feet by 4 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 these shelters in 1941. They afforded excellent protection against incendiary bombs (page 84 and Reference Item 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 8 feet wide, 6½ 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 structures the capacity of each being about 2,000 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. Page 86 shows an entrance to this type shelter. (See Reference Item No. 24, entitled "Specifications of Tunnel Type Air Raid Shelter$_1$.)

(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 was rectangular in shape, constructed of concrete approximately 8 inches thick, placed below the ground surface and covered with 3 to 4 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 (p. 86).

4. *Comments.*—a. The indifferent attitude toward a shelter construction program was mainly due to the over-optimistic opinions of the military regarding the air defense of the homeland and the belief among local officials that the United States would not bomb historical and cultural cities. Indicative of the lack of responsibility and preparation was that adequate shelter space was available to only about 6,000 persons.

b. Only the reinforced concrete pipe shelters and the two tunnel shelters provided adequate protection and the value of the latter type was offset by the distance the public had to travel to reach them. All other types of shelters and the above-mentioned types gave no protection against suffocation if located in areas swept by conflagrations.

c. Had Kyoto been subjected to the same type of saturation raids as other Japanese cities, it would have found itself in the same predicament due to the shortage of adequate shelters for the total protection of the public.

Concrete pipe buried in open lot. Built for the public by Kyoto City.

Concrete box type shelter dug in the front yard of the prefecture building. Built for officials of Kyoto City.

Tunnel-type public shelter dug in the side of a mountain. Built by Kyoto Prefecture. (Kyoto City)

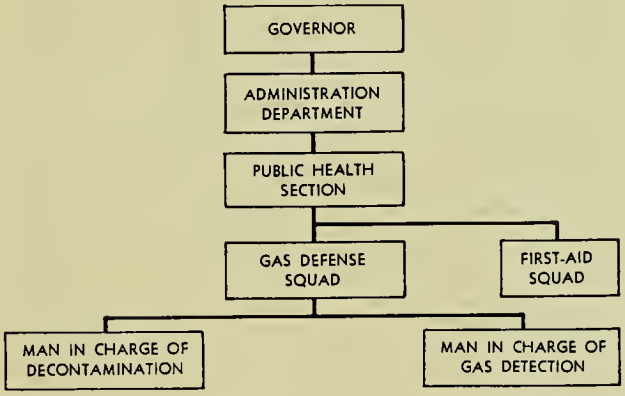
Gas Protection Service

1. *Introduction.*—Preparations in Kyoto for gas defense began in 1934, 3 years after the beginning of the "Manchurian Incident." 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 comprehensive detail. In fact, the impression was gained 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 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 (p. 88). It was the plan, however, for the leader of gas-defense activities to work in close liaison with the police department. The entire gas-defense organization consisted of the administrative director 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 appeared that any definitive measures would have been carried out by the auxiliary police and fire units *(keibodan)* in the district police offices. 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.

3. *Equipment and training.*—Except for gas masks, the report on this subject is almost wholly negative. It was said that there was some protective clothing but that it was used for demonstration only by members of first-aid squads within the auxiliary police and fire units. There were no gas detection kits and no decontamination equipment. It was stated that 60 percent 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 police headquarters, although 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 know how to use them. No gas masks were available for children, so that in case of attack they would have had to rely upon damp towels over the face.

GAS-DEFENSE ORGANIZATION
FOR KYOTO PREFECTURE



Camouflage

1. *Introduction.*—Local regulations on camouflage *(giso)* were first released on August 19, 1941, which were reprints of the pertinent sections of the national regulations released at the same time by the Ministry of Home Affairs. 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, are included in the Osaka field report as Exhibit S.

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 responsibility was delegated in Kyoto to the auxiliary police and fire section *(keiboka)* and the technical help on camouflage was obtained by borrowing engineers from the building and construction 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 the one pamphlet issued by the Ministry of Home Affairs and on their own engineering "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 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 Kyoto once to study it from the air and on the basis of his flight suggested the darkening of one or two additional buildings.

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 checkerboard and spiral or striped patterns. There was only one use of nets and that was too hide the characteristic rectangular pattern of the filtration ponds at the waterworks. Plantings of shrubs were used as far as practicable at factories to help break up the straight lines of the edges of the buildings and their shadows. The Ministry of Home Affairs' publication did not mention possible use of artificial fogs or smoke to achieve a camouflage and such possibilities had never occurred to local officials. They had conceived the idea 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 planning stage.

4. *Local topography and features.*—Kyoto was 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 only a few miles north of a small lake and a few miles west of the end of Biwa Lake. It was surrounded on the northeast and west by hills covered with verdant growth and the valley floor below Kyoto was patterned with 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 them 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 pattern 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. The 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 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 vividly contrasting in a manner which the "experts" thought would be effective.

6. *Other camouflage.*—Outside of factories there was very little additional camouflage used except on the waterworks, observatory and race track already mentioned. Only 2 of the 15 larger office buildings were camouflaged. 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 3 hospitals, 55 schools, or 8 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, namely ,the, sporadic type, typified by the Doolittle attack. No attempt was made or contemplated to hide the city or any of the very

distinctive landmarks mentioned above or even to study the problem of camouflaging the city as a whole. They studied only the treatment of parts of it, individually, hoping to prevent those parts from being singled out for attack; for example, the roofs and walls of the larger factories on the edge of town were painted in rectangular block patterns to imitate the roofs of nearby residences and, consequently, to hide these buildings. This camouflage was effective as a defense against the type of raid for which it was planned, but it was worthless as a defense against the mass raids which were inflicted on the Japanese cities.

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 practicable; 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 reported in the Osaka field report except that in Kyoto streetcars 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 their posts, but it thinned out rather soon and 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 6 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. No one guided strangers to the shelters except watchmen of public buildings open 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 times when there was a mass fear of raids.

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 black-out were frequent, people did not enter shelters, and traffic frequently continued to move even though the raid alarm had sounded.

VI. EVACUATION AND WELFARE

Evacuation

1. *Introduction.*—a. Prior to August 11, 1945 the city of Kyoto had no plan for the evacuation of civilians, but on that date a plan (Exhibit P and Reference Item No. 25) was agreed upon and the effective date was set at August 25, 1945. It was never used inasmuch as the cessation of hostilities came on August 15, 1945 and all preparations stopped, even the printing of the instructions which were to have been used. Although evacuation of civilians was not contemplated prior to this time, provisions (Exhibit Q and Reference Item No. 26) had been made for emergency welfare treatment of air-raid sufferers in accordance with the provisions of the national law for the "Relief of Wartime Sufferers" passed on February 24, 1942 and amended from time to time. Another precautionary measure taken was the group evacuation of school children in March 1945, following the heavy air raids on Osaka and Kobe.

b. *Definition of terms.*—In discussing evacuation and welfare in this field report the term "evacuee" is taken to mean that person who as a precautionary measure left or moved from the city at his own convenience to some other destination; whereas refugee, or sufferer as the Japanese use the term, was one who had become an air-raid victim or sufferer by reason of damage to his home by bombs or fire or destruction of his home to create a fire break.

Evacuation of Civilians

2. *Policy.*—a. Kyoto was not one of the large cities designated by the Ministry of Home Affairs to carry out a plan for the dispersal of its nonessential citizens, and, lacking any such instructions both the prefectural and municipal officials felt that this area was relatively safe from air attack. As long as the national government had not ordered dispersal, they had not made any plans for it. One other element, the municipal officials admitted, influenced them in their decision not to initiate a plan for the dispersal of civilians and that was the question of expense. Unless such a move was ordered by the government, the prefecture and municipality would be obliged to bear the expenses for such an evacuation, and this they were reluctant to do without specific instructions from Tokyo. The opinion was freely expressed also, that inasmuch as Kyoto was a Japanese religious and cultural center they did not believe that the United States would bomb it, and, therefore, it would be unnecessary to make elaborate plans for the dispersal of civilians.

b. *Change of policy.*—As early as February 1945, at the time of the bombings on Tokyo many civilians voluntarily left the city. In fact the numbers were sufficiently large to attract the attention of the officials and they, in turn, attempted to dissuade further dispersal, fearing that, if the voluntary evacuation continued, there would not be sufficient persons left to fight fires in the event there was an incendiary raid on their city. After the heavy raid on Osaka in March 1945, there was considerable talk again about leaving the city and once more efforts were made by the city officials to discourage such action. However, after the dropping of the atomic bomb (August 6, 1945) on Hiroshima the prefectural and municipal officials conferred on August 11, 1945 and decided to carry out a plan (Exhibit P and Reference Item No. 25) for dispersal of the nonessential persons as of August 25, 1945, which plan, however, was never carried out.

3. *The proposed plan discussed August 11, 1945.*—a On the orders of the governor the municipal officials had made an inventory of the persons who would be evacuated, and of where they planned to go (Exhibit R and Reference Item No. 27). Following the decision on August 11, 1945 to inaugurate a plan for dispersal, the municipality started printing the plan and necessary certificates for changing districts. It was planned that instruction pamphlets were to be distributed to the ward offices, and civilians were expected to come and get them. The essentials of the plan for evacuation of civilians which was proposed to be put into effect were:

(1) Evacuation was to be voluntary but strongly recommended.

(2) Evacuation was to be made to relatives in the prefecture or nearby prefectures.

(3) If no relatives, the city was to make a plan to provide housing within the prefecture.

(4) Priority was to be given to the nonessential people in the city (same groups as in Osaka and Kobe).

(5) For those who were not needed in the city, removal to agricultural districts in groups was to be carried out as quickly as possible.

(6) For those who were required to remain in the city, accommodation for group housing was to be set up by the city.

(7) The designated evacuation areas were Kyoto City and Maizuru City (site of a naval base in the prefecture).

(8) The city was to establish an evacuation headquarters which was to issue evacuation certificates, advise on policies and attend to all other business in connection with evacuation.

(9) Removal evacuation certificates were to be distributed by the ward leaders.

(10) Free transportation was to be given to persons and baggage.

(11) Receiving center councils were to be set up, giving guidance on the matter of securing houses and rooms and urging a positive back-to-the-farm policy for those who had relatives on farms.

(12) Expenses were to be met from the prefectural budget.

4. *Refugees.*—There were two small air raids during 1945 but no figures were available as to the number of sufferers who left the city, it being the belief of the municipal officials that all found places within the city. However, there was a plan carried out for demolishing houses to create fire breaks which made it necessary for those persons made homeless to seek other quarters. The number of certificates permitting removal and destinations selected were reported as follows:

Destination	*Number of persons*
Elsewhere in Kyoto City	52,610
In Kyoto prefecture but outside of Kyoto City	4,389
In other prefectures	12,321
Total	69,320

The 16,710 who moved away from Kyoto City represented about 1.5 percent of the population of the city (1,089,736 in 1940).

5. *Statistics.*—Kyoto, particularly the rural areas outside of the city, really became a reception center for evacuees and refuges from other prefectures. It was reported that approximately 111,000 persons came into the prefecture of which 29,000 were evacuees from Kyoto City. Other areas contributing evacuees to this number were:

From Osaka prefecture	45,000
From Hyogo prefecture	12,000
From Tokyo	5,500
From other prefectures	12,500
Total	75,000
From Kyoto prefecture:	
Kyoto City	29,000
Maizuru City	7,000
Total	111,000

This figure of 29,000 represents those who voluntarily evacuated the city, beginning in February 1945, following the raids on Tokyo, with surges of movement in March and June following the heavy raids on Osaka, only 33 miles away. These figures are based upon the requests for transfer of food ration coupons and may include some duplication of those (4,389) who left the city for other parts of the prefecture because of being made homeless when fire breaks were created. All in all it is estimated that approximately 46,000 persons or 4 percent of the 1940 population, exclusive of school children, left the city because of the impending presence of air raids. That figure includes the 17,000 persons who were made homeless due to the creation of fire breaks and the 29,000 who left voluntarily, for other parts of the prefecture.

Evacuation of School Children

6. *Authority.*—a. In March 1945 the Educational Ministry designated Kyoto and Maizuru as class "B" cities insofar as school evacuation planning was concerned. Following that the educational section of the Kyoto prefectural office publicized a compendium of regulations relating to school children group evacuation (Exhibit S and Reference Item No. 28). Its instructions to these cities pertained to pupils of the third to sixth grades, inclusive. At no time were these modified to include the pupils of the first and second grades as was done in Kobe and Osaka. The Kyoto plan was carried out in two stages: the first and the larger of the two was completed on March 26, 1945; and the second stage completed on August 8, 1945. It should not be overlooked that the first big

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raid on Osaka was March 13, the first raid of major consequence on Kobe was March 17, and the atomic bomb was dropped on Hiroshima on August 6, 1945, in order to appreciate the significance of the dates of school group dispersion. Prior to those dates, it was estimated by the school authorities of the prefecture that about 2,000 pupils, accompanied by their parents or relatives had left the city. All pupils so dispersed had returned home on October 11, 1945.

7. *Reception areas.*—Due to the fact that the plan for dispersal of Kyoto school children was not initiated until March 1945, approximately 6 months after the completion of similar plans for Osaka and Kobe in neighboring prefectures, all available areas outside of Kyoto prefecture had been filled. It became necessary therefore to confine the reception areas for Kyoto school children to Kyoto prefecture. Temples, hotels, public halls, and school buildings were used in 144 villages throughout the prefecture to house the pupils, all living a group life rather than dispersed to individual homes and integrated into the community as individuals.

8. *Statistics.*—The counties to which the third to sixth grade pupils in groups from Kyoto City and Maizuru were sent and the number in each are shown on the following page (Also see Reference Item No. 30). No data are available separating the figures between Koto City ——.

County	March 26, 1945	August 8, 1945	Total
Otagi	371	29	400
Kadono	47	7	54
Otokuni	830	26	856
Tuzuki	289	501	790
Soraku	256	452	708
Minami Kuwada	1,643	163	1,806
Kita Kuwada	1,210	360	1,570
Funai	2,838	670	3,508
Ikaruga	1,983	320	2,303
Amada	150	128	278
Kasha	584	271	855
Yosa	2,270	377	2,647
Naka	665	32	697
Takeno	1,093	298	1,391
Kumano	935	115	1,050
Total	15,164	3,749	18,913

Pupils, third to sixth grades

	Kyoto City	Maizuru City	Total
Dispersed in groups	17,510	1,403	18,913
With relatives	23,379	3,799	27,178
Subtotal	40,889	5,202	46,091
Remaining	30,551	1,124	31,675
School population	71,440	6,326	77,766
Percent evacuated	57%	82%	

and Maizuru, but there are data giving the total number of third to sixth grade pupils evacuated not only by groups but also those who left the city with their parents or relatives. These figures follow those referred to above.

9. *School children welfare.*—a. Unlike the situation found in the dispersal of Osaka and Kobe children, those from Kyoto were superimposed and integrated with the pupils of the receiving community. That was possible because the school system of the receiving areas and that of the two cities from which the pupils were being sent, were all under the direction and supervision of the Kyoto prefectural education office. It was a new experience for those from the cities but it was reported that they soon learned to enjoy their new surroundings and the rural life. The additional school load on the community did create some large classes but inasmuch as the supervisory direction was from the one source, new classes were established when the teacher load became too heavy. Their instruction included, in addition to the usual lessons, a certain amount of agricultural work such as the collection of edible herbs in order to produce as much food as possible and to make them self-sufficient in the new community. The receiving community, however, was granted an additional allotment of food, in order to provide for the increased food requirements due to the new school pupils. The costs of maintaining these dispersed pupils in the receiving community was borne by the city authorities of Kyoto. Parents were permitted to visit their children at least once in the seven months they were away from Kyoto. This limitation was imposed because of the lack of transportation facilities. The original movement from Kyoto to the receiving areas was made by train and in some cases by trucks.

b. *Inspection.*—All pupils had returned by October 11 and therefore it was not possible to visit a typical reception area.

10. *Re-evacuation.*—The Japanese naval base at Maizuru was bombed several times during the period 27 to 31 July 1945 and the Kobe children who were in the areas adjacent to that city were re-evacuated to other parts of the prefecture. An interesting point in this movement is that it was only the Kobe children and not the local children in the community who

were re-evacuated. No reason was given for this.

11. *Comments.*—a. Peculiarly enough, Kyoto, one of the large cities which was not devastated, had never been designated as an evacuation area and, therefore, lacking any specific instructions from higher authority, the prefectural and municipal authorities had not made plans for evacuation of nonessential persons prior to August 11, 1945. The reasons for this were:

(1) *Expense.*—Unless the move was ordered by the national government, the prefecture and municipality would have to bear the cost of evacuation.

(2) Belief that because Kyoto was a Japanese religious and cultural center the United States would not bomb it.

b. After the dropping of the atomic bomb on Hiroshima (August 6, 1945) and Nagasaki (August 9, 1945) decision was made to inaugurate a plan as of August 25, 1945, and printing of instructions was under way at the time of cessation of hostilities (August 15, 1945). In advance of this, approximately 46,000, or about four percent, of the population evacuated the city on their own initiative because of impending danger of air raids. Any evacuation of sufferers which might have become necessary if Kyoto had been bombed would have resulted in a panicky, disorganized flight, inasmuch as there had been no public announcement of the contemplated plan.

c. Instructions were received, however, for the evacuation of school children in groups to places outside the city. This was started March 26, 1945 (the big raids on Osaka and Kobe occurred on March 13 and 17, respectively) and the second stage completed on August 8, 1945 (atomic bomb dropped on Hiroshima August 6, 1945). In all, approximately 40,000 pupils, or about 57 percent of the school population, were evacuated either in groups or had accompanied parents. This proved a worthwhile precaution.

Post-Raid Emergency Welfare

1. *Responsibility.*—It was not until March 18, 1945 that the prefecture published its wartime damage rescue regulations which included sections relating to emergency housing, subsistence and welfare of air-raid sufferers. The city of Kyoto which had the responsibility of operating the welfare stations, published, for the use of ward leaders and other department heads having any responsibility for welfare work, a compendium (Exhibit Q and Reference Item No. 26) of all matters pertaining to the wartime damage protection law No. 71, promulgated February 24, 1942. These instructions were disseminated through the newspapers, and verbally through the block associations to those who might become air-raid sufferers.

2. *Classes of sufferers.*—The air-raid sufferers in these instructions were divided into the following three classes:

a. Persons with relatives to go to.

b. Persons without relatives to go to.

c. Persons whose work compelled them to remain in the city.

After a raid, sufferers who had taken refuge in the welfare stations which were set up in schools, temples, and other prominent public places, were to be immediately screened and (1) those with relatives were to be sent to them as quickly as possible; (2) those without relatives were to be furnished housing after those who were to remain in the city because of essential work had been taken care of; (3) and those who were to remain in the city because of essential work were to go to relatives, if within easy travel distance, or, if they had no relatives, they were to be put into temporary buildings.

3. *Welfare stations.*—In all, 141 emergency welfare stations were established throughout the city with most of them located in school buildings. These were to be the places to which air-raid sufferers were to be brought, processed, given emergency first-aid, food, and shelter. However, each sufferer was expected to present his sufferer's certificate and ration card for sufferers (Exhibit T and Reference Item No. 29), to secure food and temporary shelter. These certificates were distributed in advance through the medium of the block associations and neighborhood groups in anticipation of air raids. Air-raid sufferers could receive emergency food and shelter for a short period ranging from 3 to 5 days and during that period they were expected to complete more permanent arrangements for their own welfare. The food was supplied by the prefec-

tural police from their stores of previously prepared packages and consisted of dried bread and rice balls. Members of the women's patriotic societies and other women's associations, all volunteers, assisted in preparing and serving food to sufferers from the kitchens set up in the schools which were serving as welfare stations. After this temporary relief period the sufferers who had no place to go were to be assigned by the police to group housing which the city was planning to build for the purpose. Funds not only for the construction of these group dwellings but also for the supply of emergency food were to be provided by the national treasury to the prefecture. The police maintained a 2-day emergency ration at all times and the agricultural section of the prefecture had a 5-day supply. If more were needed, the police and the agriculture section had the authority to order extra supplies from the storage depots maintained by the agricultural and forestry ministry. The city had no funds of its own for food or clothing, but, inasmuch as there was very close cooperation between the prefectural office and the municipal office, they did not anticipate any difficulty in securing these items when needed.

4. *Statistics.*—Only four of the welfare stations were actually set up for operation. At these 4 stations it was reported 729 sufferers were taken care of following a raid on January 16, 1945 and an additional 1,500 after a small raid on June 26, 1945.

5. *Comfort stations.*—At the time of the heavy raids on Osaka and Kobe in March 1945, the number of persons leaving those communities and passing through Kyoto was so large that the city of Kyoto set up at the railroad stations a guidance agency and comfort station to provide advice, a place to rest, immediate first aid if needed, and for other needs of travellers. There were 3 such places in Kyoto, manned by a corps of 20 to 30 volunteers from the police, city officials and women's associations. These places were very temporary and disbanded after each major movement. No food was available at them.

6. *Comments.*—Profiting by lessons learned from the heavy air raids on Osaka and Kobe in March 1945, local officials established welfare aid stations, each equipped with emergency supplies of food, bedding, and the like. It was necessary to use only four of these stations during two small raids, and under these conditions they functioned very well in caring for approximately 2,200 sufferers. These stations were not subjected to the severe test of heavy and continued attacks.

War Damage Claims

1. *Introduction.*—The legislation and decrees establishing all national wartime compensation for Japanese nationals in connection with death, injury, or loss of property due to war causes were such that no variation from place to place throughout the homeland should be expected in any aspect of their operation, except for statistics on number of policies issued (in the case of casualty and property insurance), number of claims paid on war insurance policies and on straight liability compensations provided by imperial decree. The insurance companies of Kyoto handled the issuance of policies and payment of claims in exactly the same way as in Osaka and Kobe. The sole differences were to be found in the response of the Kyoto people to the insurance and compensation opportunities furnished by the national government. The current report will describe a compensation law not mentioned in the earlier reports, and an account of compensation to persons dispossessed by the fire-break program.

2. *War damage claims.* a. *War casualty insurance* (*Senso Shibo Shogai Hoken*)—There were 34 companies issuing this insurance in Kyoto. The life insurance companies made a determined effort to induce the people to take out war casualty policies, although the fire and marine companies, which also handled the war casualty policies made little effort in that respect. As a publicity stunt the mayor "took out" a policy for the entire city, although of course that was no more than a gesture since the insurance required an individual application and payment of premium. There was considerably less interest in insurance for life and injury than there was in property damage insurance. Increased interest in war casualty insurance as the war progressed followed the same general course as that for war damage insurance and will be discussed in (b) below, but the fear of death and personal injury did not increase proportionately with apprehension over property as the news from other cities

arrived in Kyoto and incendiaries came to be regarded as the weapon that would be used against the city if it were attacked. That attitude prevailed despite the fact that the only raids made on Kyoto were with high explosive bombs. Regarding the enforcement of the national law restricting to 5,000 yen the amount of war casualty insurance issuable to one person, officials said that there were instances in other cities of a person's having taken out policies with several companies for a total amount in excess of the 5,000 yen limit but there was no known case in Kyoto. Such practice, however, was eliminated by a law of July 1, 1945 which directed that all national war insurance taken out by any individual should be issued by a single company.

b. *War damage insurance (Senso Hoken Rinji Sochi).*—Only the fire and marine companies issued this insurance, and there were 16 such companies in Kyoto. From the time the war damage insurance act took effect in January 1942, until April 1944, there was negligible interest on the part of the public in spite of the fact that the public was informed about the provisions of the law by the wide distribution of a descriptive leaflet (Exhibit U). No appreciable increase in interest resulted from the Doolittle raid on Tokyo in April 1942. There was a large increase in April and May of 1944, when the war damage law was revised to cover earthquake in addition to war-caused fire damage, and was reduced in cost. One reason for the increase was the fact that the law required all new applicants for private fire insurance policies to take out war damage insurance also, even though the private companies were protected from disastrous loss by provisions in their policies specifically excluding fire from air raids as a damage cause for which they would make payments. The law was not binding on holders of fire policies already in force, but applied to all renewals. Kyoto insurance officials felt that the April 1944, increase could not be accounted for by the new linkage between the private fire and national war damage insurance policies, but that there was a growing feeling of apprehension over American ability to bomb Japan. The March 13, 1945 raid on Osaka produced an avalanche of applications for war damage insurance in Kyoto. The people tended to insure their houses, but not the contents, for many household effects were removed from the city after the great raid on Osaka. In spite of the fate of its neighboring cities, the percentage of persons in Kyoto taking out war damage insurance was less than that for either Osaka or Kobe. Two reasons were given by insurance officials for this fact: The first was that Kyoto was not subject to the strong winds typical of the two seaside cities; and the second, that the people figured their city "would not be bombed inasmuch as it was not a military target." All claims from the three small raids on the city had been paid as of the time of this report, with no cases requiring the referee services of the control association, closest branch of which was in Osaka.

c. *Air-defense service allowance (Boku Fujisha Fujorei).*—Despite the fact that there were nearly 200 casualties from the 3 minor raids on Kyoto, the finance section in the prefectural office, responsible for paying claims under the air-defense service allowance law covering air watchmen and auxiliary police and fire units, had paid only one claim as of November 6, 1945. This was in the case of a 35-year-old man in the air-defense observation corps *(boku kanshitai)* who died of heart failure while running to man his lookout post upon hearing the air-raid warning. His family was compensated in the amount of 1,000 yen. About 10 days elapsed between the date of filing the claim and the date of payment. It was stated that most of the casualties from the small raids on Kyoto occurred among members of the neighborhood groups *(tonari gumi).*

d. *Wartime disaster protection (Senji Saigai Hogo).* (1) *Purpose.*—On February 24, 1942 there was enacted a national wartime protection law providing relief and financial indemnity to victims of wartime disasters. The law took effect on April 30, 1942. "Wartime disasters" were defined as disasters caused by enemy action, as well as disasters resulting from such.

(2) *Provisions.*—Three types of compensation were named in the law: Relief, pension, and allowance. Insofar as the act provided for relief by means of food, clothing, housing, medical attention, school supplies, and other services this report will not be concerned. But its provisions for money to pay medical and funeral expenses, for homes destroyed, for death and injury, and for sickness and disability

come within the scope of the war damage claims study. The act indemnified and protected from undue financial suffering those persons whose buildings were commandeered for relief purposes or whose commodities were expropriated by the government to distribute to air-raid victims. It also covered persons killed, injured, or hospitalized in connection with carrying out relief duties, as well as providing compensation to the dependents of persons victimized in any lawful manner as a result of wartime disaster. The sums of money allowed under the law appear below. Special interpretations on the disbursement of these sums will be found in exhibit V.

TABLE 1.—*Compensation payments (refers to Art. 12, Exhibit V)*

Description of payment	*Amount of payment*
1. Medical attention expenses	Actual expenses
2. Injury compensation:	
a. Permanent disability	Y1,500
b. Loss of means of sustenance	1,000
c. Serious bodily injuries and female facial scars	700
3. Terminal lump sum	1,500
4. Beneficiary compensation	1,000
5. Funeral expenses	100

TABLE 2.—*Compensation payments (refers to Art. 22, Exhibit V)*

1. Injury compensation:	
a. Permanent disability	Y700
b. Loss of means of sustenance	500
c. Serious bodily injuries and female facial scars	350
2. Beneficiary compensation	500

TABLE 3.—*Compensation payments (refers to Art. 6, Sec. 1–5 and Art. 24)*

1. Medical attention expenses	Actual expenses
2. Injury compensation:	
a. Permanent disability	Y1,000
b. Loss of means of sustenance	700
c. Serious bodily injury and female facial scars	500
3. Terminal lump sum	1,000
4. Beneficiary compensation	700
5. Funeral expenses	70

3. *Compensation under the Firebreak Program.*

a. *Assessment and Payment.*—As in other cities, the prefectural city planning section in Kyoto was responsible for assessing the value of houses and other buildings condemned for demolition to make firebreaks. The municipal government assessed the land which was either bought or leased by the city. The same scale for evaluating buildings was used by Kyoto prefecture for the 19,351 houses involved in the program as was used in Kobe. The last of the firebreak operations was but one-third complete when the war ended in August, 1945, so that of the 7,672 houses assessed only about 2,000 had been torn down at that time. Since the program was integrated with postwar plans for the city, it was contemplated that it would be eventually completed. The assessment of land followed a fixed rule of compensation on the basis of 120 yen per 36 square feet *(tsubo)* regardless of the location of the land, providing the city bought the land. But if the city only rented the land, the annual rent paid was 5 yen per 36 square feet. For the first two of the four firebreak operations all claimants had been paid in full, and, as of 6 November. 1945, the prefecture and city were paying [illegible] third. The same arrangement as to national government, prefecture and city financial responsibility for indemnity on buildings and land obtained in Kyoto as reported for Kobe.

b. *Loss of Business and Transportation Compensation.*—Although no different in its provisions, additional details of the compensation law were secured from the Kyoto study. In the case of indemnity for loss of business, as when an individual's store was demolished, two bases for payment were found. The first covered entrepreneurs who did not expect to continue in business. For certain categories of that classification of business establishments, the national department of commerce and industry laid down the amounts which the proprietor could collect, and furnished the funds to pay him. Those businesses not included above could collect from the prefecture. The second provided a different scale for those who wished to continue in business and the compensation was designed merely to carry them over until they could get re-established in another location. There were three classifications for such businesses, based upon amounts received: (1) A manufacturing concern, public bathhouse or other establishment having equipment difficult to move was allowed an amount equal to six times its net profit for 1 month:

(2) more easily transferable businesses such as barber shops, shoe repair shops, grocery stores or home industries were allowed three times their net profit for 1 month; (3) informal businesses such as those of peddlers were allowed an amount equal to 1 month's profit. Compensation for these dispossessed business operators was made in the form of a flat sum, paid once, and was the financial responsibility of the prefecture. Payment for transportation expenses has been described in the Kobe report on war damage claims.

4. *Comments.*—The negligible bombing effort made against Kyoto produced equally insignificant payments of insurance and compensation indemnity in the city, but the insurance attitudes of the people in the face of constant threat of mass attack that never materialized lead to conclusions of general interest. The expectation that the city would be attacked by high-explosive bombs, if at all, changed in March 1945, to the anticipation of fire raids, and the March 17 attack on Osaka did more to encourage the taking out of war insurance than all previous government urging and other attacks on Japan put together. Even then, less than half of the population and dwellings was covered by either war casualty insurance or war damage insurance. There was little knowledge or interest on the part of the general population regarding the wartime disaster protection law, so that had a major raid struck Kyoto a large number of persons would not have applied for funds under its terms. Insurance men interviewed, while not officially concerned with it, were wholly ignorant of the law and its provisions. The persistent belief that Kyoto would not be attacked characterized even the officials administering the war insurance program, and they admitted to having made virtually no effort to promote the applications for policies. Whereas harassed Tokyo had completed its compensation payments to owners of homes dispossessed by the firebreaks program, the payments in unbombed Kyoto were only three-fourths complete by November 1945.

Civilian-Defense Personnel

1. *Introduction.*—The purpose of this section is to describe the civilian-defense schools, the selection of civilian-defense personnel and the methods used to train them. All directives on training emanated from the Ministry of Home Affairs and were distributed through the prefectures down to the several political subdivisions. The first directive on training was received from the Ministry of Home Affairs in October 1938, but a regular training program was not developed in Kyoto until late in 1942. Kyoto officials stated that the slow progress in training was the result of the attitude of civilian-defense officials who believed that Kyoto would not be bombed.

2. *Training schools.* a. *Air-defense school (Boku Gakko).*—This school was established in March of 1943, by a directive from the Ministry of Home Affairs. Here, as in Kobe, the school was the main training center for Kyoto prefecture. The expenses of the school were met by the Great Japan Air-Defense Association granting a subsidy to cover 50 percent of the expenses, with the prefecture paying the balance. In addition, the Great Japan Air-Defense Association furnished most of the printed material on civilian defense, which was used as the basis for the training program.

(1) *Instructors.*—The faculty was composed of police, fire, and organizational leaders who had been sent to the air-defense school in Tokyo to undergo a 10-day period of training in civilian-defense services. In addition, certain persons with specialized training were added to the staff to aid in the instruction of subjects such as first aid and emergency relief. At various times the army furnished instructors who had undergone field experience in connection with large fires and different types of bombs.

(2) *Trainees.*—The selection of personnel for attendance at this school followed the same principles as explained in the Osaka and Kobe field reports.

(3) *Curriculum.*—Courses of training offered in this school covered the fields of first aid, construction of shelters, emergency relief for bombed-out victims, and fire extinguishment, with particular emphasis on the last. In addition, a special course was provided to train leaders in methods of maintaining high morale among the members of their own organizations. Of particular interest is the statement that no training in rescue services was given at this school until after the middle of 1944 when information reached Kyoto from the cities which had been bombed on Kyushu Island.

b. *Prefectural police and fire schools.*—Schools for the training of minor leaders of police, fire and other organizations were conducted in the same manner as described in the Osaka and Kobe field reports.

c. *Auxiliary schools.*—The number and type of these schools did not reach the proportions found in Osaka and Kobe and that fact was principally due to the belief among the leaders of the organizations responsible for these schools that Kyoto was in little or no danger of being bombed.

Training of the Public

1. *Introduction.*—The purpose of this section of the report is to portray the various methods used for disseminating civilian-defense information and the procedures for educating the general public in the several phases of air-raid-protection duties.

2. *Methods of disseminating information.*—All of the methods used in Osaka and Kobe for bringing before the public the general rules of civilian defense were used in Kyoto with the exception of the radio. Officials stated that great emphasis was placed upon the use of the press and the distribution of civilian-defense pamphlets. A pamphlet on general air-raid protection duties entitled "Air-Raid Instruction Manual," published by the Ministry of Home Affairs, was reprinted at the expense of the Kyoto prefectural government and distributed to every family in Kyoto prefecture through the neighborhood groups. Practice air-raid drills were conducted once a month under prefectural leadership until February 1945, when formal drills were discontinued. Investigation proved that the public demonstrated a lack of interest and gave no cooperation whenever drills were held until after the reports of the raids on

Kyushu Islands, and even then the outlying districts of the city showed a complete disregard for black-out regulations and other civilian-defense responsibilities.

General Comments

3. Evidence gathered by observation and investigation proved that the people of Kyoto had been advised by governmental officials that the city would probably not undergo any heavy air attack, and, as a result, training never got beyond the planning stage until late in 1944, and then very little interest and effort were displayed.

4. The training programs for both civilian-defense personnel and the public placed the greatest emphasis upon the methods for extinguishing incendiaries and 550-pound (250 kg.) high explosive bombs. The training program was not revised when other types were used by the U. S. Army Air Forces.

5. Civilian-defense officials of Kyoto visited cities such as Osaka and Kobe, which had been heavily bombed, in order to make a study of conditions so that they could better prepare the air-raid protection organization of Kyoto, and the reports which they brought back from those cities caused most officials and people of Kyoto to develop a feeling of utter uselessness, realizing that they were unprepared and untrained to cope with situations arising from saturation raids. This attitude was largely responsible for the cessation of training programs by higher echelons in the spring of 1945.

6. Considering the lack of training and its obvious resulting influence on the operations of civilian-defense organizations, the loss of life and property would have been relatively greater had Kyoto been subjected to a saturation raid or raids, such as suffered by Osaka and Kobe.

VIII. REFERENCE NOTES

The reference material listed below is on file in the office of G–2, United States Strategic Bombing Survey.

Reference Item No.

1. Map of northeastern Kyoto prefecture, showing area in which Maizuru was responsible for the sounding of air-raid alarms.
2. Map of city of Kyoto showing locations of sirens.
3. Map showing locations of civilian observation posts in Kyoto prefecture. Symbols indicate headquarters and individual posts.
4. Blueprint map of general communications channels for air-raid defense in the Maizuru naval port area.
5. Blueprint diagram of control center for air-raid defense of Maizuru naval base.
6. Map of Kyoto City water system.
7. Data on fire department section of Kyoto prefecture (1945). General outline; personnel, equipment; water supply; number of fires; fire brigade districts; organization and operation; statistics on fires caused by air raids.
8. Map of Shinjo Gokurakuji Temple, showing fire mains, hydrants, pools, pump house, water curtain, and buildings.
9. Map of Kyoto showing locations of fire stations.
10. List of pumpers in Kyoto during the war period: manufacturer; pumping capacities. List containing similar information as of October 1945.
11. Map of Kyoto showing distribution grid system and locations of hydrants with cutout valves.
12. Blueprint showing distribution mains in Kyoto City.
13. Map showing tanks, wells, and swimming pools used as static water supply in Kyoto City.

Reference Item No.

14. Map of Kyoto indicating areas in which only concrete buildings were permitted to be constructed.
15. Original Japanese document (untranslated). City building regulations enforcement act (Kyoto prefecture). Summary in English of table of contents.
16. Japanese pamphlet: "Protective Police Statistics—1942. Record of Fire Sections of Public Welfare Department, Police Bureau" (untranslated). Table of contents in English.
17. Map of Kyoto showing fire barriers made by demolishing buildings.
18. Data on construction of fire barriers from 17 July 1944 to 21 July 1945.
19. Pamphlet (illustrated) issued by the Kyoto Electric Company, containing suggestions on how to achieve light control.
20. Original Japanese document and translation concerning control of lights in street cars.
21. Original Japanese document and translated table of contents: "Training orders, training notices, and prefectural orders concerning air defense"; Kyoto prefectural police department. See Exhibit N.
22. Original Japanese documents. Data on street lighting provided by street railway department of Kyoto. Extracted and shown on Table 1. Data on street lighting in residential sections. Extracted and shown as Table 2. Data on wattage used for lighting by minimum rate residential customers. Extracted and shown as Table 3. Data on wattage for lighting by metered residential customers. Extracted and shown as Table 4.
23. Plans and specifications of reinforced concrete pipe shelter.
24. Specifications of tunnel-type air-raid shelter.

Reference Item No.

25. Japanese text. Bill proposed for effecting evacuation of persons, published Kyoto prefecture, August 1945. See Exhibit P.

26. Japanese text. Compendium of matters pertaining to Wartime Damage Protection Law No. 71, promulgated 24 February 1942. See Exhibit Q.

27. Japanese text of questionnaire form designed to determine destination of persons seeking other locations. See Exhibit R.

Reference Item No.

28. Japanese text. Compendium of regulations relating to school children group evacuation, issued by Ministry of Education. See Exhibit S.

29. Japanese form of Sufferer's Certificate and Ration Card for Sufferers. See Exhibit T.

30. Map showing counties of Kyoto prefecture and the number of children sent to each.

EXHIBIT A

List of air-raid attacks in Kyoto prefecture, excluding Maizuru, a naval base city north of Kyoto

Jan. 16, 1945.—2310 hours, one B–29. Approximately 60 high-explosive bombs and 1 incendiary. Thirty-four killed, 23 seriously injured, 23 slightly injured. Two structures completely demolished, 29 structures completely burned, 22 structures partially burned.

Jan. 29, 1945.—2105 hours. One B–29. Five high explosives. No casualties. No damage.

Feb. 4, 1945.—0035 hours. One B–29. Approximately 83 high-explosive bombs. No casualties. One structure completely demolished. One structure partially demolished.

Mar. 19, 1945.—0700. Approximately 19 Grummans dropped 11 high explosives. One structure totally demolished. No casualties.

Mar. 19, 1945.—0730. Approximately 14 Grummans dropped 1 high explosive. One person seriously injured, one structure completely demolished.

Apr. 16, 1945.—1200. One B–29 dropped 7 high explosives. Two killed, 2 seriously injured, 37 slightly injured. No damage.

Apr. 22, 1945.—0950. One B–29 strafing attack. Two seriously injured and 2 slightly injured.

May 11, 1945.—0900. Unspecified number of B–29s strafing attack. Two slightly injured.

June 5, 1945.—0800. One B–29, strafing attack. One killed, 1 seriously injured, 7 slightly injured.

June 9, 1945.—0930. Approximately 110 B–29s strafing attack. One killed.

June 15, 1945.—Approximately 15 B–29s dropped 1,097 incendiaries. Twenty-five structures completely burned. One killed, 1 slightly injured.

June 26, 1945.—0940. One B–29 dropped 6 high-explosive bombs. Forty-three killed, 13 seriously injured, 63 slightly injured. Sixty-five structures completely demolished, 84 structures slightly damaged.

July 19, 1945.—0930. Thirteen P–51s strafing attack. Two killed, 11 seriously injured, 6 slightly injured.

July 24, 1945.—0750. Approximately 15 P–51s dropped 4 high-explosive bombs. Seven killed, 4 seriously injured, 11 slightly injured.

Second wave.—Approximately 15 P–51s dropped 5 high-explosive bombs. Seven killed, 2 seriously injured, 12 slightly injured. One structure completely demolished, 2 structures partially damaged.

July 28, 1945.—1330. Six P–51s strafing attack. Three seriously injured.

July 30, 1945.—1213. Approximately 20 small type planes strafing attack. One slightly injured.

Second wave.—Eight small type planes strafing attack. Two killed, 1 seriously injured, 1 slightly injured. One structure partially burned.

Third wave.—One small type plane strafing attack. Three slightly injured.

Fourth wave.—Approximately 17 small type planes strafing attack. Fourteen killed, 9 slightly injured. Six structures completely burned, 26 structures slightly burned.

Fifth wave.—Seventeen small type planes strafing attack. Fifteen structures completely burned. Two seriously injured, 2 slightly injured.

Sixth wave.—Five planes, 2 slightly injured.

Seventh wave.—Seventy planes, 1 slightly injured.

Eighth wave.—Five planes, 1 slightly injured.

Ninth wave.—One hundred forty-five planes, 2 killed, 1 structure completely burned, 2 partially burned, 1 completely demolished.

EXHIBIT B

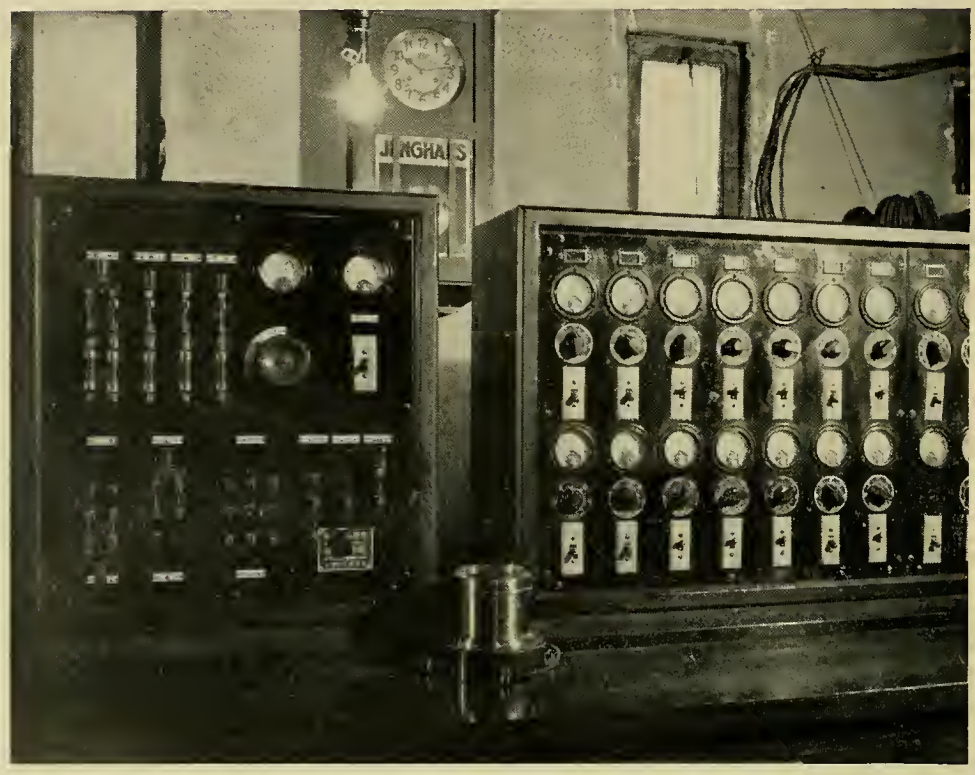
Illustration of Large Municipal Siren on Tower of Kyoto City Hall.

Right. One of the large municipal sirens in Kyoto City, installed on the tower of the Kyoto City Hall. The control room from which the sirens were operated was located in the room in the top part of the tower from which the balconies protrude. Note the two large sake tanks used for the storage of static water for fire-fighting purposes.

Below. Close-up view of the siren shown above.

EXHIBIT C

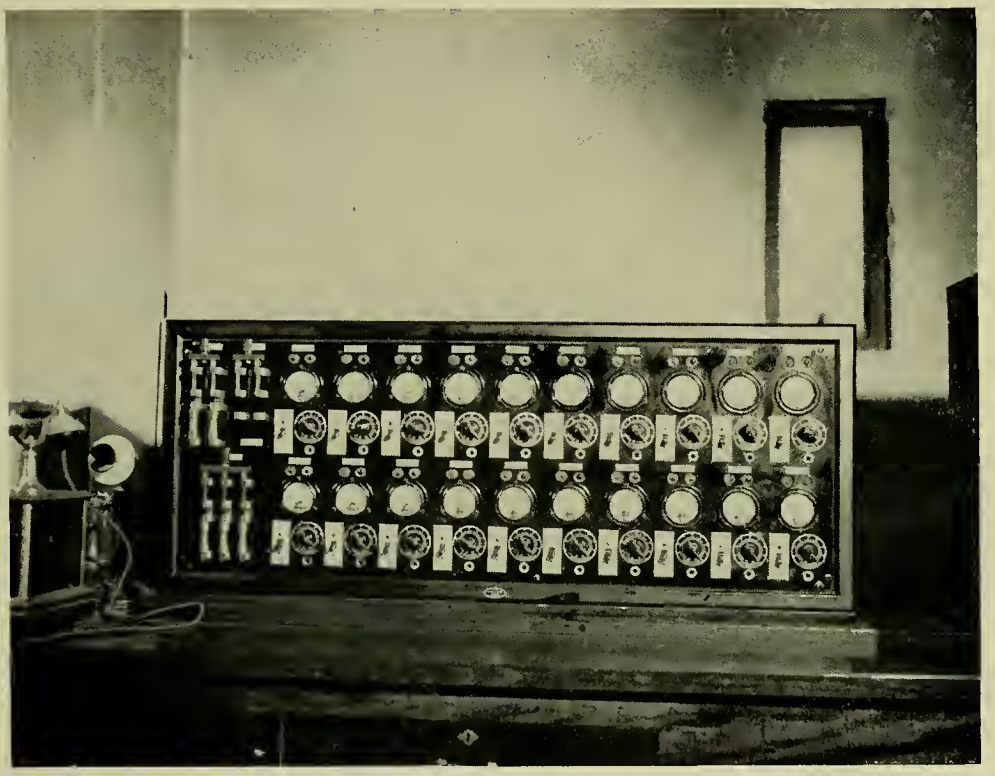
Illustration of control panels from which the sirens in Kyoto were operated



View of the control panels from which the sirens in Kyoto were operated. Lines from each siren ran into the individual connections on the large panel-board to the right. The circular switch in the center of the left board was an automatic switch which could be set to sound the air-raid warning signal desired.

EXHIBIT D

Illustration of the improved panel board intended for installation in the siren control room



View of the improved panel board intended for installation in the siren control room. This board had not been connected. Note the small holes under the individual dials. Telephone connections could be made there with each individual siren operator in the event of power disruption to the siren from this control room.

EXHIBIT E

Diagram of Kyoto prefectural control center

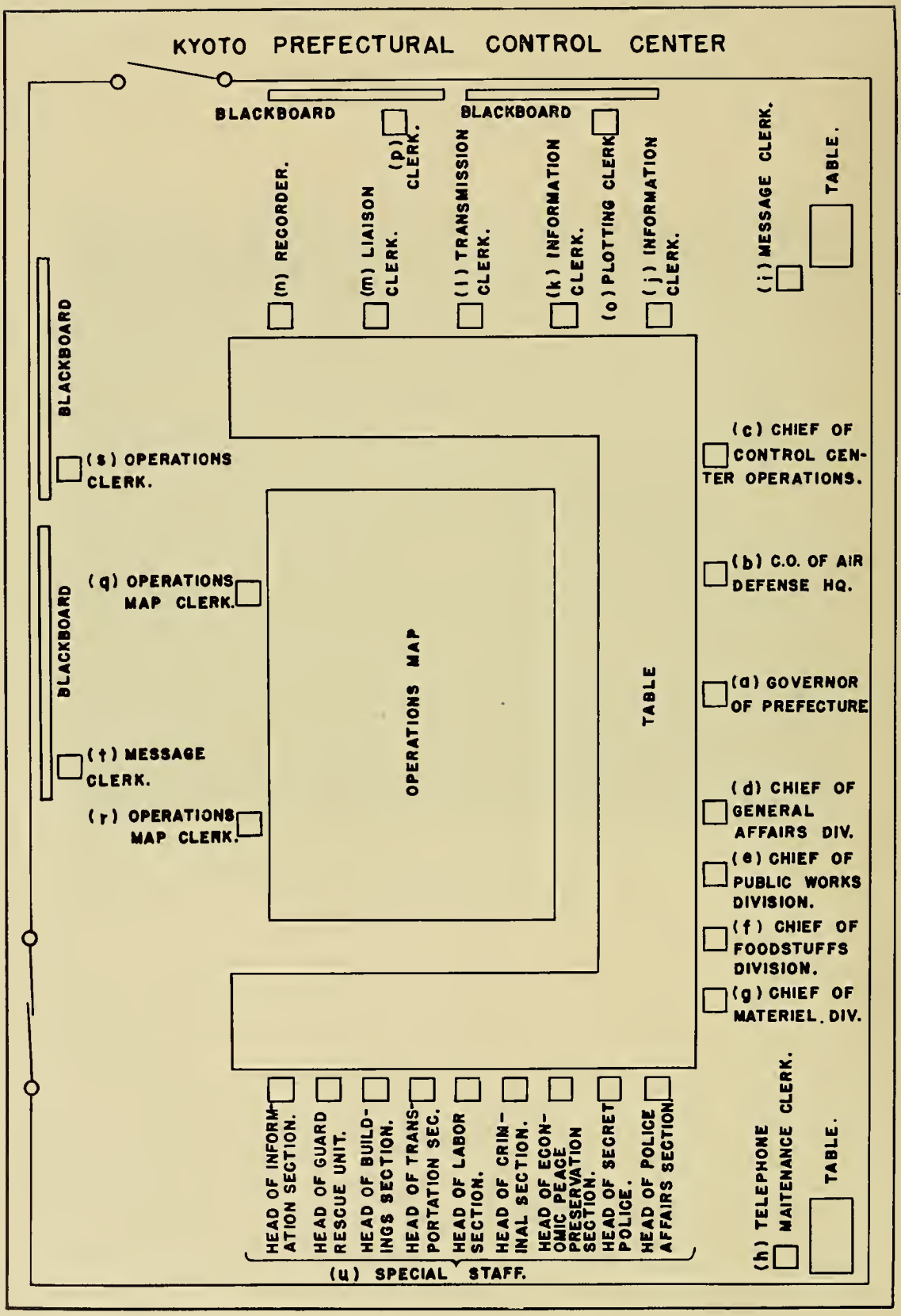


EXHIBIT F

List of officials of Kyoto City fire and water departments

Officials of Kyoto City Fire and Water Departments:

1. Yoshida, Senjiro. Local fire brigade commander. Chief of Shimo fire brigade station.
2. Yoshioka, Yoshio. Fire inspector, peace preservation, police bureau.
3. Kondo, Kazuo. Assistant fire inspector, peace preservation, police bureau.
4. Fukuoka, Denzaburo. Assistant engineer of Keage purification plant, Kyoto public water works.
5. Moriguchi, K. Civil engineer, civil engineering department, police bureau.
6. Sakurai, Y. Civil engineer, civil engineering department, police bureau.

EXHIBIT G

Translation of first-aid regulations, air defense, Kyoto prefecture, 7 July 1945, together with chart showing channels for medical instruction and training

Classification: Very Secret, Home Affairs Ministry Training Order No. 6 (Naikun).

From: Prefectural Governor.

To: Mayors: Kyoto, Maizuru, Fukuchiyama and towns of Miyazu, Higashiuji. Presidents of Kyoto Prefectural Medical, Dental, and Pharmaceutical Associations.

CONTENTS

KYOTO PREFECTURE AIR-DEFENSE FIRST-AID REGULATIONS

ARTICLE 1.—First aid for injured or sick cases, medical care for pregnant women, women confined to childbed and prevention of epidemics during air raids will be carried out according to these regulations.

ARTICLE 2.—Establishment of first-aid stations (*kyugosho*) and maternity first-aid stations (*josankyugosho*) at air alert will be planned by designated mayors and village heads under the direction of the governor. Reserve facilities will be adequately prepared.

ARTICLE 3.—The governor will determine the first-aid hospitals (*kyugobyoin*) and the special first-aid hospitals (*tokubetsukyugobyoin*) from the list of hospitals (*byoin*), maternity hospitals (*sanin*), and others. He will organize a first-aid squad (*kyugohan*) directly responsible to him from the prefectural public health section (*eiseika*) personnel.

ARTICLE 4.—Division of the work at air alert for doctors, dentists, and pharmacists will be decided by the governor. The presidents of the prefectural medical, dental, and pharmaceutical associations will determine such division for their respective members; these heads will be directed by the governor.

No. 1 Personnel.—First-aid station doctors, dentists, and pharmacists.

No. 2 Personnel.—Maternity first-aid stations.

No. 3 Personnel.—First-aid hospitals.

No. 4 Personnel.—Special first-aid hospitals.

No. 5 Personnel.—Auxiliary police and fire units and home guard units (*jieitai*).

No. 6 Personnel.—Supplementary first-aid squads (reserve) (*oenkyugohan*).

No. 7 Personnel.—Those attached to police districts for gas defense and detection.

No. 8 Personnel.—Those persons who cannot be easily placed in any of the above numbered groups (reserve).

ARTICLE 5.—The governor will decide the functional classification for public health nurses (*hokenfu*), midwives, nurses, and orthopedic surgeons; however, classification for like medical technicians with hospitals or clinics will be determined by the directors of those institutions.

ARTICLE 6.—Those affected by functional classification, as determined in articles 4 and 5, will be notified by the organizations concerned.

ARTICLE 7.—When air alert is received, the designated mayors and village heads will set up the first-aid and maternity first-aid stations, according to the plans stated in article 2. The No. 1 and No. 2 Personnel, as designated in article 4, will quickly take their posts and commence work.

ARTICLE 8.—The No. 5 and No. 7 Personnel will go quickly to their posts and will work under their respective chiefs of police districts.

ARTICLE 9.—Nos. 3, 4, 6 and 8 Personnel will await instructions at their homes and places of business.

ARTICLE 10.—The governor may issue new or change the regulations as stated in articles 4, 5, 6, 7, 8 and 9 when deemed necessary.

ARTICLE 11.—The first-aid organs established in articles 2 and 3 will maintain close liaison with the chiefs of police districts, auxiliary police and fire units, and the other related air-defense organs.

ARTICLE 12.—The governor will be responsible for the instructing and training of the medical personnel concerned in first-aid measures and specialized treatments, and training of the others as designated in these regulations in whole or part.

ARTICLE 13.—The governor will have the presidents of the medical, dental, and pharmaceutical associations instruct and train the members concerned, and the public health nurses, midwives, and nurses in the hospitals and clinics administered by the members.

ARTICLE 14.—At times the governor will let the designated mayors and village heads be responsible for the training of No. 1 and No. 2 Personnel.

ARTICLE 15.—These regulations cover first-aid measures for emergencies.

AIR-DEFENSE FIRST-AID FACILITIES

1. First-aid stations will receive temporarily, examine, and apply first-aid measures to injured and sick cases. The maternity first-aid stations will mainly assist in delivery cases involving women who have lost their homes; regarding serious illnesses and irregular births requiring operation or lengthy care, patients will be quickly delivered to first-aid hospitals or special first-aid hospitals.

2. A doctor will direct a first-aid hospital and also a maternity first-aid hospital.

3. Generally for every 5,000 to 10,000 people, a first-aid station will be set up in an easily accessible site; maternity first-aid hospital will be set up in designated cities, towns, and villages (wards in Kyoto city).

4. First-aid stations will be established in:

a. Clinics having surgical facilities (excluding those designated as first-aid hospitals).

b. Remaining clinics and hospitals (excluding those designated as first-aid hospitals).

c. Schools, public halls, hotels, and other appropriate buildings.

d. Maternity first-aid hospitals will be located as far as possible in obstetrics hospitals (*sankabyoin*) and maternity hospitals.

5. When space is not adequate in case of "a," preparations will be made to use a building in the vicinity for receiving the injured and sick cases.

Plans will be made to utilize nearby surgical facilities in regard to "b" and "c."

6. There will be a plan to receive the injured and sick cases by utilizing the houses along the roads in the neighborhood of the first-aid stations.

7. Escape facilities and air-raid shelters will be prepared near first-aid stations and maternity first-aid stations.

8. The owner or administrator of building planned to be used as first-aid station or maternity first-aid station will assist with the establishment of such station during air alert or when directed by the governor, and such owner or administrator will have ready at all times materials to make possible the giving of first aid and the assisting of birth.

9. The owner or administrator of a designated first-aid or maternity first-aid station will clearly indicate the building and its entrance, and at night he will place a distinguishing light.

10. The governor-designated first-aid station will have the necessary facilities to treat gas casualties (decontamination station).

11. Measures to clarify the duties of the personnel in a first-aid station or a maternity station, such as number and names of personnel and system of taking turns working, will be prepared.

12. When a first-aid station is damaged or is not able to function, it can be foreseen that a large number of injured and sick cases need to be removed, and so, plans for a reserve first-aid station (*yobikyugosho*) will be made, other than those utilized for first-aid hospitals.

13. The designated mayors and village heads will appoint the first-aid station chief from among the doctors; however, in case of clinics and hospitals used as first-aid stations, the directors of such institutions are to be the chiefs.

FUNCTIONAL CLASSIFICATION OF MEDICAL PERSONNEL

1. The following deals with No. 1 personnel. For each first-aid station there will be three or more doctors, one or more dentists; and one or more pharmacists.

a. Doctors who are directors for hospitals or clinics selected as first-aid stations.

b. Doctors who are directors or owners of surgical-clinic facilities and who maintain offices which have been designated as first-aid stations.

c. Doctors, dentists, and pharmacists who work under like professional men designated as No. 2 Personnel.

d. Doctors familiar with surgical methods or who have had experience in surgery, excluding those in No. 3 and No. 4.

e. Dentists and pharmacists who live near

the first-aid stations, excluding those in Nos. 3, 4 and 7.

2. No. 2 Personnel are directors and doctors in obstetrics hospitals and maternity hospitals designated as maternity first-aid stations.

3. No. 3 Personnel are directors, doctors, dentists, and pharmacists of hospitals designated as first-aid hospitals.

4. No. 4 Personnel are directors, doctors, dentists and pharmacists of hospitals designated as special first-aid hospitals.

5. No. 5 Personnel. For each auxiliary police and fire unit there will be two doctors and one or more dentists.

a. Doctors and dentists in auxiliary police and fire units, police doctors, and doctors not on the regular police staff.

b. Male doctors and dentists robust in health and able to do field first-aid work.

6. Personnel in No. 6 will be divided into those who are fitted to work for long hours or in distant places and those who cannot. A squad of 10 men will be organized and each will have a squad chief.

Doctors, dentists, and pharmacists who are not classified in any of the numbered groups.

7. The following constitute the No. 7 Personnel, and there will be 10 men attached to each police district.

Male pharmacists whose health is robust and fit for field duty and those who have knowledge of gas detection, excluding the pharmacists who work in hospital clinics.

8. The No. 8 Personnel:

a. Government doctors, dentists, and pharmacists.

b. Married female doctors, dentists, and pharmacists, excluding the personnel in Nos. 1, 2, 3 and 4.

c. Physically unfit doctors, dentists, and pharmacists.

Functional Classification for Assistant Medical Personnel

1. The following will constitute No. 1 Personnel. There will be approximately 10 members in each first-aid station.

a. Public health nurses, midwives, and nurses in clinics and hospitals directed by doctors in No. 1.

b. Students of nurses' schools other than those attached to first-aid hospitals and special first-aid hospitals.

2. No. 2 Personnel. There will be five members in each maternity station.

a. Public health nurses, midwives, and nurses in hospitals and maternity hospitals directed by doctors in No. 2.

b. Students in schools for midwives.

3. No. 3 Personnel.

a. Public health nurses, midwives, and nurses in hospitals and clinics directed by doctors in No. 3.

b. Orthopedic surgeons.

4. No. 6 Personnel.

a. Nurses who are students at schools for public health nurses.

b. Off-duty nurses.

c. Off-duty nurses in hospitals for communicable diseases sanitariums for tuberculosis patients.

5. No. 8 Personnel.

a. Public health nurses and nurses working for public sanitation, excluding those in No. 3.

b. Public health nurses, midwives, and nurses with homes or babies and who are believed to be ill-fitted for first-aid work.

DISSEMINATION OF MEDICAL TRAINING

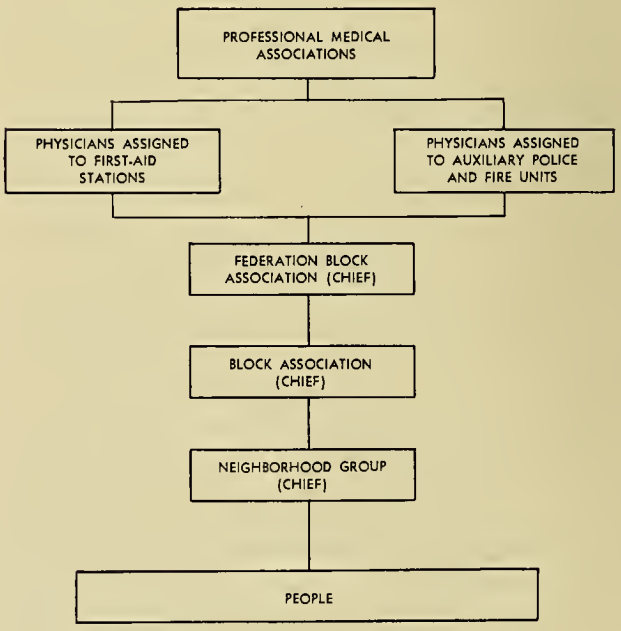


EXHIBIT H

Chart of guard rescue unit

KEIBITAI

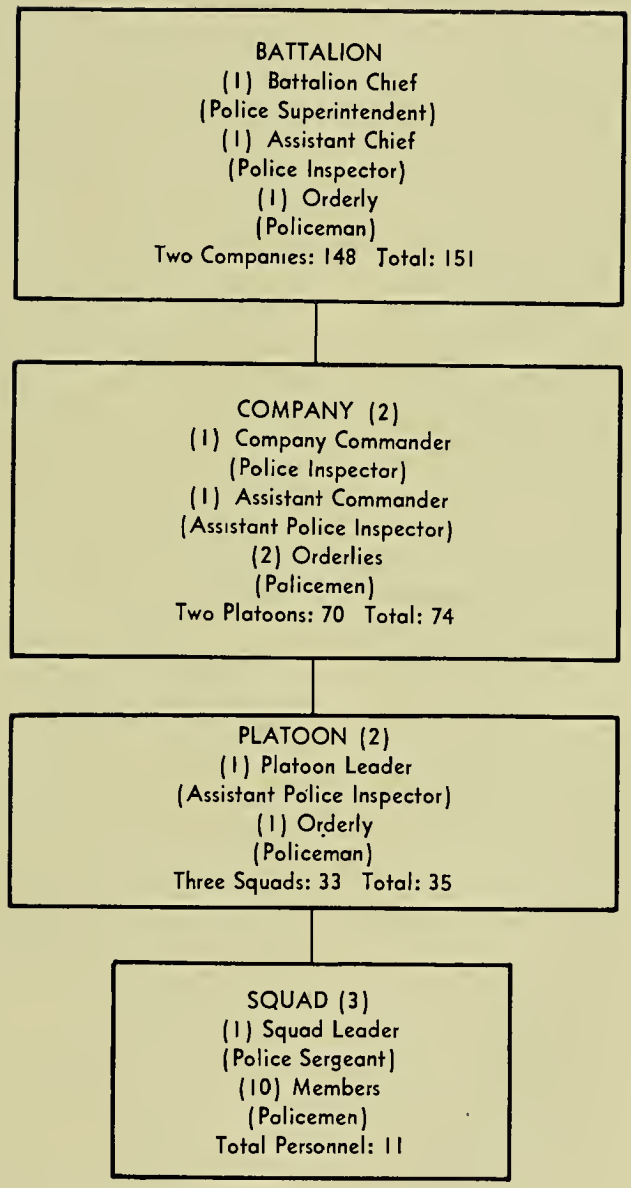


EXHIBIT I

Report on air-raid protection inspection of Mitsubishi Aircraft Engine Plant, plus Annexes I-1 and I-2

1. *General Information:*

Ownership.—Built by Japanese Government and operated by Mitsubishi Heavy Industries, Ltd., Tokyo.

Location.—No. 1 Kawashimi—Meiji—Cho, Ukyo-Ku, Kyoto.

Principal officials.—T. Rinoye, general manager; S. S. Shimawaga, manager of administrative Department; K. Kato, manager of Technical Department.

Number of employees.—10,000.

Work shifts.—This plant operated two 12-hour shifts with two-thirds of the employees engaged on the daylight shift and one-third on the night shift.

Area of the plant.—1,698,150 square meters.

Number of buildings in plant.—289.

General construction of buildings.—Buildings in the office and administration group were of wood frame covered with wood sheathing and corrugated asbestos sheet roofing. The larger buildings in the manufacturing departments of the plant were of steel frame construction with wood sheathing and corrugated asbestos sheet roofing.

Principal products.—This plant is reported to have been the only one in Japan assembling aero engines of 2,200 horsepower, double row, radial type, for both Army and Navy requirements.

a. Being a newly built plant in a rural area, proper fire prevention consideration was given to the separation of buildings and the dispersal of those units housing hazardous processes.

b. This industry was destroyed during an incendiary raid on the Nagoya area and such machine tools and equipment as could be salvaged were moved during the fall of the year 1944 to the present location where operations were started on or about January 1, 1945. This plant did not do any manufacturing as such but was purely an assembly plant for parts manufactured in small machine tool shops and foundries widely dispersed throughout the Kyoto area. However, it was equipped with heat treating and annealing furnaces to finish the castings and forgings supplied by subcontract units. The plant was erected to meet a production capacity of 330 aircraft engines per month, but during its 8 months of operation, the production never exceeded 130 per month.

c. Located as it was in the Kyoto area which did not suffer any heavy air strikes, this industry did not suffer any damage, although its air-raid protection organization was called out for many alerts during the period of its operations in wartime. As the intensity of air raids increased over the large cities of Japan, further steps were taken by the management of this plant, on advice of the Munitions Ministry, to further disperse some of its machine-tool operations to temporary locations in the foothills of the nearby mountains, such as school houses, small warehouse buildings, privately owned sheds. The war ended before this plan was fully consummated.

2. *Organization of the plant air-raid protection forces.*—The air-raid protection organization consisted of 1,300 employees under the directorship of the general manager of the plant and two assistants, which group had attached to it an advisory capacity, the Protection Research Group of 20 men. Under this leadership, the protection force was divided into four units (Annex I–1) namely, Permanent Subunit, and Subunits Nos. 1, 2 and 3. (For geographical coverage of these units see Annex I–2.)

a. The first unit we will deal with is the Permanent Subunit. The directing staff of this unit consisted of a chief and two assistants and was subdivided into five departments, namely: The Provisioning Department, with a chief and 44 persons; the Repair Department with a chief and 60 persons; the Sanitary or First-Aid Department, with a chief and 28 persons; the Guard Department with a chief and 45 persons, and a General Affairs Department with a chief and 18 persons.

b. *Duties.*

(1) *Provisioning department.*—The duties of the Provisioning Department were to procure and store an ample supply of foodstuffs, at company expense, to care for the employees and their families in the event of any emergency to the plant property or to the nearby villages where the majority of the employees lived. Inasmuch as no emergency arose during war

time to require the services of this unit, it did not function as such, but was used as a utility group to assist permanent subunit organization.

(2) *Repair department.* — The personnel of this department consisted of machine tool mechanics, electrical apparatus technicians, building repair employees and several foremen who could direct emergency repair to the water supply system for fire-fighting purposes.

(3) *First-aid department.*—Under the leadership of the chief physician of the plant, 4 other medical officers, 18 nurses and 3 druggists in the stockroom, the duties of this department were to man the 2 casualty stations located in the plant area and to prepare, in the event of an emergency, more seriously wounded cases for transport to the nearest general hospital. This department was also equipped and provided with sufficient medical supplies to care for as many as 5,000 casualties at one time.

(4) *Guard department.*—The duties of the personnel of this department were to provide the police force protecting entrances to the plant against saboteurs or unlawful entry, to check the identification of employees entering and leaving the plant; to act as directing guides for employees seeking the safety of air-raid shelters during an emergency and to perform other guard duties as might be required by management.

(5) *General affairs department.*—The General Affairs Department was in charge of all communications throughout the plant as well as with the prefectural government police and fire organizations of Kyoto. All incidents throughout the plant were reported to this department, as well as normal occupational accidents. It was their further duty, acting on behalf of management, to settle such cases with employees.

c. *Subunit No. 1.*—This unit was composed of a chief, two assistant chiefs and two administrative assistants, and subdivided into three sections. Section No. 1 described herein was organized and staffed, whereas sections Nos. 2 and 3 were only contemplated on paper, the need never having arisen for their mobilization. Section No. 1, headed by a chief and one assistant, was further subdivided into four groups, namely, first aid, fire fighting, fire pump, and liaison group.

(1) *First-aid group.*—Each section of each subunit maintained and operated one first-aid station in the plant area served by the section, composed of 18 trained first-aid assistants, equipped with first-aid kits, litters, splints, and supplies. It was their duty to render initial treatment to wounded and carry them to the plant casualty station for final treatment and discharge or evacuation to the general hospital.

(2) *Fire-fighting group.*—The total personnel in this group consisted of 35 persons handling the 15 hand-operated water pumps of the 120-gallon capacity type with which each section was equipped. Additional equipment consisted of hand-pump extinguishers, 25-foot ladders, and small hand tools.

(3) *The fire pump group.*—It was the duty of the 25 employees of this group to assist the regular paid fire brigade of the plant in the handling of pumping equipment, laying hose, drafting from static water supply ponds, and acting under the direction of the chief of the plant fire brigade during incidents occurring in their particular area of responsibility.

(4) *Liaison group.*—In this group 12 employees were used as messengers between the plant control center and the various operating units of the plant to call for further assistance, carry additional fire-fighting tools, and act as a general utility reserve to the other three groups of the section.

d. *Subunit No. 2.*—This subunit, which was responsible for the plant protection in the area denoted on the map shown in annex I–2, consisted of two sections, Nos. 4 and 5 of the plant organization, which were fully organized and staffed exactly the same as described for Section 1, Subunit No. 1 above.

e. *Subunit No. 3.*—This unit, which covered a larger area of the plant, including dormitories for workers and the assembly plant for trainees learning the aircraft engine trade, was com-

posed of four sections, Nos. 6, 7, 8 and 9, which were organized, staffed and subdivided into four groups, exactly the same as section 1, subunit No. 1 previously described.

3. *Management interest.*—Mitsubishi heavy industries took the matter of air-raid protection very seriously after the bitter experience with some of their plants during the early air raids on Nagoya, and the management of this particular unit, which was known as Mitsubishi Heavy Industries Unit No. 8 (Mitsubishi Aircraft Engine Plant), was very much concerned about the adequacy and efficiency of their air-raid protection organization. As previously stated, this plant was not bombed during the war, but after the heavy raid on the sister works of this plant located some 30 miles north of Kyoto and known as Works No. 14, preparations in the plant were carried out with renewed vigor and every precaution at their command was installed.

4. *Organization of the fire department.*—The plant maintained a central fire brigade of 30 well trained firemen at all times who were equipped with two motor pumpers. This brigade trained and drilled three times weekly, assisted during each drill by the fire-fighting and fire-pump group of a subunit in the plant air-raid protection organization. Again, due to the fact that no serious emergency resulted at this plant during its 8 months of operation, the size and adequacy of its organization to combat the effects of an air raid can not be measured or determined. This personnel also conducted inspections daily throughout the plant and made recommendations to management for the proper location of the simple fire-fighting tools, such as shovels, sand, mops, and fire beaters of Japanese design, as well as the posts of duty for personnel of each fire-fighting section, and they further supervised the entire plant air-raid protection force drill which was held regularly five times per month.

5. *Water supplies.*—The water supply for plant fire protection was secured from the city of Kyoto, delivered to the plant through a 6-inch main at a pressure never greater than 15 pounds per square inch. Gasoline-driven booster pumps were installed in the plant mains to bring the static pressure for fire purposes up to 45 pounds per square inch. Mains were laid throughout the plant underground below the freezing line in a grid system and connected to fire hydrants of 2-inch size, 15 in number, properly located with respect to the manufacturing buildings. Supplementing this supply, 27 static water-supply pools were created artificially within the area of the plant, the largest of which was plotted on the map shown as annex I–2.

6. *Automatic sprinkler protection.*—The buildings of this plant, which were constructed of highly combustible material, were not protected by any type of automatic protection even for the oil-treatment process of steel castings or other hazardous processes. The only equipment to combat fires in these areas consisted of 300 CO_2 hand extinguishers and 1,200 of the foam type.

7. *Air-raid warning system.*—The management of this plant depended entirely upon public radio or telephone from the central police headquarters of the Kyoto prefecture for the receipt of air-raid alerts and warnings. There was no audible air-raid alert or alarm system installed throughout the plant area, but telephones were used between the control center located in the main administration building with each subunit station, which in turn was connected with each of the sections and group units. A number of small bells manually operated were installed throughout the buildings housing moving machinery which were sounded by members of the air-raid protection groups to alert individual employees of the imminent danger of air raid. In addition to this signal flags, the blue and white for the alert and the red and white for the alarm, were hoisted on the flag poles of each of the manufacturing buildings as well as over the headquarters office.

8. *Control Center.*—One room, approximately 20 by 15 feet in the central administration building of the plant was used as a control center. It was not given any particular protection other than the usual black-out equipment and it was from this point that the general management of the plant and its assistants were prepared to direct the air-raid protection organization in the event of any emergency.

9. *Air-raid shelters.*—a. Shelter preparation in the plant was rather meager in consideration of the fact that an average 7,000 employees were on duty during the larger daylight shift. Two reinforced concrete shelters, 8 feet below

ground level, were constructed with 8-inch decks and 6-inch sidewalls for the safety of plant management and of its staff. However, these two shelters could not conveniently accommodate more than 20 persons each. Within the plant yard there were 250 small dug-out type shelters capable of accommodating, in an emergency, not more than 6 to 8 persons each, of the wood-frame, earth-covered type common throughout Japan.

b. All employees who could not be accommodated in the shelters described were directed to leave the plant and run for the protection of the nearby foothills, female employees and those students in the training area of the plant being evacuated first, then the skilled plant employees, and last of all, the members of the air-raid protection group who were permitted to take shelter in one of the dugouts on the plant premises. Shelter protection provided by plant management could not accommodate, under any circumstances, more than 2,000 persons at any one time.

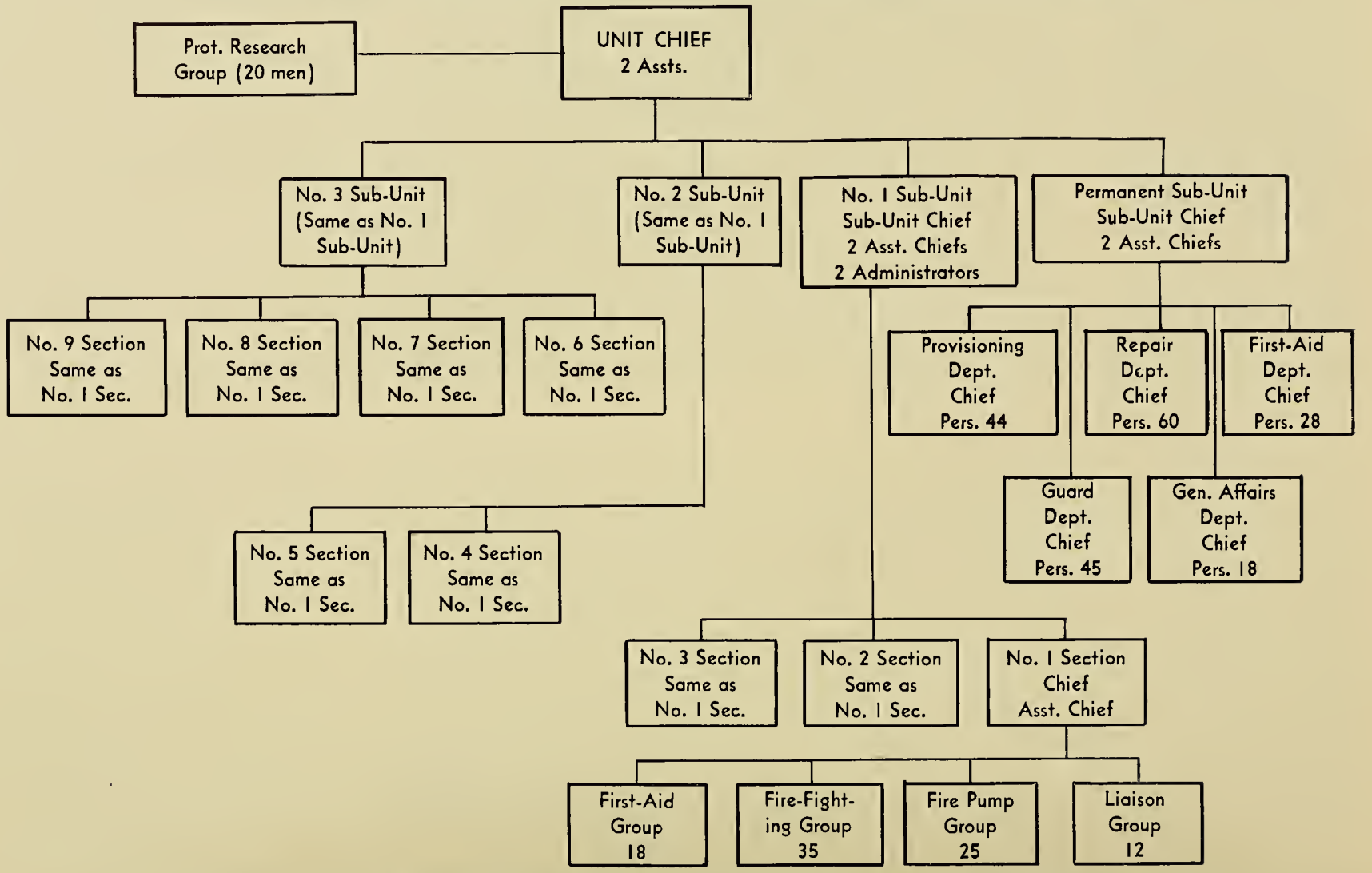
10. *Emergency hospital facilities.*—In addition to the emergency medical care and equipment previously described, the plant management depended upon utilizing the Matsuho Hospital, located at 2½ kilometers distance, in case of emergencies. The plant was not provided with ambulances for the transportation of the wounded, but relied on three cargo-type trucks for this purpose, if the emergency should arise.

11. *Mutual aid.*—Mutual aid assistance agreements existed between the plant and the auxiliary police and fire units *(keibodan)* of the nearby communities who, upon receipt of an air-raid alert, immediately dispatched as many pumping units as they deemed wise of the hand-operated 120-gallon type to the plant. Conversely, as a post-raid mission, if the near-by communities were aflame and the plant not in immediate danger, the plant fire brigade, assisted by the fire pump groups, were to be dispatched to the assistance of the near-by communities. This arrangement met with the wholehearted approval of plant employees who, with their families, resided in these communities.

12. *Dispersal plans.*—Motivated by the increased intensity of American bombing raids on industry, the Japanese Government on April 4, 1945, ordered the dispersal of certain machine-tool operations of this plant to points in the nearby mountain foothills, as previously described. Actual start of this movement was undertaken by management the following day and was about 80 percent completed at the time of the Japanese capitulation. During this transition period, production capacity dropped to as low as 70 aircraft engines per month.

13. *Summary.*—The air-raid protection organization conceived and organized for the particular needs of this particular type of industry and its geographical lay-out was, by comparison, far the best observed in Japanese industries. More care in training and equipment for the protection of these new buildings and machine tools was demanded by the government and carried out by management. It was apparent and obvious, however, that the fire-fighting equipment as well as the water supply would have been totally inadequate to combat fires set by incendiary air raids in buildings of this type of construction.

PLANT PROTECTION UNIT, MITSUBISHI No. 8 PLANT, KYOTO, JAPAN



NOTE: Sections No. 4–No. 9 are organized similar to Section No. 1. Section No. 2 and No. 3 groups are not organized

AREAS OF SUB-UNIT RESPONSIBILITY,
MITSUBISHI AIRCRAFT ENGINE PLANT

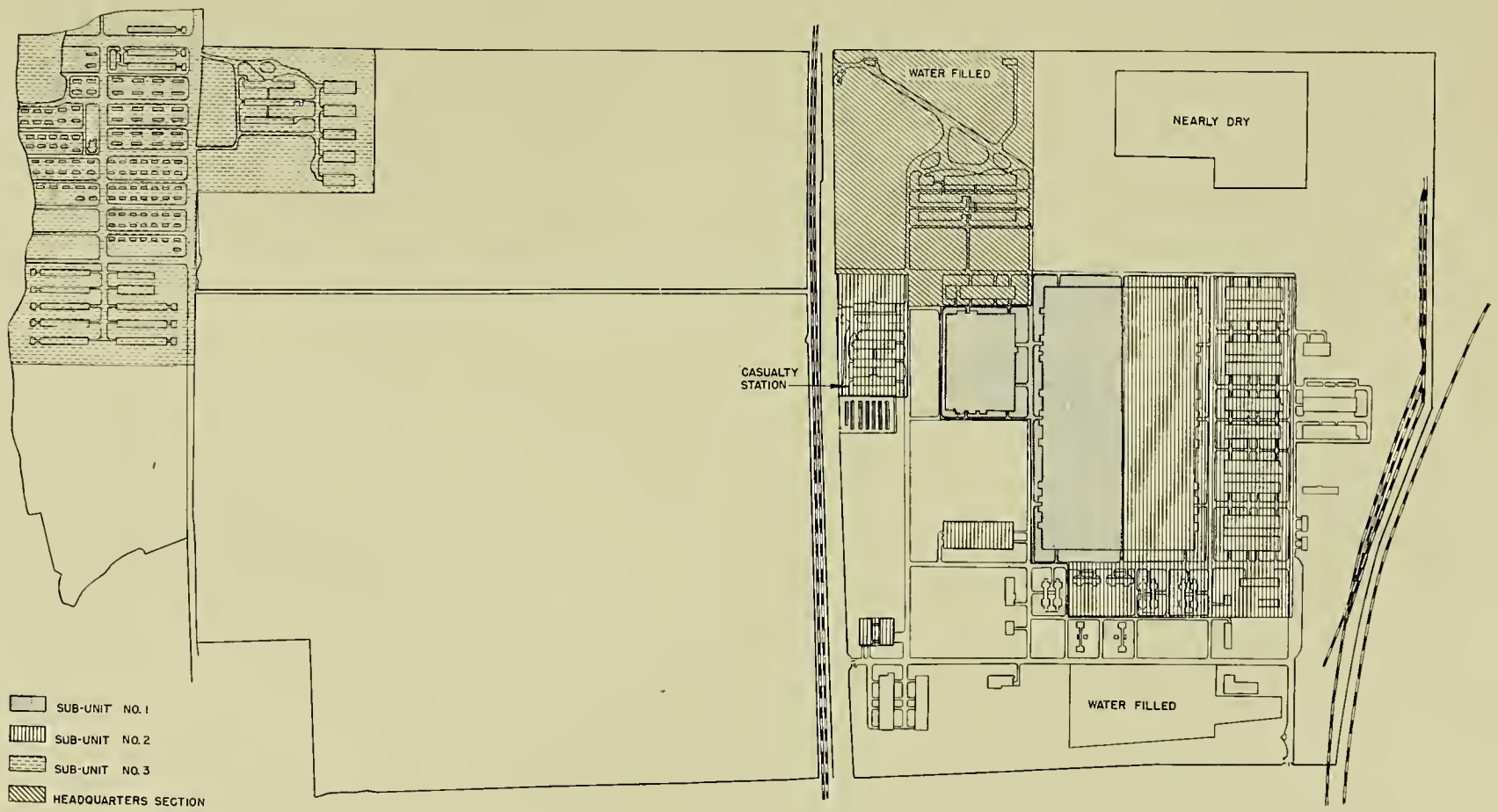


EXHIBIT J

Report on air-raid protection inspection of Kyoto Imperial University

1. *Introduction.*—Kyoto University is the national university of Japan, and is totally supported by the Japanese government. It is a tremendous institution covering over 140 acres, and its 227 buildings are sprawled in 3 main groups at the foot of a mountain.

a. The principal officials of the institution are the president, Rishaburu Torigai, the business manager, H. Honda, and the dean of the student body, S. Kimura.

b. *Faculty and students.*—The faculty was composed of 981 professors and instructors, and the student body numbered 7,000.

c. *Building construction.*—The main buildings consisted of 75 reinforced concrete, 52 brick, and 190 wooden structures.

2. *Organization.*—a. The air-raid protection organization of Kyoto University was probably given the most academic treatment of any air-raid protection organization in Japan. The literature on the subject included 15 volumes of over 200 pages each. The outline of the organization and the duties of the personnel was thorough and searching.

b. The president of the university was the titular head of the air-raid protection organization, but he passed the actual planning and administration on to his business manager, Mr. Honda. Mr. Honda was also in charge of the general affairs division of the university and as such his staff handled all administrative matters for the air-raid protection organization.

c. *Break-down.*—There were 16 departments in the university, a few of which included: Law, medicine, forestry, engineering, chemistry, and literature. Each of these 16 departments had its own air-defense unit which was called the *"boedan,"* and the professor in charge of each department was responsible for his own air-raid protection. The organization of each department varied but in general contained an emergency medical squad, fire squad, liaison squad, guard squad, repair squad, and gas squad. Some units contained a supply squad and in many cases the gas squad was made a part of the fire-fighting squad.

(1) *Fire department.*—The city of Kyoto had a small unit of their fire department stationed at the university. This unit originally included two manual pumps, one mobile pump which was mounted on a 1926 Chevrolet chassis, and crew totalling approximately 15 men. Although the list of equipment included approximately 300 feet of hose, there was none on the mobile pump, and the pump itself was not in operating condition. There was in addition to this equipment other miscellaneous materials including fire beaters, pails of sand, and buckets. None of the equipment was properly maintained, and the mechanical apparatus was in such a state of ill repair as to be inoperative.

(2) *Training.*—Training of the city fire unit was sporadic, and toward the end of the war was discontinued entirely as a useless waste of time. Training of the volunteer fire squads in the various departments was about on a par with the equipment. About 17 or 18 police from the prefectural level came to the school about two or three times a year and conducted classes lasting approximately 1 hour and 20 minutes. The first 20 minutes were spent in lectures on fire-fighting technique, and the remainder was spent in drilling and practice in ladder climbing, operation of the manual pump and operation of bucket brigades. In general it may be said that the fire department was inadequate, equipment was poor, training was insufficient, and the attitude on the part of the personnel was one of futility. The volunteer fire squad of the science department was composed of 87 men who were poorly organized, poorly trained, and their leaders not only did know how many men they had but could not find the number in their own book governing the organization of air-raid protection in their department.

(3) *The Guard squad.*—The science department, which has been taken as a representative unit, had 65 persons assigned to the guard squad; their training was about on a par with that of the fire department and was given by the same instructors. The duties of the guards were to act as aircraft spotters, guard important installations, protect valuable equipment, watch over the dormitory area, control lighting, guide personnel to shelters, and take cus-

tody of dangerous or valuable goods in the event of air raid.

(4) *Emergency medical section.* — Medical treatment for the school was handled by the Department of Medicine, which was composed of over 70 doctors and 600 nurses who were stationed at the university hospital. The emergency medical station was the only section in the air-raid protection of the university which could be considered adequately trained and equipped. First-aid stations were set up in the main administration building and the agriculture department building. Adequate medical supplies were kept at these stations and personnel included five doctors and three nurses at one station and three doctors and three nurses at the other. The hospital was 400 meters from the university and all casualties were taken there by stretcher.

(5) *Repair section.*—Maintenance of buildings, electrical equipment, gas, water works, was the duty of the official building maintenance personnel and generally was not undertaken by the repair squad of the air-raid portion unit. When a repair squad did assist in the defense unit they were used as technical reserves to act as advisors and assistants to official maintenance personnel. No definite figure was obtainable on the number of personnel in the volunteer repair squads.

(6) *Reserves.*—Reserve personnel varied in all departments. However, the science department had 36 members assigned to the squad, and these people were organized to assist wherever needed, but in general were supposed to assist fire fighting squads.

(7) *Gas squad.*—In most cases the gas squad was made part of the fire-fighting squad. There were only 100 gas masks available in the institution, which obviously was not sufficient and a list of instructions contained a statement to the effect that it would be wise for at least one member of the gas squad to be equipped with a mask. The prefecture police and fire office issued directives outlining the duties of the gas squad which were to detect gas, give alarm, perform decontaminataion, and bring in casualties to the casualty station. Instruction and drill were handled and operated by each department and were given by the prefectural police and fire departments on an average of three times a year.

(8) *Liaison squad.*—The liaison squad normally contained approximately 60 members; their duties were generally administrative but they served as well as messengers and watchers.

3. *Water supplies.*—Water supplies were adequate for normal use. There were approximately 460 hydrants fairly well distributed, but the hydrants were relatively useless due to the fact that there was not enough hose to use them. There was no sprinkler system, and in general it may be said that there was insufficient equipment to utilize the static water available.

4. *Air-raid warning system.*—Air-raid warning was received from the city siren and from a telephone call from Central Army headquarters. This call came in to the main switchboard and was immediately transmitted to the guard in charge of the section. This guard was stationed in an office near the main switchboard, and it is interesting to note that the room used by the guard for quarters and the room housing the switchboard had no air-raid protection. Signals used were standard and included blasts for the air alert, and one long blast for the air-raid alarm. In addition to the siren equipment, one guard was also stationed in a nearby Buddhist temple and was responsible for ringing the bell in that temple. The bell was rung in the case of air-raid alarm.

5. *Control room.*—The primary control room was located in the main administrative building, and the secondary in the basement of an adjoining unit. Communication was carried on solely by messenger and communication was highly inadequate, due to the fact that only one telephone was available and all messages had to be sent by individual messengers. According to the organization chart this room was to be staffed with the head secretary of the business manager's office and he was assisted by ten men.

6. *Shelters.*—The shelters for the university were without exception inadequate and in some cases were actually useless. No one seems to know how many exterior shelters had been built, and no check could be made because they had all been filled in. The total capacity of the shelters, including basements, which were used, was 2,000, which obviously would not accommodate the 7,000 students at the school. Prefecture order required all students to take shelter at the air alert signal, but this policy was not

followed by Kyoto university; the students normally waited for the air alarm and then entered the shelters which were available, and the overflow went to the hills.

7. *Mutual aid.*—No mutual aid was expected from the auxiliary police and fire units *(keibodan)* or neighborhood groups *(tonari gumi)*, but allowances were made whereby these units might call upon the University for assistance, and this assistance was in the form of students to aid in fire fighting.

8. *Comments.*—Kyoto University went to much expense and trouble to organize their air-raid protection on paper. The volumes relative thereto were thick and heavy and were completed with great dispatch and much industry, and then were placed on a shelf and thoroughly ignored. Professors who were in charge of departments did not know anything about the protection of their own area, could not find any information in the book which gave instructions concerning their area. Equipment was completely inadequate and inoperative, and had there been a great fire the school, fire equipment, and the books which outlined the details and instructions for the air-raid protection, would have all been destroyed.

EXHIBIT K

Report on air-raid protection inspection of the Miyako Hotel, Ltd.

5 Nov. 1945

1. *Introduction.* a. *Location.*—Kyoto Sango Awataguchi-Cho.

b. *Ownership.*—Stock corporation incorporated in the amount of 2,000,000 yen.

c. *Office force.*—Ninety employees during the war, 160 at present. This organization was composed of one manager, three assistant managers, and the remainder was made up by office staff, clerks, cooks, waiters, night guard, chambermaids, and gardeners.

d. *Shifts.*—The hotel operated on two shifts, with the larger portion of the staff present during the day shift. Officials interviewed were Mr. Takino, hotel manager, Mr. Ito, the assistant manager, and the chief engineer.

e. *Area.*—The grounds cover an area of approximately 11 acres.

f. *Description.*—The Miyako Hotel is unusually elaborate, the first four floors containing nothing but dining rooms, lounges, and game and recreation rooms. The remaining upper four floors contain the guest rooms, which were done in both Western and Japanese style. The clientele was obviously exceptionally wealthy, yet, in spite of the attractiveness of the hotel, it was unusual to have more than one-third of its 95 rooms occupied.

g. *Type of building construction.*—The hotel was built in several sections, all adjoining and stepped up along a mountainside. All buildings were of reinforced concrete, the front building being six stories high and the rear adjoining buildings being three stories; overlapping in such a fashion as to give a resultant height of eight stories. Although parts of the building were over 30 years old, all of it had been modernized to such an extent that the whole edifice gave the appearance of a thoroughly modern and up-to-date hotel.

2. *Organization.*—The air-raid protection of the Miyako Hotel was organized in conformance with the Kyoto prefectural police, as a neighborhood group *(tonari gumi)*, and was a complete air-raid protection unit in itself. It was headed by the manager, Mr. Takino, and his staff of three assistant managers. The basic organization was broken down into two squads, the fire-fighting squad *(bokahan)* and the first-aid squad *(kyugohan)*. Each squad had a complete staff for each shift and was organized as follows:

a. The fire-fighting squad had a total of 30 men and was composed of 8 pump-men, 4 ladder bearers and a bucket brigade of 18 men.

b. The first-aid squad had a total of 15 persons which included 8 stretcher bearers and 7 individuals charged with administering first-aid.

c. Personnel was divided into day and night shifts, with approximately 85 percent of the personnel working days and 15 percent working nights. This, of course, affected the size of the air-raid protection organization, but, however, in view of the fact that most of the hotel personnel lived on the premises they could be called to duty on short notice.

3. *Fire-fighting equipment.* — Fire-fighting equipment was basically good. The hotel was equipped with emergency hoses which were 30 feet in length and could be found at 16 stations throughout the premises. The hose was all linen, 1¼ inches in diameter, except the hose in the kitchen area, which was 3 inches in diameter and measured 50 feet. Buckets of sand were placed at strategic points outside of the building and glass bottles filled with carbon tetrachloride were to be found in the interior in small numbers. In addition to the interior hydrants and hose equipment, the hotel boasted of one hand-drawn, hand-operated pump, complete with 50 feet of hose.

4. *Water supply.*—The water supply for the hotel and its environs was excellent. The main supply was through a 3-inch outlet from the city water mains and the pressure at this station was 45 pounds per square inch. The water in the mains was supplemented by a reservoir which contained 118,870 gallons (504,000 liters) and a swimming pool, which was 20 by 40 feet and contained approximately 30,000 gallons of static supply.

5. *Air-raid shelters.*—Shelter available to hotel personnel was afforded by two flimsy earth and wood shelters which were capable of accommodating 10 persons each. These were not gasproof or fireproof and even the manager

was apologetic concerning their lack of stability. The guests were taken to a specially prepared exterior room located on the third floor in the event of an air raid. It was equipped with special shutters made of heavy 4 by 4 lumber solidly bound with iron straps and bolts. An adjoining room, similarly equipped, was available for hotel employees. The rooms were 20 by 40 feet each and offered ample room, but doubtful protection, even from near misses.

6. *Training.*—The prefectural police office sent five policemen to the hotel on two occasions to train personnel in first aid and fire fighting. Personnel from the police and fire unit *(keibodan)* paid one visit for the same purpose. Drill was conducted in each instance but the over-all time of each visit was not over an hour and instruction given was not thorough. Subjects covered during these visits included methods of first aid and how to form and operate a bucket brigade.

7. *Air-raid warning system.*—First information of an air-raid alert was obtained when the city sirens sounded. No additional notice came from criers of official police and fire units and no flags were visible in the area. Interior alarm was handled by the desk clerk. In the case of an alert, he immediately telephoned all guest rooms and bellboys notified persons in the gardens. For the final warning, or "air alarm," the clerk called all departments and each chambermaid was required to knock at the door of each guest room and guide the occupant to the special shelter room. Each department head was responsible for getting his personnel to the shelter room. In order of preference in the case of air raid were guests, women and children, then hotel employees. At night the night watchmen called in and informed the clerk when they heard the siren. Final authority relative to warnings rested with the desk clerk. When the "all-clear" was sounded, guests and employees returned to their rooms or duties, respectively.

a. *Signals.*—Signals were standard: "air alert," one long blast on the siren of approximately 1 minute; "air alarm," 7 short blasts of the siren; "release-from-alarm," 1 long blast of 1-minute duration.

8. *Light control.*—All rooms were equipped with black-out curtains and the lights of the main dining room and the lounges were the responsibility of a specially assigned attendant. Each took care of lighting control in his area.

9. *Mutual aid.*—The hotel manager stated that regulations required that there be a mutual-assistance program set up between the hotel and the neighborhood groups. However, he stated that such assistance was wishful thinking and was more in plan than in fact. He did state, however, that he could expect aid from the city fire and police departments.

10. *Summary.*—Fire protection for this hotel was adequate under normal conditions. The manager stated that the attitude relative to hotels in this area was one of tolerance and that little assistance was received from neighboring units or from the prefecture of city government. The hotel manager expected no assistance and certainly intended to offer none. He was well aware that his shelters were inadequate, but did not know how he could improve them. The effectiveness of the provisions which were made could not be adequately tested because Kyoto was never involved in any serious air raids. It is certain, however, that there was not enough equipment to protect the hotel in the event of even spill-over hits from nearby areas.

EXHIBIT L

Report on air-raid protection inspection of the Daiken office building.

1. *Introduction.* a. *Location.* — Kyoto Shi, Shimokyoku, Karasurudori, Shijo Sagaru, Suiginyacho, 622.

b. *Ownership.*—Daiken Sangyo, Ltd. The Daiken Sangyo, Ltd., is a holding company with a capital of 15,000,000 yen. The shares sold on the open market during the war at 80 yen per share. The greatest portion of the stock is held by Mr. Chubei Ito; Mr. Takenosuke Ito; Mr. Sanichi Fujino.

c. *Floor space.*—The building has a total of 8 floors, comprising 90 offices, and each floor has approximately 38,856 square feet.

d. *Office Staff.*—The building management employed a staff of 30 persons.

e. *Tenants.*—The office space was leased by three business firms, a textile company and two industrial concerns, which employed a total of approximately 600 persons at the building.

f. *Construction.*—The building was of modern construction, being built of structural steel and reinforced concrete.

2. *Organization.*—The air-raid protection organization was headed by the assistant manager of the building, who, in turn, had one assistant as a staff member. The basic organization included two squads, a fire-fighting squad and a first-aid squad.

a. *Fire-fighting squad.*—

(1) *Personnel.*—The squad is composed of 3 guards, or watchers, 7 pump men, 5 hose men and 30 men who formed a bucket brigade. The bucket brigade was composed of employees of the building and also volunteers who came from the tenants of the building. The guards' sole duty was to act as watchers and they were stationed on the roof. These men were in direct communication with the main office and were able to report incidents directly when they occurred. Their duty was to watch for bomb hits on or near the premises and no protection was afforded them other than the elevator loft.

(2) *Equipment.*—Included in the equipment for the building were 100 buckets, 2 manual pumps capable of delivering a pressure of approximately 30 pounds per square inch, 5 ladders, 10 picks, 5 shovels. The hand-pump hose was 1-inch in diameter and included 2 lengths of approximately 33 feet (10 meters) each, making a total of approximately 65 feet of hose for each pumper. In addition to this miscellaneous equipment the building was equipped with four hose stations. Each hose station had two lengths of hose, 1¼-in. linen, of 33 feet (10 meters) length, which, with the nozzle attachment, gave a usable length of approximately 65 feet. This hose station was equipped with an automatic device that turned the water supply on immediately when the hose was withdrawn from the rack. In addition to these hose stations there was a similar station on the roof and two stations on the main floor.

b. *First-aid squad.*—The first-aid squad had a total of five men who acted both as stretcher bearers and bandagers. This unit was equipped with three stretchers, some emergency bandaging material and two sets of splints. There was one casualty and first-aid station combined in the lobby of the first floor. First aid was administered at this point and any casualties were assembled to be taken to the nearest hospital which was a 10-minute stretcher ride from the building. This hospital had 5 doctors and 30 nurses in attendance.

3. *Training.*—The prefectural police visited the building twice per month and gave instruction. The classes lasted 1 hour each time and included instruction in the rudiments of first aid and basic fire-fighting techniques. Drills were conducted twice every 6 months and involved the use of fire-fighting equipment on hand.

4. *Air-raid warning system.*—The members of the building received their air-raid warning by radio, siren, and telephone from the prefectural police. The first and second assistant managers were responsible for giving the interior alarm, which was a system of electric bells controlled by a switch in the manager's office. After this the "alert" signal was announced by three short rings and the "alarm" signal was announced by one long ring, whereas the "release-from-alarm" was three short rings.

In addition to the electric bells, there were two hand bells available on each floor.

5. *Operations.*—When the "alert" signal was given, all personnel who were assigned equipment procured it and hastened to the first floor garage to await instructions. They were joined immediately by the remainder of the fire-fighting and first-aid groups. Little attention was paid to the "alert" by the tenants. These people habitually waited until the "alarm" before they took shelter. The only shelters which were used were two basements, one under the garage for the employees and one under the main structure for the tenants. The roof of the garage basement had a thickness of approximately 10 inches of concrete and steel, whereas the overhead protection of the other basement consisted of all the floors above. Neither shelter was gasproof, and no oxygen equipment was available, but both were fire resistive. No guides were furnished by the management. All tenants knew where to go and incidental visitors naturally followed the crowd.

6. *Light control.*—All lights were extinguished on all floors above the third floor every night before sundown. Normally, black-out was not observed but during raids curtains were drawn in lighted offices. Office personnel in each room was responsible for lights being turned off at the end of the working day and a check was made by the management to assure that this was done.

7. *Control center.*—The manager's office was used as a control center and operations headquarters. He was able to get connection with the various parts of the building through the regular telephone system.

8. *Water supply.*—Water was delivered to the building from the city water mains at a pressure of 70 pounds per square inch through a 4-inch riser. The city water supply was supplemented by two large static tanks of 390 gallons each at the front and rear entrance and eight small 20-gallon tanks which were located on each floor. There was no automatic sprinkler system in the building.

9. *Mutual aid.*—Arrangements were made to exchange assistance with the neighboring auxiliary police and fire units *(keibodan)* and the neighborhood group (*tonari gumi*). The city fire department could also be depended upon to give assistance when needed.

10. *Comments.*—The air-raid protection group of the Daiken office building was quite small and auxiliary equipment was characteristically crude. The organization never was actually tested due to the fact that Kyoto was never subjected to a large incendiary raid. However, the building was equipped to sustain and successfully fight off incidental damage or fires. Should the building have been subject to a direct attack it would not have been able to cope with the emergency. The interest shown by the management was above average for the Kyoto area, but below the average necessary to combat actual saturation raid conditions.

EXHIBIT M

Report on air-raid protection inspection of St. Agnes' Episcopal Church and girls' school

7 Nov. 1945

1. *Introduction.* a. *Location.* — Kyoto Shi, Kamikyo Kyuko, Karasumaru Dusi, Shimoto Churi.

b. *Description.*—The St. Agnes Episcopal Church and Girls' School is a Protestant organization which was constructed and operated on funds furnished by the Episcopal Board of Foreign Missionaries. The pastor, the Reverend Matsutaro Okajima, is a Japanese citizen who received his college education at an Episcopal seminary in New York City. The church, school and rectory cover an area of approximately one-quarter of a block and have a total of eight buildings. Four of the buildings were of wood, three of brick, and one of modern reinforced concrete construction.

c. *Staff.*—The pastor was assisted by an assistant pastor, 35 permanent instructors and 15 part-time instructors.

2. *Organization.*—The titular head of the air-raid protection unit was the pastor himself, but due to the many pressing duties incident to his position he passed on the actual administration of the air-raid protection organization to one of his male instructors.

a. *Breakdown.*—The organization was broken down into five main sections.

(1) Fire fighting.
(2) Emergency medical.
(3) Guide.
(4) Watchers.
(5) Liaison.

b. *The fire-fighting section.*—The fire-fighting section was composed of 18 teachers and between 100 and 200 students. The equipment for this section was very poor and included nothing but the most rudimentary tools, namely:

(1) Hand pump, exceptionally small, delivering only 20 pounds pressure and having only 40 feet of 1-inch hose.
(2) Two hundred and fifty buckets (canvas).
(3) Forty beaters (wood and reed).
(4) Ten hooks (wood).
(5) Ten mats (grass).
(6) Five hundred sand balls (these were about 4 or 5 inches in diameter and were to be thrown at the base of the fire). Four or five of these balls were at each door.
(7) Ten ladders.

The pastor stated that by the time he received instructions from the prefectural government to purchase the fire-fighting equipment there was none to be had and that he knew that the equipment which he did have was insufficient but he could procure no more.

c. *The emergency medical section.*—This section was headed by one teacher and a staff of nine assistants. The number of students participating varied from 50 to 100. This section was exceptionally well trained because part of the regular peacetime as well as wartime curriculum of the school included a course in first aid. This course was taught as a formal subject and several periods a week were devoted to it. The girls received further training by going to the local Red Cross hospital which was located nearby. This hospital, which contained a staff of approximately 30 doctors and 350 nurses, was used as a casualty station in view of the fact that it was only 3 to 4 minutes away by stretcher.

d. *The guide section.*—This section was headed by one teacher and operated with a normal complement of 30 students. The duty of a guide was to escort groups of girls to shelter areas during emergencies. These girls were specifically chosen for their stability of character and common sense plus the ability to remain calm under stress.

e. *The watcher section.*—This section had one teacher as the head and was composed of 20 students. The girls in this section were chosen for their initiative and were trained to identify aircraft and call this and other information through a megaphone. The pastor stated that the girls actually had to be trained to shout due to the fact that the normal Japanese girl is very timid and shy and would, under no circumstances, shout, even in emergency. These watchers were stationed on the roofs of various buildings and were charged with the duty of informing the headquarters section or the control center of the approach of enemy

planes. The control center, or headquarters section, was equipped with a radio and the pastor and his staff used to gather and listen to the radio and make a personal estimate as to whether enemy planes were going to bomb near their area.

3. *Air-raid warning system.*—The original information regarding an impending air raid was received from the city siren and the radio. The siren was audible to all the students and instructors and at the first warning (the "alert" signal) all students stopped work, stood up and awaited the command of the leader of their group which was usually a member of the guide section. Key personnel immediately assembled at the pastor's office to listen to the radio and get the latest information. An estimate of the situation was made at this time, and, if it was decided that there was no immediate danger, messages were sent to each room and classes were resumed. Should the decision be to the contrary, girls were immediately marched to the adjoining playground and were told to hasten to their homes, in an effort to disperse the students. The boarding students, who numbered approximately 200, were sent to the basement of the concrete building.

4. *Shelters.*—There were only two formal shelters and these were inadequate. These shelters were built of wood and earth, half below the ground and half above the ground; the roof was less than 2 feet thick and was no protection against other than flying spinters or incendiaries. The basement of the reinforced concrete building was the main shelter but the final refuge in the event of a heavy unannounced raid was to use the imperial palace grounds which were across the street from the school.

5. *Training.*—When the instructions were received from the prefecture to train the girls in defense, a request was made to the prefectural police to send an instructor to the school to assist. In spite of the fact that the request was repeated on several occasions, no aid was ever forthcoming. The school did the next best thing and trained the girls as best it knew how. This training involved instruction in ladder climbing, bucket-brigade operation, aircraft identification, and shouting. Instruction was apathetic, however, and teachers did not believe that such rudimentary measures as the prefecture advocated could be of any value whatsoever, especially in view of the pathetic shortage of equipment. It was further stated that what instruction was given lacked force due to the instructor's lack of conviction.

6. *Mutual aid.*—No arrangement was made with local neighborhood groups *(tonari gumi)* or auxiliary police and fire units *(keibodan)* for mutual assistance. The only assistance that could be expected in the event of fire was from the city fire department.

7. *Light control.*—All lights were extinguished at sundown and if it became necessary to use any lights after dark, certain rooms had effective black-out curtains on them and could be used.

8. *Fire prevention.*—Two of the school buildings had been torn down to act as fire breaks and to decrease the hazard to adjoining buildings in the event of fire.

9. *Water supply.*—Almost the only water supply available was from the city mains, the hydrant of which was situated on a nearby corner, but an insufficient number of inadequate tanks were sparsely distributed throughout the area.

10. *Comments.*—The pastor specifically stated that the raids on Osaka and Kobe had had profound effect upon himself and his instructors. He stated that he and his teachers were very suspicious of the efficiency of the methods of fire protection that the prefecture had suggested and felt that any effort to train in the use of such primitive equipment was less than useless. The concensus was that, if the bombs did come, the best course of action would be to flee to a more secure position and thus save the students and themselves. They did not believe in making futile attempts at the impossible and thus risk placing themselves and their girls in a dangerous position from which there might be no escape. In this connection it was stated that the girls in general were very nervous and excitable during air-raid alerts and that the girls of the 13- and 14-year age group were so excitable as to be useless even in air-raid drill. It was, therefore, the policy to evacuate this group at once at the "alert" signal, even for drill purposes. Futility was the impression gained and futility was the keyword of their air-raid protection.

EXHIBIT N

Translation of table of contents and summary of air-raid defense book: "Training Orders, Training Notices, and Prefectural Orders Concerning Air Defense"; Kyoto prefecture police department. See Reference Item No. 21

Table of Contents

1. Regulations on Control of Sounds Resembling Air-Defense Warnings, 11 June 1938. Prefectural Order No. 23.

Types of air-defense warnings, training air-defense warnings, methods to be used in transmitting warnings, prohibition of sounds resembling air-defense warnings, and application of fines and punishment in the event of any violations.

2. Rules for Light Control Operations, 9 August 1938. Prefectural Order No. 40.

Information (kind of light, size of globe, reasons for using light, name, address, etc.,) to be secured from individuals who desire special light permits referred to in article 5, section 2, article 6, section 1, article 6, section 2, article 8, and graphs 1, 2, 4 and 5 in the Light Control Regulations. Fines and punishment for violations.

3. Procedure for Conducting Light Control, 9 August 1938. Prefectural Training Order No. 28.

Steps to be taken when various orders and permits are issued and persons to be notified. Example: When making out a special permit according to article 6, section 2, of the Light Control Regulations, the governor will be notified immediately.

4. Regulation for Kyoto Prefecture Air-Defense Observation Units, 27 August 1938. Secret Instructions No. 3. Police Chief. Chief of Air Observation. Governor of Kyoto Prefecture—Suzuki, Keiichi.

Purpose of air-observation units, organization and administrative set-up, and duties and responsibilities of officers. Organization charts.

5. Amendments to Regulations for Kyoto Prefecture Air-Defense Observation Units, 25 July 1941. Chief of Prefectural Police Department. To chiefs of police stations.

Revisions and supplements to regulations covered in previous chapter. Changes in number of personnel, and elaboration on duties and responsibilities of officers.

6. Regulations for Fire Defense, 1 February 1944. Secret Instructions No. 5. Police Department. Chief of Fire Defense. Governor of Kyoto Prefecture—Yukizawa, Chiyoji.

Purpose of fire-defense units, organization, chain of command, duties, and responsibilities of personnel and a chart on defense areas.

Amendments to Regulations Pertaining to Lights Designated in article 5, section 2, of Light Control Regulations, 27 August 1940. Chief of Kyoto Prefectural Police Department. To Chiefs of all police stations.

Notice to comply with Order No. 773 (20 August 1940. Signed by Governor Kawanishi, Jitsuzo), which increases the distance of shop lights, and business lights from a visible distance of 50 meters to 100 meters.

8. Matters Pertaining to Brilliance of Lights Referred to in article 4 of Light Control Regulations, 8 December 1941. Governor Ando, Kyoshiro. Kyoto Prefectural Notice No. 1259.

Lights referred to in article 4 of the Light Control Regulations will be concealed or controlled during security periods as designated until further notice.

9. Matters Pertaining to Prohibition of Sounds Resembling Air-Defense Warnings Referred to in article 3 of Regulations on Control of Sounds Resembling Air-Defense Warnings, 8 December 1941. Governor Ando, Kyoshiro. Kyoto Prefectural Notice No. 1260.

Sounds referred to in article 3 of the Regulations on Control of Sounds Resembling Air-Defense Warnings will continue to be prohibited as specified until further notice.

10. Matters Pertaining to Light Control and Defense Against Floods, 9 September 1940. Chief of Kyoto Prefecture Police Department. To chiefs of police stations.

Usage of minimum practicable amount of light in the event of floods which necessitate immediate repair work, rescut, and first air in compliance with an order to this effect from the Engineering and Economics Bureau under the Ministry of Home Affairs.

11. Matters Pertaining to Permits for Use of Lights in Local Railroad Emergency Repair and

Construction Shops, 24 February 1943. Chief of Kyoto Prefecture Police Department. To chiefs of police stations.

Orders to notify all railroad personnel of manner in which special permits may be secured to use certain lights necessary for the maintenance of railway activities. Types of lights which may be used, wattage limitations, and communication systems for receiving air-defense warnings.

12. Matters Pertaining to Air-Defense Observation Units and the Conscription of Personnel, 2 March 1942. Chief of Kyoto Prefecture Police Department. To all police station chiefs concerned.

Air-observation units should not indulge too freely in the conscription of civilians for observation activities, except when they are vitally needed and, then, only with the approval of the governor.

13. Matters Pertaining to the Transmission of Air-Defense Warnings, 2 June 1942. Chief of Kyoto Prefecture Police Department. To chiefs of police and fire stations.

Different types of warnings, transmission of alarms by sirens, radio, voice, and flags, and precautions to be observed when alarms are sounded.

14. Matters Pertaining to Air-Defense Organization During Alert Periods, 20 December 1942. Chief of Kyoto Prefecture Police Department. To chiefs of all police stations in the prefecture.

Reminder to air-defense units to make certain that their responsibilities are carried out efficiently. Also several regulations stating that people who are in public places at the time the "alert" is given should be advised to return to their homes.

15. Matters Pertaining to the Explanation of Air-Raid Training Conditions, 30 December 1942. Chief of Kyoto Prefecture Police Department.

To chiefs of all police and fire stations in the prefecture. Manner in which various conditions (fire, damage) should be made known to the people by the use of voice messages, flags, and signs during training.

16. Air-Raid Defense Personnel's Allocation During Security Alarm, 4 January 1943. Chief of Kyoto Prefecture Police Department.

Regulations concerning what individuals or groups may be used for defense and fire-fighting activities depending upon the gravity of the situation.

17. Matters Pertaining to the Enforcement of Preparatory Control Referred to in article 4 of the Light Control Regulations, 10 February 1943. Chief of Kyoto Prefectural Police Department.

To chiefs of all police and fire stations in the prefecture. Regulations concerning the enforcement of light control regulations which deal with outside lights (gate lights, shop lights, advertisement signs, street lights).

18. Matters Pertaining to the Transmission of Air-Defense Warning Signals, 29 March 1943. Chief of Kyoto Prefectural Police Department.

To chiefs of all police and fire stations in the prefecture. Flags, sirens, bells, streamers, and other methods of transmitting the various warnings and the proper procedure to be followed.

19. Matters Pertaining to Lights Designated in article 5, section 2 of the Light Control Regulations, 23 November 1943. Chief of Kyoto Prefectural Police Department.

To chiefs of all police and fire stations in the prefecture. Regulations concerning movement of trains at night and the control of lights used by the railroads (car lights, station lights, sparks, repair shop lights).

20. Matters Pertaining to the Appointment of Permanent Personnel for Specific Observation Posts, 1 March 1944. Chief of Kyoto Prefectural Police Department. To those police station chiefs concerned.

Brief sketch on observation units' personnel, mainly the appointment of students with pertinent responsibilities and details.

21. Summary of Preparatory Light Control Enforcement, April 1944.

General regulations on outside lights, inside lights, factory lights, street lights, etc.

EXHIBIT O

Pictures of: (1) conical-shape black-out street lighting unit; and (2) dome-shape street lighting reflector unit

Conical shape black-out street lighting unit replacing pendant enclosing globe units. Lamped with approximately a 20-watt lamp the unit is approximately 6 inches diameter and 8 inches deep mounted about 15 feet above the curb line.

Dome type street lighting reflector unit, typical unit used for illumination of some of the major streets in Kyoto.

EXHIBIT P

Translation of bill proposed for effecting evacuation of persons, published by Kyoto prefecture, August 1945. (Reference Item No. 25.)

1. *Purpose.*—As a means of increasing protection of cities against the air raids which are becoming more intense, we are to evacuate the old and young, the sick, pregnant women, and those not required to remain in the city.

2. *Methods.*—a. Evacuation will not be compulsory but will be strongly recommended.

b. As a fundamental policy, evacuation will be to relatives so far as possible, people in the prefecture or in nearby prefectures. In the case of persons without relatives or whose relatives live in distant places, plan to be set up to receive them within the limits of the prefecture.

c. Apart from those who need to remain in the city for defense purposes, priority will be given in evacuation to the old and young, sick people, pregnant women and attendants for such. For other people who do not need to remain in the city, removal to agricultural districts in groups will be carried on as quickly as possible. They will be used for thorough-going increase in food production for carrying the war through. For those who need to remain in the city, accommodations for group housing will be set up and the city will give attention to this matter.

d. Evacuation areas will be in Kyoto city and Maizuru city.

3. *Carrying out the measures.*—a. Organization for the administration of evacuation to be set up. While the prefecture and city will cooperate in directing and urging the performance of the plan, the main work will be carried out by the city as follows:

(1) All kinds of policies with reference to the evacuation of persons will be considered by the prefecture's evacuation committee and a complete and speedy carrying out of these measures is to be expected.

(2) In the cities to be evacuated, a headquarters for directing evacuation of persons will be set up and they will have charge of the evacuation in those districts.

(3) In order to afford all facilities for evacuees, consultation offices on evacuation will be set up in the prefecture and in the police offices concerned, and for the purpose of issuing evacuation certificates and attending to other business on evacuation, offices for the direction of evacuation will be set up in the cities, and ward offices.

(4) For the sake of promoting plans for reception areas, the Kyoto prefecture reception center conference will be established.

b. Time for carrying out the evacuation. It shall be begun on the 10th of August and completed within approximately 2 months.

c. *Distribution of removal certificates.*—

(1) In Kyoto city the distribution will be made by the ward leaders and in Maizuru, by the mayor. The form and the handling will be determined separately.

d. The payment of money to encourage removal. (Note) As a fundamental principle, such payments are not to be made. However, in the case of citizens who are exempt from the tax payments, if they go out by families (in the case of a person whose presence is required in the city the remainder of the family will be considered as the unit) the sum of Y300 per family will be paid. This money will come from the national treasury but will be handled by the city. Details of these financial transactions will be decided separately by the city.

e. *The management of transportation.*—

(1) In the matter of rail transportation, conference will be held with the head of the Osaka Railway Bureau and free transportation given to persons and their baggage. Attention will be given to speeding up transportation and efficient use of the railroad through adequate planning.

(2) In transportation other than by rail, just so far as there is no interference with the transportation of necessary articles for daily living in increasing the war potential, the vehicles for land transportation may be allotted, and allotment of trucks may be considered as in the case of those who were evacuated because of the tearing down of buildings.

(3) As a fundamental principle, each one is to see that his baggage is carried to the railway station, but in special cases, methods for the handling of personal bag-

gage are to be considered and volunteer bodies among the populace are to be encouraged to give their cooperation.

(4) Each one is urged to provide his own packaging materials and containers.

(5) In order to expedite the transport of evacuation baggage, facilities for handling baggage are to be set up in the neighborhood of railway stations.

f. *Handling of receiving centers.*—

(1) Through the receiving center councile set up in the various cities, towns, and villages throughout the prefecture, guidance is to be given in the matter of securing houses and rooms, consigning people to nearby farms, and urging a positive back-to-the-farm policy for those who have relatives on farms.

(2) Evacuation of persons who have relatives in nearby prefectures is to be facilitated.

(3) Necessary measures are to be taken for a sufficient distribution of supplies for living in the receiving areas.

(4) All the organizations concerned are to take effective cooperative measures in order to facilitate the finding of occupations by evacuees and the transfer of their children to local schools.

g. *Disposal of baggage left behind.*—

(1) As a fundamental principle, evacuees are to take care themselves of the disposal of baggage which comes outside transportation limits, but in addition to that the following points are to be considered: Articles which can be kept in safes will be attended to by the city.

(2) The city will give attention to buying, selling, and exchanging of second-hand goods, and, in addition, will carry out the purchase of certain types of goods.

(3) In unavoidable circumstances, the use of a building of solid construction and cellars will be planned for.

h. *Expenses.*—Expenses arising from transportation will be placed in the prefectural budget and money for the encouragement of removal and for the direction centers for carrying out evacuation in the cities and wards will be put in the budget of public bodies concerned.

EXHIBIT Q

Translation of section 3, "Prefectural Regulations for Wartime Damage Rescue Work," 18 March 1945, abstracted from Kyoto prefectural publication dated April, 1945, "Compendium of Matters Pertaining to Wartime Damage Protection Law No. 71, Promulgated 24 February 1942." Reference Item No. 26

SEC. 3. *Other matters.*—a. In order to manage matters pertaining to protection of sufferers in accordance with the Regulations of the Kyoto Prefectural Headquarters for the Wartime Damage Rescue Work, that office will be established in the Kyoto prefecture.

b. There will be the chairman, vice chairman, and councilors. The chairman will have charge of the duties of the Headquarters; the vice chairman will assist the chairman and take his place in case of need; councilors will assist the chairman and take part in carrying out the work of the Headquarters. The chairman will be the deputy governor; the vice chairman will be the head of the section in charge of wartime damage matters; and the Governor will appoint the councilors from among the section heads concerned.

c. The Headquarters will be divided into the following seven sections: General Affairs, Local Guidance, Rescue, Housing, Equipment, Medical, and Provision. Each section will have a chief who will attend to the business of the section. The Governor will choose the section heads from among the prefectural section heads concerned.

d. The members of the Headquarters will be chosen from among the members of the Department of Internal Affairs and others designated by the Governor, and the section heads will choose the section members from their own departments in the prefecture and others designated by the chairman of the Headquarters.

e. Duties of the various sections.

(1) General Affairs.—Plans based on the Rescue Law; the control of regulations among the different sections handling finance, rescue work, and supply of provisions for the sufferers; providing living necessities for the sufferers; the management of control of this law; the preparation of certificates; matters pertaining to relief funds for the sufferers; and any matters not handled by the other sections.

(2) Local Guidance.—Control of the guidance of the relief for sufferers in the suffering area; liaison between the suffering area and the relief headquarters and investigation of the condition of sufferers.

(3) Rescue.—Plan for evacuation; establishment of rescue centers and the reception of sufferers.

(4) Housing.—Control of temporary housing; finding quarters for sufferers and people obliged to remain in the city.

(5) Equipment.—Construction of temporary residences; demobilization and allocation of personnel for construction of temporary residences; the preparation and storage of materials for temporary residence construction.

(6) Medical.—Medical attention and obstetrical care for sufferers; the mobilizing and emergency allocation of the personnel for rescue work; anti-gas and anti-epidemic work; emergency distribution of drugs and medical materials; testing, disinfection, and supply of water.

(7) Provision.—The providing of rescue materials and comfort to sufferers.

THE MAIN POINTS IN THE CARRYING OUT OF THE WORK OF THE ABOVE-MENTIONED HEADQUARTERS.

Each section is to have confidential contact with the local authorities concerned and is to leave no stone unturned in the speedy and effectual carrying out of relief measures for sufferers. Each section is to keep a daily record of its work and to show it to the chairman of the Headquarters. Each section is to keep a record of the residences of the members of his section to determine the method of getting in touch with them and to leave no stone unturned in times of emergency summoning to their posts. The chief of the councilors is to keep a record of the residences of the personnel who are held in reserve and to have all preparations made for emergency mobilizing. The different sections are to formulate detailed concrete plans for their work and to make a report to the chairman and in general to observe the following:

1. *General Affairs Section.*—a. This section, on the basis of report from the Guard Head-

quarters (*Keibi Hombu*), will make immediate contact with the Local Guidance Section who will investigate the state of the damage; will also gather reports and records of all sorts of matters and contact the various other sections and have them take appropriate measures on the basis of the law for rescue.

b. It will maintain close contact with all the different sections and see to it that the work is carried out fully and quickly.

c. It shall have charge of the finances of rescue work and act on the basis of the detailed reports from all the sections and city, town, and village chiefs concerned.

d. It shall determine methods for setting up consultation places for the sufferers in any areas where there is need for consultation on personal matters.

e. After the Police Guard have furnished the supply of boiled rice and other foods and living necessities to the sufferers, this section shall carry on and make provision on the basis of the Wartime Damage Protection Law.

f. It shall plan for close contact with the departments which have to do with clothing and other materials for distribution and see that no stone is left unturned in maintaining a supply of such things.

g. It shall make a distinction between the supply of rescue items to the sufferers according to whether they are in the reception areas or in reception places at the evacuation point and determine on concrete methods of distribution.

2. *Local Guidance Section.*—a. On the basis of contact from the General Affairs Section, they shall immediately set out for the actual spot (of disaster) and guide and control the rescue work carried on by city, town, and village heads, and maintain contact with the Headquarters.

b. They shall investigate the actual condition of the disaster on the basis of the provisions in the law and quickly report the same to the head of the General Affairs Section.

c. The carrying out of rescue measures on the spot is to be done on the basis of the plans formulated in accordance with the law, in the places entrusted with the Wartime Damage Rescue work, and in other places the work is to be carried out in general in accordance with the above.

3. *Rescue Section.*—a. This section will act in accordance with a plan for rescue work for sufferers in Kyoto Prefecture.

b. Housing and protection of sufferers will be carried out in general in line with the following provisions:

(1) Sufferers are to be divided into the following three classes and provided for: Persons with relatives to go to; persons without relatives to go to; and persons whose work compels them to remain in the city.

(2) A distribution of sufferers—sufferers who are caused to take immediate refuge in schools and temples and the like are to be investigated as quickly as possible and then to be scattered to various places in accordance with the following principles: Refugees with relatives are to be sent to them and in the case where they have to go to other prefectures, the laws in such places are to be followed; those without relatives are to be furnished with housing after those who remain in the city for essential work have been taken care of; of those who stay in the city for essential work, those who have relatives in places from which they can travel easily shall be sent to them but if they have no relatives, they are to be put in temporary buildings for which priorities were given on contact with the Housing Section.

4. *Housing section.*—a. So far as possible, rented houses and rented rooms suitable for long-time dwelling should be provided for the sufferers.

b. In cases where it is difficult to provide dwellings for the sufferers in those cities, towns and villages, to which they have been sent, help should be sought from other cities, towns, and villages.

5. *Equipment section.*—a. On the basis of the Rescue Law determined by the General Affairs section, when necessary, temporary construction should be carried out quickly according to the general principles for temporary housing.

b. The building sites for temporary residences should be determined ahead of time and the mobilizing and allocation of the building unit (personnel) should be arranged satisfactorily.

c. The preparation and storage of building materials should be provided for through close contact with the sections concerned.

6. *Medical section.*—a. Medical services for time of disaster should be carried out on the basis of Kyoto Prefecture's regulations for Air-Defense Rescue.

b. All rescue places should be immediately opened and, according to necessity, the rescue personnel mobilized and quick and proper medical treatment for wounded and sick people carried out satisfactorily.

c. The necessary drugs and medical supplies should always be kept on hand in the rescue places and in case of an insufficient supply, an emergency distribution should immediately be carried out.

d. The section should always make sure of the condition of supply of medicines and medical supplies and plan to keep on hand a suitable amount.

7. *Provision section.*—a. This section will maintain contact with the Supply Department and in times of necessity, will encourage The Imperial Rule Assistance Association and the Greater Japan Women's Association and all other bodies and associations among the populace to provide a sufficient supply of rescue materials, ample for the rescue of sufferers.

b. In order to raise the morale of the sufferers, plans for comfort and encouragement should be set up in the various reception places.

8. The summoning of the personnel concerned and their allocation for duty.

a. When the time comes for the carrying out of wartime damage or rescue work, the chairman will give notice to each section head.

b. When the various section heads receive the orders from the chairman, they will immediately summon the section personnel and have them take their assigned posts.

c. The chairman, in order to expedite work, may give orders to the personnel of one section to help another section.

d. The chairman, on the request from any section chief, may mobilize the reserve personnel and attach them to the section which needs help.

e. Each section chief may make arrangements for exchange of personnel as the length of the operation demands.

(EXPLANATORY NOTE.)—These directions are followed by tables showing how the different sections in this organization are to be linked up with existing sections in the Kyoto Prefecture and municipal offices.

EXHIBIT R

Translation of questionnaire designed to determine destination of persons seeking other locations. Reference Item No. 27

FORM FOR THE INVESTIGATION OF THE REAL CIRCUMSTANCES OF APPLICANTS FOR EVACUATION.

1. Head of household.
2. Number in household.
3. Number applying for evacuation.
4. Desired destination.
5. Presence or absence of relatives at the desired destination.

Membership in.....
Neighborhood Group of.....
Block Association of.....
Federated Block Association of.....Ward
Seal of Block Association Leader.
Name and seal of Neighborhood Group.

At the back of the form are instructions to the one who fills out the form. Among other items are given the classes eligible for evacuation:

1. Those over 65, primary school pupils, children under 7.

2. Pregnant women, those with chronic illness, the deformed.

3. Families or survivors of men in the service, who are not necessary in the city.

4. Others not necessary in the city: people living on pensions, annuities, rentals, interest, allowances, and people without occupation.

5. People necessary to care for the helpless.

EXHIBIT S

Translation of compendium of regulations relating to school children group evacuation. Issued by educational section of Kyoto prefecture, May, 1945. Reference Item No. 28

ABSTRACT OF CONTENTS

Page 1, 2 Sept. 1944:

Encouragement of evacuation to relatives made known through literature and meetings of guardians.

Those to be evacuated first:

1. Those living near important installations.
2. Those in densely populated areas.
3. Those too weak to join in group evacuation.

Report desire to principal of school, who reports to mayor on each occasion, while mayor reports to governor at end of each month. Principal also sends word to school principal at destination.

Page 4, 3 April 1945:

Further exhortation to evacuate to relatives.

Regulations for group evacuation.

Expenses all assumed by city except monthly tuition.

Receiving centers to be towns and villages in Kyoto Prefecture, but unsuitable places to be avoided. Number to be evacuated from Kyoto and Maizuru estimated at 20,000, and receiving areas to be sought on that basis.

Twenty-five to a dormitory is standard.

Students from city to be added to classes in country, but where this crowds things too much additional classes are to be formed.

Laundering and mending to be done by local women if possible.

Checked baggage limited to one piece of 20 kilograms or less, including bedding.

Individual meetings with parents not allowed.

Page 16, 22 March 1945:

Vice Minister of Educational Ministry to Governor. (Decision of Cabinet meeting, 16 March 1945. Government Ordinance No. 93.)

Need felt for increased emphasis on school children evacuation.

Divide cities into A and B classes, and enforce thoroughgoing evacuation in A class cities, either to relatives or by groups. Also have first and second years go to relatives; carry on schooling for those who have no relatives but if guardians request, group evacuation may be carried out when occasion arises. Also have seventh and eighth grades go to relatives, but if they have none, send boys to farms and girls to places where they can do light work. Use the school buildings, except a part for school office, for necessary purposes. Education Minister to decide on A and B cities, on consultation with other ministries concerned.

If any present receiving centers are deemed unsuitable, let there be re-evacuation.

Period of evacuation may be extended beyond one year if advisable.

Page 21, 22 March 1945:

Communication from Head of National School Bureau of Educational Department to Governor of Kyoto Prefecture emphasizes the strengthening Group Evacuation for school children.

In "A" cities, first and second grade instruction may be suspended temporarily, but the third to sixth grades inclusive should carry on at receiving centers.

Page 24, 22 March 1945:

National School Bureau to Governor. Government Ordinance No. 94.

"A" cities: Tokyo (55 wards), Osaka, Nagoya, Yokohama, Kobe, Kawasaki, Amagasaki.

"B" cities: Kyoto, Kure, Maizuru, Yokosuki, Hiroshima.

Page 25, 29 May 1945:

School Ordinance No. 1337.

Deputy Governor to Principals of Evacuation Schools.

Inclusions and exclusions from group evacuees.

As participation in evacuation is desirable,

get in touch with officials in receiving centers and, so far as accommodations allow, have students participate before anything happens.

Exclusions as a fundamental rule will not be allowed.

Where illness has made participation in group evacuation impossible, or where parents have moved to country, exclusion may be allowed. In such cases, consultation with authorities concerned should be carried out ahead of time.

Page 27, 29 May 1945:

A headquarters for school children evacuation (*Gakudo Sokai Hombu*) to be established in the Prefectural Office.

Chairman—The Governor.

Vice Chairman—the Deputy Governor (head of Administrative Section).

Councillors—All Department Heads.

Secretaries—Heads of the Sections concerned.

Six sections:

1. General Affairs Section:	Tie-in with Prefectural organization
a. Planning Office.	
b. Budget Office.	
c. Liaison Office.	Educational section.
2. Educational Section.	
a. Personnel.	
b. Inspection.	
3. Control Section:	Local Section.
a. Investigation	
4. Supply Distribution Section:	
a. Rice.	Agriculture Section.
b. Supplemental food.	Sea Foods Section.
c. Necessary articles.	Commerce and Industry Section.
d. Fuel Section.	Forestry Section.
5. Physical Welfare Section:	Sanitation Section.
a. Anti-epidemic.	
b. Medical Treatment.	
c. Health.	
d. Medical Supplies.	
6. Transportation	Transportation Section.
a. Pupils.	
b. Supplies.	

Page 39, 29 May 1945:

School Children Evacuation Liaison Committee of Kyoto Prefecture.

Headed by the Governor and Deputy Governor, and consisting of Prefectural Sections heads and officials and other bodies at the Reception Centers.

Page 43, 29 May 1945:

Society of Backers of School Children Evacuation.

Page 51, 29 May 1945:

Education at the Reception Centers.

Purposes:

1. To build up future citizens with an understanding of the purpose of the holy war and present war conditions.
2. To build strong minds and spirits.
3. To give thoroughgoing training in group living.
4. To give education in the various branches of learning.
5. To train as citizens, with a knowledge of local customs and traditions.
6. Teachers to lead by their example, as well as word.

Page 57, 30 Dec. 1944:	
Transfer of school enrollment.	School Regulation 3671.
Page 59, 30 March 1945:	
Organization of school in reception center.	School Regulation 597.
Page 62, 4 April 1945:	
Regulation of dormitory arrangements.	School Regulation 619.
Page 66, 6 April 1945:	
Regular reports.	School Regulation 640.

Page 71, 6 April 1945:
Imperial grant. School Regulation 652.

Page 77, 4 May 1945:
Control of life in dormitories. School Regulation 1016.

Page 79, 16 May 1945:
Administration of education. School Regulation 1171.
Transfer of school rolls, evacuated and local schools, reports to be made out separately, physical examinations.

Page 81, 26 March 1945:
Rationing and distribution of food. Agricultural Ministry Regulation 1413.

Page 91, 6 April 1945:
Physical welfare. School Regulation 651.
Physical examinations.

Page 93, 10 April 1945:
Carrying out welfare measures. School Regulation 671.

Page 100, 20 April 1945:
Control of disease and physical training. School Regulation 877.
Knowledge of prophylactic measures.
Nourishment.

Page 119, 6 April 1945:
Formation of Society of Backers of School Children Evacuation. School Regulation 641.

Page 125, 18 May 1945:
Labor service. School Regulation 1170.

EXHIBIT T

Translation of: (1) Ration card for sufferers; and (2) Sufferer's certificate. Reference Item No. 29

Sufferer's Certificate

1. Residence.
2. Head of household.
3. Head of household's occupation and age; number in the household.

Certificate:

It is certified that the above became sufferers on.....
(date)

This is to be signed by the mayor or ward leader or head of town and village, or police chief, or of block association or of neighborhood group.

(Note): This certificate must have the seal of an official in the evacuation center or at the reception center, otherwise it is invalid.

In case of moving before suffering disaster, this certificate is to be returned to the head of the block association.

Ration Card for Sufferers

(Explanatory Note): This ration card has 12 coupons for the purchase of emergency supplies. There is space for the residence of the sufferer, the head of the household and the residence at the reception center, also the number of the sufferers, indicating the wounded or sick; the number below 2 years of age, Japanese count.

There is a place for the seal of the city, town, or village head, as the case may be.

The coupons are for different commodities and must be signed and dated on the back. This certificate must be guarded carefully and in case of moving before suffering damage, it is to be returned to the head of the block association.

EXHIBIT U

Guide to wartime damage insurance (translation)

The following is an explanation of Wartime Damage Insurance and how application may be made for a policy. The Wartime Damage Insurance Law (*Senso Hoken Rinji Sochi Ho*) (which appeared in the Official Gazette (Kampo) dated 19 December 1941) and the regulations putting it into effect (Official Gazette dated 12 January 1942) will be considered in detail.

1. *Insurance covering damage due to enemy action.*—War Damage Insurance insures the policyholder against loss or damage from fire or damage attributable to air raids or other forms of enemy action. As long as the cause is enemy action, damage resulting from measures essential to taking refuge as well as fire fighting and spreading of fire are included in the clauses. Fire insurance does not insure against fire resulting from air raids. Therefore, even though one has a fire insurance policy, damage in the first air raid cannot be insured against unless one has in addition a Wartime Damage Insurance policy.

2. *Articles insurable by Wartime Damage Insurance.*—Articles within Japan proper covered by fire insurance, and articles within Japan proper not covered by fire insurance, provided they meet the following stipulations:

a. Buildings and their adjacent fixtures.

b. Movable merchandise and household effects located in one place.

c. Goods in transit.

d. Trains, street cars, automobiles, and other vehicles, and aircraft on the ground.

e. Ships, floating cranes, dredges, and auxiliary equipment.

f. Other articles as designated by the Minister of Finance (at present buildings are designated in Art. 177 of the Official Gazette dated 13 Apr. 1942).

3. *Articles not insurable by Wartime Damage Insurance.*—The following articles are not insurable by Wartime Damage Insurance. Even though they are insured, the policy is void.

a. Currency, securities, stamps, precious metals, precious stones, documents, curios, works of art, manuscripts, specifications, designs, models, bonds, account books, etc.

b. Ships insured under reinsurance of the Damage Insurance National Service Reinsurance Law (*Songai Hoken Kokuei Sai Hoken Ho*).

c. Animals and plants.

d. Other items as designated by the Minister of Finance. At present enemy property is classified as such according to the enemy property custody law (*Tekisankanri Ho*), as set forth in official report No. 17 dated 21 January 1942.

4. A person cannot take out insurance for rent lost from a house destroyed by air raid. Therefore, the actual value of the house only shall become the insured value of the object of insurance.

5. The amount of contract must not be over 90 percent of the insured value. For example, one cannot insure for over Y9,000 a house valued at Y10,000. Should he apply for insurance in the amount of Y10,000, coverage for the remaining Y1,000 will be without effect. In case several policies are taken out on the same object, the total sum of the policies must be 90 percent or less of the insured value.

6. The company will pay the amount of damage multiplied by the proportion of contracted to the insured value.

$$\text{Amount of damage} - \frac{\text{Contract amount}}{\text{Insured amount}}$$

For example, if a man takes out insurance for a house having an insurance value of Y10,000 and contract amount of Y9,000 and that house sustains damage amounting to Y5,000 he will be paid Y4,500 or Y5,000 x $\frac{\text{Y 9,000}}{\text{Y10,000}}$

7. Premium will be determined by the Minister of Finance; at present by official report No. 288 dated 25 May 1942. It is quoted as follows:

> (1) For property other than goods in transit the rate of premium is Y3 per Y1,000 for a period not longer than 6 months. For a storage warehouse owner, goods stored by him under a contract in his warehouse, insurance will be issued on a monthly basis at a rate of Y0.6 per Y1,000 per month.
>
> (2) For goods in transit the rate of

premium shall be Y0.75 per Y1,000 for any one movement.

8. *The period for which the company takes responsibility.*—a. The company's liability begins not when the contract is made but when the period of insurance commences. The period of insurance is six months commencing at 1600 on the day following that on which the contract is made. (Contract is considered made upon the actual presentation of application together with payment of premium) and ending at 1600 of the last day of the contract period. Therefore, one cannot take out insurance upon application to take effect at once and thus commit the insurance company to immediate responsibility; he must allow an interval before the time of danger from an expected air raid. If he wishes to postpone the commencement of the contract for some reason he can select any given commencing day within 10 days after the contract is made. In this case the contract begins at 1600 on the commencing day.

b. When anyone takes out insurance for goods in transit the period of insurance shall be referred to Rule No. 9 in the Enabling Law (*Seko Kisoku*) for execution.

c. *The effect of the insurance contract in case of partial loss.*—In case of partial loss the amount of the contract less the amount of payment shall be the insured amount for the remaining period. But when the amount remaining is less than 10 percent of the former insured amount or Y100, the contract loses its effect.

9. *Application for insurance contracts.*—a. The application shall be made to the regular fire insurance companies as designated by the Minister of Finance. At present, as reported in official report No. 15, dated 21 January 1942, almost all insurance companies doing fire insurance business in Japan (including Korea, Formosa, and Karafuto) are authorized. Persons may apply for insurance either at the main office of such companies or their branch offices. If application is made through an insurance agent, an individual must make sure that the insurance he takes out actually deals with war insurance. Such an agent receives a letter of instruction from the company authorizing him to engage in the business and this authorization is so indicated by a sign at his office.

b. If anyone taking out war insurance on given property already has that property covered by insurance, the war insurance must be taken out through the company already covering the property. For example, on buildings, fire insurance; on goods in transit, transportation insurance; on automobiles, automobile insurance. He must take out war insurance from the same company with which he has contracted for other insurance. If he has divided the insurance between several companies on the same property, the war insurance must be divided as such also. If the property is not already covered by insurance he can insure it with any company so authorized by the Ministry of Finance.

c. When anyone takes out insurance he shall make two copies of an application duly filed by him and stamped with his personal stamp, and present it to the company together with the premium. The two application blanks must agree in form and content. The item of the contents of the application blank shall be as follows:

(1) Subject matter insured (household effects, dwelling house, factory, etc.).

(2) Location of subject matter of insured, number, name of town, name of city, etc.

(3) (a) Construction of houses or buildings where contents to be insured may be stored.

(b) Use of the buildings.

(c) The occupation of the person who uses the buildings. To illustrate the above.

1. Construction: wooden, two-storied with so much floor space.

2. Use: Dwelling house, factory, shop.

3. Occupation (in case of dwelling house no entry needed).

(4) Estimation of the insured value. (The actual market value of the subject matter insured at the time of contract will be used.)

(5) As above mentioned, the amount of the contract must be less than 90 percent of the insured amount).

(6) Period of insurance.

(7) Premium.

(8) Name and address of the assured. (The assured is the person who has the right to claim payment of insurance—it may be the same person who applies for the insurance or a different person.)

(9) In case other insurance is in effect on the same property, the kind of insurance, the name of the company, the insured amount, and the number of the policy.

d. The items headed on the application blank for insuring goods in transit.

(1) Subject matter insured.

(2) Estimation of insured value.

(3) Insured amount.

(4) Premium.

(5) In case other insurance is in effect on the same goods in transit, the kind of insurance, name of the company, insured amount, number of policy.

(6) Method of transportation.

(7) Name of carrier.

(8) The places where the carrier receives and delivers the insured goods.

NOTE. In case of insurance on trains, electric cars, automobiles or other vehicles, aircraft on land, steamer or on other mobile transportation facilities having no fixed location it is necessary not only to mention particulars under Nos. 1 and 3 to 9 but also to mention this fact and to give exact location as to where the property is stored or moored, insofar as it is possible to do so.

e. Cases in which necessary evidence for the estimation of insurance value is required are as follows:

(1) When war damage insurance is taken out without fire or transportation insurance on the same subject matter.

(2) When the amount of war damage insurance exceeds 90 percent of the amount of fire or transportation insurance. If a person neglects to attach the documentary evidence or if such evidence is insufficient he will lose the benefit of insurance owing to the difficulties of establishing the claim.

10. *Form of policy.*—When the company receives two copies of application together with the premium it will stamp one of them and return it to the applicant. This will be called the war insurance policy and it is the only proof of the contract of the insurance so the applicant must keep it carefully.

11. *The time when the contract of insurance takes effect.*—The war insurance contract will take effect at such time when the application reaches the company together with the premium.

12. *Responsibility of the contractor and the assured.*—a. The assured must endeavor to protect the company against undue loss on property covered for him, even if it involves expense to the owner. If he neglects to do this, he may not be paid all or some part of the insurance amount.

b. The assured must communicate promptly to the company any changes affecting the matters written on the application form. Such matters include the following:

(1) Change of location of the subject matter insured.

(2) Change in construction of the building of the insured; in construction of buildings where insured contents are stored. Changes in their use and in the occupation of the users of the buildings.

(3) In case of insurance on trains, electric cars or other vehicles, aircraft, steamers, etc., changes of their shed, mooring place, use, number or any particulars of the subject matter insured.

c. Any changes of the above must be sent to the company without fail.

d. If the person taking out the insurance or other assured is informed of accident to the insured objects, he must notify the company without delay. This notification may be made verbally or in writing but it must be made immediately.

13. *Procedure for making claims for insurance payment.*—a. The assured must present the estimate of war damage together with its proving documents and the insurance policy to the company within 30 days after notification to the company that damage has occurred.

b. The application for prompt payments can be made in such cases as are mentioned in the next article.

14. *Payment of claims will be postponed* (in principle) until the time decided by the Minister of Finance but in the following two cases only payment will be made promptly:

a. In case the subject matter insured is the

dwelling house or the household effects, up to Y2,000 for each will be paid at once. For example, the claim amount being Y3,000, Y2,000 will be paid promptly and the payment of Y1,000 will be postponed. The dwelling house may be used at the same time as a shop or a factory. The amount of household effects may include partly the amount of merchandise or other effects than those used for housekeeping.

b. If recovery of the damage is deemed to be in the national interest the company will pay the total amount promptly on approval of the Minister of Finance.

15. If the company postpones payments it will issue a war damage certificate to the assured which will be proof of the right to receive payment of claims at a future time and must be kept carefully.

16. If the payment of claims is postponed, interest will be paid on the insured amount. If the payment is postponed over one year, interest will be paid at the rate of 2.4 percent per annum for the amount postponed. The interest will be calculated by the compound interest method and paid together with the insurance amount.

17. *Cases in which payment will not be made.*—a. If the assured neglects to protect the property and to defend it against damage by violating the air-defense law, all or a part of the insurance amount may not be paid.

b. In case the claim amount is less than Y30 for any one accident the amount will not be paid.

18. Instruction concerning the use of insurance money. If the payment exceeds Y10,000 the Minister of Finance may, if he deems it necessary, determine the methods of its use.

January 1942

Superintendent

Bureau of the Department of Finance

EXHIBIT V

Translation of Wartime Disaster Protection Law

SENJI SAIGAI HOGO HO

1. *Concerning the Law.*—A. Wartime disaster protection law (24 Feb. 1942, Law No. 71)

CHAPTER 1

ARTICLE 1.—This law compensates Japanese nationals who are injured due to wartime disasters, as well as their families and the surviving family members.

ARTICLE 2.—In this law wartime disasters shall be defined as disasters due to enemy action, as well as disasters resulting from such.

ARTICLE 3.—There are three types of compensation (1) relief, (2) pension, and (3) allowance.

ARTICLE 4.—With respect to compensation, it shall be done by the prefectural governor of the area in which the claimant maintains his permanent residence (in case of relief, his present residence).

CHAPTER 2

ARTICLE 5.—Relief shall be given to persons who need emergency relief immediately after meeting with some wartime disaster.

ARTICLE 6.—Types of relief are as follows:

a. Supplying of household effects.

b. Giving food in case of being burned out.

c. Giving and loaning of clothing, bedding, and other essentials.

d. Medical and maternity expenses.

e. Giving for school supplies.

f. Funeral expenses.

g. In addition, any items deemed necessary by the prefectural governor. The prefectural governor can, in cases which he deems necessary, disburse sums of money to persons needing relief (in case of funerals to the person who performs the funerals) regardless of the provisions mentioned above. Items pertaining to the extent of the relief, the method and the length of time shall be determined by orders.

ARTICLE 7.—The prefectural governor is authorized to employ in the effecting of relief those persons designated by imperial edict.

ARTICLE 8.—The prefectural governor is authorized to have those persons needing relief cooperate in the effecting of relief.

ARTICLE 9.—In order to carry out relief, the prefectural governor can in instances which he deems necessary superintend installations, utilize property (land), houses, or commodities designated by temporary imperial edict, and take custody of and appropriate commodities, employing those persons as are designated by imperial edict.

ARTICLE 10.

(1) The prefectural governor is empowered, when necessary for the purpose of preparations for superintending, utilizing, expropriating, and taking custody, according to the foregoing article, to enter and inspect places where commodities are to be taken in custody and places where there are installations, land, houses, and commodities.

(2) The prefectural governor is authorized to exact necessary information from persons who have been charged with custody of commodities in accordance with the provisions of the above article (10) and to have authorized public officials enter and inspect places where there are commodities.

NOTE. In the case of entry made in accordance with the provisions of (2) above, the custodian of the installations, land, houses, and the place shall be informed in advance of the purpose of the visit. An authorized government official who makes entry in accordance with sections (1) and (2) above shall bear credentials to prove his identity. Mayors, town, and village chiefs and their assistants as mentioned in article 14, section 1, when they have been vested with the proper authority according to the regulations in sections 1 and 2, shall be regarded as competent authorities in sections 1 and 2 above.

ARTICLE 11.—In the event one is called upon to participate in the effecting of relief according to the provisions of article 7 he shall be compensated to the extent of the actual costs as decided by imperial edict.

ARTICLE 12.—In the case of injury, hospitalization, or death of a person participating or cooperating in effecting relief according to the provisions of articles 7 and 8, relief money will be paid as decided by imperial edict.

ARTICLE 13.—As determined by imperial edict, losses will be compensated for in the event commodities are expropriated or taken into custody or in the event land or houses are

utilized and the installations supervised according to the provisions of article 9.

NOTE. In the event a person eligible to receive compensation under the provisions of the above paragraph is dissatisfied with the amount of compensation, he may ordinarily file suit in a court within 6 months from the date he receives notification of the amount of money decided upon.

ARTICLE 14.—The prefectural governor can, by orders, invest the mayor and town and village chiefs and their assistants with a portion of authority with respect to relief as determined by this law.

NOTE. In cases where mayors, town, and village chiefs and those under them perform duties derived from the authority (mentioned in the provisions mentioned in article 7–10) vested in them by the prefectural governor (in accordance with the provisions of the above section), the stipulations of articles 5 and 6 of the Administrative Execution Law (*Gyosei Shikko Ho*) and orders based thereon shall apply.

ARTICLE 15.—The prefectural governor can have the mayors, and town and village chiefs in Hokkaido and each prefecture (Fu and Ken) make temporary substitute payments for expenses necessary in relief, as decided in orders, when it is deemed essential for relief.

CHAPTER 3

ARTICLE 16.—Relief is given to persons who have difficulty in earning a living due to death of a person who comes under one of the following categories, and to persons who receive slight injuries, serious injuries, or who become sick under any one of the following categories (though no relief can be given in instances where injury, sickness or death is intentional or is the result of carelessness by either the person, or an eligible person):

(1) Persons who become sick or who receive injuries due to wartime disasters.

(2) Persons who recover from injuries or illnesses incurred in wartime disasters but whose freedom of body movement is still seriously restricted.

(3) Spouse, or person mentioned in 2 above (includes person who has actually entered into a marriage contract, though no notification has been made) or a person who is a descendent and in the same family or household as the person mentioned in (2) above. Persons who are in the same household or family from the time the person mentioned in (2) above is injured or becomes ill, and who are ascendents of that person.

(4) The wife of a person who dies due to wartime disaster, a person who is a descendent and is in the same family or household continuously from the time of that person's death, or a person who is an ascendent of that person and who is in the same family or household continuously from the time that the deceased met with wartime disaster.

NOTE.—Persons who receive or who are eligible to receive pension according to this law cannot receive pension during the period in which they are receiving relief. Relief cannot exceed the limit necessary to existence.

ARTICLE 17.—Kinds of pension are as follows:

1. Living pension.
2. Medical attention pension.
3. Delivery pension.
4. Occupation pension.

ARTICLE 18.—Pension cannot be given after the lapse of a period of time to be determined by imperial edict, from the time the injury due to wartime disaster is received.

NOTE.—Items concerned with the amount and methods of payment of pensions will be determined by orders.

ARTICLE 19.—In case the person who receives the pension dies, funeral expenses may be paid to the person who performs the ceremony, as determined by orders.

ARTICLE 20.—In case the person who receives the pension is sentenced to more than 6 years' penal servitude or imprisonment, no pension will be given to that person. In case one is sentenced to penal servitude or imprisonment for less than 6 years the same shall apply until the sentence is concluded.

ARTICLE 21.—For any one of the following reasons a person who receives or who is eligible to receive pension may be disqualified:

1. Disobeying without legitimate reason the directions of the prefectural governor concerning pension.
2. Opposing, without legitimate reason the investigation concerning pension.
3. Disorderly conduct and extreme idleness.

CHAPTER 4. DISBURSING OF ALLOWANCE

ARTICLE 22.—As determined by imperial edict, an allowance shall be paid to the surviving family of one who dies in a wartime disaster. An allowance shall also be given to a

person who is injured or becomes ill due to wartime disaster and who for that reason remains physically handicapped.

ARTICLE 23.—In case of loss or damage to house or household effects (including boats which serve as houses for persons who live afloat) an allowance shall be paid the owner thereof as determined by imperial edict.

ARTICLE 24.—An allowance shall be given to persons or to families of persons, as determined by imperial edict, who, because of the nature of their duties are required to carry them out regardless of risk in wartime disasters, and who, while performing such duties under those circumstances are injured, killed, or become ill. In this case, the allowance mentioned in Art. 22 will not be given.

NOTE.—The duties mentioned above will be determined by imperial edict.

ARTICLE 25.—Allowance will not be paid to a person who opposes, without legitimate reason, the investigation concerning payment of allowance.

ARTICLE 26.—With respect to the application of other laws, compensation under this law is not considered to be relief or pension from public funds for poverty.

ARTICLE 27.—Funds received under this law shall not be subject to taxation.

ARTICLE 28.—Money given under this law cannot be lawfully seized by any other person whether or not it has been actually issued.

ARTICLE 29.—When this law is applied in Chosen, Taiwan, or Karafuto, if necessary, special imperial edicts may be issued for that purpose.

CHAPTER 6. PUNISHMENT

ARTICLE 30.—Persons who do not obey the provisions in article 7 will be imprisoned for not more than 6 months, or fined not more than 500 yen.

ARTICLE 31.—Persons who receive compensation by fraud or any other illegal means, shall be imprisoned for not more than 6 months, or fined not more than 500 yen.

ARTICLE 32.—Any person who refuses, obstructs or avoids the entry and inspection of the officials or their staff according to the provisions of article 10, sections 1 or 2, or who does not make any report, or makes a false report according to the provisions of article 10, section 2 shall be fined not more than 500 yen.

The date on which this law shall go into effect will be determined by imperial decree.

(Effected on 30 April 1942)

UNITED STATES STRATEGIC BOMBING SURVEY

LIST OF REPORTS

The following is a bibliography of reports resulting from the Survey's studies of the European and Pacific wars. Certain of these reports may be purchased from the Superintendent of Documents at the Government Printing Office, Washington, D. C.

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2 The United States Strategic Bombing Survey: Over-all Report (European War)
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4 Aircraft Division Industry Report
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9 Gothaer Waggonfabrik, A G, Gotha, Germany
10 Focke Wulf Aircraft Plant, Bremen, Germany
11 Messerschmitt A G, Augsburg, Germany — Over-all Report; Part A; Part B; Appendices I, II, III
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14 Wiener Neustaedter Flugzeugwerke, Wiener, Neustadt, Austria

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18 Bayerische Motorenwerke A G (BMW) Munich, Germany
19 Henschel Flugmotorenwerke, Kassel, Germany

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23 Aluminiumwerke G m b H, Plant No. 2, Bitterfeld, Germany
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25 Luftschiffbau Zeppelin G m b H, Friedrichshafen on Bodensee, Germany
26 Wieland Werke A G, Ulm, Germany
27 Rudolph Rautenbach Leichmetallgiessereien, Solingen, Germany
28 Lippewerke Vereinigte Aluminiumwerke A G, Lunen, Germany
29 Vereinigte Deutsche Metallwerke, Heddernheim, Germany
30 Duerener Metallwerke A G, Duren Wittenau-Berlin & Waren, Germany

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