

DE/R

In reply refer to
NA

June 29, 1948

RESTRICTEDMEMORANDUM FOR THE SECRETARY, SANAGC

Subject: Draft Directive regarding Access to Japanese
Technical and Scientific Information in Japan.

There is enclosed a draft directive prepared on the basis of a policy decision approved at the one hundred twelfth meeting of the Far Eastern Commission on June 24, 1948 under the provisions of Paragraph II, A 1 of its Terms of Reference.

It is requested that the enclosed draft directive be forwarded to the Joint Chiefs of Staff for transmission to General MacArthur for his guidance in accordance with Paragraph III, 1, of the Terms of Reference of the Far Eastern Commission. It is assumed that if the Joint Chiefs of Staff have any question regarding the draft directive they will refer the matter to the Department of State for clarification before transmitting a directive on the subject.

At the time that the policy decision on which the enclosed draft directive is based was adopted, a number of Commission representatives made formal statements for the record with respect to aspects of the policy. In accordance with the wish of the Commission it is requested that the attention of the Supreme Commander for the Allied Powers be called to Item 4 of the Minutes of the one hundred twelfth Commission meeting which contains these statements and which will be forwarded to him as soon as possible.

The Secretary General of the Far Eastern Commission has informed the Secretary of State that the Commission in adopting the policy decision regarding Access to Japanese Technical and Scientific Information in Japan agreed that it should be released to the press after the appropriate

directive

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- 2 -

directive had been received by the Supreme Commander. Therefore, in accordance with normal procedure, acknowledgment of the receipt of the directive by SCAP is requested.

C. V. HULICK

for Frank G. Wisner
Deputy to the Assistant Secretary
for Occupied Areas

Enclosure:

/ Draft Directive.

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JUN 29 1948

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A true copy of
the signed origi-
nal. CR/ZK

RESTRICTED

E N C L O S U R E

**DRAFT DIRECTIVE REGARDING ACCESS TO
JAPANESE TECHNICAL AND SCIENTIFIC
INFORMATION IN JAPAN**

The following directive prepared by the State Department to implement the policy adopted by the FEC on June 24, 1948 under the provisions of Paragraph II, A 1 of its Terms of Reference has been received from the State, Army, Navy, Air Force Departments for transmission to you for your guidance in accordance with Paragraph III, 1, of its Terms of Reference:

During the period from July 1, 1948 through March 31, 1949, technical representatives of the Governments of members of the Far Eastern Commission should be permitted access to and the right to take copies of the details of any technical or scientific processes of industrial or commercial value which are of Japanese origin and ownership and which were developed prior to December 31, 1945.

Technical or scientific information obtained by any representative of the government of a member of the Far Eastern Commission pursuant to this policy statement should be promptly and fully disclosed to SCAP for dissemination to other interested members of the Far Eastern Commission upon specific request.

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Dejm

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C. V. HULICK

for Frank G. Wisner
Deputy to the Assistant Secretary
for Occupied Areas

Enclosure:

Draft Directive.

A true copy of the
the signed original
na. CR/21c

NA: ALDunning: abs/ggg
6/28/48

FE

RESTRICTED

E N C L O S U R E

**DRAFT DIRECTIVE REGARDING ACCESS TO
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THE FOREIGN SERVICE OF THE UNITED STATES OF AMERICA

ACTION is assigned to

[Signature]

United States Political Adviser for Japan

DCIR

Tokyo, June 29, 1948

No. 396

UNCLASSIFIED

ASSISTANT SECRETARY FOR OCCUPIED AREAS

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SUBJECT: Transmittal of Report, Reorganization of Science and Technology in Japan.

The Acting Political Adviser has the honor to enclose five copies (Nos. 146, 147, 148, 149, 151) of a Report of the Scientific Advisory Group to the National Academy of Sciences United States of America, entitled Reorganization of Science and Technology in Japan, dated August 28, 1947.

FE (encl)
OIE (encl)
OCD (encl)

Enclosure:

5 copies of Report Reorganization of Science and Technology in Japan dated August 28, 1947.

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**REORGANIZATION
OF
SCIENCE AND TECHNOLOGY
IN JAPAN**

REPORT

OF THE
SCIENTIFIC ADVISORY GROUP
TO THE
NATIONAL ACADEMY OF SCIENCES
UNITED STATES OF AMERICA

*7 W 894.92 / 6-2948
Sinc X Map 396 from Tokyo*



TOKYO, JAPAN
AUGUST 28, 1947

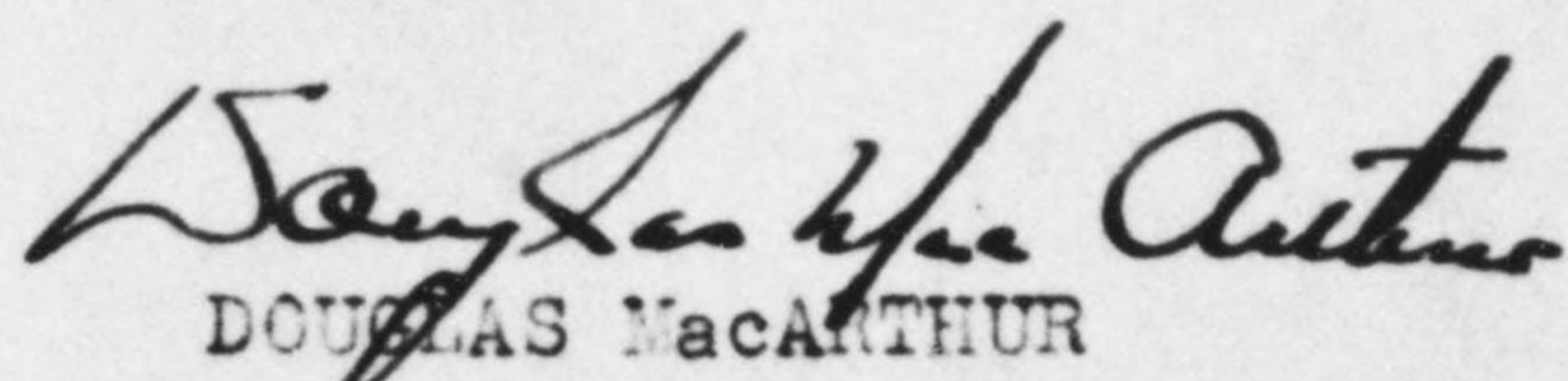


GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
OFFICE OF THE SUPREME COMMANDER

APO 500
4 March 1948

This report of the Scientific Advisory Group on the Reorganization of Science and Technology in Japan is accepted as a document of reference for study and analysis by interested staff sections of General Headquarters and by Japanese officials and Japanese Government agencies concerned, to assist in achieving the revitalization of scientific research and technology and an improved educational organization. The vitalization of scientific research and technology and an enlightened democratic educational system in Japan are approved Occupation Objectives.

Appreciation is expressed to the members of the Scientific Advisory Group for the time they so generously gave and the contributions they have made in improving research in Japan. They have earned the thanks of the Allied Nations for their extremely valuable report.


DOUGLAS MacARTHUR

UNIVERSITY OF ILLINOIS
Department of Chemistry
URBANA

The William Albert Noyes Laboratory

September 29, 1947

Dr. A. N. Richards
National Academy of Sciences
2101 Constitution Avenue
Washington, D. C.

Dear Dr. Richards:

I am submitting herewith three copies of the report of the Scientific Advisory Group on Science in Japan.

The report contains a review of the present situation in science in Japan as well as a proposed plan for reorganization. Since the Military Government has followed the sound policy of expecting reorganization plans of any sort to be initiated and formulated by the Japanese, it is suggested by the Scientific Advisory Group that printing of this report, if printing is to be considered, be delayed until the Japanese Renewal Committee has had an opportunity to present its plan of reorganization to SCAP.

Sincerely yours,

/s/ Roger Adams

Roger Adams
Head - Chemistry Department

REORGANIZATION
OF
SCIENCE AND TECHNOLOGY
IN JAPAN

REPORT
of the
Scientific Advisory Group
of the
National Academy of Sciences
United States of America

TOKYO, JAPAN
August 28, 1947

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FOREWORD

In June, 1947, a letter from the Secretary of War to Dr. Frank B. Jewett, President of the National Academy of Sciences, formally invited the National Academy of Sciences to sponsor a visit to Japan of a group of six scientists to undertake an Advisory Scientific Mission. The purpose of the mission was stated by the Secretary of War as follows:

"To advise members of General MacArthur's staff concerning the proper evaluation of plans submitted by the Japanese scientific groups for the democratization of scientific research in Japan."

The communication from the Secretary of War follows:

WAR DEPARTMENT
Washington, D. C.

17 June 1947

Dr. Frank B. Jewett, President
National Academy of Sciences
2101 Constitution Avenue
Washington, D. C.

Dear Dr. Jewett:

The Supreme Commander for the Allied Powers in carrying out occupational policies in Japan is currently faced with the problem of democratization of scientific research.

General MacArthur has informed me of an urgent need for scientists qualified to organize and direct research in the fields of chemistry, physics, biology, electrical engineering and the social sciences to advise members of his staff concerning proper evaluation of plans submitted by the Japanese scientific groups for the democratization of scientific research in Japan.

In accordance with our conversation on this subject, the National Academy of Sciences is invited to sponsor the visit to Japan for approximately thirty days of a group of six scientists to undertake the advisory mission mentioned above. It is understood this group will serve without cost to the Government except for transportation from San Francisco, California to Tokyo and return and as required in Japan and Korea. Individuals will be subject to theater regulations while in Japan and Korea.

Lt. Colonel William J. Allen, Jr. has been detailed from General MacArthur's Headquarters to effect close liaison with the National Academy of Sciences in the organization of this science mission and to accompany them to Japan. You may contact him directly in the Civil Affairs Division of the War Department on all matters pertaining to the mission.

Sincerely yours,

/s/ Robert P. Patterson
Secretary of War

The following letter or one similar to it was addressed by Dr. Jewett to each member of the Committee:

NATIONAL ACADEMY OF SCIENCES

June 19, 1947

Dr. Roger Adams
Head of Department of Chemistry
University of Illinois
Urbana, Illinois

My dear Dr. Adams:

This is formally to appoint you a member of the Special Advisory Committee which the American Military Government in Japan and the Secretary of War have asked the National Academy of Sciences to send to Japan this summer. I am asking you to act as Chairman of the Committee.

For your information I am enclosing copy of Secretary Patterson's letter of June 17, confirming this request which originated jointly with the Japanese scientists and General MacArthur's people; also copy of my acknowledgment.

As you know from the correspondence and conversations we have had, the primary purposes of this mission are: (1) to review with A.M.G. and the Japanese the plans which have been formulated for the peacetime organization and development of Japanese science and technology along democratic lines; (2) to give such aid to A.M.G. and the Japanese as the experience of the Committee may suggest; and (3) by your presence as representatives of the Academy to show the Japanese that American scientists are interested in the re-establishment of their science along lines which will be permanently beneficial both to them and to the world at large.

The other members of the Academy Advisory Committee are:

Dr. William D. Coolidge, Director of Research (Emeritus),
General Electric Company, Schenectady, New York.
Dr. Royal W. Sorensen, Professor of Electrical Engineering,
California Institute of Technology, Pasadena.
Dr. William V. Houston, President, Rice Institute,
Houston, Texas.
Dr. Merrill K. Bennett, Executive Director, Food Research
Institute, Stanford University, Palo Alto, California.
Dr. William J. Robbins, Director, New York Botanical
Garden, Bronx Park, New York.

I am writing similarly to each of them.

Much of such assistance as the Committee is in position to render will doubtless be conveyed verbally in the discussions which the members have with the Japanese and the A.M.G. people. Nevertheless, I would ask that at the conclusion of the mission some sort of report be made to the Academy for its information and file and for transmittal to the Secretary of War and to General MacArthur.

The report and recommendations (if any) can be in any form you prefer and if the members wish can be supplemented by such personal observations as the individual members may think of interest. Following established custom, this report will not be released for publication or dissemination without approval of the Secretary of War.

Although the Advisory Committee is an agent of the National Academy, its operations in Japan will necessarily have to conform to the general rules established by the Army. Further, since the members of the Committee will undoubtedly become acquainted with many confidential matters which affect American policy or international relations, they will need to observe caution in any published or quotable observations, which they may have occasion to make on their return.

Quite aside from the main problems of the Committee a number of questions have arisen on the answers to which the members may be able to give aid. Principal among those which have come to my attention are (1) the matter of restoring the flow of scientific and technical information cut off by the war, and (2) the question of the United States admitting a limited number of qualified students, the conditions likely to be imposed and the probable attitude of universities toward such students.

While you will hardly be in position to answer such questions very definitely, you should be in position to appraise the Japanese situation and so be able later to assist in presenting and handling the matter here.

Finally, I would request that on appropriate occasions you and your associates would convey to Japanese scientists and technologists the deep interest of the Academy in and sympathy with their endeavors to restore and enlarge this sector of national activity. In fact, I think you will be quite safe in voicing this as the feeling of American science generally.

For myself personally, I would ask that you and the others convey to the various Japanese scientists and the members of A.M.G., who have urged me to come to Japan with you, my deep regret at my inability to make the trip at this time. Possibly later I may be able to do so.

Sincerely yours,

/s/ Frank B. Jewett
Frank B. Jewett
President

Encls.

This letter made the official appointments, designated the Committee as the Special Advisory Committee, and elaborated on its objectives. (At the suggestion of SCAP, the name of the Committee was changed to "Scientific Advisory Group" and it is so referred to in the balance of this report.)

The Committee assembled in San Francisco, received a preliminary briefing from Lt. Colonel W. J. Allen, Jr., Executive Officer, Scientific and Technical Division, Economic and Scientific Section, GHQ, SCAP, and left Fairfield, California, on July 15, arriving in Tokyo on July 19.

During the first eleven days, the Group remained in Tokyo and was briefed by the Civil Information and Education Section; the Civil Communications Section; the Scientific and Technical Division, Economic and Scientific Section; the Public Health and Welfare Section; the Government Section; and the Natural Resources Section. The Group discussed reorganization and rehabilitation problems with the faculties of Tokyo Imperial University and Keio University and inspected laboratories and other facilities at these two Universities and at the Institute of Physical and Chemical Research (Riken). It met with the Japanese Reception Committee and devoted a day and a half at Tokyo Imperial University to a discussion of the reorganization of science and technology in Japan and allied questions. In addition, informal but informative consultations were held by members of the Group with individual or several Japanese. The Group had also the benefits of meeting with General Douglas MacArthur, Supreme Commander for the Allied Powers, and Lieutenant General Robert L. Eichelberger, Commander of the Eighth Army.

The Group left Tokyo on the evening of July 29 and visited Nagoya, Kyoto, Osaka, Hiroshima, and Fukuoka, where reorganization problems were discussed with the Japanese; various opinions, information and questions were presented and laboratories and other facilities were inspected. Visits were made to government universities (Nagoya, Kyoto, Osaka, Hiroshima, and Kyushu), to private universities (Doshisha), to industrial plants and other organizations. As a part of its effort to become acquainted with the cultural and technical background of Japan, the Group visited also the National Museum in Tokyo, shrines at Nikko, Nara, and Miyajima, and the Kure naval base.

The Group returned to Tokyo August 9 and spent the following week in obtaining pertinent information from various divisions of ESS, in inspections of various industrial and other laboratories (including the Seriological Experiment Station) in the vicinity of Tokyo, and in discussion. On August 17 the Group left for Sendai, where discussions were held with the faculties of Tohoku Imperial University and Hokkaido Imperial University, and university and industrial laboratories and other facilities were inspected.

The Group returned to Tokyo on August 20 and spent the following week in discussions with the faculty of Waseda University, in meetings with the Japanese Renewal Committee, the function of which is to formulate plans for the reorganization and development of science and technology in Japan, and in formulating its report. The Group left Japan for the United States on August 28.

Following is a partial list of industries and industrial laboratories visited by the Scientific Advisory Group or by individual members: in Tokyo, the Institute of Physical and Chemical Research (Riken), the Mitsubishi Mining and Metallurgical Company, the Oji Paper Company, the Mitsui Chemical Company (Central Research Laboratory), the Furukawa Physical and Chemical Research Institute, the Electro-Technical Laboratory (Gotanda Laboratory), the Tsurumi 175,000 k.w. and Ushioda 75,000 k.w. steam power plants of Electric Company, the Central Tokyo Telephone Exchange, the Meguro Scientific Research Institute, the Dai Nippon Institute of Fermentation, and the Nippon Columbia Company, Ltd.; in Nagoya, the Noritake China Factory and the Sanyo Yushi Company, Ltd.; in Toba, the K. Mikimoto Pearl Company, in Kyoto, the Nishimura Lacquer Factory, the Shimazu Seisakusho, Ltd., and a textile factory; in Osaka, the Takeda Pharmaceutical Industries, Ltd., the Institute of Scientific and Industrial Research,

Sumitomo Electric Industries, Inc., Shionogi and Company, Inc., and a textile factory and home weaving; in Sendai, the Tohoku Metallurgical Company, the Institute of Iron, Steel and other Metals, and the Institute of Electrical Communications.

In submitting its report, the Scientific Advisory Group acknowledges its deep indebtedness to the many individuals who made its work possible. Members of the Allied Occupation Forces, in particular at the Economic and Scientific Section, GHQ, SCAP, furnished the Group with a quantity of organized information pertinent to its objectives, arranged with meticulous attention to detail visits to Japanese organizations and installations, responded to every request made by the Group for assistance, and gave every attention to the comfort and convenience of the Group. The cooperation of the Japanese with the Group must also be commended. The organized meetings with the Japanese evidenced extensive preparation, a desire to present the Group with information on the status of Japanese sciences, and opinions on how it might be improved for the benefit of a peaceful Japan and the welfare of mankind, and an eagerness to answer any questions propounded by the Group. Whatever merit the report which follows possesses has resulted in large measure from the extraordinary cooperation and assistance accorded the Group by SCAP and members of the staff as well as by the Japanese.

In the forty days of its mission in Japan the Group has received an impression that the Japanese are a people beaten in war and on the verge of economic ruin, but a people at work rebuilding with the means at hand. On the whole, they appear happy in their lot, hard though it may be; ill fed but not starved; anxious for international contacts and acceptance; eager to remold their institutions and practices to the democratic ideal of freedom of the individual and of peace, but handicapped in attaining these objectives by their social structure and traditions and by the lack of a sufficient body of citizens who understand the true meaning of democratic concepts.

INTRODUCTION

The primary purposes of the mission of the Scientific Advisory Group as stated in the letter of appointment of June, 1947 from Dr. Jewett were as follows:

"(1) To review with the American Military Government and the Japanese the plans which have been formulated for the peacetime organization and development of Japanese science and technology along democratic lines; (2) to give such aid to A.M.G. and the Japanese as the experience of the Committee may suggest; and (3) by your presence as representatives of the Academy to show the Japanese that American scientists are interested in the reestablishment of their science along lines which will be permanently beneficial both to them and to the world at large."

It will be noted that the Group was requested to consider science and technology in Japan. The word "science" as used in Japan has no English equivalent. It corresponds most nearly to the German word "Wissenschaft" and includes both the natural sciences ("Naturwissenschaft") and cultural subjects ("Kulturwissenschaft"). It is highly important to bear in mind that, to the Japanese, "science" covers the humanities, social sciences, jurisprudence and law, agriculture, engineering, and medicine, as well as the natural sciences per se, and that the plans prepared by the Japanese for the reorganization of science and technology and submitted to the Group were not limited to the natural sciences, pure and applied.

The Scientific Advisory Group wishes to emphasize its opinion also that a consideration of the peacetime organization of science and technology in Japan along democratic lines and the reestablishment of science in Japan so that it will be permanently beneficial both to the Japanese and the world at large cannot be completely divorced from the past and present social organization or from the present and future economic status of Japan.

This is not the place to elaborate on the social and economic situation in Japan. But some comments are desirable in order to give the report which follows a setting, to define the major questions toward which the report is directed, and to illuminate some of its sections.

The social organization in Japan was feudalistic; controls extended from the top down to the individual in every part of Japan through a militaristic type of organization; even the thoughts of the individual were subject to the notorious thought-control police. Reverence for authority in the family and in government was characteristic; independence of action and freedom of thought were discouraged and for nearly a generation almost completely repressed. The social and educational system encouraged and emphasized obedience to authority; the people were easily led.

Bureaucracy which flourishes in such an environment led, at various levels and in various fields, to domination by groups or cliques which favored their own adherents and excluded others and sometimes became involved in bitter struggles between themselves for power. The ultimate success of the militaristic clique led to the final catastrophe.

The characteristics outlined above are not peculiar to Japan; they exist to some degree in every country and in every society but in Japan they were dominant.

Another aspect of the social system in Japan is the regard for ceremony and for form which at times interferes with a realistic approach to a problem. One must admit that expressions of this attitude result in some of the most appealing characteristics of the Japanese. At the same time, they encourage an avoidance of reality, a faith in systems rather than in actions, and satisfaction with superficiality instead of a demand for thoroughness.

The loss of the war, followed by military occupation, resulted in the beginnings of a social reorganization typified by the new Constitution of Japan with its inspiring foreword which reads in part:

"We, the Japanese people, desire peace for all time and are deeply conscious of the high ideals controlling human relationship, and we have determined to preserve our security and existence trusting in the justice and faith of the peace-loving peoples of the world. We desire to occupy an honored place in international society striving for the preservation of peace and the banishment of tyranny and slavery, oppression, and intolerance for all time from the earth."

Its Chapter III, which enumerates the rights and duties of the people and even includes in Article 23 the statement "Academic freedom is guaranteed", is a model of conservative liberalism.

Although much has been done to initiate the democratization of Japan, one would be naive indeed to assume that the old order has disappeared. To institute the ideals set forth in the Constitution of Japan will require time, a sympathetic understanding by the rest of the world of the difficulties which are being courageously faced by the Japanese, and the intelligent cooperation of those fully cognizant of the meaning of democracy and experienced in its practice.

The loss of the war also upset the Japanese economy. An empire which was self-sufficient was shorn of its overseas possessions and capital investments. A population approximating 70 million was confined to the home islands on an area meager in natural resources and inadequate to supply sufficient food even under the intensive agriculture practiced by the Japanese. In addition, the greater part of her merchant fleet and numberless public buildings, schools, hospitals, factories, and other facilities were destroyed. It is estimated that 2,200,000 families lost their dwellings and some 10,000,000 people had nearly all their possessions destroyed by fire. What remains of the industrial machine is in part subject to seizure for reparations and to a large degree is out of date and in poor repair. Imports far exceed exports.

The situation of the average Japanese in 1946, or perhaps better the urban group constituting somewhat more than half of the population, is indicated in part by the following comparisons. Per capita consumption of the main staple food, rice, was 82 kilograms in 1946 as against 133 in 1930; of sugar, half a pound in 1946, 30 pounds in 1930; of textiles, 2.6 pounds in 1946, 10 pounds in 1930; of paper, 7 pounds in 1946, 28 pounds in 1930; and of total calories of food, 1,600 in 1946 and 2,150 in 1930.

It seems clear that at least three major domestic problems face the Japanese people. They are:

1. To establish and maintain a truly democratic and peaceful state.
2. To re-establish as quickly as possible a balanced minimum economy for the population in Japan.
3. To consider from the longer view the complications inherent in an annual increase in population of approximately 1,000,000 people.

The Scientific Advisory Group realizes the seriousness of these problems. It considers their resolution not only essential for the Japanese but of the utmost importance for the rest of the world. It regards them as problems that the Japanese themselves must solve if the results are to be permanent and effective. It believes that science in the broad sense as used by the Japanese can contribute substantially to their solution.

On these assumptions, the Group has proposed and discussed the following questions:

I. What is the present organization and status of science and technology in Japan?

II. How important is the reorganization and development of science and technology in Japan for the Japanese and for the world at large?

III. How can science and technology in Japan be reorganized and developed by the Japanese so that it may be democratic and of benefit to them and the world at large?

I.

PRESENT STATUS OF SCIENCE AND TECHNOLOGY

Science in Japan is a comparatively recent importation from the west, and contains little of an indigenous nature. The earlier Japanese learning consisted largely of Chinese literature, art, and medicine. The modern forms of western learning have been superimposed on this basis so that scientific research to the Japanese means any kind of advanced intellectual activity. It includes all fields of learning, such as literature and law, as well as the natural and social sciences. This all-inclusive idea of science and research fits in well with the general structure of a university, but it complicates the question of the overall value of science and technology for the reconstruction and rehabilitation of the country.

Scientific research is carried out in three different classes of institutions. The universities are probably the centers of intellectual activity. Every university professor is expected to carry on extensive research in his field, and every faculty must give graduate work. In addition, various research institutes are associated with the universities. The members of these institutes have faculty rank but do no teaching, except to research students. Second, there are independent research institutions, some supported by the government in special fields and others supported privately. Third, there are industrial laboratories closely associated with the various industrial organizations. The government universities are largely supported by the Ministry of Education which is advised concerning the distribution of special research funds by the Imperial Academy, the National Research Council, and the Japan Society for the Promotion of Science. Laboratories such as agricultural and sericultural experiment stations and telephone and telegraph laboratories are supported by the appropriate ministries. During the present postwar period of inflation, many private organizations are applying to the Ministry of Education or to other ministries for support to supplement their diminishing revenues.

Research in Universities

There exist in Japan both government and private universities. The government universities include the seven formerly known as Imperial Universities, two colleges of

literature and science that seem to be largely teachers' colleges, and a number of other institutions supported directly by the Ministry of Education or through the prefectural governments. Private universities also exist in a number of places. The oldest one, Keio University, goes back to the days before the Meiji Restoration as a school for the study of western culture. Some private institutions have a missionary basis. The private universities on the average are older than the others and even though they are now smaller in enrollment, they account for about half of the university graduates in Japan.

The Imperial Universities are of relatively recent origin. The University of Tokyo is the oldest and was founded in 1877. Because of its age as well as because of its location in the national capital, it holds a position of great influence. This is probably partly justified by its quality, but there are many in Japan who believe it to be artificially maintained on the basis of access to the national government. The youngest university is at Nagoya, established in 1939. In external form the Imperial Universities are direct copies of American and European institutions. The emphasis on the scholarly activity of the faculty and on graduate work, and the nature of the work required, suggest a strong German influence.

Until about 1919, the different parts of the universities were called colleges. They are now called faculties. A complete university has seven faculties -- of law, literature, economics, science, engineering, agriculture, and medicine. Not all universities have all seven faculties, but some of them have more than one faculty of some kinds. In the University of Tokyo, all faculties are represented and there are two faculties of engineering. The University at Nagoya has only the faculties of science, engineering, and medicine.

The natural sciences are more heavily represented in the Imperial Universities than in other schools. This side of university activity underwent a major expansion after 1925 and might well be regarded as part of the preparation for war. In particular, the second engineering faculty was established at the University of Tokyo in 1942. Medicine and science were established at Osaka in 1931, and the faculty of science was established at Kyushu in 1939.

The unit of an Imperial University appears to be the "chair". A chair consists of one professor, an assistant professor, and one or more assistants. The establishment of a chair and its exact composition are suggested by the faculty

for approval by the Ministry of Education. The salaries of the various members are then paid in accordance with a scale established by this Ministry. Members of the staff of any government university are employees of the government.

The internal administration of the public universities appears at present to be very democratic. The deans are elected by the professors, and the president either by all the professors or by representatives of the various faculties. This democracy is probably more apparent than real since all of these elections are subject to approval by the Ministry of Education, and in addition, these officers seem to have very little significant authority. The ultimate decision in all matters relating to appointments, promotions, and budget rests with the Ministry of Education, although the extent to which this authority is exercised is not easy to determine.

There are eleven institutions of university grade that have never been called Imperial. There are two universities of science and literature, one at Tokyo and one at Hiroshima. These contain only the faculties of science and literature and apparently have the training of teachers as a principal function. Others have different special functions such as Tokyo Institute of Commerce and Kobe Institute of Economics. These have only one faculty but in this faculty graduate work is given and the doctor's degree is awarded. There are also research institutes associated with some of these universities, and all of the activity is supported by the Ministry of Education.

There are numerous private universities throughout Japan. Three of the outstanding ones appear to be Keio and Waseda in Tokyo and Doshisha in Kyoto. These institutions all have an interesting historical association with the opening of Japan to western knowledge. They appear to put much less emphasis on the natural sciences and engineering than do the Imperial Universities, although Keio University has a good medical school and a good engineering school. Since, however, the Japanese idea of scientific research includes all fields, these universities are also interested in any plans that provide funds for research.

By executive order the Ministry of Education has assumed the authority to establish regulations governing the private as well as the government universities. The Ministry, in particular, specifies the number of students that may be admitted to each faculty each year. It also has the power of limiting the number of faculties. Hence these universities are private largely in the sense that they are self-financed.

Because of their number and age these private institutions have provided about half of the university graduates in Japan even though their present enrollment is less than that of the government institutions. Many of them were founded or carried on through periods when western learning was in bad repute and under official ban. Possibly for this reason, as well as because many members of their faculties were trained abroad, they seem to represent a more liberal and democratic spirit than do the Imperial Universities.

In the development of research in the natural sciences, numerous research institutes have been established under the jurisdiction of the various government universities. These are often established on the initiative of the university but only with the approval of the Ministry of Education. The institute is again composed of chairs with a composition similar to those in the universities proper. Occupancy of the chair in a research institute involves no teaching obligation except the personal instruction and direction of research students. These institutes may get additional support from outside sources. In particular, the Institute of Science and Technology associated with Osaka University was started with a significant contribution of funds from local industries and the city. A large majority of these institutions were established just prior to the war, and some of them took an active part in the development of weapons.

Much university research is somewhat esoteric in character. Mathematicians prefer such things as number theory to analysis or to work in applied mathematics. The idea of a cultured class, and of upholding the honor of Japan by showing its culture to be superior to the rest of the world, seems a prominent motive in the minds of many university people.

There are a few brilliant, and many competent, scholars in Japan. True originality is rare, as it is elsewhere, and there is much copying of western research, sometimes with alleged improvements. It seems a point of honor, however, to make sure that all sorts of research activity are going on, and that each field known elsewhere is represented in Japan.

Following the German tradition, there is a high degree of specialization in a Japanese university. A student is confined to a single faculty and all general education is obtained at pre-university level. A graduate student is attached to a single professor and all his work is research and semi-independent study under the guidance of this one man.

There is a strong transfer of family loyalty to the professor. A professor and his students constitute a "family type" unit that probably exerts an undue influence on the thinking

and activities of many scientific men. This leads to concentration of activity in very narrow fields and to a decided lack of breadth in training and interest. It also leads to a competition by the scientists and scientific institutions rather than cooperation, and probably hinders the general development and spread of scientific attitudes.

A similar situation appears to exist with reference to individual universities. Many universities maintain preparatory schools and a student may spend his whole student life in one institution. The alumni of such institutions feel a tremendous loyalty to it, and tend to form a clique that can see no merit elsewhere. The principal problem for a student is to be admitted to such a school. After admission it is expected that he will continue to obtain the highest degree he desires. No very serious hurdles seem to be interposed at intermediate stages.

The current postwar inflation has produced the usual serious economic plight for university people. The salary of a professor is barely sufficient to provide the necessities of life for a single person. The assistants and assistant professors receive much less. These people must supplement their incomes in any way possible, by teaching in other institutions, by consulting work, or other means. The physician can practice medicine, the lawyer can practice law, and these means formerly used for augmenting a fair income are now used to secure the bare means of livelihood. Such means are less open to the younger members of the universities, and their dire economic straits tend to convince them that their elders are being undemocratically favored.

On the whole the physical damage to university laboratories, due to the war, is relatively small. A large part of the university at Nagoya was destroyed as well as a portion of the engineering faculties at Osaka and Waseda. Keio University was badly damaged and also the University at Hiroshima, but many escaped with no damage whatever.

The research equipment seems fairly good but much of it does not seem to be in use. Many of the laboratories seem poorly maintained, dirty, and disorderly. It is difficult to know how much of this is directly attributable to the war, but it seems reasonable to conclude that some of it is due to a mental lethargy associated with a mere subsistence diet. The junior members of the research establishments are attempting to hang on in the hope that something will save them from starvation, and in the meantime they are using the university campus for the purpose of raising vegetables. This is quite naturally a more important activity than cleaning up a laboratory.

Independent Research Institutions

Entirely apart from universities or industrial organizations are a number of laboratories supported by the government or supported independently.

The Ministry of Agriculture supervises a number of agricultural and sericultural experiment stations apart from the faculties of agriculture of the universities. The prefectural governments also support experiment stations. The agricultural work seems to be both practical and effective, and the results are made available to the individual farmer about as well as it is reasonable to expect. Although all of these stations could make use of additional funds they seem to be making effective, though not strikingly efficient, use of the funds now available.

The Ministry of Communications has developed the Electrotechnical Laboratory which grew out of a laboratory for testing telephone and telegraph equipment. This laboratory maintains the electrical standards for Japan. It has also undertaken work of a general nature and is now being split so that the Ministry of Commerce and Industry will supervise the work associated with electrical power.

For protection against air raids the laboratory was widely dispersed during the later years of the war and much of the equipment was saved. Many of the buildings in Tokyo were destroyed, however, and some 50 per cent of the current appropriation is for building restoration.

The Ministry of Commerce and Industry also maintains a number of other laboratories working on problems related to principal industries of the country, such as ceramics, mining, and textiles.

There also exist in Japan several research institutions that support themselves by the work they do. Perhaps the largest is the Institute for Chemical and Physical Research, or "Riken". This laboratory has developed a number of products and has formed subsidiary companies to manufacture and market them. The income obtained in this way has been used for the support of the laboratory. It is a little surprising that this means of support has been so effective, for it suggests a very skillful business management as well as effective technical direction. Under the decrees dissolving holding companies, this organization is being changed.

Many of the staff of the Riken laboratory are also on the faculty of the Tokyo Imperial University. Perhaps because of this contact the laboratory has been able to secure

grants from the Ministry of Education and other ministries to help tide over its period of reorganization.

The Kobayashi Institute of Physical Research is another such institution. It has developed a Rochelle salt pickup for phonographs and has established a company for its manufacture. This laboratory also is getting temporary support from the Ministry of Education.

The government and independent laboratories have close contact with the universities. The scientific men in the government laboratories are mostly graduates of the universities while the industrial laboratories use many university professors as part-time research men.

Industrial Research Laboratories

Many industrial concerns maintain something in the nature of a research laboratory. Some of these are very limited in nature and seem to be essentially devoted to testing and solving the day to day problems of production. Others are larger and try to do significant research. Many of them are not operating at all at the present time because of uncertainty as to the future, and none appear ever to have been major research organizations.

These laboratories seem to have little contact with university science. Few of their research men have taken advanced university degrees and there seems to be a feeling on the part of some university people that industrial work is not worthy of the holder of the university's highest degree. This may be one of the reasons why Japanese industry does not seem, as a whole, to be making the best use of the available scientific knowledge.

Most of these industrial laboratories seem to operate on the basis of secrecy because of their lack of confidence in the patent law.

Government-Sponsored Central Organizations

For a hundred years there has been present in Japan a strong anti-western feeling, sometimes open and sometimes merely latent. Along with this has existed a fluctuating policy of the government for the stimulation of western forms of learning. This policy has been expressed in a number of organizations.

In 1879 at the suggestion of the Minister of Education, the Imperial Academy was formed. The members of this Academy were appointed by the Emperor and represented all fields of

learning. Its ostensible functions were to stimulate research by the giving of prizes and awards, to carry on investigations of its own, and also to provide for the publication of the results of scientific research. This group of elder scholars was very close to the government and apparently exerted a significant influence on the actions of the Ministers. At one time the Academy was authorized to send several members to the House of Peers. During the war the activity of the Academy in the award of prizes and subsidies increased. Although there is no conclusive evidence that this was an effective war measure, many Japanese seem to feel that the Academy is too much dominated by the older scholars and should be abolished or restricted in its activities. The Academy itself, on the other hand, is proposing to increase its membership and activity.

At the suggestion of the Imperial Academy, a National Research Council was established in 1919. It is easy to interpret this as a direct imitation of the organization in the United States with the same name. The members of the Council were appointed by the cabinet and served to advise the Ministry of Education in the distribution of funds for research. The National Research Council took a very active part in the mobilization of scientists for war activity. A committee of the National Research Council supervised the compulsory assignment of research work to persons throughout the country. At the end of the war the Council was reorganized again and its membership reduced from 700 to 300. At the present time, its president and its two vice presidents are members of the faculty of Tokyo University. Many in Japan seem to regard this organization as representative of the undue influence of the Tokyo University and the Tokyo group.

The Japan Society for the Promotion of Scientific Research was established in 1931 as an independent foundation to distribute funds for research purposes, and a fund-raising campaign was undertaken. As time went on, more and more of these funds were obtained from the government. During the war, this group was active in attempting to put science at the disposal of the government. Its membership included influential army and navy men as well as other government representatives. After the war, the society was completely reorganized and its present function is obscure.

General Comments

In the fields indigenous to Japan, such as agriculture, fisheries, and sericulture, the Japanese show outstanding skill, not only in practical methods, but in the application of recent scientific results. In some subdivisions of these fields they possibly lead the world.

In the fields associated with manufacturing industries and physical sciences, they have made remarkable progress, in the past eighty years, in the introduction of western skills and methods of thought. They still lag behind the United States and England in the development of a broad base of scientific and technical understanding. Science is still regarded as the exclusive possession of a privileged few, so that its influence on the life of the country is limited. This is a condition which time and the democratization of political life will tend to cure, and which cannot be suddenly changed by any type of reorganization.

The social sciences, especially as they involve international comparison in the fields of history, economics, law, literature, and government, seem to have suffered greatly before and during the war from lack of freedom, both of speech and of investigation. But evidence exists of talent and training adequate to provide a basis for recovery of lost ground and future development now that defeat has lifted bans on free expression and has prompted critical reconsideration of Japanese social and political institutions.

II.

IMPORTANCE OF SCIENCE AND TECHNOLOGY
FOR RECOVERY AND RECONSTRUCTION

Presently and in the foreseeable future, the Japanese nation possesses much smaller income-yielding assets than before the war. At the same time the population of the "home islands", because of natural increase as well as the repatriation of nationals, is considerably larger than before the war. Investments abroad will no longer yield the income once obtained from them. The income from sale of shipping services to other nations and the yield from tourist traffic are at a very low ebb. Domestically, manufacturing establishments of all kinds, whether for export or for the domestic market, have been seriously damaged though in varying degree, and in addition much existing equipment has been set aside for payment of reparations. As of the summer of 1947, imports of food, fuel, fertilizers, and raw materials, once very substantial if former colonial sources of supply are counted, are very small; and exports of manufactured goods have shrunk in approximate proportion. Oceanic areas open to Japanese fisheries are now much restricted. External trade in general stands in so abnormal a condition that the value of the yen on international exchange is unknown. The agricultural plant alone remains substantially intact, though it lacks the fertilizer once imported.

Under present circumstances the general level of living of the augmented population of the home islands is therefore unquestionably considerably lower than it was before the war, even in terms of the basic items of food, clothing, and shelter.

Elevation of the level of living may be taken as the equivalent of recovery and reconstruction. It may occur in the future through development in many directions. Among these are the possibilities of augmentation of the home-island farm output of food and fibre, increase of yield from now available fisheries, and increase of domestic output from mines and forests. But it must be said that home-island resources, except for the labor supply, had previously been so far and so skillfully exploited that further gross increase of domestic output could be obtained only slowly, especially in relation to natural increase of population, and at heavy

economic costs. Even before the war, the home islands of Japan had reached a stage of economic development in which appreciable elevation of the general level of living could be firmly counted upon (conquest of territory proving illusory) chiefly through the development of manufacturing industries serving the export trade and through sales of services, as in the tourist trade and shipping.

The general characteristics of the pre-war export and import trade are shown by the following table:

EXPORTS AND IMPORTS OF HOME ISLANDS OF JAPAN

(Per cent of total values; averages of 1934, 1936, and 1939)

	<u>Exports</u>	<u>Imports</u>	<u>Notes</u>
Fabrics	26.3	1.0	Exports include woven cotton, rayon.
Yarns, Threads, Fibres	14.7	27.0	Exports include raw silk; imports, raw cotton.
Clothing and Accessories	6.3	0.0	
Machinery, Vehicles, etc.	9.0	5.3	May largely represent capital export this period.
Ores and Metals	5.0)		
Metal Manufactures	4.0)	17.0	Imports include iron and steel for processing.
Beverages and Tobacco	8.0	8.3	Includes salt and miscellaneous "comestibles".
Grain and Seeds	2.3	15.3	Food imports largely here.
Oils, Fats, and Mfrs. thereof	2.3	6.3	Include fuel oil imports.
Drugs, Chemicals, Explosives	3.0	5.3	
Minerals and Mfrs. thereof	2.0	3.7	
Pulp, Paper	2.7	2.3	
Pottery and Glass	2.3	0.0	
All Others	12.1	8.5	Includes imports of coal, fertilizers.
Total (%)	100.0	100.0	
Total (Million Yen)	3,823 *	3,570 *	

* Excess of export value represents capital export (investment) abroad. The value of net yield of shipping services would be about 5% of merchandise export and would increase excess of exports over imports.

On the side of imports, the larger items, constituting more than half of the total, were (a) raw fibers like cotton, (b) crude ores and metals, (c) fuels, as oil and coal, (d) fertilizers, and (e) crude foodstuffs, notably grain. In large degree, the imports were for processing domestically with subsequent sale abroad of the manufactures. On the side of exports, the lead was undoubtedly taken by sales abroad (a) of raw silk, and (b) of woven fabrics of cotton and rayon particularly. No other single item or group of items, machinery perhaps excepted, bulked large; the characteristic of the export trade beyond the categories of textiles, raw silk, and machinery, was dispersion among a very wide range of items, those mainly manufactured ones. The sum total of these many items bulked larger than the three major items of textiles, raw silk, and machinery.

It is with reference to the recovery, reconstruction, and development of the export trade in manufactured goods, and in a very wide range of these, that the progress of science and technology in Japan (using the word "science" with emphasis upon the natural sciences) assumes particular importance. The products of industry competitively salable by any country on the world market are constantly changing both in character and in unit cost. The most efficient nations must and do invent new products, creating new markets; and at the same time they devise cost-reducing processes applicable to older products. In the competitive world to which Japan will presumably sometime return, the Japanese must depend heavily upon their scientists, engineers, and technicians to find the new products early and to launch them promptly but not prematurely on world markets; and to continually devise cost-reducing processes both for new products and for old. Without an alert and progressive supply of scientists, engineers, and technicians, no nation can hope to retain its place or forge ahead in the international competitive race for remunerative exportation of manufactured goods.

At a later stage in this report we express our views on the difficult problem which Japan will face in allocating limited research funds to their most productive uses. Here we wish to emphasize our conviction that the social and cultural sciences ought not to be neglected while the natural and applied sciences and engineering stride forward. The social and cultural sciences are the domain in which are nurtured the individual enterprise, the respect for the individual man, and for the rights of minorities, and the voluntary cooperative effort which lie at the roots of democracy. Without their development, rungs will be missing from the long ladder which Japan must climb in achieving a place among the peace-loving nations of the world. Prosperity

attained through scientific and technological advance cannot alone win that place for Japan. Equally important is growth of the democratic spirit; and for this growth Japan must look for leadership among her social and cultural scientists.

If, therefore, a system can be devised of reorganizing science in its broadest sense, to include the social as well as the natural sciences, in such a way as to aid as much as possible in speedy mobilization and fruitful and peaceful development of scientific effort in Japan, that system ought to be suggested. Its effectiveness over the years can only depend, however, upon the efforts of the Japanese themselves.

III.

THE RENEWAL COMMITTEE

As the Scientific Advisory Group leaves Japan, a Renewal Committee composed of Japanese scientists is considering the problem of the reorganization of Japanese administration of science and technology. The Advisory Group had the advantage of meeting with the Renewal Committee on its first and second days of convocation, August 25 and 26, but did not enter into specific discussion of the problems to be considered.

The Renewal Committee is the survivor of a number of efforts, some organized and some unorganized, to replan the program of Japanese science and technology. One of the organized groups was a Reorganization Committee. Formed in March, 1946, it consisted of 30 members, 10 from each of the three existing top-level scientific associations, the Imperial Academy, the National Research Council, and the Japan Society for the Promotion of Scientific Research. The objectives of the Reorganization Committee appear to have been (1) to eliminate overlapping functions of the three principal associations, (2) to strengthen the Imperial Academy by increasing its membership, and (3) to revise or reorganize or integrate the research activities of Japan. For various reasons, however, the Reorganization Committee chose to dissolve itself as soon as a successor, more widely representative, could be established.

The successor, called the Preparatory Committee, included three groups of members. The first group was chosen from the three top-level associations, the Imperial Academy, the National Research Council, and the Japan Society for the Promotion of Scientific Research. The second group was chosen from several newly-formed associations, the Japanese Associations respectively for Scientific Liaison, for Engineering Liaison, for Agricultural Liaison, for Medical Liaison, and for Social Science Liaison. The third group was chosen from the several Ministries of government. These three groups, acting together as a Preparatory Committee, had as their function the preparation and execution of an election of a Renewal Committee.

The Preparatory Committee's general plan for election of the Renewal Committee was to use as an electorate all scientific societies having 500 or more members, of which some 50 existed; and in the end to have the Renewal Committee composed of 108 members. Of these, each of the seven

traditional "faculties" of a full-fledged university -- law, economics, literature, engineering, agriculture, science, and medicine -- was to be represented by 15 members; and the other three members were to represent respectively The Society of the Science of History of Japan, the Democratic Scientists' Association, and the Association of Democratic Technologists.

The sole directive of the Renewal Committee was to reorganize science and technology in Japan; its specific functions were to be decided by the Committee itself.

It was early apparent to the Scientific Advisory Group that Japanese scientists everywhere exhibited deep interest and concern in the method and outcome of the election of Renewal Committee members. As to method, there can be no question that voting within the individual scientific societies was not standardized; in some, each member had a voice while in others the officers made appointments. The Japanese themselves have seemed uncertain or not agreed whether the intention was to elect by individual ballot or by appointment by society officials. It must be said also that difficulties in defining eligibility to vote, and shortages of time, of paper, and of funds for stamps and envelopes to mail ballots, played a part in the procedures adopted.

In its general conferences, attempts were made by the Scientific Advisory Group to form some idea of the probability that Japanese scientists would have confidence in the Renewal Committee as eventually chosen. Japanese attending the conferences were usually asked, "Was the selection of the Renewal Committee made in the best way possible, considering the circumstances?" In all instances, votes when taken were overwhelmingly affirmative and rarely not unanimous.

Yet criticisms, or perhaps fears of the outcome of the elections, were commonly voiced, substantially as follows: (a) that preponderance of representation from Tokyo Imperial University might result in close control by that group; (b) that the broader Tokyo area would have too many members, geographical representation thus failing; (c) that private universities would have insufficient representation; and (d) that some branches of learning would lack representatives.

The actual outcome of the elections confirmed some of the doubts expressed. Just over half of the members of the Renewal Committee were from Tokyo University; just over three-fourths came from the Tokyo region; and less than 10 members were from private institutions. There was, in short, less regional and non-governmental representation than many may have hoped.

Despite this outcome, it can be said that the Renewal Committee represents a genuine break with tradition. Of the 108 members, only 6 come from the Imperial Academy, only about half from the large and inclusive National Research Council (and twelve of those are recently-elected ones), and only 5 from the Japan Society for the Promotion of Scientific Research. A substantial fraction of the membership thus represents "new blood". Also, a good many of the members are less than 50 years old. Steps toward democratization of the top-level scientific structure are thus in evidence, even if perfection may not have been attained. It must further be said that a possibility exists that, in some degree not determinable by the Scientific Advisory Group, the preponderance of members from the Tokyo district and the Tokyo Imperial University may have rested upon the relative quality of those elected and not upon mere prestige, influence, or manipulation.

If indeed the members of the Renewal Committee prove to be of a quality to realize their true responsibility and to place sincerely the interest of Japan as a whole above the interest of any region or group, the stage would seem to be set for fair, intelligent, and effective reorganization, on Japanese initiative, of the administration of science and technology in Japan. The Scientific Advisory Group expresses the earnest hope that this quality of disinterested statesmanship will promptly make itself apparent throughout the Renewal Committee, to Japanese scientists of every region and every field of endeavor.

IV.

RECOMMENDATIONS ON GENERAL REORGANIZATION
OF SCIENTIFIC ADMINISTRATIONIntroduction

The Scientific Advisory Group has considered many Japanese proposals for formation of what is commonly called a "deliberative organ" composed of leaders in or representatives of science in Japan, of which the outstanding proposed objective is to "rationalize" or "coordinate" scientific research and technology, thus assuring so far as possible the greatest achievement at the lowest possible cost. In these proposals, the common meaning of "science" is the Japanese meaning -- higher studies in all fields of learning ranging through the humanities to the natural sciences. Among the proposals which have come to attention of the Scientific Advisory Group are those of the Japan Association for Scientific Liaison, the Japan Association for Medical Liaison, the Japan Association for Engineering Liaison, and the Japan Association for Agricultural Liaison. But other proposals have also come to our attention.

Quite generally, it has been proposed that the "deliberative body" be elected from a group of scientists which, though a part of the general political electorate, is no more than a part of it; and quite generally it is also proposed that the "deliberative body" chosen by and from among this narrow segment of the total political electorate be accorded administrative authority over the expenditure of funds collected by the central government of Japan as taxes levied by the Diet, which represents the total political electorate. The Scientific Advisory Group considers that the assumption of authority over disbursement of governmental funds by a group such as the proposed deliberative body, which is not directly and fully an arm of government, would constitute a dangerous if not an illegal precedent in the development of government in Japan under its new constitution.

In the suggestions advanced below, therefore, an effort has been made at once to preserve sound governmental structure and procedure, and at the same time to provide ways and means whereby the best scientific talent of the country, so recognized by fellow-scientists competent to judge, might be brought into a position of guiding and coordinating the development of science and technology in Japan.

Furthermore, it is the opinion of the Scientific Advisory Group that instruction in the sciences cannot properly be divorced from research in the sciences. In large degree the same personnel in institutions of higher education not only conduct and guide researches, but also instruct potential researchers. The longer-range problem of developing research is inextricably entangled with the problem of training research personnel. Accordingly, it will be found in the suggestions offered below that the matters of administering public expenditures for research and for higher education are considered jointly. It will be seen that a new administrative agency of central government suggested below by the Scientific Advisory Group would absorb certain functions now performed by the Ministry of Education. Our opinion is that in the longer run higher education and research, preparatory and technical education, and elementary education would gain alike from the separation of authority suggested; and a degree of safeguard would also be provided against a single administrative agency's exercising undue influence in molding attitudes throughout the nation. It is to be recalled that the United States Education Mission to Japan remarked (p. 28 of its Report), "The Ministry of Education has been the seat of power for those who controlled the minds of Japan."

Major Aspects of Reorganization

Three principal steps in the general reorganization of science and its administration in Japan are suggested in the following pages. They are:

- A. Transformation of the Imperial Academy of Sciences into a purely honorary scientific society.
- B. Dissolution of the National Research Council and the Japan Society for the Promotion of Scientific Research, and formation of an advisory or deliberative body (herein termed an Advisory Council on Higher Education and Research), democratically chosen from a restricted electorate. This Council, which would not be an arm of government, would have the principal functions of (1) advising governmental organizations as to objectives, policies, and principles in higher education and research, and (2) nominating lists of candidates for a governmental organization also to be brought into existence, which would administer higher education and research.
- C. The formation of a Commission on Higher Education and Research, an arm of government, absorbing certain existing functions of the Ministry of Education.

The personnel of the Commission would be appointed by the Prime Minister from among a slate of candidates nominated by the Advisory Council on Higher Education and Research. The Commission on Higher Education and Research would be responsible to the Prime Minister, and would present its budget to him and thence through the usual channels. The major functions of the Commission would be:

(1) To assume jurisdiction over public institutions of higher education (universities or "Daigaku" and certain "institutes" as distinguished from Koto Semmon Gakko or Koto Gakko), and publicly-supported research institutions except those operated by Ministries;

(2) To distribute as it deems wisest for the welfare of the country such research funds as are made available to it; and

(3) To advise the Prime Minister and through him the Cabinet and the Diet on coordination and integration of research activities conducted by the several Ministries.

The Commission would thus exercise control over all public (central government) funds spent in furtherance of education at its highest level; it would directly control all central government funds destined to be expended for research purposes by agencies other than the ministerial departments; and it would advise upon the use of, but would not directly control, all public funds for research conducted directly by Ministries of the central government. In effect, the Commission would thus be a central clearing house on research activities supported by the central government from public funds. Except as the Commission might be empowered to check or prevent privately-supported researches on subjects barred by SCAP regulations or peace treaty, it would have no jurisdiction over research supported by private funds, nor would it have jurisdiction over higher education supported by private funds, except presumably as to initial chartering of new institutions.

Transformation of the Imperial Academy of Science

The Japanese scientists whom we have interviewed seem in general to think well of the existence of some sort of an honorary scientific society. But they do not seem to desire a non-democratic organization of any sort, whether honorary or not, to hold and exercise power. In the past, the Imperial Academy has unquestionably exercised a great deal of influence, to the extent that it may reasonably be said to have had power in fact if not in law. An expedient

and reasonable remedy is to alter the character of the Imperial Academy chiefly by legal restriction of its functions and legal severance of it from all access to public funds. In this way it ought to be possible to transform the Imperial Academy into a purely honorary scientific society.

Accordingly we suggest:

a. That the name of the Imperial Academy of Science be changed to something like "The Honorary Japanese Academy of Science".

b. That it be denied by law access to all or any public funds and be dependent upon dues of members and/or private donations.

c. That its functions be limited by law to (1) publication of books, journals, monographs, pamphlets and the like, of distinguished scientific character, or subsidization of such publications, and (2) awarding of prizes for excellence in scientific achievement.

d. That the present membership remain undisturbed unless purged for other reasons than membership itself.

e. That the transformed organization be permitted to establish its own rules of eligibility, representation, elections, number of members, and the like.

It is the view of the Scientific Advisory Group that if an honorary self-perpetuating association of scientists so shorn of direct connection with government should continue to exert a dominant influence in competition with another democratically-elected scientific group having direct access to government, then nothing genuinely effective can be done in any way, outside of purging which is not the concern of the Scientific Advisory Group, toward democratizing and rationalizing science and higher education in Japan.

Abolition of the National Research Council and the Japan Society for the Promotion of Scientific Research

It is suggested that these organizations dissolve themselves, or be dissolved if legal action is required. They can perform no function which cannot be performed equally well by the Advisory Council on Higher Education and Research next considered.

Formation of an Advisory Council
on Higher Education and Research

The Renewal Committee might profitably spend considerable time in devising ways and means of securing an advisory council, democratically elected though from a restricted electorate, which would represent all fields of scientific activity and all regions of Japan.

It would seem important first to define the electorate. The Scientific Advisory Group feels that the membership of the nation-wide professional and learned societies in the United States would, if the same attempt were being made there, provide a suitable electorate. If such societies were formed in all fields of science in Japan, there would exist a suitable electorate. The basic criteria of an elector suitable to choose an Advisory Council on Higher Education and Research would seem to the Scientific Advisory Board to be (a) sufficient training in some professional field to establish a reasonable degree of competence in it, as the ordinary bachelor's degree would do in the United States, and (b) sufficient interest in the professional field to pay membership dues to a professional society. Further comments on the potential importance of nation-wide professional societies in Japan appear in section V.

Another point important for the Renewal Committee to consider would be the devising of ways and means of achieving geographical representation within each professional or learned society which would elect members of the Advisory Council on Higher Education and Research. The Scientific Advisory Group suggests that delegates to the Advisory Council from any professional society be in some part elected to represent geographical areas of the country, and in some part be elected at large. The numbers geographically elected might well, in our opinion, constitute about two-thirds of the membership, those elected at large one-third. In this way, it seems possible that advocates of geographical representation would be satisfied, while at the same time the opportunity to elect representatives at large would satisfy the claims of those who wish to be certain of the election of the most competent personnel possible. Furthermore, election on the geographical basis would provide a simple way of forming regional branches of the Advisory Council on Higher Education and Research if these should prove desirable.

From various sources, opinions have come to the Scientific Advisory Group that other kinds of organizations than professional societies, as for example private universities, labor unions of university or teaching personnel, ought

to be specifically accorded representation on a deliberative body such as the Advisory Council suggested above. Our opinion is that members of private universities, labor unions, or other groups, would be in a position to receive appropriate representation through their membership in professional societies.

The Renewal Committee may face the problem of fixing upon an appropriate number of members of an Advisory Council on Higher Education and Research, and of determining the length of their tenure. On these matters, the Scientific Advisory Group expresses only the opinions that membership ought not to be so small as to fail to give widespread representation, as we think would be the case with less than 200 members, or so large as to be unwieldy, as we think would be the case with more than 500 members; and that tenure without re-election should obviously not be less than one year and probably not more than three years. Regularly recurring elections seem advisable in order to maintain vitality. Nor do we express opinions upon the necessary officers of the Advisory Council, or their tenure, or their distribution among the several fields of science.

Constituted as an advisory organ to a specific governmental organization, members of the Advisory Council might reasonably be provided with per diem and travel expenses from governmental funds budgeted by the governmental organization. But election expenses might more appropriately be borne by the Advisory Council either from membership dues or from sums provided by the professional societies which elect the Council.

Miscellaneous and minor functions of the Advisory Council might be (a) to represent Japanese science in general in international conferences (a function formerly performed by the Imperial Academy of Sciences); (b) to engage in the publication or the subsidization of publication of scientific writings; (c) to receive and disburse donations from private sources; and (d) to form from its own membership or other persons, on its own volition, special committees of inquiry into specific problems of higher education and research.

More important, the Advisory Council might well be empowered by law to advise the Prime Minister and through him the Cabinet and the Diet on problems of higher education and research, either on the initiative of the Advisory Council or on the initiative of the Prime Minister, Cabinet, or Diet.

The Advisory Council might further be empowered by law to advise the Commission on Higher Education and Research, hereafter to be described, with respect to general policy in the administration of higher education and research and with respect to the budgetary requests of the Commission on Higher Education and Research. The Advisory Council could properly be accorded definite authority to review and give advice upon the Commission's budget, but not the authority to amend or alter. In this respect, the control of a non-governmental organization over a governmental one must be advisory or moral, not legal.

The most important function of the Advisory Council on Higher Education and Research might be to exercise a substantial and effective degree of influence over the selection of the personnel of the Commission on Higher Education and Research. We suggest that the Advisory Council on Higher Education and Research might nominate initially and every three years thereafter a slate of candidates for the membership on the Commission on Higher Education and Research, and that legal action might be taken to confine official appointment of the officers in question to a choice among those named on the slate submitted by the Advisory Council. In this connection, it may be indicated that, as stated below, the members of the Commission on Higher Education and Research might be appointed by the Prime Minister. Our understanding is that such a curtailment of the powers of appointment of the Prime Minister would not be unconstitutional so far as precedents are as yet established.

Formation and Functions of a Commission
on Higher Education and Research

If the general educational structure is to be strengthened by some decentralization of the jurisdiction of the Ministry of Education, if as adequate a direction as possible is to be provided to institutions of higher education supported by the public funds, and if as rational a guide as possible is to be provided for the utilization of public funds for scientific research, it seems advisable that a Commission on Higher Education and Research be formed. This Commission, if composed of competent persons, might help greatly to coordinate and focus research activities of the country undertaken outside of the ministerial research institutions; and it might help considerably to coordinate and focus the research efforts conducted by the several ministerial research institutions.

The Scientific Advisory Group is of the opinion that such a Commission might reasonably consist of about seven members, of whom one would act as chairman or director.

In order to assure a degree of representation as between the natural sciences on the one hand, and the social or cultural sciences on the other, it would seem reasonable to provide by law that at least two of the members be drawn from the social and/or cultural sciences, and at least two from the natural sciences. Members of the Commission might best, in our opinion, be appointed by and responsible to the Prime Minister, who might also appoint the director. Members might be drawn from the Advisory Council, but on appointment to the Commission resign their membership in the Council. The Prime Minister himself might reasonably be required by law to appoint members of the Commission only from a slate of nominees prepared for him by the Advisory Council on Higher Education and Research. This slate would presumably include at least three times as many nominees as are to be appointed, in order that the Prime Minister may have appropriate latitude with respect to the power of appointment. The members of the Commission would presumably be full-time government employees, thus fully subject to governmental discipline and responsible to government. We make no suggestion concerning appropriate levels of salary, but are inclined to think that probably members of the Commission might well have status outside of Civil Service, at least to the extent of being removable by dismissal on order of the Prime Minister. As to tenure, we would suggest normal 3-year terms, with incumbents eligible for reappointment, though only if included in a slate of nominees to be presented by the Advisory Council on Higher Education and Research every three years. In this way, possibilities would exist for continuing in office the most competent men in the judgment of an Advisory Council, itself composed of men able to exercise judgment on professional competence, while at the same time elimination of the weak and incompetent would not be blocked. Incidentally, it may be suggested that an age limit, perhaps 65 or 70 years, might reasonably be imposed; and that no provision could reasonably be made for geographical representation on so small a commission.

The Commission on Higher Education and Research might well be denied jurisdiction over privately-supported universities or privately-supported research institutions beyond the act of recommending their chartering or their recognition as juridical persons to the appropriate authorities. We consider that in normal times, and perhaps even in the immediately abnormal situation, competition between private and public universities is to be welcomed as providing the best assurance of general elevation of educational and research standards and accomplishments.

The Commission on Higher Education and Research might well be accorded by law an advisory capacity in respect to the allotment of public (central government) funds used in

research by institutions directly controlled by the several ministries. Given this advisory capacity, the Commission would be in a position to make itself aware of the research conducted in these highly important ministerial institutions, and it could then provide the Prime Minister, Cabinet, and Diet with information useful in minimizing duplication of effort and organizations as between the Ministries, and thus in economizing expenditures of ministerial research institutions.

The Commission on Higher Education and Research might well be given complete jurisdiction over all publicly-financed universities and institutes of "Daigaku" status and over all publicly-financed research institutions not directly under ministerial jurisdiction. It would presumably have authority to promulgate rules and regulations governing the institutions over which it has jurisdiction, as well as to found new institutions and to expand or to contract old ones. It would naturally have powers to review and consolidate the budgets of the several institutions under its jurisdiction. So far as concerns matters of instruction, as distinguished from research, it is to be hoped that such a commission might act to improve certain existing practices, to which reference is made below under the heading "Comments on Higher Education".

The Commission on Higher Education and Research might well be accorded by law complete jurisdiction over the allocation of public funds to be used for research purposes other than by ministries directly. It might determine research grants and subsidies, not only to publicly-supported universities and research institutions but also to all other such applicants as may make application for grants in aid of scientific research. It is to be expected that there may be at least three major classes of research disbursements: (a) disbursements in continuance of approved research institutions; (b) regular annual grants to administrations of publicly-financed universities for distribution at the discretion of those administrations; (c) grants in aid of research to applicants of all sorts from all kinds of public and private institutions and even from individuals not associated with educational or research institutions.

Disbursements of "(b)", grants to administrations of publicly-financed universities for distribution at the discretion of those administrations, would constitute an innovation so far as concerns Japanese practice. Our information is that such grants have hitherto been made directly to "chairs" within universities, and approximately upon the basis of the same sum per chair regardless of the merit of the chair or the type of research. In the judgment of the

Scientific Advisory Group, much is to be said in favor of a procedure which places in the hands of the president or other administrator of a publicly-financed university each year a fund which that administrator may use, with appropriate consideration of priority among research projects, within his own institution in the furtherance of research work. This would constitute a decentralization of authority not in evidence in the past.

The Commission's problem of most efficiently allocating public funds to research will prove difficult not only in the immediate, but also in the more distant, future. The nature of the problem is such that a perfect procedure or a demonstrably optimum result is not in evidence anywhere in the world. Briefly stated, the problem is one of allocating to the most important or productive uses, smaller funds than will cover all justifiable demands upon them. The fund-distributing agency must establish priorities for the use of funds. The Scientific Advisory Group is well aware that its stay in Japan has been too short to provide a basis for useful discussion of optimum priorities among general fields of research or among specific research projects. Among other questions which it has considered and which a Commission on Higher Education and Research would surely face will be the following: Shall "fundamental" researches be accorded a higher priority than "applied", or the reverse? In the field of stimulating the export trade, shall research priorities be accorded to products made of domestically-produced materials or to products made of foreign-produced materials? Should research directed at larger and more efficient domestic production of domestically-consumed materials receive a high priority, in order that import requirements for consumption be minimized? Shall the projects in natural science, applied or fundamental, be accorded higher priority than projects in the social sciences and humanities, considering that the future participation of Japan in the community of nations may perhaps depend quite as much upon political and social adaptations as upon the economic? The Scientific Advisory Group believes that no aspect of scientific research ought to be neglected, suppressed, or heavily penalized. It does, however, tend to think that the immediate future calls for rather more emphasis upon applied research than upon fundamental, upon natural science than social and humanitarian, upon domestically produced and consumed materials than upon domestically-produced and exported, and upon domestically-produced and exported than upon imported materials processed for export or the processes of manufacturing imported materials for export. Yet the immediate circumstances may be expected to change, and a wise Japanese Commission on Higher Education and Research would not sacrifice the future to the present. It must be prepared

to alter its assignments of priority as circumstances beyond its control, or beyond any man's vision, will indicate.

The importance of selecting men of the greatest possible competence and vision as members of the Commission thus becomes obvious. If such men are selected, their judgment of appropriate research priorities will prove much superior to anything which an advisory commission from a distant country, most imperfectly acquainted with Japan, can possibly suggest.

The Commission on Higher Education would presumably have the function of preparing and submitting the annual budget to the Prime Minister, whence it would pass through regular channels. But it might reasonably be required by law to submit this budget in detail to the Advisory Council on Higher Education and Research or appropriate committee thereof and to receive and consider the advice of that Council, valuable because of the professional competence of its membership, before the budget is submitted to the Prime Minister. One of the items in the Commission's budget might well be the provision of funds to finance meetings and travel of the Advisory Council.

Finally, the Commission on Higher Education and Research might well be required to publish annually a particularized record of receipts, disbursements, and balances, and to make this record available to the Advisory Council on Higher Education and Research.

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V.

PROFESSIONAL SOCIETIES AND THE ADVANCE
OF SCIENCE AND TECHNOLOGY

Some of the Japanese associations of highly-educated persons, which in the United States are called professional, scientific, or learned societies, differ little from what is common in the United States. Others, however, seem to be modeled upon the Imperial Academy as rather small, self-chosen, self-perpetuating groups, apparently regarding themselves as embodying the elite; and still others are even smaller local organizations. The differences between the professional societies in Japan as compared with the United States may perhaps be attributed to the all-pervading influence of government in university and other affairs, the strong Japanese tendency to organize societies and create official positions, and the cohesiveness of groups formed about one professor or one institute.

The Scientific Advisory Group believes that professional societies can play an important role in the development of science and technology in Japan. A professional society in the sense used here refers to a voluntary association of men and women of some degree of competence in a particularized field of science. The degree of competence cannot be accurately defined but might be considered to be the bachelor's degree or its equivalent. Membership in an effective professional society is on a nation-wide basis and is open to any individual with the necessary competence and sufficient interest to pay the annual dues of the society. An effective professional society is not government-sponsored or controlled, but is a voluntary association of the individuals concerned.

The main aim of any professional society is to advance the science it represents -- not the scientists who are its members. It accomplishes its aim by supporting an effective publication devoted to the field covered by the society, by furnishing a free and independent agency which allows the scientists in a field to become acquainted with one another and with the problems on which each is engaged, and by serving to encourage, to stimulate, and to crystallize research and scientific thought in the field the society represents.

Effective professional societies aim to hold at least an annual meeting -- the place of the meeting shifting

from one center to another from year to year and sometimes occurring several times a year. The programs for these meetings include reports of the work of individual scientists, invitation papers, and symposia or discussions on major problems. Programs are not exclusively occupied by the older and established scientists. Opportunity is furnished the younger scientists to present their results and opinions.

On occasion joint meetings in which two or more professional societies participate are found desirable. If sufficiently large and active, a professional society may find it desirable to organize local sections or branches, but these by no means substitute for or replace the meetings of the entire society.

Examples of professional societies not widely different from their counterparts in the United States are perhaps the medical, engineering, physico-mathematical, and zoological societies in Japan; this, however, does not exhaust the list.

One example is the Japanese Medical Association. During the war, it became a semi-governmental body with compulsory membership. But this wartime organization has been dissolved, and plans for a new association have been drawn up. The new constitution is similar in almost every respect to that of the American Medical Association. Already the prefectural, city, and town medical associations have been reorganized along democratic lines. Clearly the new national association is as yet in the process of formation, and therefore its final complexion cannot be perceived. The membership will presumably be both large and nation-wide, and, so far as is known, will include not only practicing physicians but also the academic group. The stated objectives provide for general elevation of medical standards, adoption of a code of medical ethics, and stimulation of medical research both clinical and academic. To the extent that the scholarly group participates and exerts influence, the new association may prove to be a professional society as the words are understood in the United States, with advancement of the art and science in the foreground; if their participation and influence fail, its activity may tend more toward improvement of the economic and social status of its members. The outcome remains to be seen.

The Physico-Mathematical Society of Japan appears very similar to corresponding organizations in the United States. It has recently been split to separate the physicists and the mathematicians. The physical society

contains between one and two thousand members, probably nearly all Japanese physicists. It has branches in the major university centers which hold monthly meetings. An annual national meeting is held in the different centers in rotation. Apparently this is a scientific society in the usual sense of the word.

The engineering society and the zoological society in Japan are likewise nation-wide in scope of membership, and their membership is large and representative.

On the other hand, as far as the Scientific Advisory Group can learn, there are few if any nation-wide societies of large membership representing the various sub-fields of the social sciences and humanities. Counterparts of the American Economic Association and the American Historical Association, to name only two, do not seem to exist. Although precise information is not immediately available, there appear to be numerous local groups, in these fields and others, associated with a single professor or a single institute that call themselves scientific societies. They would call for no particular mention except for the facts that some of them publish journals, many of them are alleged to operate as political cliques, and it may be possible that consolidations of some would provide at least the nuclei for truly nation-wide professional societies.

It seems to the Scientific Advisory Group that the development of science and technology, and indeed higher education generally in Japan, would be aided greatly by the formation of more nation-wide professional or scientific societies. It is by way of the journals of such nation-wide societies and by way of their annual meetings that the competence of scholars comes best and soonest before the judgment of their peers; it is through the open judgment of their peers that scholars come readily to the attention of administrators; and the judgment of peers, freely expressed, cannot fail to affect strongly and rightly the action of administrators in appointment and promotion of scholars. The prompt formation and development of genuinely democratic and effective nation-wide professional societies in fields where they do not now exist may constitute one way of escape from the procedures still so commonly thought on the one hand to hamper the ablest men in achieving the positions commensurate with their ability, and on the other hand to elevate preferentially those of seniority and privileged social status.

Finally, it seems important to the Scientific Advisory Group that nation-wide professional societies, well covering the many particularized fields of science and organized democratically and voluntarily to include as many members as might measure up to a reasonable degree of competence and as might choose to pay dues, could constitute an appropriate basic electorate for a national Advisory Council on Higher Education and Research, as suggested above. We question whether a more appropriate electorate, if it is to be in any genuine sense democratic, would be either as easy to form or as suitable to the purpose.

VI.

COMMENTS ON UNIVERSITY EDUCATION

The Scientific Advisory Group, while charged with the problem of investigating general reorganization of science and technology in Japan, has necessarily learned something about instruction within universities, and has had the advantage of visiting several and observing contrasts and similarities. The comments which follow, while not systematically organized, seem pertinent to a report of activities, especially since we have found research in science and technology to be inseparable from instruction.

Private Universities

The Scientific Advisory Group has been impressed by evidence, perceptible in many directions though somewhat intangible in its nature, that the private universities of Japan are and have been leading proponents of liberal and democratic ideals, inculcating individual initiative and judgment. Perhaps in part for this reason, perhaps as much for other reasons, their graduates constitute but a small fraction of the appointive officials of the country, although we are advised that among all university graduates those of private universities constitute at least half, and that the post-occupation Diet consists more than half of graduates of private universities. Our impression is that Japan, if it is to become a peace-loving nation respecting internally the individual freedom of its citizens and externally the rights of other nations, would profit from development of private universities.

In accordance with this impression, we have earlier expressed the view that the private universities might wisely be freed entirely from the control of any national administrative agency, whether the Ministry of Education or a new Commission on Higher Education and Research, except as regards the launching of new institutions. The existing administrative power of granting or denying the formation of new faculties, or of passing upon the addition of new departments or chairs within existing private universities, seems to us a power which might reasonably be removed, regardless of how wisely that power may have been exercised in the past or might be exercised in the future. At the same time we have expressed the opinion that the members or faculties of private universities might well continue to be eligible to receive grants from government funds in aid of research projects.

It remains to mention an aspect of private-university finance. Several of these universities have suffered severely from war damage. Reconstruction will be difficult, to say nothing of expansion in the fields particularly of laboratory sciences and engineering, where the private universities have lagged behind the public. Our understanding is that the private universities wish to avoid support drawn from public funds, and that they feel confident that alumni and friends can be counted upon. Yet a gift tax exists which, we understand, diverts to the public treasury 60 per cent of any sizable gift proffered by a donor. Lacking knowledge of the precise importance of this tax to national revenues, we nevertheless hope that the possibility of its removal, at least so far as concerns non-profit educational institutions, may be carefully examined. The benefits to private universities and research institutions would perhaps be substantial. Publicly-supported institutions would share in the benefits, however, since they too may be recipients of gifts.

Income-yielding properties of some private universities, notably at least one lower or preparatory school (such schools are commonly conducted as parts of private universities, yielding revenues helping to support higher education and research), are momentarily taken over by the occupation forces. We express the hope that they may be permitted to revert to normal uses at the earliest moment feasible.

International Contacts

In private and public universities alike, the teachers and researchers are eager for renewal of contact with other countries. Access to foreign literature and equipment, ability to send students abroad for training and professors abroad for research and on teaching assignments, and permission to bring in instructors from other countries, have been stressed repeatedly by the Japanese in our conferences.

The subject of renewal of international contacts is not one in which the Scientific Advisory Group feels itself competent. We are aware that the movement of goods and persons to and from Japan must be controlled closely for a time. The movement of scientific and educational literature into and out of the country, on a non-commercial exchange or barter basis, however, seems to us a matter in which relaxation of existing restrictions might reasonably be considered by SCAP authorities. When no financial transaction is involved, it seems possible that exchanges of

publications between educational institutions in Japan and abroad might be made more simple, direct, and rapid than under present regulations. Perhaps the mere registration of such non-commercial transactions, together with a device for shipment in both directions through SCAP offices, might deserve consideration, pending the time when commercial transactions and direct mailing services become possible.

We feel that controls aimed at withholding published scientific information from the Japanese, if indeed there are controls so designed, can serve no useful purpose to the Allies and would tend to hamper the Japanese in reconstruction efforts. Additionally, the outside world would benefit rather than suffer from wider diffusion of knowledge of events and of intellectual tendencies in Japan, such as a freer outflow of Japanese publications would facilitate.

The observation seems warranted that the Japanese, so long isolated from foreign countries, may not be fully aware, when they speak of sending students abroad, of the tremendous pressure upon university facilities which seems in most countries to have come with the cessation of hostilities. Particularly in the United States but equally in Canada, the physical and instructional facilities for higher education are being taxed heavily by an influx of students, largely veterans. As a consequence, standards of admission tend to rise. Perhaps for some years to come, admission of Japanese students will be more difficult than was true between 1920 and 1935. Admission to graduate schools will be especially difficult. It may be suggested in this connection that Japanese graduate students, when permitted to apply for study in the United States, may face the prospect of being denied admission as much or more for lack of competence in the English language as for inadequate undergraduate training in substantive disciplines.

Although we have had neither time nor opportunity to examine more than casually the museums, libraries, and scientific collections of Japan, we have encountered evidence that considerable material exists in both private and public hands. We express the hope that effort will be made to insure that these collections will not be allowed to deteriorate and that they may be preserved as a part of the scientific heritage of the Japanese people.

Relations with Government

Whether the administrative functions of the central government with respect to publicly-supported universities and attached research institutions are exercised in the future by the Ministry of Education or by a new commission, the

organization so supported must presumably have budgets subject to administrative approval and their personnel must be government employees. Administrative control may therefore continue to reach deeply into instruction, research, and general organization in the government universities.

We have not exhaustively considered possible reforms in administration. It seems fitting, however, to record some scattered impressions of aspects of administrative control which seem deserving at least of review and reconsideration. Already it has been suggested that wider latitude might be accorded by the governmental administration to administrators of government universities in the use and internal distribution of public funds devoted specifically to research. Additionally, it would seem that serious consideration might well be given to ways and means of granting to university administrations wider initiative in the creation of new faculties, new departments, and new chairs; in the consolidation, curtailment, and discontinuance of the same; and in the number of students allowed to enroll. As matters stand, there appears to be a degree of standardization applied to government universities which runs counter to the human probability that among several universities all faculties in a given field cannot be of equal quality, and that within any given full-fledged university having all faculties, their relative quality changes with inevitable changes of personnel. Higher education and research rest heavily upon the individual qualities of instructors. Any university administration might reasonably be permitted to capitalize upon excellence in particular directions by having the latitude to expand in those directions even at the cost of contraction in others.

A striking feature of higher education in Japan is the infrequency of exchange of instructors between institutions. Both instructors and students obviously suffer unnecessary losses thereby. To what extent this immobility of instructional staff has been due to governmental administration we are uncertain. It seems clear, however, that governmental administration is in a position at least to encourage such exchange of staff. Equally striking is the infrequency of transfer of students, even those proceeding to graduate work, from one university to another. To what extent this is the choice of students, to what extent the existence of administratively-imposed barriers to transfer, we are not clear. But on the assumption that quality of instruction in a given field must differ between universities, we consider that a change of practice might well prove advantageous to scientific progress.

As has been pointed out by the United States Education Mission to Japan, restriction of intercourse between

universities extends even to exchange of library facilities. It is to be hoped that freer and easier utilization of one another's libraries, including a system of inter-library loans, may develop. Similarly, some economies might be found in the establishment of a few national or regional service shops, wherein experimental instruments and apparatus might be repaired or calibrated.

Conceivably, the prevalence of the "chair" system within the public universities may be an important factor in the imperfection of communications both between and within universities. The idea that a full-fledged university properly consists of a given number of faculties, that each faculty is subdivided into chairs, and that each chair is a little kingdom in which the professor exercises jurisdiction over an assistant professor and one or more assistants, is assuredly alien to American thought. It is difficult to see how the chair system can fail to stimulate attempts to monopolize subject matter, to establish laboratories even if they duplicate or overlap existing ones, to channelize students and hold them at point of initial registration, to retard deserved promotions and otherwise facilitate the exercise of personal authority, and generally to make for operations "in camera" and to hamper cooperative effort. Recognizing that drastic modification of the chair system might prove extremely difficult, we nevertheless strongly hope that it may be given careful consideration.

General Aspects of Instruction

Aside from the high degree of compartmentalization within universities which was mentioned above, the aspects of high-level instruction particularly noteworthy to the Scientific Advisory Group were the following. No attempt was made to survey the subject carefully.

In general, graduate study in Japan seems to involve attachment to a single professor and work under his direction almost entirely, rather than exposure in advanced seminars to the competition with other students or to the instruction of other professors.

At the graduate and research levels, at least in the fields of natural science and technology, emphasis seems to fall upon work in pure sciences to an extent detrimental to applied science. Such emphasis may reasonably be questioned considering the present desperate condition of the Japanese economy and the need to restore it. The appropriate emphasis in Japan at this stage would seem to be the opposite of that in the United States, where there may be said to be overemphasis upon teaching the application of science to

industry. Without abandoning the more romantic research in pure science, there appears to be need in Japan for more study of and instruction in production methods, production quality control, design and construction improvements, safety and maintenance methods, and development of a system of pre-failure testing for such things as machinery, electric circuits, and apparatus used by utilities.

At the undergraduate level, the relative prevalence of lectures as compared with laboratory and problem-solving courses is conspicuous. We observed only one university using laboratories for undergraduate instruction in engineering, and those were dynamo-machinery and heat-engine laboratories about like what would have been found in the United States in 1900. It may be noted that if some research laboratories attached to chairs should be abandoned, some space and a little useful equipment would be made available for student-instruction laboratories; and growing familiarity of students and professors with laboratory techniques would tend to reduce the widespread dependence upon assistants for the manual work involved in laboratory practice.

VII.

OBSERVATIONS ON SCIENCE AND INDUSTRY

All technology is based upon the results of scientific research, and the general recognition of this fact has led to the ever-increasing dependence of industrial management upon the scientific laboratory.

In any free-enterprise society there is competition, without which industrial progress would be relatively slow. In such a society, research effort is the only effective insurance which an industrial organization has against the obsolescence of its product due to the technical progress of its competitors.

The work carried on in industrial laboratories may be divided into three categories:

(a) The control function. This includes the control of the materials and processes used in production and may also well include the establishment of manufacturing specifications. The former function involves the making of chemical and physical tests -- for the most part, repetitive work carried out by trained technicians. The latter is closely related to engineering design.

(b) New applications of scientific knowledge to improve present product or reduce its cost or to create new devices.

(c) Search for new scientific facts and principles, some of which may later be applied to the production of entirely new devices.

An efficient industrial laboratory owes much of its strength to having on its staff a group of scientists with widely different backgrounds and, hence, coming from various universities where they have been under the influence of various teachers.

It also owes much to the cooperation of these scientists with one another, and to their cooperation with the engineers of the manufacturing organization which they both serve. The attainment of a maximum of such cooperation is not easy and will always call for constant effort on the part of all concerned.

To utilize as fully as possible the faculties of the scientist in industry, he should not feel hampered in his mental processes, and this freedom may well result in

his having valuable new ideas in fields outside of the major interest of the industry with which he is associated. Such ideas, if carried far enough in the laboratory to put them into sufficiently concrete form, may well be salable to some other company in whose field of interest they do lie.

If a good piece of experimental work coming from the laboratory is to bear fruit it cannot in general safely be turned over to a factory unless and until it has been given both very concrete form and searching test. For this reason, pilot plant production is often imperative; and the pilot plant will in general best be operated by the laboratory, as the gap between the initial experimental work and the pilot plant stage is much more difficult to bridge than that between the pilot plant and the factory.

In the United States, a university professor is frequently retained by industry for his services in an advisory capacity, a practice which can be of mutual benefit to university and industry. For the university, it means a closer contact than it would otherwise have with industry, one of the various fields of activity for which it is training men. It also vitalizes to the pupil the work of the teacher by showing that this work has practical as well as cultural value. To the industry, it makes available the experience of the scientist and his fund of special knowledge.

In addition to this, United States industry frequently gives financial support to a research project to be carried out in a university. Where the subject is one of wide interest and importance, and secrecy is not required, this practice can be of considerable mutual value. For the university, it brings teaching staff and students in touch with the industry and with a live problem, and the results of the work can later be published. For the industry, the research results themselves may be helpful, and the contact will have resulted in a demonstration of the potential value to the industry of the university staff members, in addition to showing the ability of the students involved, some of whom may later be employed by the industry. This practice may to advantage be followed later in Japan.

An entire industry can sometimes to advantage be served by a research institute established for fundamental research in the field of the industry, and financially supported by the various competing manufacturers engaged in this field. The results would be used to supplement those obtained by each company in its own private laboratory. Examples of this type of institution are the textile and paper institutes in the United States.

The Application of Science to Japanese Industry

In comparison with the products of European and United States industries, the manufactured products of Japan have, in general, come to be regarded as of poor quality.

The better application of science to the control of the materials and methods used in Japanese industry and to the inspection of the components and of the final product could readily remove this stigma. Why hasn't it been done? Visits to factories and laboratories supply much of the answer. They show science entering Japanese industry to only a very limited extent, as in general there are very few scientists in Japanese industrial laboratories.

Apparently but few Japanese scientists are at present willing to accept positions in these laboratories. For reasons of prestige, and freedom in the technical conduct of their work, they prefer university positions, just as United States scientists did early in the history of organized industrial research in that country. This is a situation which can be dealt with successfully. The position in the industrial laboratory in Japan can be made at least as attractive as it is in the university. This would necessitate recognition on the part of industrial management of the importance of science in industry and a treatment of the scientist which accords with this. The scientist must receive at least as much financial recompense for his work as he would in a university. He must have adequate library and other material facilities, able and well-trained assistants, as much freedom in the technical conduct of his work as its nature will permit, and the privilege of publishing in his own name his worth-while new results. He must also be allowed to attend scientific conferences where he may meet and discuss his work with his confreres.

In the past, a powerful deterrent to the application of science in Japanese industry was to be found in the effective artificial control of the prices of manufactured products which existed due to the influence of control associations. This greatly reduced the incentive either to improve product or to reduce costs.

Still another deterrent was the failure of the patent system, for if inventions coming from the laboratory cannot be protected, it becomes more difficult to justify the expense of the laboratory. Patents should contain complete disclosures and the patent laws should be so administered that the rights of the inventor are upheld. This is of great importance, as the patent system of any country has so much to do with the incentive to carry on research and hence with the growth and development of its industries.

The help which Japan's industries can derive from the laboratory in the near future will of necessity come from the control of materials and manufacturing processes and the application of scientific methods to the inspection at various stages of the factory product.

Other scientific effort directed to help in the rehabilitation of Japanese industry could seemingly best be concentrated for the present on new applications of existing scientific knowledge to improve present product or reduce its cost or to create new devices, leaving largely for the future the search for new scientific facts and principles. There will, however, be exceptions to this, as scientists, like other people, differ greatly from one another in their interests and their capabilities, and there will be some who could not contribute to industry in the present emergency and who could best be encouraged to work on the longer term and more fundamental type of research.

Laboratories of Zaibatsu Companies

Some of the largest industrial laboratories of Japan have been those of the Zaibatsu concerns which are now undergoing dissolution. (A Zaibatsu company is one which in any way has come to have excessive power.) Question has been raised as to the future disposition of these laboratories.

In many cases, what is involved is a liquidation of a holding company, leaving the former subsidiaries as separate independent companies.

In some of these cases there were several separate laboratories, each serving one of the subsidiaries. In such cases it would seem that each laboratory might simply become an integral part of the manufacturing company which it has been serving. If for any reason, such as enforced curtailment of the volume of business of that particular company, it should appear that the laboratory is relatively too large, a reduction in size might be indicated and might even be possible without decrease in usefulness.

Where, as in the case of the Zaibatsu brewing industry, a laboratory has been serving several factories all employed in the same field, and, under the terms of the dissolution order, these factories are to be separated, it would still seem desirable and practicable for the one laboratory to continue to serve them all; that is, insofar as the service required is that of control rather than something which the individual factory organization would desire kept secret from the others. The laboratory could simply be made

a separate commercial company deriving its financial support from its clients, the separate manufacturing units.

Where the laboratory of a Zaibatsu company has been rendering service to several subsidiary companies operating in different fields, it could be split up into several parts and each of these joined to the appropriate manufacturing group. This however might well involve the duplication of library and other services and perhaps machine-shop and glass-blowing facilities, as well as special apparatus. As alternatives, it might be better to set up a large laboratory of this kind on a commercial basis as an independent profit-making unit supported by various industries (like the A. D. Little Company of Boston), or as a non-profit making unit carrying out private research for any industry desiring its help (like the Mellon Institute of Pittsburgh).

With the availability of these different methods for handling specific cases, disposition of the laboratories which have been connected with Zaibatsu companies would not seem to present a difficult problem; nor can their continued existence at anything like their present strength be regarded as constituting a worrisome war potential. They certainly should not be eliminated or weakened, especially at this time when Japanese industry has need of all available technical skill.

Future Prospects for Japanese Industry

With changed educational methods, designed to develop rather than stifle originality, with a more extensive and better use of science by industry, and with the industriousness and manual skill and dexterity of the Japanese people, there is every reason to predict a brilliant future for Japanese industry and, with it, a higher level of living than the mass of the Japanese people have ever known.

VIII.

CONCLUDING REMARKS

The members of the Scientific Advisory Group bring this report to a close in awareness of its deficiencies and of their own. Six men sojourning for six weeks in a foreign country of 70 million people whose language they cannot use are inherently unlikely to be able to comprehend fully even the restricted segment of Japanese organization and activity which they scrutinize, however closely. We have suggested changes in the administrative structure of higher education and scientific research in Japan and have chosen to express ourselves as specifically as might be. It is hoped that the suggestions will be considered with due regard for the limitations of their authors. In particular we regret that time has not permitted us to draw as fully as the circumstances indicated upon the accumulated experiences and knowledge of personnel in the several sections of GHQ, SCAP.

Change in the structure of administration of science in Japan is in course and will proceed. It will not be accomplished over night. Its success will ultimately depend upon people -- Japanese people -- far more than upon any scheme of organization. It will not succeed in an appropriate sense if efforts are confined to the natural sciences, pure or applied. The reconstruction of Japan and her rehabilitation in the eyes of the world call equally for leadership and advancement of thought in the social, economic, and cultural fields, and for change (or continuation of change) in the attitudes of the people as well. Material and spiritual reconstruction must move forward on a common front. Progress depends not alone upon the scientists but upon the collaboration of scientific and political leaders. Their joint efforts to vitalize the new Constitution and to restore the economy of Japan will be watched throughout the world.

* * * * *

Members of Scientific Advisory Group (see p. iv):

(Signed)

Roger Adams
W. D. Coolidge
Royal W. Sorensen
W. V. Houston
Merrill K. Bennett
William J. Robbins

memo to SA NAC
DIVISION OF
NORTHEAST ASIAN AFFAIRS

FAR EASTERN COMMISSION
2516 MASSACHUSETTS AVENUE, N.W.
WASHINGTON 8, D. C.

~~SECRET~~
JUL - 2 1948
drafted 7/6/48 A L D
DEPARTMENT OF STATE

1 July 1948

My dear Mr. Secretary:

290
894.92/6-2548

In my letter of 25 June, forwarding to you the text of a policy decision approved by the Commission relative to Access to Japanese Technical and Scientific Information in Japan, I referred to the various statements made by Commission Representatives at the time of the adoption of this policy decision, and the desire of the Commission that an excerpt from the minutes of the meeting be forwarded to the Supreme Commander for his information in connection with the terms of the policy.

894.92/7-148

At its one hundred-thirteenth meeting today, the Commission approved the minutes of its one hundred-twelfth meeting. I am enclosing the text of Item 4 of these minutes, which covers the discussion on the policy on Access to Japanese Technical and Scientific Information in Japan, with the request that, in accordance with the wishes of the Commission, this be forwarded to the Supreme Commander.

FR

Sincerely yours,

Samuel S. Stratton
Samuel S. Stratton
Acting Secretary General

CS/V

Enclosure

The Honorable George C. Marshall
Secretary of State
Washington, D. C.

Confidential File

894.92/7-148

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SIGNED & RECEIVED
IN SANACC *WMA*

July 8, 1948

In reply refer to
NA

SIGNED & RECEIVED
IN SANACC

CONFIDENTIAL

MEMORANDUM FOR THE SECRETARY, SANACC

Subject: Item 4 of Minutes of One Hundred Twelfth Meeting of the Far Eastern Commission: Access to Japanese Technical and Scientific Information in Japan.

894.92/7-148

Reference is made to the memorandum for the Secretary, SANACC of June 29, 1948 from the Deputy to the Assistant Secretary for Occupied Areas, in which it was stated that at the time the policy decision regarding Access to Japanese Technical and Scientific Information in Japan was adopted in the Far Eastern Commission, a number of Commission representatives made formal statements for the record with respect to aspects of the policy. The Secretary, SANACC, was also informed that it was the desire of the Commission that the attention of the Supreme Commander for the Allied Powers be called to Item 4 of the Minutes of the One Hundred Twelfth Commission meeting which contains these statements.

Accordingly, there is attached the text of Item 4 of these minutes which covers the discussion in the Commission on the subject of Access to Japanese Technical and Scientific Information in Japan. It is requested that this enclosure be forwarded to the Supreme Commander for Allied Powers for his information.

J

Charles E. Saltzman
Assistant Secretary

CONFIDENTIAL FILE

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894.92/7-148

Enclosure:

✓ As stated above.

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DIVISION OF
NORTHEAST ASIAN AFFAIRS

JUL 13 1948

STATE-ARMY-NAVY-AIR FORCE COORDINATING COMMITTEE
Washington, D. C.

DEPARTMENT OF STATE

7/14/48
ALD

SANA-6159
9 July 1948

MEMORANDUM FOR THE SECRETARY OF STATE:
(Attention: Mrs. A. L. Dunning - NA)

Subject: Directive Transmitted to SCAP by the
Joint Chiefs of Staff.

Reference: SANA-6150 (30 June 1948)

Enclosed are four copies of Directive, Serial No. 92,
transmitted to SCAP by the Joint Chiefs of Staff. Copy
No. 1 is for transmittal to the Far Eastern Commission,
and Copies Nos. 2, 3, and 4 are for the files of the
State Department.

For the State-Army-Navy-Air Force Coordinating
Committee:

W. A. SCHULGEN
Acting Secretary

Enclosure:
Directive, Serial No. 92,
Copies Nos. 1, 2, 3 & 4.

894.92/7-448

CS/V

894.92/7-448

FOR THE UNIT
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JUL 29 1948

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In reply refer to
NA

July 16, 1948

RESTRICTED

MEMORANDUM FOR THE SECRETARY GENERAL,
FAR EASTERN COMMISSION

In accordance with a memorandum dated July 9, 1948, from the State-Army-Navy-Air Force Coordinating Committee, there is enclosed a certified copy of a directive, Serial No. 92, to the Supreme Commander for the Allied Powers regarding Access to Japanese Technical and Scientific Information in Japan, to be filed with the Far Eastern Commission under the provisions of paragraph III, 4, of its Terms of Reference.

C. V. HULICK

Charles E. Saltzman
for Assistant Secretary

Enclosure:

Copy No. 1 (certified)
of Directive to SCAP,
Serial No. 92.

NA:ALDunning/ggp
7/14/48

FE

A true copy of
the signed original.
CR/21K

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UNITED STATES

REPARATIONS AND RESTITUTION DELEGATION
TOKYO, JAPAN

340

ACTION
is assigned to

DIVISION OF
NORTHEAST ASIAN AFFAIRS

JUL 15 1948

DEPARTMENT OF STATE

ASSISTANT SECRETARY
FOR OCCUPIED AREAS

No. 3

CONFIDENTIAL

Subject: Memorandum of Conversation (Mout & Baker)

The Honorable
The Secretary of State,
Washington.

DIVISION OF ECONOMIC PROPERTY
POLICY

OCT 15 1948

DEPARTMENT OF STATE

Sir:

I have the honor to enclose original and five
copies of a Memorandum of Conversation between Dr.
M. G. Mout, Chairman of the Netherlands Reparations
and Restitution Delegation in Tokyo, and Homer L.
Baker, U. S. Reparations and Restitution Delegation
in Tokyo, on July 3, regarding access to Japanese
technical and scientific information in Japan.

Respectfully yours,

Charles L. Hodge

Charles L. Hodge,
Chief

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Enclosures: (6) *at H. at W.*
✓ Memorandum of Conversation

894.92/7-748

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894.92/7-748

CONFIDENTIAL

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FOR DEPARTMENTAL USE ONLY.

MEMORANDUM OF CONVERSATION
Tokyo, Japan

PRESENT:

DATE: 3 July 1948

Dr. M. G. Mout, Chairman, Netherlands Reparations & Restitution Delegation

Homer L. Baker, U. S. Reparations & Restitution Delegation

cc: USRRD, Tokyo
Dept., Washington (IR, OE, A-S, FE, & SEA)

Dr. M. G. Mout, Chairman, Netherlands Reparations & Restitution Delegation, made a brief call this morning for the purpose of enquiring about FEC documents on the subject of access to Japanese technical and scientific information in Japan. He was particularly interested in SC-280/7, Questions and Answers Regarding SC-280/6, and in the draft proposal for the policy. During the course of the conversation, Dr. Mout evidenced considerable interest in the possibility of the investigation of technical and scientific processes in Japan and said that his Government was particularly interested in fish net manufacturing processes, fishing techniques, and in textile industry machinery and processes. He expressed the hope that his Government would be able to obtain information of value in these fields.

FOR DEPARTMENTAL USE ONLY.**MEMORANDUM OF CONVERSATION
Tokyo, Japan****PRESENT:****DATE: 3 July 1948****Dr. M. G. Mout, Chairman, Netherlands Reparations & Restitution Delegation****Homer L. Baker, U. S. Reparations & Restitution Delegation****cc: USRRD, Tokyo
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Tokyo, Japan****PRESENT:****DATE: 3 July 1948****Dr. H. G. Mout, Chairman, Netherlands Reparations & Restitution Delegation****Homer L. Baker, U. S. Reparations & Restitution Delegation****cc: USRED, Tokyo
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FOR DEPARTMENTAL USE ONLY.MEMORANDUM OF CONVERSATION
Tokyo, Japan

PRESENT:

DATE: 3 July 1948

Dr. M. G. Mout, Chairman, Netherlands Reparations &
Restitution DelegationHomer L. Baker, U. S. Reparations & Restitution Del-
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Dept., Washington (IR, OK, A-S, FE, & SEA)

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FOR DEPARTMENTAL USE ONLY.

MEMORANDUM OF CONVERSATION
Tokyo, Japan

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DATE: 3 July 1948

Dr. M. G. Mout, Chairman, Netherlands Reparations & Restitution Delegation

Homer L. Baker, U. S. Reparations & Restitution Delegation

cc: USRRD, Tokyo
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No. 3

7 July 1948

CONFIDENTIAL**Subject: Memorandum of Conversation (Mout & Baker)****The Honorable
The Secretary of State,
Washington.**

Sir:

I have the honor to enclose original and five copies of a Memorandum of Conversation between Dr. M. G. Mout, Chairman of the Netherlands Reparations and Restitution Delegation in Tokyo, and Homer L. Baker, U. S. Reparations and Restitution Delegation in Tokyo, on July 3, regarding access to Japanese technical and scientific information in Japan.

Respectfully yours,

Charles L. Hodge
Chief

Enclosures: (6)

Memorandum of Conversation

CONFIDENTIAL

No. 3

7 July 1948

CONFIDENTIAL

Subject: Memorandum of Conversation (Mout & Baker)

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The Secretary of State,
Washington.

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CONFIDENTIAL

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Respectfully yours,**Charles L. Hodge
Chief****Enclosures: (5)****Memorandum of Conversation****CONFIDENTIAL**

FE

In reply refer to
NA

July 16, 1948

894.92/7-948

RESTRICTED

MEMORANDUM FOR THE SECRETARY GENERAL,
FAR EASTERN COMMISSION

In accordance with a memorandum dated July 9, 1948, from the State-Army-Navy-Air Force Coordinating Committee, there is enclosed a certified copy of a directive, Serial No. 92, to the Supreme Commander for the Allied Powers regarding Access to Japanese Technical and Scientific Information in Japan, to be filed with the Far Eastern Commission under the provisions of paragraph III, 4, of its Terms of Reference.

C. V. HULICK

for Charles E. Saltzman
Assistant Secretary

CS/V

Enclosure:

✓ Copy No. 1 (certified)
of Directive to SCAP,
Serial No. 92.

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7/14/48

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RESTRICTEDCOPY NO. 2Serial No. 92

1 July 1948

DIRECTIVE TO THE SUPREME COMMANDER FOR THE ALLIED POWERSACCESS TO JAPANESE TECHNICAL AND
SCIENTIFIC INFORMATION IN JAPAN

The following directive, serial number 92, prepared by the State Department to implement the policy adopted by the FEC on June 24, 1948 under the provisions of Paragraph II, A 1 of its terms of reference has been received from the State, Army, Navy, Air Force Departments for transmission to you for your guidance in accordance with Paragraph III, 1, of its terms of reference:

"During the period from July 1, 1948 through March 31, 1949, technical representatives of the governments of members of the Far Eastern Commission should be permitted access to and the right to take copies of the details of any technical or scientific processes of industrial or commercial value which are of Japanese origin and ownership and which were developed prior to December 31, 1945.

"Technical or scientific information obtained by any representative of the government of a member of the Far Eastern Commission pursuant to this policy statement should be promptly and fully disclosed to SCAP for dissemination to other interested members of the Far Eastern Commission upon specific request."

RESTRICTED

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STATE-ARMY-NAVY-AIR FORCE COORDINATING COMMITTEE
Washington, D. C.

DC/R

SANA-6197
13 August 1948

MEMORANDUM FOR THE SECRETARY OF STATE: *←*
(Attn: Mrs. A. L. Dunning, *NEA*)

Subject: Directive on Access to Japanese Technical
and Scientific Information in Japan.

- References: a. SANA-6150 (30 Jun 48)
- b. SANA-6159 (9 Jul 48)
- c. SANA-6160 (12 Jul 48)

894.92/7-948

You are advised that Serial No. 92, copies of which were
transmitted to you by reference b, has been downgraded to
UNCLASSIFIED.

For the State-Army-Navy-Air Force Coordinating Committee:

H. W. Moseley
H. W. MOSELEY
Secretary

894.92/8-1348

DIVISION OF
NORTHEAST ASIAN AFFAIRS
Memo to FEC
SEP 3 1948
A. Dunning ish
DEPARTMENT OF STATE *9/6/48*
JH

TO:	<i>W</i>
FROM:	
SUBJECT:	
DATE:	

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In reply refer to
NA 894.92/8-1348
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(JAPAN)/8-1348

September 13, 1948

UNCLASSIFIED

**MEMORANDUM FOR THE SECRETARY GENERAL
FAR EASTERN COMMISSION**

In accordance with memoranda dated August 13, 1948, from the State-Army-Navy-Air Force Coordinating Committee, it is requested that directive, Serial No. 91 regarding Attendance at Inter-Governmental Conferences and directive, Serial No. 92 regarding Access to Japanese Technical and Scientific Information in Japan be downgraded to UNCLASSIFIED.

C. V. HULICK

for **Charles E. Saltzman**
Assistant Secretary

Enclosures:

- ✓ 1. Copy of Report on Attendance at Inter-Governmental Conferences, August 13, 1948.
- ✓ 2. Copy of Report on Access to Japanese Technical and Scientific Information, August 13, 1948.

SEP 8 1948 P.M.

SEP 13 1948 P.M.

UNCLASSIFIED

FE:NA:ALDunning:jh

9/6/48

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A true copy of the signed original.
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THE FOREIGN SERVICE
OF THE
UNITED STATES OF AMERICA
UNITED STATES POLITICAL ADVISER
FOR JAPAN EAST ASIAN AFFAIRS

ACTION
is assigned to



No. 538

UNCLASSIFIED

SEP 3 1948
DEPARTMENT OF STATE August 19, 1948.

Subject: Access to Japanese Scientific and Technical Information in Japan.

- 1/ The Acting Political Adviser has the honor to forward herewith five copies of a memorandum for the Japanese Government by the Supreme Commander for the Allied Powers, dated August 6, 1948 on the subject "Access to Japanese Scientific and Technical Information in Japan" (SCAPIN 1925), with enclosures; five copies of a memorandum from the Supreme Commander for the Allied Powers, dated August 6, 1948 on the same subject, addressed to the Chiefs of the Missions in Japan of the Far Eastern Commission nations; and five copies of a memorandum from the Supreme Commander for the Allied Powers, dated August 14, on the same subject, addressed to the other foreign diplomatic representatives in Japan.

894.92/3-1948

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According to the memorandum for the Japanese Government, the Japanese Government is directed to make available to the technical representatives of governments of members of the Far Eastern Commission, from the date of the memorandum through March 31, 1949, all scientific and technical processes having industrial or commercial value of Japanese origin and ownership developed prior to December 31, 1945.

Japanese organizations or individuals having or using processes which are not of Japanese ownership or origin, or which were developed after December 31, 1945, must present proof that such processes are outside the scope of this directive. Moreover, Japanese organizations or individuals are prohibited from divulging or making available to technical representatives any technical or scientific information or processes which are not of Japanese origin or ownership, or to give access to information or processes having primarily military value.

Enclosures: *att*

- 5 copies SCAPIN 1925 dated 8/6/48, with enclosures.
- 5 copies SCAP memorandum of 8/6/48, on the subject "Access to Japanese Scientific and Technical Information in Japan."
- 5 copies of SCAP memorandum of 8/14/48, on the same subject.

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UNCLASSIFIEDEnclosure No. 1 to
Tokyo's No. 538 of
August 19, 1948.GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
APO 500AG 000.91 (26 Jul 48)ESS/ST
SCAPIN 1925

6 August 1948

MEMORANDUM FOR: JAPANESE GOVERNMENT

SUBJECT: Access to Japanese Scientific and Technical
Information in Japan

1. The Japanese Government is hereby directed to make available from the date of this memorandum through 31 March 1949 all scientific and technical processes having industrial or commercial value of Japanese origin and ownership and developed prior to 31 December 1945 to technical representatives of governments of members of the Far Eastern Commission.

2. The following augmentation policies are promulgated to define the official relations of the technical investigators and Japanese nationals:

a. All technical investigators and their parties will carry passes admitting them to the area of the factory, shop, laboratory, pilot plant, etc., in which processes being investigated are located. These passes will indicate that such investigations are recorded in General Headquarters, Supreme Commander for the Allied Powers. (See Inclosure 1)

b. Technical investigators shall upon their request be furnished with opportunity to make or take copies of specifications, drawings, blueprints, manufacturing data, etc., provided, if permanent withdrawals are made, they do not reduce the number of copies in possession of the Japanese below three full sets, and shall be allowed such time as they deem necessary within the period of the pass to inspect shops, machinery, equipment, laboratories, pilot plants, etc., which are utilized in the process or processes being investigated.

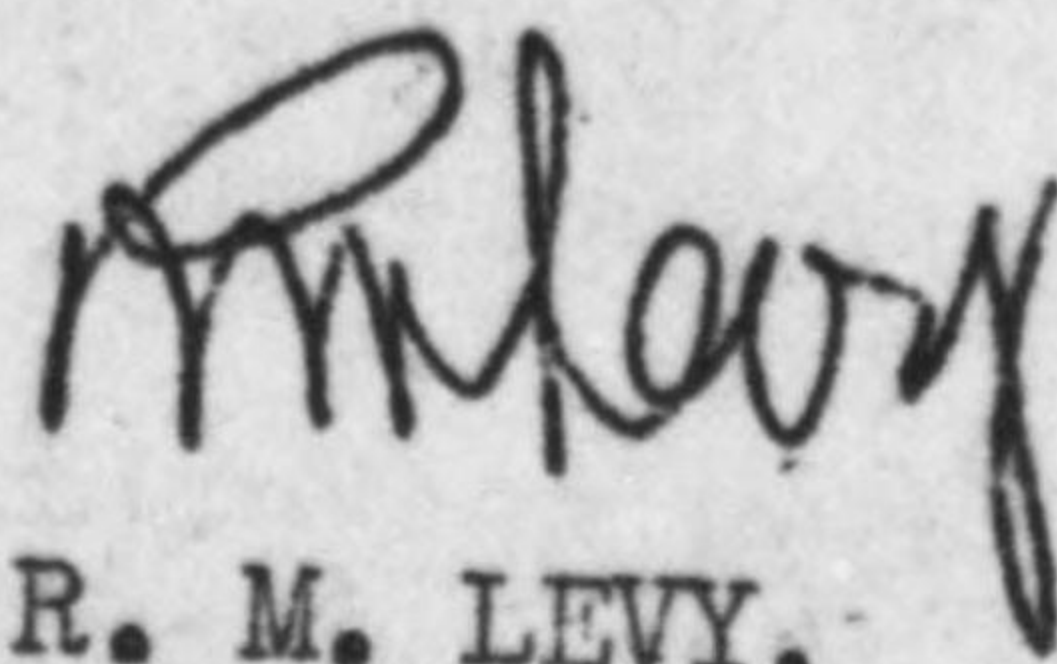
c. Japanese organizations or individuals who are using, or are in possession of, processes that lie outside the limitations of this directive, i.e., processes which are not of Japanese ownership and origin or which were developed after 31 December 1945, are advised that proof that such processes are not within those limitations is upon them. In the event of dispute, documentary proof will be requested from the Japanese Government by General Headquarters, Supreme Commander for the Allied Powers. Japanese organizations or individuals are prohibited from divulging or in any manner making available to technical representatives any technical or scientific information or processes, which are established as of other than Japanese origin or ownership, or access to information or processes having primarily military value.

AG 000.91 (26 Jul 48)ESS/ST, 6 Aug 48 SCAPIN 1925

4. The Japanese Government will give this directive the widest possible dissemination consistent with the prospective audience it will ultimately affect.

5. Direct communication between agencies of the Japanese Government and interested staff sections of General Headquarters, Supreme Commander for the Allied Powers is authorized.

FOR THE SUPREME COMMANDER:



R. M. LEVY,
Colonel, AGD,
Adjutant General.

1 Incl
Sample pass

GENERAL HEADQUARTERS
 SUPREME COMMANDER FOR THE ALLIED POWERS
 Economic and Scientific Section
 Scientific and Technical Division

Sample Pass Date _____

TO:

(Name of Japanese company, laboratory, individual, etc.)

SUBJECT: Access to Japanese Scientific and Technical Information

1. This pass is to admit

who are technical representatives _____ and party.
 (Name of country)

2. In implementation of SCAPIN _____ the above named persons will be furnished with information on the following scientific and technical processes of industrial and commercial value about which you or your staff have knowledge.

(Name of investigation being carried out) _____

Such information will include access to shops, pilot plants, laboratories, etc., if necessary and also may include receipt or copying of specifications, drawings, blueprints, manufacturing data, etc.

3. The furnishing of such information is subject only to the following limitations:

- a. The processes must be of Japanese origin and ownership.
- b. The processes must have been developed prior to 31 December 1945.

4. Proof that the limitations of 3a or 3b are applicable to your processes rests upon you.

5. This pass is good only for the date(s) indicated.

(specimen signature)

Leslie H. Cross
 LESLIE H. CROSS
 Lt. Col., Cav

Incl 1 to SCAPIN 1925

Sample Pass

GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
APO 500

AG 000.91 (26 Jul 48)ESS/ST

6 August 1948

MEMORANDUM

SUBJECT: Information of General Application Pertaining to SCAPIN 1925,
AG 000.91 (26 Jul 48)ESS/ST, subject: Access to Japanese
Technical and Scientific Information in Japan, dated 6 Aug 48

1. With reference to Memorandum SCAPIN 1925, the following clarification is published for information of all concerned.

2. The directive as received by General Headquarters, Supreme Commander for the Allied Powers from the Far Eastern Commission lists the following conditions:

a. The period of access shall be from 1 July 1948 to 31 March 1949.

b. The technical representatives of the governments of members of the Far Eastern Commission shall be permitted access to and the right to take copies of the details of any technical or scientific process of industrial or commercial value if,

(1) the process is of Japanese origin and ownership.

(2) the process was developed prior to 31 December 1945.

c. All information obtained by the technical representatives should be promptly and fully disclosed to General Headquarters, Supreme Commander for further dissemination.

3. Processes having industrial or commercial value is interpreted to include any process in production in Japan, past or present except those having primarily military value.

4. To insure compliance with the above conditions the following policies have been instituted:

a. All technical investigators must have a pass in their possession issued by General Headquarters, Supreme Commander for the Allied Powers, Economic and Scientific Section, Scientific and Technical Division, signed by Leslie H. Cross, Lieutenant Colonel, Cavalry, admitting them to the area of the plant, shop, laboratory, etc., in which the process being investigated is located. This pass insures that a record of the investigation is on file with General Headquarters, Supreme Commander for the Allied Powers. Investigators will be admitted only to those areas for which they possess passes. Those passes shall be used

AG 000.91 (26 Jul 48)ESS/ST, subj: Information of General Application
pertaining to SCAPIN 1925 AG 000.91 (26 Jul 48)ESS/ST, subj: Access
to Japanese Technical and Scientific Information in Japan, dated 6 Aug 48

by the investigators to introduce themselves to the Japanese in areas
investigated.

b. In the event that the Japanese owners or users of processes
have any documentary proof that the processes lie outside the limita-
tions of the directive, i.e., the processes are not of Japanese origin
and ownership, or they were developed after 31 December 1945, the tech-
nical investigators and Japanese have been advised that any disputed
claims will be investigated by General Headquarters, Supreme Commander
for the Allied Powers and an appropriate course of action will be deci-
ded on the basis of the investigation.

c. Paragraph 2b is included for information only. Enforcement
shall be the responsibility of General Headquarters, Supreme Commander
for the Allied Powers.


d. Technical investigators are accredited to General Head-
quarters, Supreme Commander for the Allied Powers only in the capacity
of technical investigators and cannot serve in other capacities for the
missions of their respective countries while so accredited. Nor will
personnel serving in other capacities for their missions undertake tech-
nical investigations.

e. In the event that the zeal of the investigators, in their
"right to take copies of details", produces friction with the Japanese
Nationals, the Japanese shall be allowed to keep three (3) full sets
of blueprints, specifications, manufacturing data, etc., for maintain-
ing their processes and no permanent removals should be permitted below
that level. Rather details should be obtained by copying or other dup-
licating methods at the disposal of the investigators.

4. Technical representatives will coordinate with the Military
Government Team having jurisdiction over the area in which the represen-
tatives visit whenever outside the Tokyo-Yokohama area.

5. Logistic support will be provided the representatives in a
similar manner to Reparations and Restitution Delegates.

DISTRIBUTION:
Same as SCAPIN 1925
less Japanese Government


R. M. LEVY,
Colonel, AGD.
Adjutant General.

UNCLASSIFIED**Enclosure No. 2 to
Tokyo's No. 538 of
August 19, 1948.**GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
APO 500

AG 000.91 (26 Jul 48)ESS/ST

6 August 1948

MEMORANDUM FOR: The Head of the Australian Mission in Japan
The Head of the Canadian Liaison Mission in Japan
The Chief of the Chinese Mission in Japan
The Chief of the French Mission in Japan
The Head of the Indian Liaison Mission in Japan
The Head of the Netherlands Military Mission in Japan
The New Zealand Trade Representative
The Chairman of the Philippine Reparations and
Restitution Delegation
The Acting Soviet Member, Allied Council for Japan
The Head of the United Kingdom Liaison Mission in Japan

SUBJECT: Access to Japanese Scientific and Technical Information
in Japan

1. Pursuant to the policy adopted by the Far Eastern Commission on 24 June 1948 as FEC 280/8 the following administrative instructions are issued to supplement subject policy.

2. All personnel assigned to this program from outside Japan will obtain clearance to enter Japan under provisions of General Headquarters, Supreme Commander for the Allied Powers, Circular Number 19, subject: Control of Entry and Exit of Individuals, Aircraft and Surface Vessels into and from Japan, dated 23 June 1948. In no case will application for entry of dependents of such personnel be approved.

3. All personnel at present in Japan in other capacities, upon assignment to this program will effect their severance of present assignment and take necessary action to obtain a new clearance under the provisions of Circular Number 19 as technical representatives. During such assignment the technical representatives cannot be recognized by General Headquarters, Supreme Commander for the Allied Powers, in any other official capacity.

4. Foreign Missions or similar agencies in Japan will provide logistic support including services of secretaries, interpreters and translators for all subject personnel from the government which it represents and this memorandum will not constitute a basis for a request for additional facilities. Logistic support outside of the Tokyo area will be provided in a manner similar to Reparations and Restitution Delegates.

AG 000.91 (26 Jul 48)ESS/ST, 6 August 1948,
Subj: Access to Japanese Scientific and Technical Information in
Japan

5. All liaison with General Headquarters, Supreme Commander for the Allied Powers, will be initiated through Field and Reports Branch, Scientific and Technical Division, Economic and Scientific Section, Room 403, Pacific Building.

6. The terms of policy adopted by the Far Eastern Commission are limited to "any technical or scientific process of industrial or commercial value which are of Japanese origin and ownership which were developed prior to 31 December 1945". Under these provisions the burden of proof that any technical or scientific process was not developed prior to 31 December 1945, or is not of Japanese origin and ownership shall rest upon the Japanese. Where such claims are made, they will be investigated by General Headquarters, Supreme Commander for the Allied Powers, upon request of technical investigators. Nothing herein authorizes or will be interpreted to authorize any technical representative to request or obtain access to technical or scientific information or processes which can be established as of other than Japanese origin or ownership. Nor does anything herein authorize technical representatives access to scientific or technical information or processes having primarily military value.

7. The Supreme Commander for the Allied Powers assumes no obligation for infringement claims arising out of unauthorized inspection and use of technical and scientific processes owned by non-Japanese pursuant to the Far Eastern Commission Directive, which states ". . . access to and the right to take copies of details of any technical or scientific process of industrial or commercial value which are of Japanese origin and ownership and which were developed prior to 31 December 1945".

8. It is requested that each government submit, if they so desire, to General Headquarters, Supreme Commander for the Allied Powers, the following information:

- a. Names of companies in your country which had prior to 7 December 1941, agreements, patent agreements, licensing or exchange of information agreements with Japanese companies.
- b. Copies of subject agreements.
- c. Names of Japanese companies concerned.

Although considerable information of this nature has been obtained from the Japanese Government, it is possibly incomplete and it is desirable that interested companies be granted an opportunity to protect their rights.

AG 000.91 (26 Jul 48)ESS/ST, 6 August 1948,
Subj: Access to Japanese Technical and Scientific Information in
Japan

9. Further, under the terms of the policy adopted by the Far Eastern Commission, "Technical or scientific information obtained by any representative of the government of a member of the Far Eastern Commission pursuant to this policy statement should be promptly and fully disclosed to SCAP for dissemination to other interested members of the Far Eastern Commission upon specific request".

10. To implement the above policy the following administrative rules are issued:

a. All technical representatives will request passes five days in advance from the liaison office to visit any establishment or individual necessary in pursuit of their investigations. The requests for passes will give the following information: Place to be visited; purpose of the visit; i.e., technical or scientific subject being investigated; personnel of party; date of visit. Where establishments or individuals to be visited are outside the Tokyo-Yokohama area, requests for travel orders must be made previous to the 18th day of the month prior to the month in which the travel is planned. While outside the Tokyo-Yokohama area, technical investigators will coordinate their movements with the military government teams having jurisdiction over the area in which they visit.

b. ". . . promptly and fully disclosed . . ." will be interpreted as follows:

(1) Within one month after visiting an establishment or individual a complete technical report will be filed with the liaison office. This report will be type-written in three copies, in English and will be accompanied in like number by any specifications, blueprints, photographic reproductions, sketches, printed materials, etc., obtained during the course of the investigation from Japanese sources.

(2) Where a series of visits are necessary to, or where large amounts of material must be digested for, an investigation, an interim report will be filed each month, giving visits made during the period, summary of information gained, estimate of percentage of investigation finished. Where several investigations are being carried out simultaneously the same information will be filed for each investigation.

c. Requests from representatives for reports filed by other representatives will be honored in the order in which received unless experience indicates some other procedure is necessary. Such reports will be loaned for duplication purposes for periods not to exceed ten

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Subj: Access to Japanese Technical and Scientific Information in
Japan

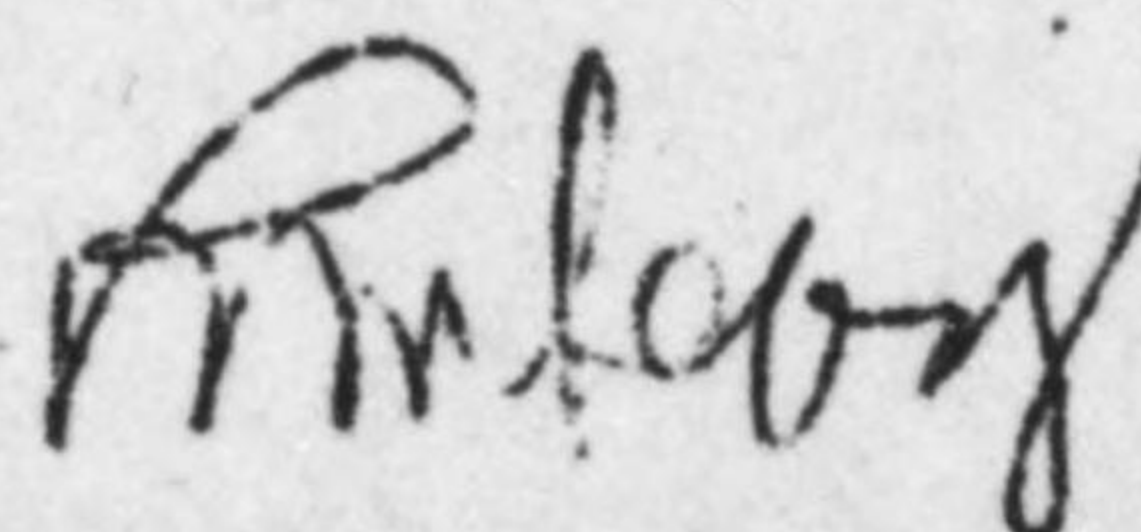
days and will not be reloaned to the representatives of the same member nation until all other member nations' requests have been fulfilled. Duplication will be entirely the problem of the individual representatives of their missions and may be carried out in any manner that will not destroy any value of the duplicated material.

11. All expenses involved in reproductions including copies furnished General Headquarters, Supreme Commander for the Allied Powers, will be borne by the investigating country.

12. General Headquarters, Supreme Commander for the Allied Powers, reserves the right to designate personnel to accompany technical investigators at any time.

13. Since the total number of technical representatives allowed under this program shall not exceed twenty-five at any time, each member nation of the Far Eastern Commission is permitted two accredited technical representatives at all times during the period of the program. The remaining representatives will be divided among the member nations for periods of time commensurate with an equitable distribution. No limit is anticipated on the number of representatives who may be accredited in sequence from any member nation subject only to the condition that there shall be filed with the liaison office complete technical reports on all investigations undertaken by any representative before he is replaced.

FOR THE SUPREME COMMANDER:



R. M. LEVY,
Colonel, AGD,
Adjutant General.

AG 000.91 (26 Jul 48)ESS/ST, 6 August 1948,
Subj: Access to Japanese Technical and Scientific Information in
Japan

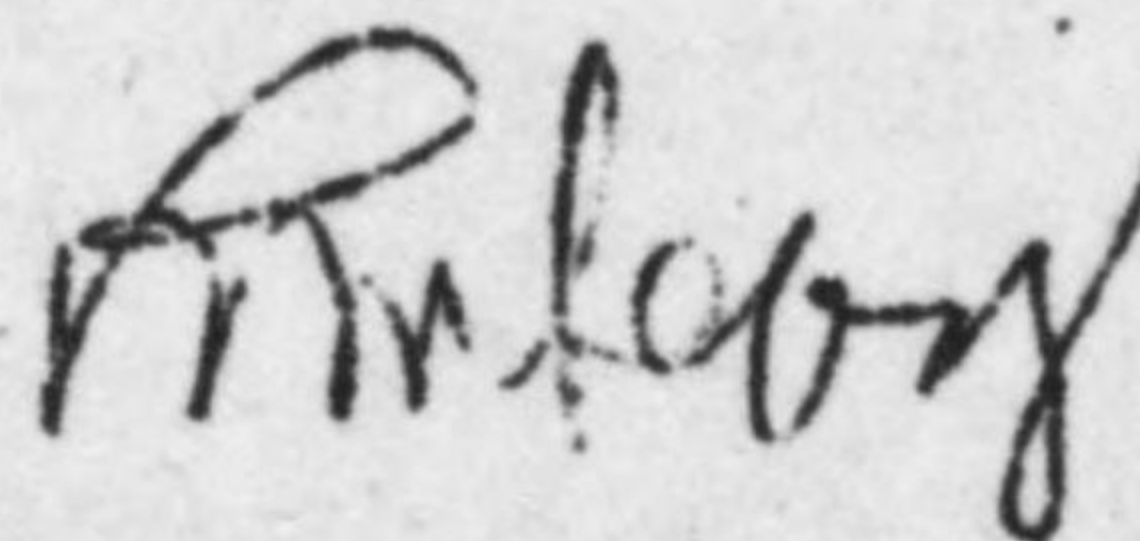
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FOR THE SUPREME COMMANDER:



R. M. LEWY,
Colonel, AGD,
Adjutant General.

UNCLASSIFIEDEnclosure No. 3 to
Tokyo's No. 538 of
August 19, 1948.GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
APO 500

AG 000.91(2 Jul 48)ESS/ST

14 August 1948



MEMORANDUM FOR: The Belgian Diplomatic Representative
The Danish Diplomatic Representative
The Italian Diplomatic Representative
The Norwegian Diplomatic Representative
The Portuguese Diplomatic Agent
The Spanish Diplomatic Representative
The Swedish Diplomatic Representative
The Swiss Diplomatic Representative

SUBJECT: Access to Scientific and Technical Information in
Japan

1. General Headquarters, Supreme Commander for the Allied Powers, has received a policy directive from the Far Eastern Commission which follows in part:

"During the period from July 1, 1948, to March 31, 1949, technical representatives of the governments of members of the Far Eastern Commission should be permitted access to and the right to take copies of the details of any technical or scientific process of industrial or commercial value which are of Japanese origin and ownership and which were developed prior to December 31, 1945."

2. The possibility exists that processes, owned or originated by nationals or companies of your country or countries whose interests you represent in Japan and being used by Japanese under a recognized agreement may be exposed to unauthorized investigation due to absence of complete information on such agreements.

3. It is requested, therefore, and only if you so desire, that your government furnish to General Headquarters, Supreme Commander for the Allied Powers, the following information:

a. Names of all individuals or companies in your country or those countries whose interests you represent which have patent agreements, licensing agreements, or exchange of information agreements and the names of the Japanese individuals or companies with whom these agreements are made.

b. Subject of the agreement and as many identifying details as you care to furnish.

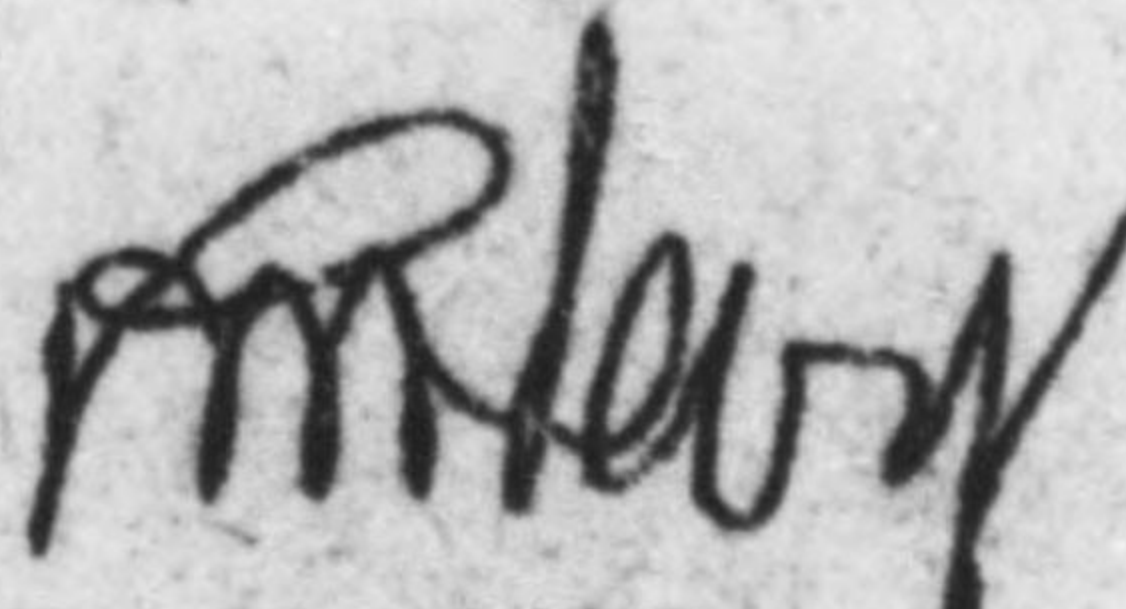
4. The Japanese Government has been forbidden to permit the disclosure of any information not of Japanese origin and ownership. However, the information available to the Japanese Government is believed to be incomplete and would not give the maximum amount of protection to scientific and technical information of non-Japanese origin.

AG 000.91 (2 Jul 48)ESS/ST, 14 August 1948;

Subj: Access to Scientific and Technical Information in Japan

5. Member nations of the Far Eastern Commission have been requested to furnish similar information to that requested in paragraph 2. In addition, they have been informed that General Headquarters, Supreme Commander for the Allied Powers is not responsible for infringement claims arising out of unauthorized inspection or illegal acquisition of information of non-Japanese origin or ownership.

FOR THE SUPREME COMMANDER:



R. M. LEVY,
Colonel, AGD,
Adjutant General.

COPY /GS

August 26th, 1948.

NORWEGIAN EMBASSY
WASHINGTON 7, D.C.

~~ADD~~
~~RAF~~
~~MG~~
DCR
fil

Hon. Nelson T. Johnson,
Secretary General,
Far Eastern Commission,
Washington, D.C.

Re: Information regarding scientific and technical processes in Japan.

Sir,

According to reports in the press, information regarding scientific and technical processes of industrial or commercial value owned by Japanese citizens have been made available to the eleven member nations of the Far Eastern Commission.

I have received instructions from my Government to approach the Far Eastern Commission with the purpose of obtaining for Norway, as one of the countries that took part in the war against Japan, the same opportunity as has been given members of the Far Eastern Commission to acquire and utilize scientific and technical information in Japan and to send a limited number of experts to Japan for that purpose.

The branches of Japanese industry that would present particular interest to Norway in this connection, are the fish-meal, canning, sea-weed and freezing industries as well as the electro-metallurgical, electrochemical, rayon, textile and garment industries.

I should greatly appreciate your assistance in having this question submitted to the Commission and would be grateful to be informed as soon as the Commission has had opportunity to consider the matter.

Yours very truly

Eigil Nygaard
Charge d'Affaires a.i.

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