

Tokyo's Despatch No. 770,
November 5, 1949.

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does indeed modify the effects of the deconcentration program. It is not unfair to add that policy-makers here are inclined to consider that conclusion a part of their terms of reference, and therefore do not worry about its implications.

Mr. Vaughan prefaced his remarks by noting that the article referred to in the Department's instruction was published by the Oriental Economist on June 4, at which time there was under consideration in General Headquarters a plan for examining the efficiency of each producer in certain critical industries, and eliminating allocations of raw materials to those who appeared to be sub-marginal. The program would have eliminated up to half the producers of such commodities as soap, bottles, and paints and varnish.

In view of the obvious political implications of such a program, however, it was abandoned in favor of a more gradual program which, according to Mr. Vaughan, will produce the same results. The soda industry was first considered for rationalization through "concentrated production". It soon became apparent, however, that the elimination of certain plants would produce marked dislocations in the labor force, and that whole cities would quite possibly be left without an economic base.

The obvious political implications of such a program, according to Mr. Vaughan, made it imperative that a more gradual approach to the same ends be sought; it therefore became the policy of the Economic and Scientific Section to institute a system of allocation of raw materials on the basis of advance orders for finished products, with the ultimate goal of eliminating allocations entirely and gradually reducing subsidies.

Mr. Vaughan concluded, on the basis of the above observations, that the problem of rationalization is no longer concerned directly with the elimination of large numbers of producers, and efficient producers, whether large or small and whether many or few will survive the program. It was clear from the general tone of his remarks that Mr. Vaughan expects production to be ultimately concentrated in the hands of a few producers.

Mr. Class generally seconded Mr. Vaughan's views, pointing out that the emphasis of industrial rationalization has shifted considerably since publication of the June 4 article. He continued that the problem is now one of rationalizing individual companies rather than of rationalizing an industry as a whole, and of eliminating those that "show that they can't be rationalized". The details of how this is to be accomplished

are unclear;

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are unclear; the theory appears to be that every manager is to have a chance to rationalize his company before harsh economic realities close in. Mr. Class concluded that the problem posed in the Department's instruction is largely academic, in view of the fact that conscious selection of efficient firms is no longer being considered.

Mr. Welsh concurred in the Department's conclusion that industrial rationalization need not run counter to the deconcentration program, and pointed out that, in fact, he believed the deconcentration program to have as one of its aims the furthering of industrial efficiency. He expressed a conviction, however, that the general tone of thought in ESS, set by Mr. Calvin VERITY, Deputy Chief, and prevalent through all the echelons of technical and industrial advisers, now holds that the two are indeed inconsistent, and that ESS is prepared to sacrifice deconcentration for the sake of rationalization. Since Mr. Welsh is at present in Washington, it is not believed necessary to enlarge upon his views in any detail, and it is suggested that the Department may wish to confer with him on the problems involved.

This Mission realizes that the views summarized above do not furnish an entirely satisfactory answer to the question raised in the Department's airgram. It is not inaccurate to state that General Headquarters considers the issue to have been settled through the abandonment of the program for "concentrated production", and through substituting therefor the present scheme of letting the economic stabilization program take its toll.

While holding no brief for the idea that inefficient Japanese industries should be allowed to live on American charity, this Mission doubts if the Department's fears will be resolved by any assumption that the efficient will survive and the inefficient perish as stabilization progresses. It is by no means certain that survival will depend entirely upon business efficiency, and it appears that in many cases medium and small enterprises are handicapped by problems not directly connected with their technical efficiency. Primarily among these, of course, is the problem of obtaining credit, the city banks being extremely reluctant to extend long-term loans to any except the largest enterprises. Similarly, small businesses find it more difficult to maintain inventories and to extend credit than do larger enterprises.

A paragraph from the Economic Stabilization Board's "Analysis of the Economy in Transition", which was forwarded with this Mission's despatch no. 767 of November 4, 1949, may be quoted in this connection:

"As an effect

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"As an effect of the deflationary trend on enterprise, the careless management under inflation is being severely criticized and sincere efforts are being made for the lowering of cost through rationalization. However, the abnormal factors still existing in the basic national economy place limits to the rationalization within enterprises. Owing to the shortage of capital, the rationalization is not effected through improvement of equipment and technique but through reduction of workers and liquidation of weak enterprises. In the process of rationalization, concentration of production to big enterprises goes alongside the liquidation of medium and small enterprises, thus aggravating the social contradictions".

It is also questionable whether enterprises which find it difficult to compete in an economy operating at the present low level should automatically be allowed to fail, even though they could operate profitably if production were increased, or whether, on the other hand, they should at least be given the assistance of somewhat easier credit policies.

While the Department's airgram apparently was concerned with larger scale enterprises in which retrenchment could be undertaken within companies without reducing competition between those companies, any program tending to eliminate numerous medium and small companies runs equally counter to the principles of deconcentration. As noted above, this Mission recognizes the dangers of wasteful dispersion of productive effort; care should be taken, however, to ensure that stabilization not take the direction which occasioned the Department's airgram, i.e., that of equating rationalization with largeness and concentration.

Respectfully yours,

W. J. Sebald
W. J. Sebald

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THE FOREIGN SERVICE OF THE UNITED STATES OF AMERICA

894.60/11-1449 INTERNATIONAL RESOURCES DIVISION

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Office of the U. S. Political Adviser for Japan

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DEPARTMENT OF STATE Assigned to RCD
Action Taken file Tokyo, November 14, 1949

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No. 792 Date 11/18/49
Action ITP:BP
Name of Officer H. V. Berger
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Reference to DC/R file

INTERNATIONAL RESOURCES DIVISION
Nov. 14, 1949
DEPARTMENT OF STATE

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Subject: Transmission of Statement Regarding Small Business in Japan.

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The Acting Political Adviser has the honor to enclose a copy of a statement entitled "Small Business in Japan," dated November 8, 1949, and issued by the Public Information Office, General Headquarters, Far East Command, Tokyo.

According to this statement, "small business in Japan, freed from feudalistic paternalism, is now on the upward swing." Information is given regarding the steps taken to encourage and guide small businesses, first by the Anti-Trust and Cartels Division (now the Fair Trade Practices Division), Economic and Scientific Section, General Headquarters, SCAP, and later by the Japanese Government. Establishment of the Smaller Enterprises Agency is cited, together with a summary of its operations.

The statement concludes with an observation to the effect that "although survival and expansion represent a difficult problem for a large number of these smaller enterprises, predictions are that small business is entering a period of improvement."

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Enclosure: *AK*

Copy of Information Bulletin No. 25 dated November 8, 1949, entitled "Small Business in Japan".

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RETURN TO DC/R FILES WITHIN 14 DAYS, WITH A NOTATION OF ACTION TAKEN.

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Enclosure to Despatch No. 792,
November 14, 1949, from the Office
of the U.S. Political Adviser for
Japan, Tokyo, on the subject "Trans-
mission of Statement Regarding Small
Business in Japan."

(COPY)

GENERAL HEADQUARTERS
FAR EAST COMMAND
Public Information Office

Information Bulletin No. 25

8 November 1949

SMALL BUSINESS IN JAPAN

Dissolution of industrial and business combines in Japan began shortly after the beginning of the Occupation in 1945, and responsibility for it was vested in the Anti-Trust and Cartels Division of the SCAP Economic and Scientific Section.

This action embodied an attack on monopolies and domestic and international cartels, the most powerful of which were those with Zaibatsu connections.

Small business in Japan, freed from feudalistic paternalism, is now on the upward swing. The latest reports from the Anti-Trust and Cartels Division, based on the best available figures prepared by the Statistics Bureau of the Premier's Office, show there are approximately 948,819 manufacturing enterprises and 1,012,633 commercial enterprises in existence in Japan. Of these organizations, more than 99 percent employ less than 100 people.

Statistics covering the four major manufacturing fields follow:

	Total Firms in Japan	Less than 100 Employees	More than 100 Employees
Spinning and weaving	178,795	177,820	975
Lumber and Wooden products	159,482	159,063	419
Food products	130,528	130,303	225
Machines and tools	60,822	59,300	1,522
Totals	529,627	526,491	3,136

Results of the early attack on monopolistic concerns indicated that positive action was needed to assist and encourage individual initiative. Continuous opportunity for small enterprisers to go into business and to compete with others was recognized as important to the maintenance of a free economy.

Encouraged and guided by the Anti-Trust and Cartels Division, a few Japanese, recognizing the basic importance of small business, set out to do something about it. The result of that effort was the establishment of the Smaller Enterprises Board, currently known as the Smaller Enterprises Agency, on Aug. 1, 1948, when Public Law 83 was passed by the Diet.

This

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This law recognized that "smaller enterprise is essential to a sound and prosperous Japanese economy" and that "small, efficient, independent enterprise will serve as a bulwark against concentrations of economic power." The purpose was "to establish conditions which will assist in the development and successful operation of smaller enterprise."

The Smaller Enterprises Agency, the first of its kind known to have existed in Japan, operates as a semi-independent agency, as free as possible from political control. It is headed by a director general who acts as administrator of the policies and objectives set forth by the law.

The agency director receives compensation and emoluments similar to a vice-minister and was attendant at the vice-minister's meetings as a spokesman for small business in Japan. The total of 94 persons in the agency perform functions in the director's secretariat and in the Promotions and Fostering Divisions and six operating sections.

Under the law the general duties of the agency are to gather, analyze and fully disseminate information on all matters pertinent to efficient business methods and successful operation. These include procurement and availability of materials or substitutes, production methods, engineering, inventory maintenance, accounting, merchandising, advertising, sales methods, distribution and transportation, credit taxation sources, use of fuel and power, labor relations and government. The staff examines and diagnoses the problems, organization and methods, making recommendations for improvement. None of these functions, however, obligates the enterprise in any way.

The agency also conducts widespread publicity including the issuance of its monthly Journal of Smaller Enterprises.

Consultation with laboratories and research institutions, passing on those findings useful to the smaller enterprise, is another phase of the agency's work. It encourages, without requiring, new and useful products and processes. It also maintains liaison and cooperates with all sections of the government, national and local, whose activities affect small business. It receives and refers to the Fair Trade Commission, any complaints of government or private business which affect smaller enterprises, restrain their trade or constitute unfair competition.

During its year of operation, the Smaller Enterprises Agency, working on a small budget of 36,500,000 yen, has established a financial system and obtained from the Reconstruction Finance Bank substantially increased allocations for direct agency loans and guaranteed private loans to small enterprises, quarter by quarter.

More than 1,400 small business and factories were diagnosed and received recommendations from the agency between February and June, 1949. During the past year, training and technical courses were held three or four times in each prefecture in cloisonne, lacquerware, optical lenses and other industrial skills. It is now undertaking the

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Tokyo's Despatch No. 792,
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establishment of consultation offices through liaison with local governments and has opened 129 of these offices.

Added stimulus has been given to the program through exhibitions of the materials produced, two of which have been held in Tokyo and one in Osaka. Experimental products were displayed as well as displays in wooden and bamboo products, metal products, machines and appliances, chemical and ceramic products, lacquerware and textiles. These exhibitions were supported by charted statistical data which demonstrated the problems of Japan's smaller businesses and their prospects in the field of foreign trade. Over one thousand exhibitors, including public laboratories, representing nearly every prefecture and major municipality in Japan participated in these exhibitions.

Although survival and expansion represent a difficult problem for a large number of these smaller enterprises, predictions are that small business is entering a period of improvement.

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INCOMING AIRGRAM

DEPARTMENT OF STATE DIVISION OF COMMUNICATIONS AND RECORDS TELEGRAPH BRANCH

DIVISION 0527

NORTHEAST ASIAN AFFAIRS

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DEPARTMENT OF STATE USPOLAD, Tokyo.

FROM: DEPARTMENT OF STATE
Date of mailing: December 1, 1949.

Rec'd Dec. 5, 1949 10:51 am

OFFICE OF FAR EASTERN AFFAIRS
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DEPUTY DIRECTOR
Department of State

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AIRGRAM
OFFICE OF INTERNATIONAL TRADE POLICY
DEC 7 1949
DEPARTMENT OF STATE

Secretary of State,

Action Assigned to

Washington.

Action Taken

A-330, December 1, 1949.

Date of Action 12/16/49

Following news item released November 1949, by Public Information Office, General Headquarters, (U.S.) Far East Command, Tokyo, under heading "German Firms Resume Operations"

"The Civil Property Custodian announced today that SCAP has permitted five German owned firms to resume operations because it will assist in Japan's economic recovery.

"The five were among a number of firms which were taken over at the outset of the occupation on the basis that they were owned partially or completely by Germans whose property was subject to vesting.

"In announcing the release of the firms from occupation custody, the Civil Property Custodian said that the reasons for the release were twofold. Primarily, the reentry of these firms into their former fields of endeavor will assist Japan in her economic recovery. It was also explained that by being permitted to handle their own affairs, the released firms could gain a degree of solvency which will be desirable when it becomes necessary to liquidate vested interests in these firms.

"The released firms will operate under scrutiny of occupation authorities. They are Goshi Kaisha Winkler and Company, an export-import firm; Leybold K. K., an engineering concern and sales agency which also acts as an import-export agency; Helm Gemei Kaisha, real estate investors; Standard Braid and Produce Company, an import-export firm and Thordsen Goshi Kaisha an investment company which is affiliated with the Standard Braid group."

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THE FOREIGN SERVICE
OF THE
UNITED STATES OF AMERICA

Office of the U. S. Political Adviser
for Japan

Tokyo, December 5, 1949.

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OFFICE OF
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- LABOR-enc
- MINES-enc
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Subject: Transmission of "Technical White Paper" Issued
by Ministry of International Trade and Industry.

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The Acting Political Adviser has the honor to enclose a copy of a report entitled "Present Conditions of the Mining and Industrial Technics in Our Country," which was issued on November 19, 1949, by the Agency of Industrial Science and Technology, Ministry of International Trade and Industry.

The present report, generally referred to as the "Technical White Paper," is a summary translation of a much longer study issued simultaneously in the Japanese language. The report is marred by all too numerous typographical errors and many mistakes in translation; nonetheless, the substance of what is said may readily be determined.

After explaining the relation between scientific techniques and foreign trade, resources, enterprises and standard of living, the report attempts to present a picture of the present technological level of the mining and manufacturing industries in Japan. It is stated that "in spite of the extremely important role to be played by the techniques in rehabilitating and stabilizing the Japanese economy...the techniques, which may be said the sole assets left to postwar Japan, seem to have been neglected indifferently or handled vaguely in the past." The lack of equilibrium between the development in the respective branches of technologies in Japan is especially emphasized.

The report states that the level of Japan's scientific techniques in the mining and manufacturing industries is relatively high in some fields, but, taken as a whole, Japan lags behind the United States and certain European countries in the application and industrialization of such techniques. Fields in which Japanese mining and manufacturing techniques have made the most progress are said to be hydroelectric power, electrical appliances, communications equipment, rolling stock, textile machinery, shipbuilding, cement, plate glass, fibers and the alcohol industry. Fields in which Japanese technology is deficient include coal mining, petroleum exploitation, iron and steel manufacture, non-ferrous metals, steam power, machinery parts, shipbuilding machinery, plastics, ceramics, and fireproof bricks.

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Tokyo's Despatch No. 848,
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The greatest defect of Japanese techniques, it is pointed out, consists of poor supervision of the quality of products, with too much reliance being placed on "hunches" and "knack" of experienced workers. The report states that the daily life of the Japanese people in general is lacking in scientific methods; that is reflected in the lack of uniformity in many products made by small enterprises.

Compared with the United States, even in the fields in which Japan is considered to be relatively advanced, it lags some 10 years behind American levels of techniques. In other fields, there is said to be a lag of from 20 to 30 years.

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The report points out that the low standards of living in Japan is preventing the improvement of better techniques owing to the limited domestic market for superior products. In this connection it is noted that "the improvement of techniques presupposes the existence of a fairly big demand. Industries relying mainly on unstable export markets cannot be firmly established unless their products enjoy worldwide fame. A low standard of living makes the domestic market narrow and generally retards the elevation of the technical level."

The report points out that labor productivity in Japan has declined drastically as a whole compared with prewar days because of the decrepitude of equipment, irregular procurement of materials and reduction of working hours. It then lists the following weaknesses, among others, in Japan's mining and manufacturing techniques: (1) poor quality of raw materials, attributable to the fact that Japan's natural resources are limited; (2) lag in the development of welding techniques; and (3) backwardness in both synthetic resin and synthetic textile industries.

The "White Paper" frankly admits that hitherto the improvement of techniques was synonymous with the importation and copying of foreign technologies and, accordingly, no efforts were exerted toward enhancing the technological level by Japan's own capital and inventiveness, a tendency which is said remains unchanged.

Issuance of this report prompted publication of several editorials by leading English-language and vernacular papers. The English edition of the Osaka Mainichi on November 20, 1949, said that the report "offers postwar Japan rich food for serious thought." In its editorial, the Mainichi observed that:

"Japan, whose territory has been reduced to the four main islands since the surrender, must export to survive, export finished products processed from imported raw materials. In other words, she must depend on the profits from processing--manufacturing in other words--to sustain herself, importing foodstuffs in which she is not self-sufficient. Raw materials which she utterly lacks must also be paid from manufacturing profits. With this basic

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economic condition confronting her, the attainment of national and efficient technological know-how is one of the most important prerequisites for the promotion of exports. The world will buy Japanese goods if they are high in quality. The most advanced technological methods are necessary for the production of quality goods at reasonable prices..."

The Yomiuri Shimbun, Tokyo, on November 23, 1949, in commenting on the "White Paper", noted that that report, wittingly or unwittingly, failed to point out what it termed the most important factor that has caused Japan's engineering techniques to be so backward. The Yomiuri stated that:

"Needless to say, during the war engineering in our country was placed under absolute control of the military and bureaucrats. No matter how excellent inventions, discoveries and devices might have been made among private circles, they could not be realized unless they had the support of the bureaucrats. Through their control over funds and materials, bureaucrats had the power to kill or let live any and all enterprises. Most of the entrepreneurs chose the easy way of continuing to operate their plants by getting into the good graces of bureaucrats rather than to meet the hard necessities of the intensive war by striving to achieve technical progress. This led to the terrible corruption, graft and jobbery among bureaucrats on the one hand and held in check any progress in engineering."

2/ The Nippon Times, English-language daily published in Tokyo under Japanese auspices, on the same date published a thoughtful editorial, a copy of which is enclosed, which contains an analysis of the problems encountered in having Japanese manufacturers adopt advanced industrial techniques. While the Times suggests that consultants be employed to give technological advice to various firms, no mention is made of what appears to be a prime essential, namely, that foreign consultants be employed for that purpose. For in no other way, even by having Japanese technical experts study abroad, does it seem possible for Japan to hope to bridge the time-lag between it and the United States in the matter of industrial "know-how."

Enclosures: *att.*

- 1/ Copy of report entitled "Present Conditions of the Mining and Industrial Technics" (8 copies to the Department);
- 2/ Copy of editorial entitled "A Basic Step" from the November 23, 1949 issue of the Nippon Times.

Copy to American Embassy, London.

Parchment Mat to the Department.

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Enclosure No. 2 to Despatch No. 848, December 5, 1949, from the Office of the U. S. Political Adviser for Japan, Tokyo, on the subject "Transmission of 'Technical White Paper' Issued by Ministry of International Trade and Industry."

(Copy of editorial from the November 23, 1949 issue of the Nippon Times, Tokyo)

A BASIC STEP

The recent announcement of a White Paper on the present level of scientific technique in Japan comes as a sobering thought to the Japanese people who are feeling highly elated over the receipt of the Nobel Prize in physics by Dr. Hideki Yukawa. The document prepared by the Ministry of International Trade and Industry revealed that Japan is from 10 to 30 years behind the United States in mining and industrial technique.

As reasons for this lag, the White Paper has mentioned the long isolation due to the war, the wearing out and the destruction of machinery, the reliance upon the plentiful and cheap labor, and the practice of copying foreign models. And there is the still existent lack of interest on the part of the Government, the entrepreneurs as well as the people in the nation's technological advance.

The need for greater progress in this field is self-evident. It is the answer to some of the most pertinent problems facing the nation today. One of the axioms of solving the problem of over-population is that a nation reach a high state of industrialization. As one SCAP official pointed out recently, the advance of scientific technique is in a sense an increase in territory to care for more people and to raise their living standard. And the beauty of it is that no one will begrudge such advances.

Then there is the problem of trade whose basic solution lies in the manufacture of superior goods. But without the technical and scientific knowhow, Japanese goods will not be able to compete with the products of more advanced nations. There was a time when Japan utilized virtual slave labor to cut production costs to the barest minimum. But that period of immoral and unfair competition has long since passed. The answer to the question of how to produce superior goods at the lowest possible cost must be found in the improvement of the nation's industrial technique to cut per unit costs and to turn out the best possible products.

One may, moreover, talk himself blue in the face about the rationalization of the nation's industries. But rationalization should not end in merely streamlining business and clerical procedures and in discharging personnel. With fewer help the entrepreneur may actually find himself producing an even more inferior product. What must be done is to utilize technical knowhow.

To be sure, the matter of funds looms large. And it is a matter of record that both the Government and the entrepreneurs have been extremely reluctant to spend money for the advancement of and research in scientific technique. Their reason of course is that they do not have the funds for projects and experiments which may or may not succeed.

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December 5, 1949.

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In truth, there have been numerous inventions by private individuals which could not be commercialized because the inventors could not find financial backing. In the United States, the enterprising spirit of the people has been such that periods of depression and financial stringency have seen the greatest active support for scientific research. The Government and entrepreneurs here would do well to learn this lesson.

On a practical basis, the entrepreneurs could join forces and contribute to common experimental projects which raise the technical standard of their particular industry as a whole. They could, moreover, employ consulting engineers who would be on call from all entrepreneurs to solve specific problems facing the individual firm. The Government for its part should give financial aid in every possible way since the benefits from the advance of technique in one industry is not limited to that industry but to the nation as a whole. And every encouragement must be made for the accumulation of capital so that the commercialization of new technique may be possible.

There is every hope for a bright economic future for Japan. But it is essential that the people do not neglect this important technological and scientific phase of Japan's reconstruction into a modern peaceful nation. Indeed, this is a basic step.

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11111. Foundation for fostering mining and manufacturing techniques

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Conclusion

1. Foreword

On what international level the mining and industrial technics of our country are situated? What are the defects of the Japanese technics? What state of being is desirable for the technics of the future Japan?

Heretofore, the general public had little interest in science and technics. When interests were shown, they were superfluous, and real understanding was seldom attained.

In spite of the extremely important role to be played by the technics in rehabilitating and stabilizing the Japanese economy, as stated in the following chapter, the technics which may be said as the sole assets left to the post-war Japan, seem ~~to~~^{to} have been neglected indifferently or handled vaguely in the past.

We take pleasure in presenting to you the following report on the present conditions of mining and industrial technics showing the plain facts based on data obtainable at present in our hope that the synthetical and appropriate valuation on Japanese technics may be made by various parties, and we sincerely hope that our people understand the importance of the promotion of the technics of our country and extend to us every cooperation.

11. The Role played by the Mining and Industrial technics in Economy

In the post-war Japanese economy, the balance of resources and population is entirely under such a condition, it is extremely difficult to realize the economic independence and the standard of living. Further, the depressed condition of our export business is offering another ~~new~~^{new} problem to the Japanese economy, which is depending much on foreign countries. We believe we must clearly understand that the fundamental factor of solving such contract is the development of technics. Then, what role can be played by the technics in the rehabilitation and stabilization of our economy?

(1) Foreign Trade and Technics

It goes without saying that the promotion of export is the life-line of our industry and for the realization thereof the production of superior commodities becomes necessary. Furthermore, various factors such as the increased importance of machines, chemical products, etc. in the constitution of export commodities, with the consequent tendency of the increase of products of higher grades, the rapidly intensifying export competition of countries surrounding us, and the progress of industrialization of the various technically backward nations, are all strictly demanding the advancement of the technics of our country. But it will not be permissible for the post-war Japan to resume the pre-war ways of promoting export through the cheap price, realized by the low wages. The key of the promotion of export should lie in the supply of superior commodities at low prices, increasing the productivity of labor through the improvement of technics. We consider we should recollect how England endeavored after the termination of war, under the slogan "Export or Die", to improve and develop the technics, putting much importance on the technical researches, in

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Foreword

On what international level the mining and industrial technics of our country are situated? What are the defects of the Japanese technics? What state of being is desirable for the technics of the future Japan?

Heretofore, the general public had little interest in science and technics. When interests were shown, they were ~~superfluous~~ ^{superfluous}, and real understanding was seldom attained.

In spite of the extremely important role to be played by the technics in rehabilitating and stabilizing the Japanese economy, as stated in the following chapter, the technics, which may be said as the sole assets left to the post-war Japan, seem ~~to~~ ^{to} have been neglected indifferently or handled vaguely in the past.

We take pleasure in presenting to you the following report on the present conditions of mining and industrial technics showing the plain facts based on data obtainable at present, in our hope that the synthetical and appropriate valuation on Japanese technics may be made by various parties, and we sincerely hope that our people understand the importance of the promotion of the technics of our country and extend to us every cooperation.

The Role played by the Mining and Industrial technics in Economy

In the post-war Japanese economy, the balance of resources and population is entirely lost. Under such a condition, it is extremely difficult to realize the economic independence and elevate the standard of living. Further, the depressed condition of our export business is offering another ~~new~~ ^{new} problem to the Japanese economy, which is depending much on foreign countries.

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order to reconstruct economy, ~~especially~~, especially to promote export. We must see squarely the fact that English people are steadily obtaining the satisfactory results of their efforts.

We are now under the difficult international situation, and without the improvement of technics, we shall be unable to resume the splendid export of former days. the world is also hoping to see the appearance of low priced commodities of superior quality. "Bright export through brilliant technics" is the slogan of the industrial technic promotion movement of this year, and is representing exactly the people's earnest desire to reconstruct the peaceful Japan through the scientific technics.

Lastly, we wish to touch on the export of technic itself, namely the introduction of the Japanese technics to foreign countries. It is natural that the industrially backward nations try to elevate their technical levels in a short time by purchasing and putting into practice the patent rights of the more advanced states or by inviting technicians from these countries. Such a tendency is becoming more and more conspicuous in the southern Asiatic peoples, probably because they consider, in view of their low standard of living, the technics of our country are more fitted to their requirements than European or American technics. On the other hand, the export of superior technics to advanced states is quite possible as in the case of the Japanese invention on the permanent magnetic steel which was put into practice in Germany.

Needless to say that we are feeling the impending necessity of elevating the technical level quickly by inducing the superior technics from Europe and America, but it is our earnest desire that we establish the original technics, which are befitted to the Japanese resources and export markets, and realize the exports of technics themselves in the balance of international receipts and payments.

(2) Resources and Technics

It would be scarcely necessary to say that for the attainment of economical independence of our country, we must strive to develop, utilize, economize and preserve water, land, energies, minerals and other resources. We will cite the concrete examples showing the roles played by the mining and industrial technics in realizing the above purposes.

The physical prospecting method which was invented by the modern science, is not only finding the new oil fields and made it possible to investigate existing conditions of coal seam lying under land and sea. Thus, this method is supplying us with new resources, and on account of the advancement of the prospecting technics, the ratio of utilization of massive mineral deposits, which were used to be left unexploited up to about 80% until recently, is becoming higher now.

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Investigations on the latent hydraulic power were made in our country ^{three times} ~~there~~ since 1910, and as time passed, the results of investigation became bigger, ^{What} ~~was~~ the reason of this? ^{It} was because the generating technics, the coordinated art of civil engineering technics and mechanical technics, have advanced the production of the synthetic fibers is a good example of having created the new resources through the concentrated strength of various technics, and there are other countless examples of the similar nature.

For exploiting the national resources, it is necessary to form the synthetical plan respecting the organic unity of nature. In this connection, we naturally recollect T V A Plan of U. S. A., which succeeded to concentrate the newest and highest technics for realizing the organic and synthetical development and utilization of the extensive area of Tennessee River, taking into consideration the various view points. This is a very good example showing the role of technics in developing the resources and will give many suggestions to us for developing our national resources. It is also a matter of course that the efficient use, economy and preservation of resources must all be planned on the basis of technics. The utilization of by-product of factories is a focus of the problems of modern industry, especially chemical industry. The characteristic of progressiveness lies in the fact that to-day's waste gas slops, scraps, etc. will become the precious resources tomorrow. Thus, it is quite clear that technics play an important role in solving the problems of resources, but in the present-day Japan technics are not utilized sufficiently and their intrinsic values are not yet displayed. As Dr. Ackerman, of GHQ-SCAP said the increase of resources through technics would be the extension of territory, on which no one in the world would intend to point out an error. We believe these words clearly suggest the course of progress of the peaceful Japan.

(3) Enterprises and Technics

With the advancement of science and technics, the technic became one of the basic factors of constituting the modern enterprise and is playing a decisive role for the existence and development of enterprise. In our country, however, the position of technics in enterprise cannot be said as properly valued, For instance, in spite of the fact that the industrial experiments and researches are mothers of technical improvements, guaranteeing the future development of enterprise, the enterprisers are generally short-sighted in this respect. When management becomes difficult. they

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consider it a matter of course to diminish first of all the expenses and the personnel of experiments and researches. They usually lack the will to industrialize bearing some burdens, even the valuable results of researches, obtained after many painstaking efforts, unless they produce profit in a short time.

It must be noted that there are historical and economic reasons for such attitudes of enterprisers. Since the beginning of Meiji era in 1868, the industries of our country were developed by importing and imitating the technics of the advanced countries. Even when they were compelled to improve the technics, the enterprisers of our country used to convert the management by such easy methods as the purchase of the foreign patent rights, import of machines and the like, and they neglected to rely upon the original technics obtained from the regular experiments and researches.

Further, the abundant supply of cheap labor tended to make the enterprisers neglect the necessity of improving the quality, finding way out in lower price. Moreover, the accumulation of capital was not sufficient in the Japanese industry and there was little room for the enterprisers to actually experience that the expenses for experiments and researches made for improving technics were really extremely lucrative investments. In our tax system also, no measures were taken to make the experiments and researches easy. There were various other reasons, which prevented the technics to be valued properly on the real role they play within the enterprise. In the post-war Japan, in which the economical and social conditions were entirely changed, technics must regain their intrinsic nature and perform the original mission. It is quite natural that, with the increase of severity in the international and domestic competition, the rationalization of enterprise was emphasized, the backwardness of the Japanese technics became a big problem, and the fact that the improvement of technics was the basis of the continuation and development of enterprise began to be recognized.

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Then, what is the relation of the rationalization of enterprise and technics? We wish to refrain from going into details, and touch on only a few points worthy of notice.

It goes without saying that in enterprise activities the scientific production management is necessary, and it must be noted that our country is inferior to the advanced states in Europe and America especially in quality management. For the Japanese export industry, which was often denounced in the world market for the inferior and ununiform quality, the quality management is quite important. If we put into practice the same management with scientific precision, it will be possible for us to win the international credit of being suppliers of commodities of uniform quality at low prices.

In our enterprise activities, the monetary balance sheet is held as important, while the balance sheet of raw materials and energies is usually neglected. In such a condition, the rationalization of enterprise cannot be hoped for. In this respect, we are much behind the advanced nation, and therefore we can find here a wide field of activities for technics.

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From old times, the Japanese people had a strong custom of relying upon expert's feeling and intuition, and even in modern enterprises the measuring and weighing were quite neglected. By measurement, quite a wide field of enterprise may be rationalized, in preventing the waste of labor and materials and avoiding the lack of uniformity of quality. If the automatic regulating equipment is developed, it will be possible to increase the efficiency. On the other hand, the progress in measurement ideas will stimulate reversely the invention of meters. In this way, the technics will contribute, through measurement, to improve the quality and lower the cost of production.

Lastly, we wish to consider the role of technics played in smaller enterprises. In the industrial construction of our country, the smaller enterprises occupy quite an important position, but very few of them exist as an enterprise of appropriate scale for the kind of products and the greater part of them are conducting production under the old handicraft style. But, the changes in the social environments and the tendencies of international markets made it difficult for smaller enterprises to break through the difficulties by lowering of wages. Thus the smaller enterprises are now compelled to adopt the modern technics. Setting aside the special branches such as lacquer wares, handiworks and ceramic wares, which can secure market by the skill of employees, in all branches which are in a position to compete with the big enterprises, the inferiority of the technics of the smaller enterprises naturally becomes a question, and the positive and appropriate fostering and guidance on their technics are desirable.

(4) Standard of Living and Technics

Generally speaking, technics should aim at the progress and the improvement of the culture of mankind and serve to elevate the standard of living of peoples. In the Past, however, the Japanese technics were utilized directly or indirectly to strengthen the military power, and the improvement of living environment was forgotten. In future, technics should resume their original mission and render service to the whole people of our country.

It will not be necessary to explain here that technics elevate directly the level of consumptive life of the people. Under the present condition of our country, it is hopeless to elevate the standard of living by equipping immediately with the high grade equipment and machines such as the electric refrigerator, the electric cleaner and automobile, the results of scientific and technical researches. All the means left to us for the present are to rationalize through technics the consumption and produce the comfortable living environment by the scientific regulation of life. For this purpose, it is important that the people's recognition of technics is deepened. In order to realize this, we should spare no efforts in carrying out scientific education and in making industrial technics promoting movements.

Next, we wish to state on the possibility that the standards of living may be elevated by the elevation of the productive technics through economy. Inside of an enterprise, the development of technics will raise the productivity of labor and give theoretically the

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possibility of lowering the cost of products and increasing the wages. But as an actual producer, the enterprisers will not always use the surplus powers produced by the improvements in technics for increasing the wages, as their enterprises may have to face with the domestic and international competition. In the past, we saw many instances in our country in which such surplus powers were reserved by the enterprisers as profit. Theoretically, however, it is clear that the improvement in technics will play a ~~role~~^{role} of bringing about the increase of wages ~~or~~^{or} at least preventing the decrease thereof. If the problem is considered generally, not from the standpoint of enterprise alone, in the real world the various economic, social and political conditions are necessary in order that the development of technics elevate the standard of living of the whole nation. But this is rather a negative view. We cannot deny the possibility that domestically and internationally technics stimulate the new production, increase the new employment, dispose of the low wages and assist in the elevation of the standard of living.

Lastly, we wish to state that the low standard of living is preventing the improvement of technics through the narrowness of market. In Japan, the standard of living is extremely low, and there ~~are~~^{are} many modes of life. Consequently, the demand is divided into many articles and the quantity of demand is extremely limited. This is one of the reasons why the smaller enterprises are not permitted to exist extensively in our country, but at the same time this has made it difficult to realize the regular improvement of technics, which presuppose the existence of the fairly big demand. More than 80% of the American automobiles was sold in the domestic market in U.S. A. The British industries were developed being backed by colony markets, which closely resemble the domestic market. The industries relying mainly on the unstable export markets cannot be firmly established, unless their products enjoy world-wide fame. Thus, the low standard of living makes the domestic market narrow, and generally retard the elevation of technical level.

In short, each of the standard of living and the technical level assists the other's elevation and without the elevation of the standard of living, the elevation of the technical level cannot be expected.

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III. Technological Level of Mining and Manufacturing Industries in This Country.

It is quite difficult to explain in a summarized form how the level of technologies of mining and manufacturing industries in this country are.

However, if we give some explanations on the characteristic matters picked out of the Chapter 3 which treats the present stage by industries in the mining and manufacturing industries in this country and show the present situation of technologies of Japan, especially their weak points from various points of view, we shall be able to succeed in making the technological level of this country as well as how they should be directed toward future progress understood, though vaguely.

The comparison of technological levels being made with the United States only, ^{this} alone cannot always make ~~the~~ clear the situation of the Japan's technologies on the world technological levels. Accordingly, we should like to request your attention to the fact that the conclusion cannot be drawn to the effect that all the scientific technologies of our ~~country~~ ^{country} should ~~be~~ ^{be} directed toward the level of those of the United States, there being also a considerable difference in economic as well as social circumstances between those two countries.

(A) We will start from the problem of the efficiency of production.

Labor productivity in our country has lowered drastically as a whole against that in prewar days. It is attributable to the decrepitude of equipment, the unsystematic procurement of materials and the reduction of working hours. The extreme example can be sought in the coal mining industry where the annual output per one ~~miner~~ ^{miner} is no less than 90 metric tons against the output totalling 200 metric tons during a 1930-1934 period. Even in the spinning industry which is considered to be the most prosperous in this country stands at about 78% in output against that during the same period, whereas in the United States, the labor productivity in industries pre ~~war~~ ^{war} showed a marked advancement of about 30% during the ten year period from 1930 to 1939. Consequently, there are a sizeable difference in labor productivity between these two countries after the war. The labor productivity is, when compared with that of the United States, very low in its ratio, resulting in 5% or less in the coal mining industry on the whole, one sixth even in the artificial silk industry and one ninth in the rubber industry. We can attribute the causes for such a startling difference between two countries to the fact that in the United States the amazing mechanization and automaticization of industrial equipment and facilities were put into practice and that the scientific factory management system was also developed to the fullest degree.

As an example, we will take here the machine tools as equipment in factories. Their composition by types is entirely different from that in this country, ^{setting} the number of them aside. In Japan the machine tools are composed mainly of ordinary lathes, while in the United States there are found a great many of secondary metal forging machines and even the lathes are composed mostly of an automatic type, indicating how the shaping operations on the mass production basis in every segment of industries are regarded as

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of great importance, As the result, the machine tools in the United States are said to have enhanced ^{their productivity} ~~their productivity~~ by 30% ^{~50%} against that in the prewar days.

Further, the development of highspeed ^{mass rolling} ~~mass rolling~~ engineering of steel ~~Created an~~ ^{incomparable} ~~incomparable~~ difference in the iron and steel industry between Japan and the United States. Not only that, but also in the spinning industry the marked development in mechanization in the United States ^{is} ~~is~~ said to have brought about a disparity of about ten years between Japan and the United States. Actually machines of the same type made in the respective countries differ greatly in the capacity. For example, the comparison in prospecting speed in boring oil wells shows clearly the disparity as in Japan the boring speed of 1,000 metric oil well calls for from 50 to 60 days on the average against that of only 20 days for the same ^{length} ~~length~~ of boring in the United States.

Next, let us refer to the factory management system.

The ^{methods} ~~methods~~ of manufacturing products of equal quality on the mass production basis by carrying out scientifically ^{factory} ~~scientifically~~ management ^{were} ~~were~~ put under study in both ^{Europe} ~~Europe~~ and America from some ^{twenty} ~~twenty~~ odd years ago and it came to be established through the world war II. As the result, the technologies with regard to production management became to be regarded as of great importance and in the United States the ^{number} ~~number~~ of personnel engaging in design, investigation, research, etc. is gradually increasing among the technicians in all factories. By these methods, the ^{automobile} ~~automobile~~, chemical, textile, metal industries which are the representative ones in the United States became to be managed quite rationally and succeeded in bettering quality and reducing prices.

The factory management system in Japan shows, when compared with that in the United States, almost a substantial difference. It is clearly noticed if only we know the fact that the scientific control is being neglected. We should like also to draw your ^{att} ~~att~~ention to how the steps for the enhancement of heat efficiency in the iron and oil refining industries are insufficient. In industries in Japan are many what-we-call skilled laborers who still resort to "hunch" and "knack" believing that such are more ^a ~~a~~ccurate than the scientific control. Where there is no scientific control, there is no scientific management.

- (B) In what fields of technologies of the mining and manufacturing industries in Japan can their backwardness be especially perceived?

^{Weakness} ~~Weakness~~ is salient in ^m ~~m~~aterials, after all.

The ^{development} ~~development~~ of machinery is a prerequisite to the modernization of industries. The bad quality of raw materials have served as a stumbling block to the development of the machine industry in this country. For example, the bad quality of steel which was a cause of the bad welding capacity and of hindering to do deep drawing has played a great part in lowering the performance capacity of the home-made automobiles; the improper quality of materials used in chemical machinery has aggravated the quality of caustic soda; the difference in quality between ^{silicon} ~~silicon~~ steel plates of Japan and the United States made has hindered the manufacture of electric power generators of big

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capacity on the part of Japan; the bad quality of cast iron ~~castings~~ has been responsible for the every shortcoming found in machinery made in this country.

However, the problem of the bad quality of materials may be, when traced back, attributed to the fact that the natural resources in Japan are limited. In many cases it is almost impossible to expect the products of ~~equal~~ ^e products of equal quality from the iron and steel industry which was compelled to use too many different kinds of iron ores and coal due to the reliance upon the raw materials abroad. Rather, the Japan's technologies which enable to operate the blast furnaces by disposing of ~~the~~ iron ores with various grades and applauded as special technologies which no other countries can attain.

Next will come the problem of disparity between technologies of welding in two countries.

The Japan's technologies of shipbuilding attained the highest level of the world in the past, but her technologies are, during the blank period during and after the war, said to have lagged far behind the level of the United States, finally creating a distance corresponding to some 30 years between the technologies of these two countries. This can be explained in the fact that the amazing development in the welding technologies in the United States succeeded in constructing an all-welded ship which led to establish the ship's assembly system on the mass production basis which by that time was considered to be impossible by the method of riveting. With regard to quality of welding rods and their manufacturing method, there also exists a marked disparity between those two countries. We ~~may~~ ^{may} well conclude that the development of the welding technologies is, along with the improvement in quality of the materials, one of the most important problems to be imposed upon the machine industry in Japan.

Thirdly, backwardness in both synthetic resin and synthetic textiles ^{iles} industries must be noticed.

The synthetic resin industry which attend a remarkable progress during the past ~~ten~~ ^{ten} years in countries centering on the United States is a creation of an entirely new material with wider usages, marking an ^e epoch of the synthetic resin stepping further from the epoch of the iron age through that of the light metal. In this country, however, the amount of output of a certain ^{new} ~~new~~ kinds of synthetic plastics of vinyl chloride and others is extremely small and much is left to be improved from the technological point of view in the raw materials as well as in the plastic materials.

The synthetic textiles in this country have, in spite of the much publicity as a new look in these lines of products, many points to be technologically solved, therefore, together with the problems of interweaving and of dyestuffs, the disparity in technologies between the United States and Japan is apparently too big.

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Besides the above, the backwardness of the Japan's technologies in every field of industry especially represented by the mechanization² of coal mines, oil refining, stamp forging, the adoption of the alternating-current calibrating boards, strong artificial silk for the manufacture of tires and cords, the automatization in the process of manufacturing cement, etc. can remarkably be witnessed.

(c) Then let us view from the standpoint of the balance in technologies between the respective industries.

The technologies of the electric power industry in this country reached the world level in early days due^e to the economical advantage of that industry, but technologies of the civil engineering works and of the machinery manufacture indis^{pensable} for the construction of electric power generation plants cannot always be said as being developed in parallel with the technologies of the electric power industry. The electric machinery do not make an exception to the low performance capacity resulting from the backwardness in the insulating materials.

In such composite industries as shipbuilding and automobile, the technologies between the above and the relevant industry are specially closely related. However noted to ~~the world~~ the world the study of ship form if the auxiliary machines manufactured outside the yards as well as the shipbottom paints are of inferior quality, it is impossible^m to improve the shipbuilding technologies after all. If the raw materials are of inferior quality, the accuracy of machine tools is not reliable, tires wear and tear very rapidly, how can the performance capacity of Japan-made automobiles be advanced?

In the spinning industry which has beenⁿ one of the leading industries in this country, the backwardness is conspicuous in the technologies of machinery industry and in those concerned with the chemical industry such as dyestuffs and caustic soda and others, serving to lose entirely the good reputation of the past.

As is clearly known in the above examples, Japan's technologies are, unlike those in the United States and in Germany of the past which are and where on the equal level of development maintaining an equilibrium^{bricum} between the respective branches of technologies, not proportionally balanced but are composed in one part of branches at the world level and in the other part of branches disproportionately lagging behind in development, thus forming a limping character of Japan's technologies. Especially the existence of an enormous number of the smaller enterprises, and their character of being a handicraft manufacturers, have increased the unbalance between technologies in industries in general. We must not forget the fact that the relatively lower branches of technologies have always served as, the bottleneck in the development of the technological level in Japan.

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Such ~~limping~~ ^{a limping} character of the technologies is aided by the existence of a sectionalism in technologies, helping produce actual harms.

In this country, the classification of scientific researches which formulated only for the convenience of education and study was extended into the production fields, creating a definite sectionalism in all the branches of technologies. For example, in the electric power industry, in spite of the importance of the technologies concerned with machinery and civil engineering works, the technicians on electricity are only well treated, while, on the contrary, in the mining industry, the technicians on metallurgy are well treated and the technicians on electricity and on machinery worse. Such phenomenon not only led naturally to hinder the smooth coordination and cooperation between the relevant branches of the technologies, but also caused to retard the development of technologies in such intermediate fields of products as the chemical machinery as well as the electric materials. Such is found to be one of the biggest shortcomings in technologies over which we must deeply think, now that today the over-all cooperation and coordination have become the most indispensable factor for the development of technologies in order to follow the world technologies which have developed to such a high degree.

(D) Here we should like to refer to the ^historic ^{ct} character of Japan's technologies.

The modern industries in our country achieved a rapid development, as a result of ^{introduction of technologies from the leading nations of} the world. That is to say, we planned to transplant the modern technologies by means of importation of foreign-made machinery, of purchase of foreign patents, of invitation of foreign technicians and of dispatch of Japanese technicians abroad and by copying and improving the technologies with a view to setting to lay a firm foundation for the development of industry. Such principles were equally being observed by the Government and by the private enterprisers except for a short period interrupted by wars. For them the improvement of technologies was a synonym for the import and copying of foreign technologies and, accordingly, no efforts were being exerted toward enhancing the technological level by own capital and creation.

That is what we call the copying character of Japan's technologies and the tendency still remains unchanged.

Taking patent as an example, we find that, although Japan could in the past, be boast of the number of patent applications in one average year being ^{one} of the most among many leading countries of the world, the contents of the inventions were, to our great regret, usually very poor, being composed of the inventions which were but a copy and a ^{follow} of foreign patents and very few of those based upon the

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creation which should become the pioneering factor for the development of technology.

Such a copying character gave rise to the following shortcomings:

The introduction of foreign technologies naturally caused the Japanese technologies to ignore the connection with the conditions of natural resources. We cannot deny the fact that the absorption without criticism of the foreign technologies which came to be developed along with the financial situation of respective home countries forced Japan to neglect to pay any regards to the disadvantages of relying upon the raw materials abroad and the imported parts of machinery, thereby resulting in not only checking the fullest exploitation and utilization of the domestic resources, but also in killing the creative wills of the researchers as well as of the technicians in this country.

Next, the fact that the industries in Japan were started on the basis of the imported machinery from various leading countries in Europe and America was responsible for the marked backwardness in the machinery industry in Japan. This is the greatest weak point in the industrial technologies in Japan. It is without saying that the ammunitions production contributed greatly to the rapid expansion of the machine industry. The importation, however, of the principal machine tools served to enfeeble the foundation of the machine industry, and this backwardness in the machine industry that became the cause of retarding the development of all the branches of industries.

The copying character not only brought about the limping character of the technologies which we have stated above, but also lowered the proper valuation placed by the nation toward technologies of this country. We will touch upon the problem in the following column.

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which invested about 3,000,000 yen as the total expenses for the research on effective burning of low-grade coal was returned by a favorable result in terms of a sum amounting to 14,000,000 yen during only one year. If the use of a catalyst^{ee} which is currently put under study at the Tokyo Industrial Laboratory of the Agency of the Industrial Technology and Science can increase the yield of synthetic ammonia by 50%, the total profit for this industry will amount to an enormous sum of money.

In a nutshell, it is necessary for us to set a proper value on the relationship of the tests and researches with the industries in general of which future development depend all the time upon the results of the former.

If we compare such examples showing that in Japan, the inventions originated by the Japanese where, as a result of being wont to the easiness of relying upon the technologies of foreign countries, used to be ignored by the entrepreneurs^{isers} at home before their proper value was recognized in foreign countries, showing that the practice to pay the proper reward for the technological guidance conducted by a consulting engineer has not yet been established, and showing the malpractice of not leveling sharp social adverse criticism against the infringement of patents with the social position of scientific associations and the advanced understanding of the nation toward the standardization of commodities in the United States, we have but to admit that the systems and the atmosphere in the nation, both of which play an important role in the development of technologies, are still very low on the part of Japan.

(F) Now let us view the present situation of Japan's technologies from the standpoint of practicability.

In post war Japan no technologies which are developed without paying regard to the utilization of the domestic resources can be said to have no practicability. Then, is the utilization of the resources made to the satisfactory degree? No, many unsatisfactory examples also can be cited in connection with that point. For example, the natural gas is still remained unutilized, as it gushes out, at night and the waste gas from the smelting furnaces or from the chemical plants is yet to be utilized further.

On the contrary, the technologies of prior flotation process of mixed graded ores, of low temperature distillation of non-coking coal, of manufacturing "coalite" from Bojun Coal, of substituting Bojun coal for heavy coking coal and of manufacturing

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pulp through sulphate of lime process from indigenous timber as the raw material, can be listed as the original field of which the technologies of Japan can be boast, suggesting the way that they should follow henceforth. Here arises the problem of promoting applied technology. In this country there has hitherto been a tendency of placing more emphasis upon the basic research than upon the applied technology and the practical research was regarded as lower in the scientific value. And the activities of scientific associations were also developed centering mainly on the basic researches. The fact that the necessity of the promotion of the applied technologies and their industrialization was pointed out by the Scientific Advisory to the National Academy of Science of the United States will indicate that the Advisory noticed that such shortcomings in Japan's technologies had retarded the advancement of the technologies.

(G) Lastly, we will pick out several points which are considered as merits in Japan's technologies.

The ability to copy and absorb easily the technologies of other leading countries shows the strong digestive power of our country. The fact that the synthetic ammonia industry in this country employs a method of manufacture originated in Japan in parallel with the methods which were imported from various countries of the world and were digested to fit here serves as an example showing the power upon which we have touched in the above.

The completion of a ship with a single propeller is the shipbuilding industry, various technological results in the electric power industry, the amylo process in the alcohol manufacturing enterprise and many others are the examples of the technologies of Japan which were superior in the past. Of course, the blank period for these several years has come to make us feel that the technologies in Japan have been left undevolved from the world technologies, but the results of the past show that the technological ability of Japan was unusually distinguishing.

We have already stated in (F) how the technologies of this country has attained the original development in connection with the utilization of the ~~poor~~ domestic resources.

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It must be noticed here that here has already appeared a sign of vigorous technological activities in these days. For example, the fact that a number of patent applications attained already the fourth rank in the world in 1947 and that quite many technicians desire to make public the results of their researches every time a meeting of a scientific association or other meeting to make public the results of the researches was held indicate the potential power of the technologies of this country. Especially the fact that this country jumped up to one of the leading penicillin producing countries of the world in output within several years following the surrender is a typical sign of the potential power of Japan's technologies.

For references in judging the general technological level of our country, we have thus attempted an analysis from the seven points of view as shown above.

Following the above, this Report states in details the present situation by industries of technologies of the mining and manufacturing industries in this country in Chapter 3 and clarifies in Chapter 4 the present situation in six matters concerning the tests and researches, patent system, industrial standardization works, scientific associations or societies, technological organizations as the basis for the training of the technologies of the mining and manufacturing industries and finally gives a conclusion as follows:

Conclusion

The Japan's technological level dropped drastically keeping pace with the devastation of equipment resulting from the war. Since then, although the industries as a whole have rehabilitated, there still are several segments of industries which have been forced to remain far below the prewar level.

On the other hand, the world technologies have, especially those of the United States with which we have compared those of Japan, achieved a startling progress since the termination of the war. We have already touched upon in this text the marked disparity in levels between those two countries. Although the lack of materials compelled us to give up to compare with Japan, the technologies in the European countries may have also reached, we believe, the considerable high level.

The main problem does not, however, lie in the present backwardness of the technologies but in the tempo of the development in the future. In view of the past results, we know that the technological ability in Japan was unusually distinguishing.

~~SECRET~~

We do not doubt that, if every one of the nation recognizes properly the Japan's technologies and does not spare to make hearty understanding and cooperation, the technological level in Japan will suddenly start to advance and that the day of the achievement of the coveted objective of economic selfreliance can never be far behind.

Tokyo's A-374,
December 16, 1949.

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5) The engineering consultant has not been properly rewarded in Japan in the past. The emphasis instead has been on basic research rather than applied technology.

6) With a full appreciation of the importance of technological advancement, Japan can perhaps achieve economic self-sufficiency.

"The conclusions presented are in close accord with the findings of Natural Resources Section personnel and the expert consultants who have investigated the Japanese mining industry. According to Grant, it is hoped that the Ministry will implement the policies presented by providing added support to the agencies concerned with mining technology in Japan, such as the Mining Bureau and Coal Production Bureau."

SEBALD

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UNCLASSIFIED

Tokyo's A-395,
December 27, 1949.

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made adequate within a reasonably short time.'

"As a result of the de-allocation action,' he added, 'no commodity will remain under the allocations system unless the removal of distribution controls would cause either a substantial price increase significantly affecting the cost of living or the dissipation to non-essential users of commodities subsidized by the Japanese government or procured with scarce dollars.'

"The de-allocation action has been coordinated with commencement of import trade on a private basis on Jan. 1, and will make possible a considerable simplification of trade procedures. In addition, it is expected further to encourage the restoration of normal competitive pressures needed to rationalize Japan's industry and should facilitate efficient practices by substituting production 'on order' for production 'by program' for numerous manufactures utilizing the de-allocated materials.

"The relaxation of controls is another fruit of the successful implementation of the Economic Stabilization Program and the balanced budget policy by the Japanese people,' Verity concluded. 'As the program progresses they may look forward to further significant decontrols in the months which follow.'"

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