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Japan Report

(FOUO 30/79)

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POLITICAL AND SOCIOLOGICAL

FALL ELECTION: FIERCE FIGHT AMONG CONSERVATIVE CANDIDATES PREDICTED

Tokyo SHUKAN ASAHI in Japanese 7 Sep 79 pp 16-20

[Article by Yuji Katsumata, ASAHI SHIMBUNSHA, Political Office]

[Text] Prime Minister Ohira's administration is going all out to prepare for the general election on 7 October. The general public may not understand the reason for declaring the dissolution and general election, but Ohira and his faction have a clear purpose, which is to increase its strength so as to achieve a decisive victory again in the presidential election of the Liberal Democratic Party [LDP] next year. Understandably, the other factions will wage an all-out struggle to retain their strength. Indications point to a low level election with in-fighting within the conservative camp.

"Presidential election based on factionalism has become a big issue. The number of new candidates desirous of running under the Ohira faction banner is so great that all of them cannot be accepted. A weeding-out program has been established and candidates are being carefully selected, but...", so said Yoshitake Sasaki, a leading member of the Ohira faction and LDP's first deputy secretary general. From his breast pocket, he took out a memo pad that contained the names of the 21 "key candidates" being considered as new candidates. It included their addresses and election campaign office telephone numbers. Small cryptic notes which could not be deciphered were scribbled extensively throughout the pad.

The weeding-out program first considers, as the general political practice, whether a clash exists in an electoral district between an incumbent seeking reelection and a former Diet member who is trying to make a comeback, and secondly, whether the aspirant will support Ohira's reelection in the party's presidential election next year. A victim of this careful screening who was denied endorsement by the Ohira faction is Hakuo Yanagizawa from the Shizuoka prefectural third electoral district. Yanagizawa was a former official of the Finance Ministry and later served as the private secretary of Chief Cabinet Secretary Rokusuke Tanaka, who had encouraged his candidacy, thereby leading everyone to believe that Yanagizawa belonged to the Ohira faction. Yanagizawa himself assumed this. However, hailing from the same electoral district are Atsuro Adachi of the Tanaka

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faction and Kazuo Shioya of the Miki faction. Both men, from different factions, are pro-Ohira. "Yanagizawa cannot be endorsed by the Ohira faction because the two incumbents would be in a pinch," defended Sasaki.

Former Prime Minister Kakuei Tanaka, Prime Minister Ohira's ally, once remarked: "In gaining one ally, if two or three enemies are created in the same electoral district it is a loss."

Tanaka is very sensitive about protecting new candidates of his faction. The same belief is held by Ohira, who is hoping for a stable hold within the party.

On the other hand, the case of Jiro Kawasaki of the Mie Prefecture's first electoral district is considered unusual. Because his father Hideji, who died during his incumbency, was a member of the Nakasone faction, he too was considered to be with Nakasone. This past spring, when Hideji's first memorial service was held at the New Otani Hotel in Tokyo, his presence with the Nakasone faction led others to remark that the occasion was a full-strength attendance of the Nakasone faction.

However, the Sasaki memo notes he is as an Ohira faction member. Sasaki states: "There is a Dietman who serves as his father's successor, and he is slated to move into our camp." In his home district, Kenji Maide, who for 22 years served loyally as the elder Kawasaki's private secretary, managing the affairs of his constituency, remarked: "The move to join the Ohira faction is not final yet." He described the latest developments in the following manner:

"Dietman Hajime Tamura of the Tanaka faction from the neighboring Mie Prefecture second electoral district has been continuously giving his full support. At first, the Nakasone faction made the overture by offering to look after our needs, but Tamura intervened and thwarted the attempt. In the final analysis, it was decided that we remain factionless until the election and then to reconsider when elected. To date, we have not received any financial support from Zenko Suzuki, one of the top officials of the Ohira faction, and Tamura has not given instruction that we should join the Ohira faction."

The Ohira faction does not need to deal directly with Kawasaki, for it appears that through the already firmly established relationship existing with Tamura, the promising young man is already in their clutch. In any election, the faction of the incumbent president expands its influence. He controls the party's executive section, which gives official endorsement as LDP member and has large political funds. The Miki and Fukuda cabinets, that followed Tanaka's pay-off scandal, could not establish their own party's executive group; but, upon gaining the presidency, Prime Minister Ohira forcefully overcame the opposition of other factions to name Kuniyoshi Saito as his secretary-general and his confidant, Masayoshi Ito, as chairman of the finance committee which controls the party's funds. All this happened after Tanaka's regime.

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- Tanaka Faction Is Capitalizing on Ohira Faction's Successes

The following can be interpreted as being said out of envy or jealousy. In April of this year, immediately after the consolidated prefectural elections, an LDP Diet legislator is said to have remarked: "The party headquarters collected several billion yen for use in the prefectural elections, yet, half of the sum was stashed away. The general election will be held soon."

Although the election date of 7 October is about to be confirmed, leaders of the Ohira faction are saying, [with tongue in cheek], "Without election funds, how can we dissolve the Diet!" Prime Minister Ohira's predecessor, Takeo Fukuda, called for dissolution and the election, but he could not accomplish his aim [of being elected party president.] One reason for his failure is attributable to the damaging reference to the depletion of party funds made by the then Secretary-General Ohira, who was against dissolution at that time. Ohira, who won the presidency, insisted on forming his own executive group because he was fully aware of the inner workings of the party.

Political commentator Kiyoshi Iijima has said: "The Ohira faction's Kochi Club is comparable to a stock company while the rest of the factions are single proprietorship shops. Since former Prime Minister Hayato Ikeda, personalities have been recruited from the financial world and the mainstream of the Finance Ministry and, even if the head of the state is not Ohira, the organization is designed to draw personalities and money. This arrangement may be weak in a political turmoil, but once the gears of the organization start moving, power emanates."

Closely allied to the Ohira faction, which recruited personalities from the major companies of the financial world since the days of ex-Prime Minister Hayato Ikeda, is the Suehiro Club, led by President Yoshihiro Inayama of the New Japan Steel Corporation. On 18 August of this year the club members gathered at Karuizawa where Prime Minister Ohira was resting. Members golfed at the Dai Asama Country Club, which is owned by the Mitsui conglomerate. At night, non-golfers Mrs Mitsuie Ikeda, widow of ex-Prime Minister Hayato Ikeda, Shigesaburo Maeo, who is supposedly at odds with the prime minister and who was formerly president of the Kochi Club, and others dined together. Naturally, joining them were such personalities from the financial world as: Hideo Edo, chairman of the Board of Mitsui Real Estate Co., Ltd.; Rokuro Ishikawa, president of the Kajima Construction Co., Ltd.; and Masaichi Nishikawa, consultant of Nissho Iwai Co., Ltd., and others.

The fact that new candidates are seeking membership in the Ohira faction is probably because the Tanaka faction has lost the power it once had. An increasing number of new candidates depend on the Tanaka clan for campaign activities but publicly identify themselves with the Ohira faction. Linkage with the LDP president's faction has its advantages,

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and the Ohira political regime might possibly be a long term one. In proclaiming "a new brand of politics," the "Tanaka" faction is not quite appropos. However, the Tanaka faction has the best know-how to run election campaigns and therefore should not be evaded. This is how the new candidates view the situation.

According to Ohira and Tanaka factions, Sadatoshi Kosato of the Kagoshima prefectural second electoral district, Motoji Kondo of the Niigata prefectural first electoral district and Kiyoshi Ozawa of the Tokyo seventh electoral district fall into this category. The matter of their affiliation has already been discussed by the leaders of both factions and they are counted on as "candidates from the joint Ohira-Tanaka factions" or "waist-up Ohira faction" and "waist-down Tanaka faction."

A typical case is Kosuke Hori, son of the late Shigeru Hori, who was formerly the chairman of the House of Representatives. Kosuke Hori is being groomed to be his father's successor from the Saga prefectural district. Supporting Kosuke in his election campaign is his father's close friend, Shin Kanemaru of the Tanaka faction, who singlehandedly took over Kosuke's fund-raising party and sold 3,000 tickets. On the 22d, Kanemaru went with Welfare Minister Ryutaro Hashimoto of the Tanaka faction to Saga Prefecture and at the rally said: "If I cannot get Kosuke elected, then I'd be ashamed to visit Hori's grave. I have my campaigning to do in Yamanashi Prefecture, but I'll be in Saga for 10 days." From the Saga prefectural district, incumbent Kenichiro Otsubo of the Ohira faction will also be campaigning for reelection; but, since the constituencies do not conflict, an understanding was easily reached between the Ohira and Tanaka factions that the Ohira faction will furnish young Hori's campaign funds.

A similar case is that of Motoji Kondo whose office issued this statement: "An understanding has been reached between Kakuei Tanaka and Prime Minister Ohira that Kondo will be identified with the Ohira faction but will be cared for by the Tanaka faction. According to Kondo's office, leaders of the Tanaka faction will participate in the general rally on the 31st and members of the Kochi Club have expressed their availability to assist if necessary."

Thus, there is no conflict. There is hardly any trouble between the Ohira and Tanaka factions concerning new candidates. With the Ohira faction furnishing "hardware," such as funds and campaign preparations, and the Tanaka faction providing "software" by way of overseeing the campaign techniques, the election machinery gears are in mesh and the strength of the main force is progressing steadily.

Kawamoto Faction Accepts All Comers in Order to Expand

By contrast, the Fukuda faction is trying to maintain the status quo while the Nakasone faction is on the defensive.

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Commentator Kiyoshi Iijima states: The Nakasone faction is especially vulnerable to losses. One or two new candidates show promise and two former members of the Diet appear hopeful of making a comeback but, on the other hand, eight or nine incumbents appear vulnerable. In the past two general elections, the Nakasone faction increased their number of new Dietmen and gained momentum, but in this coming election, a slump is anticipated.

Last month, Nakasone himself returned to his constituency, the Gumma Prefecture's third electoral district, for a long stay. This is considered unusual for a leader of a faction. It is said that he even attended small group meetings to devote himself to election activities.

"Although it appears there is no change in his attitude of aspiring to become the head of the next government, it seems that he has lost some of his fervor."

Among the new candidates, Kawasaki, who belonged to the Nakasone faction, has joined the Ohira faction, and problems have been encountered in selecting a successor to former Dietman Taro Otake of the Nakasone faction from the Niigata Prefecture's fourth electoral district. The person selected by the booster club has refused to enter the race and his replacement, Katsuhiko Shirakawa, has opted to join the Ohira faction. The Nakasone faction cannot recover lost ground.

In the midst of the established big factions which are strengthening their positions, Toshio Kawamoto (chairman of the party's Policy Research Committee) of the Miki faction and Ichiro Nakagawa (former minister of agriculture and forestry), who organized the Liberal Reform Associates Club are conspicuous in their activities to establish new power groups. Kawamoto holds one of the three key party posts and, as successor to the Miki faction, shows definite intention to take over after the Ohira regime. Said he determinedly: "As a holder of one of the party's key posts, I will go wherever the party directs. As for the presidential election next year, I cannot comment until the election rules are revised. We of the Miki faction will go all out in seeking the election of the incumbents, the four former legislators making a comeback and the 10 new candidates.

As usual, he is full of enthusiasm and does not speculate. Friends around him report that there is more than meets the eye. Kyoichi Noro, who has been flatly stating that Kawamoto will be the next party president, comments: "Kawamoto, himself, has clearly shown his interest in the positions of party president and prime minister. He shows tremendous interest in the subject of the presidential election and acts upon the matter immediately. As for the coming general election, he is already gambling on the number of gains by the Kawamoto faction."

The strategy of winning 40 seats between the Miki and Kawamoto factions is progressing smoothly and favors have been done for the new candidates,

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ahead of the incumbents. Actually, he has been in charge of Miki faction funds, but outwardly he has bypassed Miki and leaders of the same faction. According to a Miki faction Dietman, since serving as chairman of the party's Policy Research Committee, Kawamoto's name has surfaced as the fund dispenser.

Among the new candidates claimed by Kawamoto faction as belonging to his faction are some being wooed by the Ohira and Fukuda factions. These new candidates are noncommittal about their factional affiliations and place priority on organizing their own booster clubs. Candidate Iwao Kudo, former mayor of Morioka city from the Iwate prefectural first electoral district, has linked himself with several factions. Noro has remarked that any new candidate is welcomed to join their forces and efforts are being exerted to elect those who favor the Kawamoto faction.

In the presidential election held last year, second to Kawamoto's constituency of Hyogo Prefecture was Nagasaki Prefecture, and Kawamoto has entered new candidates in the first and second electoral districts. In the second district, Kuro Matsuda of the Kawamoto faction caused an uproar by almost defeating two incumbent cabinet members, Jinkichi Shirahama, minister of posts and telecommunications, and Iwazo Kaneko, director of the science and technology agency.

Kawamoto's movements indicate his involvement with the presidential election for, along with supporting candidates of his faction, he has been attending alumni gatherings throughout Japan of his alma mater, Nippon University, as well as Nippon University alumni groups which are being organized. He has already attended alumni meetings in Tokyo, Osaka, Fukuoka and Fukushima. Because his force is weak in the rural areas, it appears that his strategy is to make up for the low party membership of the Miki faction through the organization of Nippon University graduates.

It is also rumored that a powerful member of the financial world, active since the Ikeda regime, is making overtures to ally Ohira with Kawamoto, and Kawamoto's activities are considered uncanny.

Nakagawa is said to be admired by the new candidates also for his energetic leadership on election techniques and his quick decisions regarding fund disbursement.

Designs of the Big Five Factions and the Nakagawa Faction

The case of Tooru Nogami, who is running in the Toyama prefectural first electoral district in which the LDP wants to sweep all three seats, is given. He had served two terms in the prefectural assembly and, although he was closely affiliated with Noboru Takeshita of the Tanaka faction, he joined the Nakagawa branch of the Fukuda faction. Said Nogami: "If there were a Takeshita faction, I would have joined it. The public is highly allergic to Tanaka faction's "Lockheed" incident, and my political beliefs also differ from theirs. The Ohira and Nakasone factions already have incumbents running from my electoral district."

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Coolly considered, it would be advantageous for me to follow Takeshita or Shintaro Abe, who will take over the big factions. However, I came to respect Nakagawa for his quick responses to my requests. Upon consulting Nakagawa, he recommended joining the Fukuda faction and even introduced me to Fukuda and Abe."

Nakagawa does not return to his constituency, Hokkaido fifth electoral district, during the entire election period. This is because he is traveling throughout the country to support the 19 incumbents, one former Dietman seeking a comeback, and the more than 10 new candidates of the Liberal Reform Associates Club.

In all likelihood, there will be moves for the formation of a Nakagawa faction after the election. Nakagawa has said that he has no intention of seeking the presidency and prime ministership, and that he seeks the number two ranking post which is the prime mover in politics. There is talk, however, that LDP is moved by Ohira and Fukuda. Abe had to precede Nakagawa as party president. If one does not await his turn and jumps the gun, the debacle that fell on Tanaka, who had bypassed Fukuda, can occur. Because of such talk, there is nothing definite as to when the Nakagawa faction will be formed. Nakagawa would like to have five or six of his new candidates elected and to have a total following of 20 Dietmen. Then even, if he is not referred to as one of the big six factions, at least the public would make reference to a "big five factions plus the Nakagawa faction." In such a manner, his ambitions are being made known. His so-called rivals, Takeshita and Abe, are confined to activities within the Tanaka and Fukuda factions while he (Nakagawa) will be factionless and free to do whatever he pleases.

While the established big factions and the newly rising forces are battling fiercely, the intermediate factions are withering away. This is inevitable with the demise of the faction heads, such as Mikio Mizuta and Naka Funada and the retirement of Etsusaburo Shiina. Movements by the incumbents are taking place, however, such as Shun Hasegawa of the former Ishii faction, both Shiro Hasegawa and Yuzo Matsuzawa of the Shiina faction joining Nakagawa's Liberal Reform Associates Club; and Mitsuo Horiuchi of the Shiina faction affiliating with the Ohira faction. Formerly with the intermediate factions and aspiring for a comeback are Munemori Akagi with the Miki faction, Shinjiro Yamamura with the Tanaka faction and Kiyoshi Mizuno with the Ohira faction.

Caught in the great change within the LDP, whose president is selected essentially through the election by the 1.5 million party members and friends, the intermediate factions which hitherto had the swinging votes which could sway the elections, have now fallen to an insignificant role. Among the mainstay Dietmen with cabinet aspirations, who had been affiliated with intermediate factions, are those who connive first to offer concentrated support to certain types of factionless new candidates and then, with the successfully elected new candidates, join the Ohira faction with cabinet appointments as their bargaining reward.

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The Ohira government has been boasting of gaining a stable majority of 271 seats, but the truth is that a fierce factional struggle is taking place within the LDP. This conservative party struggle is directly related to the election of the LDP president at the end of next year.

'NEW' LDP Candidates

| | | |
|--|----|-----------|
| Ohira faction | 20 | (Excerpt) |
| Fukuda faction | 11 | |
| Tanaka faction | 6 | |
| Nakasone faction | 7 | |
| Miki faction | 7 | |
| Nakagawa faction | 6 | |
| Others: | | |
| Leaning toward Ohira faction | 2 | |
| Fukuda faction | 2 | |
| Tanaka faction | 2 | |
| Miki faction | 2 | |
| Ohira, Fukuda, Miki factions | 1 | |
| Independents (no faction) | 22 | |
| Total number of new candidates | 88 | |

(Research done by Kiyoshi Iijima, critic on political affairs)

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ECONOMIC

NTT BECOMES TARGET OF U.S.-JAPAN ELECTRONIC TECHNOLOGY WAR

Tokyo CHUO KORON in Japanese Jul 79 pp 251-265.

[Article by Critic Masaomi Ohmae]

[Excerpt] Behind the negotiations on the opening of NTT, there lurks a violent battle centering around electronics technology that will decide the supreme ruler of the information era.

Senator Frank Church set out a solution that strives for a "renaissance" of technology. As chairman of the prestigious Senate Foreign Relations Committee, he was compelled to wrestle first with American's regeneration rather than with strategies toward the USSR. He calls for striving for a technology revival, raising productivity, regaining international competitive power, increasing exports, and overcoming inflation by means of expansion of research and development and plant and equipment investments.

The technology debate has suddenly become lively. "These days, 35mm cameras and color televisions are not being produced in the United States. Our country is a world leader only in computers, aerospace and advanced electronics. Japan is making extensive investments to overtake the United States even in computers." (Ms Martha Frangiadachs of the U.S. Machine Industry Association). "Japan is succeeding in computers, previously dominated by the United States, and presently, they are going for the same in aircraft." (Robert Strauss, special trade representative).

THE NEW YORK TIMES, in an editorial, also deplored that the United States is falling behind the remarkable technology development of Japan and Western Europe and pointed out that, although the number of patents U.S. firms received from the U.S. government from 1971 to 1976 decreased 20 percent, the number of patents foreign firms received from the United States increased 25 percent during that time.

There is an unbelievable uneasiness in the United States which once boasted the world's most advanced technology in all fields and defeated Japan and Germany in World War II and became the post-war world leader thanks to it.

Now, when one walks the streets of the United States, one cannot help but notice that the best cameras the people have are almost all Japanese made,

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and that low fuel cost Japanese cars have increased. Not only that, Japanese made products have increased even in the advanced electronics field of electrical communications equipment, in which the United States is believed to be the leader. The export volume of telephones, radios, televisions, cameras and the like to North America will reach 67.1 billion yen in JFY 1979.

In particular, it was NEC's successful bid for SBS (Satellite Business System) earth stations that opened the eyes of America's business circles. The SBS is a communications network IBM and others had planned and is a system whereby the home office of a firm transmits data via satellite to its branch offices throughout the country. The branch office receives the signal via a small earth station set up in a parking lot or the like. Hughes Aircraft is making the satellites; NEC fought six U.S. manufacturers in the bidding for the earth stations. In the end, both NEC and Hughes were successful in their bids. Each unit costs more than 500,000 dollars; each company received an order for 100 units for the first phase.

America's electronics industry circles were surprised at NEC's successful bid, especially since SBS received attention as the enterprise in which IBM, the computer company, was taking a hand in communications. And in particular, the low cost could not be believed. Perhaps expressing the industry's mind, AEI (American Electronics Industry Association) Vice-chairman Sodolsky, on a visit to Japan, ask an NTT executive, "Isn't this dumping? Wasn't NEC able to lower the price for export because it is supplying NTT with earth stations?"

Unfortunately, since Japan has no communication satellites, there is no demand for earth stations. NTT management dismissed the suspicion with a laugh. The United States is a one-man show in satellites. On its own, NEC started early on development of earth stations, and has already risen to being the top manufacturer in the world. An SBS executive who visited Japan said, in connection with NEC orders, "the Japanese technological genius is well known world-wide" and "I know full well the high level of Japan's technology and the strength of its competitive power from the aspect of cost." Given the explanation by this concerned party, perhaps Japanese manufacturers have strength in these areas.

But, it must be an uneasy thing for the United States is trying to solve its economic distress by a technology revival, for Japan to have started a "counter-landing" in its own bailiwick. The United States has to make a "second landing" in Japan.

If a "second landing" in Japan is difficult or impossible, it would not be strange if a cry to shut out Japanese products is raised, as it was with the northern Minnesota steel workers, as another solution. That cry has become extraordinarily loud because next year's presidential election has drawn nearer.

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How Did NTT Enter the Picture

In Washington, SANKEI correspondent Abe warned, "Watch out for Connally." Afterwards, correspondent Abe sent a spine-chilling report. Connally, who seeks nomination as the Republican Party's presidential candidate, was giving anti-Japan speeches in various parts of the country and evoking a popular response. At a Washington gathering, he violently attacked Japan's trade policies, saying that Japanese products ought to be shut out from the United States if Japan does not open its market. At that time, "when a Japanese TV cameraman engaged in covering events in the assembly hall circled around behind Connally to bring the audience into camera view, the assembly hall was enveloped in loud laughter. It appeared to the Americans that the Japanese cameraman was trying to attack Connally from the rear as he was making his anti-Japan charges."

"At that time, Mr Connally, turning to the rear, said caustically, 'You appeared just at the right time. If you don't understand from my saying it once, I'll say it many times,' and there was loud applause again in the assembly hall." (SANKEI, 26 April)

Changes such as the above in America are the background to Strauss's strong demands placed on Japan in the U.S.-Japan negotiations on opening NTT, just like Cordell Hall's demands before Pearl Harbor. In addition to the general tendency to take only a short-sighted look at inflation, Strauss himself was too eager for success.

Perhaps the real reasons why he high-handedly placed such demands on Japan will not be made public except in the life to come, but there is no doubt that he was dug into it by Connally, who is critical of the Carter administration's timidity toward Japan. Both are natives of Texas and former attorneys. Texans are hard-nosed people and are famous for their love of a political fight. And on those points, they are both second to none. Moreover, Connally changed from the Democratic Party to the Republican Party, held authority as the Secretary of the Treasury in the Nixon administration.

On the other hand, after the 1968 presidential election, Strauss was called to Washington from Texas in order to rebuild the Democratic Party which had fallen to pieces; he did all he could to rebuild the Democratic Party under a Republican administration, first as the person in charge of finance of the National Committee and later as Chairman of the National Committee, its highest executive officer. He cannot forgive Connally for betraying the party, and it is even more difficult for him because Connally is basking in the limelight as a favorite candidate of the Republican Party.

Perhaps because of a great shortage of talented men in the Carter administration, Strauss has been given one difficult job after another. His greatest duty will be to get President Carter reelected next year. In order to do that, he had to have the Tokyo Round, for which he was responsible at that time, ratified; and, in order to do that, he had to obtain the greatest concessions from Japan and at the same time outwit Connally.

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There is no doubt that Strauss was backed by such influential manufacturers as IBM and ITT. Although the developing countries want electrical communications networks, they lack the ability to pay. Because matters are not going well between the United States and USSR, the eastern European market has fallen flat. Looking at the domestic situation, the Japanese were playing havoc there too. So naturally, they turned to Japan.

The annual market of NTT, which has a monopoly on Japan's communications network, is 3 billion dollars. That is almost entirely domestic orders. Foreigners have not tried to sell to it in 20 years, but if this lucrative market should open at this point in time, and if foreign manufacturers are allowed to come in, this would be a greater opportunity than could be asked for. A characteristic of this kind of equipment is that, once deliveries are made, it is difficult to end a contract. So, U.S. manufacturers put ideas into Strauss and others to secure a much better deal. Finally, there were manufacturers who pleaded that it be opened to digital exchanges, the most crucial portion.

But it cannot be thought that IBM and the like plotted to make NTT the target from the very beginning. First, it was decided in the Tokyo Round negotiations that "no distinction will be made between one's own country and foreign countries in the products each country's government purchases." The United States said it would open government procurements in an amount of 30 billion dollars, but, afterwards, that was lowered to 12 billion dollars through excluding the military, NASA and such. The United States urged Japan to open up 7-8 billion dollars.

However, Japan has only about 3 billion dollars controlled by the central government. The United States said that was quite out of the question and demanded the opening of 141 quasigovernment institutions, including public corporations and the like. At that time, the name of NTT, which has a procurement budget of 3 billion dollars, first came out.

It seemed that the United States did not understand NTT's character very well. AT&T (American Telephone and Telegraph), the monopolistic telephone company, constitutes more than 80 percent of the market with the rest shared by more than a thousand companies, but all are private enterprises. America and Canada are the only countries in the world where private enterprise handles the telephone; in other countries, it is publicly operated.

Therefore, there was no one in U.S. government circles experienced in the telephone business. When a conference of experts from the United States and Japan opened in Tokyo regarding the opening of NTT, the United States was forced to dispatch as its STR (Special Trade Representatives) not government officials but executives from business circles (GTE, Western Electric, Northern Telecommunication, Rockwell International and the like).

Formal negotiations are carried out by government representatives from the two countries, so this was a strange conference. In the past, there were arms reduction negotiations between Japan, the United States and England,

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which made decisions on possession of warships. Although experts like Isoraku Yamamoto were present as participants at that time, there was no participation by telecommunications technology experts from both parties in the NTT negotiations. Then, in Washington, there were such episodes as when the other party brought up the name of a piece of machinery, it was unintelligible to the Japanese, and even though they made inquiries to the home office, no one knew.

During that time, the full story of NTT was made public to both Japan and the United States--that it was unexpectedly large and its technology level was the world's highest. The NTT negotiations were completely different in character than the regulations on the volume of textiles or salmon and trout.

Nippon Telegraph and Telephone Public Corporation

Nippon Telegraph and Telephone Public Corporation is normally shortened to Denden Kosha or Denden, but nowadays the English name most familiar to U.S. authorities is NTT. It goes without saying that it is the publicly operated telecommunications business that handles telephones, telegraphs and also data communication, and it is the most successful among post-war Japan's "successful."

There are 320,000 employees. This does not match Japan National Railways' 420,000 employees, but it far exceeds the 230,000 in the Self-Defense Forces or the 200,000 in the National Police Agency; and Nippon Steel Corporation, Japan's largest private corporation, is no match for it with 70,000 employees.

Assets are 7,722.7 billion yen. That is more than double the 3,455.3 billion yen of Nippon Steel Corporation. JFY 1977 budget was 3,403.5 billion yen. Since the Self Defense Forces Budget is 2,904.5 billion yen, NTT's annual budget exceeds national defense expenditures. Annual sales are 3.55 trillion yen. It is one and a half times the 2,384.6 billion yen of Japan National Railways and the 2,326.1 billion yen of Nippon Steel Corporation. Moreover, Japan National Railways continues to have a deficit, as is commonly known. In JFY 1977, it had a deficit of 833.9 billion yen; but NTT made a 438.9 billion yen profit. Even Nippon Steel Corporation's profit was only 7.2 billion yen.

The amount of plant and equipment investments was 1.6 trillion yen. There is no other enterprise where such an investment is made by one company. Furthermore, it has scheduled an enormous investment of 9 trillion yen in its 5-year plan beginning in JFY 1978. Its annual procurement volume is 600 billion yen. There is no other enterprise that purchases as much.

NTT's employees number 320,000, but there are 300 subcontractor manufacturers surrounding it. When the major manufacturers' subcontracts are added in, the number of allied industries' employees reaches 600,000. So to speak, nearly 1 million people are making their living off NTT.

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NTT rises above the common in its personnel and financial scale and in its superior operations situation. It is certainly Japan's greatest corporation. Furthermore, NTT raised Japan, ruined in the war, up to the world's second place "telephone society." The world's first is the United States, of course. It has nearly half of the world's 155 million telephones. But Japan increased nearly 100 times from 540,000 at the time of defeat to 53 million, and has completed a system of direct dial throughout the country.

Concerning the quality of service, Japan's trouble rate is the world's lowest. Although the monthly trouble rate per 100 telephones is 2.6 in the United States and 4.2 in England, it is only 0.6 in Japan. There is telephone trouble only once every 13 years per telephone user.

Until the question of opening NTT became the focal point of the U.S.-Japan negotiations, concerned parties in both Japan and the United States had not noticed how huge NTT was. Even we hardly knew it. That was to be expected. That is because NTT has no "public image." Even though a similar public service, newspapers are delivered daily by a person, and someone comes for the fee at the end of the month. Gas and electric meters may be outside, but, even so, a meterman comes to check them.

However, all telephone bills are recorded automatically at the telephone office. Charges are drawn against a bank. All we get is a piece of paper that records the total amount of the charges. We are not informed of the details of how much the cost is because of when and where the call was placed. If we are late on paying the charges, a call demanding payment will come; and, if one does not pay, a public employee will not come to seize the telephone; it will be disconnected automatically.

Since telephone trouble seldom occurs, repairmen also do not come. The only time one has contact with an employee is when the operator gives a number, and this is only a voice, no face is shown. No matter how much we use the telephone, we know only a cold telephone. There is almost no human contact with NTT.

The reason there is no human contact is because the telephone is not a human, but rather an electric signal. Electricity moves at the speed of seven and a half revolutions around the earth per second, and is unevenly distributed in our environment, but it cannot be seen. It cannot be seen, but when someone dials a telephone, the desired number is selected almost in a split second from 53 million numbers, the charge is computed, practically anything and everything is done. The 320,000 employees are just too many.

There are not telephone strikes since the labor union cannot touch the machines. Because Japan National Railways does go on strike, both those who use Japan National Railways and those who do not cannot help but be aware of Japan National Railways' existence. But since there is no telephone strike, the existence of NTT is more and more forgotten.

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Also, the Japan National Railways' "Shinkansen" is the quintessence of our country's railroading skills, but it has brought about noise pollution and radio interference and it runs only between Tokyo and Hakata. Because of opposition movements by residents, it is not easy nowadays for electric power companies to build power plants, and all the more so if there are nuclear powered.

On the other hand, instead of being opposed, telephone installation is welcomed everywhere. Cities, towns and villages cooperate in the opening of a telephone office because they can have telephones installed. No matter where, the "unsociable" telephone office building stands in the best part of the business section. That is because the telephone is a clean electricity that does not bring pollution (except harassment). Thus, before one was aware of it, the entire country was connected with direct dial telephones which must be called the "shinkansen" of electricity.

But, since the existence of an organization becomes known only through negative news in this modern mass communication society, almost no one realized that NTT was so large and so prosperous.

NTT's Technology Development

It is all the more strange that it reached this technology level. After the defeat, when Japan fell to being the "fourth rate power" MacArthur called it, Japan squandered its meager foreign reserves, on par with an underdeveloped country, in its telephone enterprise, and, along with bringing in microwave equipment and exchanges from England and West Germany, it continued to make visits to its mentor Bell Laboratories of America's AT&T.

But that was not in order to become a "telephone colony" of the advanced nations, but rather, in order to develop its own technology by using advanced technology as the stimulus material. Making their motto, "Technology is power," they put about 2 percent of the annual budget into research and development expenditures. Top engineers were given special laboratories named after themselves, and efforts were made to catch up with and surpass the United States and Europe.

According to what NTT's engineers proudly state, the result was that Japan's technology became equal to that of Western Europe in the first half of the 1960's, and reached the same level as the United States about 1970. It is equal with the United States in switching equipment and has outdistanced the United States in transmission equipment. As for microwave analog, although 1,700 circuits can be handled per wave in the United States, 3,600 can now be handled in Japan.

In digital transmission technology, although it is 267 megabits in the United States, it is 400 megabits in Japan. Microwave was 10 years behind the United States, but Japan caught up about 1965, and, having taken the

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world lead in practical application, it has now outdistanced the United States. The aforementioned NEC earth stations are based on microwave technology development.

Somehow it seems that a distinctive feature of Japan is to make prompt practical application of an original idea from elsewhere. An example of that can be seen when one visits NTT's spectacular electrical communication laboratory at Musashino inside Tokyo. The world's largest laboratory is AT&T's Bell Laboratories with 17,000 employees, but Japan is second with 3,300 employees in the three laboratories of Musashino-shi, Yokosuka-shi and Tokai-mura in Ibaraki Prefecture.

There is an LSI design room in the Musashino Laboratory. The LSI researched there have been put to practical use; calculators as thin as a card inun-date the streets and The Invaders [game] is now enjoyed.

There is a magnetic bubble memory device. This is something the Bell Laboratories conceived but NTT's laboratories made prompt practical application of it and surprised Bell Laboratories personnel who came to visit.

It is the same with optical fiber communication. This is a method of sending a signal by passing optical energy, changed from electricity, via glass fibers as thin as 150 microns in diameter. This was also conceived first by the United States, but now Japan has advanced further and has already succeeded in a 20 kilometer field test. A test for practical use is expected 2 to 3 years from now. Likewise, the visiting Bell Laboratories staff looked on with envy.

Well then, in which field is Japan behind the United States? NTT's engineers candidly admit it is in large-scale computers, software, communications satellites and solar cells. Of these, communications satellites and solar cells are not needed for the present, but the problem for the future is computers which will make up the nucleus of telecommunications. This is the very field the United States demanded be newly opened at the last moment in the U.S.-Japan commercial trade negotiations in the spring of this year, and that Japan flatly refused.

Well, what is it that brought NTT's level of technology to the point of being equal with the United States in some areas and surpassing the United States in other areas?

From my point of view, perhaps one thing was a burning conviction on trying to establish "communications sovereignty." Until World War II, the world's telecommunications technology was controlled by the United States and Europe. Prior to the war, Japan's submarine cable was controlled by the Danish company, Great Northern, and as for the telephone, there was nothing to do but introduce the machines from Europe and the United States. But the telephone and telegraph are the nerve center of the nation. There cannot be any real independence and security for a country so long as it depends on foreign countries in this. This belief can be clearly gathered

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from the words of the NTT engineers with whom I have spoken. Unmistakably, that was one of the motivations that thrust NTT's technology to the world's highest level.

Next, there is perfectionism which aims at perfection at all costs. There is a special room for carrying out LSI durability tests at the Musashino Laboratory. Here, they put 10,000 LSI into a refrigerator-like box, turn on the electric current and test for trouble for a period of one year. It is said that a durability test on submarine cables continues for 2 years. NTT's perfectionism makes it try to lower the trouble level to the lowest degree.

The previously mentioned optical fiber is a delicate fiber extruded from a mass of glass as the basic material. The laboratory is also making the basic material. In a word, the laboratory has become a glass manufacturing factory and will not entrust it to subcontracts. This brings to mind that the Japanese navy consistently built its ships, such as the Musashi and Yamato, at its own naval shipyards.

Perfectionism affects the subcontract manufacturers. NTT makes an inspection visit to its subcontract factories at the time it places orders, and makes a close inspection. For example, when it orders polyethylene wrapped wires, it specifies even the raw materials of the polyethylene. It has a reputation throughout the world for such strictness. NTT officials boast that the quality of telephone service is guaranteed to be the world's most trouble-free on account of this kind of strictness.

Well, this kind of perfectionism uses only specific manufacturers--a manufacturer who meets NTT's strict requirements has a superior technology, works together actively, promotes mutual understanding, embraces their mission and has a sense of being a community bound by common fate. For key products, the manufacturers who possess such qualifications are limited, of course. They are Fujitsu, Ltd., NEC, Hitachi, Ltd., and Oki Electric Industry Co., Ltd. It is absurd to give an order by means of competitive bids to a subcontractor of dubious origin.

A manufacturer has to be designated. So, NTT gives the know-how developed in the laboratory to favorite manufacturers, and nurtures the manufacturer along with letting it make the product. Also, it lets special manufacturers participate in the development from the beginning stages. On account of that, the manufacturer acquires valuable know-how. For the manufacturer, the value of the know-how gained from joint development is appreciated more than the money it receives.

Naturally, NTT and these special manufacturers form one family. NTT guarantees them work, and, together with rendering devoted service to NTT by supplying excellent products, they guarantee the livelihood of NTT's employees by accepting NTT's retirees as directors. It is called the "Denden Family," and it forms a huge mutual support structure seldom seen even in Japan.

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When the family is included, the number of employees would probably reach the magnitude of 5 million.

This mutual support structure has expanded to include politicians connected with NTT and a large number of the members of the Liberal Democratic Party's communication committee is a part of it. Even in the Japan Socialist Party, a seven member committee was set up and, as seen even in the recent Japan-U.S. negotiations, they conducted lobbying activities on behalf of NTT.

The fact that NTT raised Japan to be the world's number two telephone society and to have the world's highest technology in specific fields is precisely nothing less than the maximum demonstration of the merits of this cliquish mutual support structure.

Not only that, but the manufacturers belonging to the NTT family put to practical use the know-how obtained from their work for NTT in export commodities, and successively advanced into foreign markets. The export volume of Japan's telecommunications equipment has increased every year--in 1975, 145.7 billion yen; in 1976, 163.9 billion yen; in 1977, 166.7 billion yen; and in 1978, 202.4 billion yen. This was almost entirely from family members, with the majority being from Fujitsu, Ltd., Hitachi, Ltd., and Oki Electric Industry Company, Ltd.

That is to say, NTT reared not only a communications industry within the country, but also an export industry by means of its cliquish structure. It was mentioned before than when NEC made its successful bid on the earth station in the United States, U.S. businessmen argued, "Isn't this dumping from NTT's supplies?" Even though it is not dumping, NEC was able to develop and original technology and be victorious over companies in the United States, the home of this technology, precisely because it (NEC) was tenderly nurtured by NTT. It follows from the foregoing that, for the U.S. manufacturers, the ringleader of the intrusion into the U.S. market was not individual Japanese manufacturers, but had to be NTT.

The Focus Is Electronics

It is not strange that in the course of U.S.-Japan negotiations, when the United States discovered the realities of this "faceless" giant, NTT, it became convinced that this is a market that had to be opened. First, NTT, which had built a communications technology empire through its excessively Japanese family system, is a symbol of Japan's closed market.

Secondly, even though the United States were to get all of NTT's procurement orders, at 3 billion dollars, it cannot settle the 11.6 billion dollar deficit with Japan. But, as Strauss said, "it is quality rather than quantity." What the United States is trying to sell to NTT is not agricultural products, such as oranges or beef, but the avant-garde technology of advanced electronics, in which they believe themselves to be the world's leaders.

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The "Jones Report" set forth very clearly the U.S. posture at this stage.

NTT insists there is nothing it should purchase from the United States. But that same report counterargued that, in the opinion of "experts in general," the "U.S. made equipment is superior from the standpoint of technology and is competitive from the standpoint of price." ("Jones Report," Highlife Publishers)

It is reported that the U.S. manufacturers want to be allowed participation in NTT's development in the early stages, the same as Fujitsu and NEC. If there is cooperative development, they can gain a fair share of NTT's communications network. It will take considerable time to participate in development, but it will be profitable because, in several years, they will be able to have their expensive products purchased.

In short, the U.S. manufacturers want to be allowed entry into the NTT family circle. This was a dilemma for NTT. Because, up until now, they have been quite comfortable working just within the family. They do not want to use anyone outside the family, even Japanese manufacturers such as Matsushita Electrical Industrial Co., Ltd. They want to use the Americans even less.

If "strangers" come in, they cannot attain the perfectionism that guaranteed the quality of the product and service. Moreover, the price system would have to crumble due to competitive bids, and, besides that, various established systems would fall into disorder. That would be intolerable for the family that has been allowed to "grow beautiful large flowers inside its 'hothouse.'"

But that does not hold true for the Americans, with an "uberzeugungsverbrechen" in the philosophy of a free market, comprised entirely of "strangers" and in which the person who excels in free competition wins. It is argued that if goods are supplied according to specification, NTT's communication network should function perfectly. If the goods are cheaper and superior to Japanese products, NTT should gain that much more profit.

Japan counterargued that the U.S. telephone market also is not open to foreign countries. AT&T, which holds 80 percent of the U.S. telephone market, has its 100 percent financed subsidiary, Western Electric, and orders almost everything from it. They open the door to foreign countries in principle, but actually, foreign countries cannot participate. Moreover, the U.S. military, FBI, CIA, Department of State and other government agencies each has its communication network, but these are not open.

Perhaps the United States would answer thus. If one talks about opening government procurement, the United States has offered more than enough. Also, AT&T is a private agency. Moreover, AT&T has recently decreased its orders to Western Electric from the previous 90 percent level to a 70 percent level. And the government is following a policy of eliminating AT&T's monopoly.

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Japan stated that except for undeveloped countries, there is no example of an advanced country approving a foreign country's participation in the heart of a national telecommunications network. In the Tokyo Round, EC did not add the key parts of their telecommunications to the opening of government procurement."

The United States replied: "The imbalance between the United States and Japan in the balance of payments is extraordinary. Moreover, the United States has entered the private markets of the advanced nations, but has not entered Japan's. Haven't Japan's telecommunications manufacturers sold several million dollars to the United States?" Regardless of whether these kinds of questions and answers were exchanged during diplomatic negotiations, Japan made concession upon concession in the course of the negotiations, and finally gave in to the extent of promising to open up the key parts of carrier equipment, microwave equipment, and coaxial cables. But, because the United States demanded a further opening of more key items, that is, computer related items, Japan closed the negotiations without having given that away.

However, the real substance of the problem is difficult to understand when one gets into the details of the negotiations. The "Jones Report" has shown the real substance perfectly.

According to the report, the communications related field is "one of the industries of the future." The reason is that this field is a "high value-added industry of the future." Until now it was thought that the United States, as a high level technology and capital intensive nation, is supposed to lead from the aspect of new technology development, and other nations should adopt more labor intensive and lower technology intensive industry."

However, according to the "Jones Report," Japan has tried to seize the "leadership" in this field also. The "Jones Report" indignantly asked, "What kind of products can the United States make for export" if Japan gains leadership in this technology field through subsidy and restrictive trade practices.

It seems that the United States is asking Japan to get out of the advanced electronics field, such as telecommunications equipment. The reason is that this is America's domain and it seems America can be regenerated only through it.

It goes without saying that Japan cannot get out. There might be some additional political considerations, but Japan also has no way to continue to survive except through high technology. It happened to be revealed in the NTT negotiations that Japan and the United States are destined to have fierce competition in the avant-garde technology field.

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Significance of Telecommunications

Here, we have to make a further inquiry into the significance of telephones and telecommunications. The telephone is not only an instrument for conversation.

After the war, Japan rose to be the world's number two telephone society. This was wholly the result of high level economic growth. However, at the same time, it cannot be overlooked that the telephone markedly accelerated economic growth. On this point, the Electrical Communications Laboratory--it is the only full-scale laboratory in the world researching telephone and telecommunications from the perspective of the humanities--quantitatively grasped the economic usefulness of the telephone. Accordingly, telephone installation and direct dialing markedly raised Japan's productivity.

Nowadays, there is but a feeling that it used to be other than it now is, but there was a time when it took more than half a day to call between Tokyo and Osaka. One could hardly leave his desk while waiting for the telephone. Direct dialing between Tokyo, Nagoya and Osaka came in the fall of 1953, at the time a cease-fire agreement was reached in the Korean War. It was gradual but Japan was heading toward an economic comeback. Soon it entered a period of tremendous high level economic growth. And during that time, while mutually expanding each other, the economy and the telephone grew with increasing speed.

Now the number of telephones in Japan is approximately 53 million. In numbers, that is second in the world; but, in numbers per 100 people, Japan is number 8 with 40.8 telephones. Even here, the United States is first with 71.8, followed by Sweden, Switzerland, Canada, New Zealand, Denmark and Finland.

However, when the number of telephones is looked at from the aspect of land area per unit, Japan has very many. Although the United States has 16.7 telephones per square kilometer, Japan has 135.2.

The aforementioned Electrical Communications Laboratory investigated the correlation between the number of telephones and population density by country. The countries with low population density and advanced telephone (systems) are the United States, Canada and Sweden. These countries have widely scattered homes and the telephone was developed for use in long distance communication. Countries where the population density is low and the telephone is not developed are the developing countries. Countries where the population density is high and the telephone is not developed are the medium developed countries. These include West Germany and France.

However, Japan is the only country in the world where the population density is high and telephones are widespread. Use of the telephone in Japan is definitely not only for long distance communication. Even next door neighbors in a highly crowded neighborhood talk on the telephone.

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It is said that there are about 50 billion telephone calls annually in Japan. In the United States, there are 200 billion. The Japanese use the telephone 1.2 times daily; the Americans use the telephone 2.5 times. However, when looked at as telephone calls per unit area, there are 36,900 telephone calls per square kilometer annually in Japan; and 2,160 in the United States.

When one considers these data, it must be said that Japan is an extremely unique telephone society. In short, when one looks at unit space, there are 10 times more telephone messages flying past each other than in the United States. They constitute a crowded information space. With the United States as the standard, Japan is living in an information space 17 times its land mass.

More than that, the number of telegrams has decreased on account of the spread of telephones, and the number of letters has increased, though slightly. As for the so-called media, the telephone may be making the Japanese communications activity more and more lively.

It is said that now the world's electrical equipment market is expanding at the rate of 7-8 percent per year. This is because the developing nations are introducing communications networks and broadcasting networks before anything else.

However, this is not because the authorities are doing it for communication for the masses, but because a national communication network, in which the central government would draw information from the rank and file and would convey orders to them, is an indispensable instrument for national unity. A new country, which has an unstable political status and has rebellious factions in the provinces, is driven by the necessity of having one.

Even in Japan, the Meiji government, along with opening the country, immediately introduced the telephone; and after having set about installing them between Tokyo and Nagasaki in 1869, complete communication lines were completed from Hokkaido in the north to Kyushu in the south from 1869 to 1873. That was because national unity was being aimed at. In the Seinan War (Satsuma Rebellion) in 1875, the reason government troops gained mastery over the rebel troops was nothing less than that government troops could be quickly dispatched by means of urgent messages sent by telegram from Kumamoto. Likewise, when it was reported an anti-government charged atmosphere existed in Tosa on the island of Shikoku in concert with the Seinan War, the government hurriedly completed the communication lines between Matsuyama and Kochi. ("Nihon Shihonshugi to Denshin denwa sangyo" [Japanese Capitalism and the Telegraph-Telephone Industry] by Tatsuo Takahashi, Misuzu Publishing Center)

Also, around 1882-1883, when there was an argument in the government about the introduction of the telephone and whether it should be privately managed or publicly managed, the Ministry of Industry insisted on public management. The reason was "private telegrams, recognized as a breach of the public

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order or an affront to public morality, can be stopped; also, it is possible to stop private messages in the locality of the lines and restrict discussion in time of disorder. It is the same with the telephone. Naturally a telephone call can be stopped, if set up by the government, and can be strictly controlled; but if privately established, it cannot be taken into custody and will breed abuse." Making the telephone public management was a countermeasure for public order. (Same reference)

Presently, the aim of the developing countries in their eagerness to introduce a telecommunications network, inappropriate to their national strength, from foreign countries is no different than that of Meiji Japan. A country that has difficulty installing a cable buys microwave gear. A country of many islands tries to cover the archipelago by means of a satellite. In the heyday of his power, Shah Pahlavi of Iran ordered not only telephone equipment but also a special electronic monitoring network from the United States. He had many young people trained in technology by having them study abroad. This was in order to get information on rebellion factions within the country. Ironically, his new and powerful electronic monitoring network was powerless against Khomeyni's cassette tapes. The cassette tapes Khomeyni used to record his inflammatory and agitative speeches in Paris were secretly brought into Iran and were listened to in the mosques.

So the advanced nations fight furiously in a battle for orders in trying to sell communication equipment to developing nations. Since the developing countries have almost no engineers nor basic equipment, the manufacturers sell a complete plant, including everything from training of engineers to after-care. Due to this, it amounts to a huge sum of money.

This is a simple profit activity for the manufacturers, but the orders have a diplomatic meaning for the manufacturer's country, because relations with the partner country are deepened on account of it and influence can be exerted. Especially when the partner country is a country having a critical importance from the aspects of resource security and strategy, like the Middle East countries, each country's government gets caught in the battle for orders of communication network equipment.

Thus, whether they like it or not, the manufacturers cannot help but have a political connection. To cite a bad example, ITT, which held the telephone company in Chile, cooperated with the CIA to topple the Allende government and tried to contribute large sums of money to the CIA.

On that point, the government of a country like Japan, which does not have any sense for world strategy, does not support the overseas advances of its communication industry. Moreover, since developing countries purchase communication equipment in combination with weapons imports and military aid, Japan, having decided not to export weapons, is put at a disadvantage.

The direct significance that telecommunications technology has on national security is even greater. The weight of communications on modern warfare

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is always growing greater. First, in order to display a maximum nuclear deterrent, the central government has to control the masses to move as it pleases. On account of that, information has to be sent in real time and therefore, a precise, reliable communications network is indispensable.

The climate of a communications technology war in each of the countries surrounding Japan has worsened. The U.S. Seventh Fleet is deployed from the North Pole to the South Pole. Through the use of satellites, the center can get ahold of the location of the entire fleet. For example, the flagship Oklahoma City in the Pacific and the aircraft carrier Midway at anchor in Singapore can immediately converse by voice. The Soviet navy also used satellites at the time of their special "ocean" maneuvers in the Pacific Ocean. Since the location of a U.S. or Soviet nuclear submarine can be detected by the other when it goes on the air while at sea, the submarine tries to send signals on a mass scale in a short instant. This also demands an extensive transmission technology.

The P3 is an airplane for detecting submarines. An optical fiber like that developed by NTT is used in them. The P3 is like a computer itself; its insides are full of various kinds of sensors. When wired with metallic wiring in the past, each built a magnetic field and caused mutual interference. However when optical fibers are used, no magnetic field is set up nor does mutual interference take place.

Now, when there is an opening of hostilities, large and small missiles would start flying. The weapons from now on are almost all guided weapons. In short, weapons are guided not by voice but by electronic signal. Therefore, the communications equipment is key to a security system, and each country adopts stringent secretive measures. The United States, which permits Japan the licensed production of the P3 and F14, does not allow Japan the licensed production of the communication equipment for these aircraft. Rather, it has decided to bring it in from the United States. It is done this way even with an ally like Japan. Accordingly, Japan also allows its own development to be done by national manufacturers. It is not strange that these are manufacturers fostered by NTT.

Connection of Computers With Communication Lines

Thus, it is understood that the telephone and telecommunications are extraordinarily widespread. Not only that, they will become more and more widespread in the future. The reason is that there is an eagerness to connect communication lines and computers.

Taking the United States as an illustration, the telecommunications industry with an annual turnover of 50 billion dollars and the data processing industry with an annual turnover of 22 billion dollars have had a 15 percent annual rate of increase, and have become a more and more promising industry of the future. So, the data processing industry launched into the communication industry. The communication industry started work in

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data processing. And there has been the tendency for communication lines and computers to be united.

SBS, where NEC successfully bid for the earth station, is an example of a computer manufacturer launching into communications. According to the plan, SBS launches two satellites. Users use them to send voice data or facsimile signals to their branch offices throughout the whole country. That is cheaper than using AT&T's long distance telephone.

Even Xerox, the copy machine company, is planning a data communications network that uses satellites. It will be called XTN (Xerox Telecommunications Network), and is a plan to transmit computer data and graphics--their specialty--to 200 cities throughout the United States. Xerox has already taken over Western Union International, a telegraph company, and a computer terminal company.

RCA is already performing satellite communication and it is said that there is the possibility that huge corporations, such as Exxon, the oil company, GE and Boeing, the aircraft company, will launch into the computer communication industry.

These movements are all a challenge to AT&T which monopolizes the country's telephones and telegraphs. By law, AT&T is prohibited from getting into computer information processing. But recently, voices have been heard urging that permission be given both from within the government and AT&T. If permitted, huge companies, which carry information through communication lines and computers, would begin jostling each other.

Moreover, communications lines and computers would never remain just inside the country, but there would be an eagerness to connect them with foreign countries. Just such a case is the information processing service Dentsu, the advertising company, is offering in joint venture with the U.S. company, GE. The computer is housed in Cleveland. Japanese users will call the computer in Cleveland by telephone, and give data input or receive data output, or receive computations from this side of the Pacific Ocean. Recently, NHK used this and processed the data from a public opinion poll.

In the same manner, Kokusai Denshin Denwa Co., Ltd. (KDD) entered into partnership with RCA, ITT and Western Union. They are also planning a service whereby Japanese users can use an overseas data bank while remaining within Japan. The day may come when IBM's SBS, Xerox' XTN and other newly established computer communication companies will try to link Japan by use of satellites. The voice urging the opening of NTT is perhaps a preliminary announcement of that day.

Immense Chinese Market

If we turn our eyes to the west, there lies the immense "void regions" of China. The telecommunications technology of this country, which is pushing for modernization, is extremely low. The People's Liberation Army still

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uses dots and dashes. There are 400,000 telephones in the country. (U.S. source) A telephone conversation between Peking and Shanghai is more difficult to hear than one between Peking and Tokyo.

There is an enormous role that a telecommunications network cannot help but accomplish in the unification of this country. Although unification of China geographically and in essence has been impossible since ancient times, China was compelled to force a unification politically. On account of that, the first Manchu emperor maintained the Great Wall in the north in an era before Christ, and, in the south, opened a canal to connect the north and the south. However, with telecommunications, a long river is easily crossed, a desert is crossed, a craggy mountain range is crossed. All kinds of geographic conditions are overcome. Information is gathered and orders are transmitted.

But, anyone who visits China perhaps would get a strong feeling of the difficulty of stretching a cable in this kind of land. However, with microwave equipment, a point alone is enough. Moreover, if a satellite is launched the entire country can be covered at once from the sky.

Recently, there has been a flurry of visits by U.S. experts to China. AT&T representatives visited China in May in order to deal with the "increasing international telephone calls between the United States and China." A little later, a NASA delegation, led by Dr Robert Frosch, visited China.

China is likewise trying to use satellites for national communication. It goes without saying, they can depend only on the United States. When Teng Hsiao-ping visited the United States some time ago, he reached a fundamental agreement with Carter to have NASA put private use satellites into orbit in the skies over China.

China has already started negotiations with COMSAT on the purchase of one domestic satellite communication facility and earth station. The COMSAT engineers are going to guide China. The price has not been announced, but this kind of equipment is estimated to be 24 million dollars.

Undoubtedly, the problem is China's solvency. But, as long as China's leaders are earnestly aiming at modernization, they cannot help but start to work on the improvement and expansion of a national communications network, which is the foundation of modernization. That also has great significance for a military strategy toward the USSR. Thus, sooner or later, Japan and the United States will be in fierce opposition and competition over China's communications market. Sources at the U.S. Embassy in Japan are aware of this.

What Shall We Do

The negotiations on the opening of NTT reflected the influence of the amount of money to erase Japan's black-ink balance with the United States and of Strauss' individual personality. And there lurked America's desire for a

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change in its situation that would try to seek a regeneration by means of a growing communications technology. No matter who the representative is in the negotiations, the real substance will not change.

The veil was unexpectedly stripped off of the "faceless giant," NTT, by this new state of affairs in the United States. Now unveiled, NTT cannot continue to be closed as it has been for many years. A storm is already raging in the United States for the elimination of the public communication industry's monopoly. Its aftereffect will cross the Pacific and cannot be kept from washing Japan's shores. Through free competition, perhaps there are fields where improvement in service can be expected.

However, we have known that the telephone is not just a simple tool for conversation, but has an unfathomable significance socially, economically, politically, internationally, and also from the perspective of security. And it has deep meaning for our lives. If the telephone network is the nerve center of the country, the computer that carries out telephone exchange and data processing is the brain of the country. This brain has to function more and more actively. In order to do that, it is necessary to have an environment where those in charge maintain enough morale and nurture technology with affection.

On that point, the merits of NTT's traditional perfectionism must be greatly demonstrated. The minuses produced by allowing competition in a free market would exceed the pluses.

If the government authorities were thinking of the opening of NTT in terms of volume, as with salmon and trout, they could not have been more mistaken. The telephone is a high level technology that is going to be the new bearer of the information era by virtue of its connection with the computer. It is also a clean, freely growing field that Japan must live by in the future as well. Japan, which constitutes a crowded information space rarely seen in the world, must contribute to the world in this field.

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SCIENCE AND TECHNOLOGY

SUPER CONDUCTOR POWER GENERATION, TRANSMISSION PROJECT PLANNED

Tokyo NIHON KOGYO SHIMBUN in Japanese 23 Jun 79 p 9

[Text] The Science and Technology Agency, Metal Materials Technology and Research Institute (Director: Toru Araki) is planning to start a practical technology development project in the extreme low temperature sphere, including super conductor transmission, from 1980. It will be a long-term project (5-7 years) which will test produce super conductor transmission wires and super conductor power generation equipment. It also seeks to develop heat resistant materials for use in extreme low temperature environment and to implement standardization of construction methods and testing methods of such materials. It is noteworthy as a comprehensive research development project in the super low temperature sphere which is regarded as the industry of tomorrow.

Metal Materials Technology and Research Institute has been studying the super conductor materials as an extreme low temperature technology research. To date, it has developed vanadium 3 - gallium which is said to have the highest critical magnetic force when made into a magnet and niobium 3 - germanium which is said to excel as a processable materials. Manufacturing methods for turning the latter into tapes and multi-core wires have also been perfected.

Currently at Tsukuba Kenkyu Gakuen City, Ibaragi Prefecture, there is a super conductor magnetic field generator which combines vanadium 3 - gallium magnet with niobium 3 - tin magnet and performance tests for various test production materials are underway there.

The project, slated to start in 1980, is built on these research results and it is an attempt to put them into practical use or to develop a system which would substantiate its worth. In super conductor transmission research, the plan calls for development of construction method, cooling method for transmission wires and development and utilization of peripheral materials necessary to implement these methods.

With regard to transmission wires, a method employing super thin multi-core wires constructed by stretching method [enshinho] and a method by which materials processed in the form of tape and wound in spiral formation are

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being proposed. The research in this field will investigate the respective construction methods and their technical possibilities. The plan is to eventually bring the matter to test production of super conductor transmission wires.

In the meantime, with regard to super conductor power generation, niobium 3 - germanium is expected to be employed. Niobium 3 - germanium is relatively durable even when processed into a thin wire. It processes well and its critical temperature (temperature at which super conduction state is broken) is a relatively high 22°K. Because of these properties, this flexible material is to be the basis of research on development possibility of a power generator.

In addition, construction materials and adiabatic materials -- metal liquid helium containers or composite plastic material for strengthening metal wires -- are to be test produced. Establishment of methods for testing such materials is also being planned.

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SCIENCE AND TECHNOLOGY

MICRO-CERAMIC BALL MANUFACTURING TECHNOLOGY DEVELOPED

Tokyo NIHON KOGYO SHIMBUN in Japanese 26 May 79 p 9

[Excerpts] Assistant professor Yoshiji Ozaki of Seikei University Engineering Department, Industrial Chemistry Section, and others have developed a new manufacturing method for a "micro-ceramic ball" of milliorder to submicron order minuteness. A wide range of use -- heat resistant and chemical resistant ball bearing, electron material, composite material, catalytic agent and so on -- is expected to arise from the ceramic ball invention. However, there has been difficulty in finding a way to mass produce homogeneous micro-ceramic balls cheaply. The new technique may provide the answer. At present, corundum (a. aluminum) micro-balls are the only ones being manufactured but Ozaki commented that "the method can be applied to any and all ceramic materials -- oxide, carbide, nitride, borid and so on.

The new technique skillfully employs the phenomenon of an oil drop injected into water and agitated vigorously. This will cause the oil drop to be dispersed in the water and to form into minute globules. With the passage of time, oil thus dispersed in water will gather together again and revert back to its original form. The crux of the operation is to solidify the globules before they reaggregate. In the case of corundum balls water is added to dissolve aluminum isopropoxide to obtain baimite [transliteration]. By adding hydrochloric acid to this solution and peptizing it at 95°C (to return colloidal particles to sol), baimite sol is obtained. When this sol is agitated in 2 ethyl hexyl alcohol, globules are produced as the two components are like water and oil. If interfacial activator is introduced at the same time, the uniting tendency of globules is repressed, and with passage of time, the globules become solidified in the alcohol as a result of sol's thixotropy characteristic (disposition of liquid sol to turn into gel when it is left alone). Left on their own the globules will sink to the bottom of the receptacle and will change their shape as globular density is greater than that of alcohol. Thus carbon tetrachloride is added to control the density and the globules are left suspended in liquid -- "marimo [transliteration]" fashion. In this state, the moisture in the globules is gradually released into the alcohol and eventually they will acquire a hardness which resists self-transformation.

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When dry globules thus obtained are centered at 1600°C, the objective of corundum ball is attained. Globular diameter diminishes in size as the balmite volume in the gel is decreased and more violent the agitation, smaller the diameter of globules. That is, globular size can freely be controlled. Also, globular diameter distribution can be restricted to a rather narrow range. For example, the experiments verified that in most instances the globular size range was between 0.1 - 0.3 millimeters.

Moreover, the globules thus obtained are homogeneous and not anisotropic. It is possible to make globules with spiracles -- that is their construction can be porous.

It is said that research is under way in the electric and electronic materials sector which seek to turn yttrium, iron, garnet and fluorescent light into small globules. And in the composite materials sector, there appears to be a research under way which uses globular ceramics as fillers (gobs). Thus, the new innovation will probably draw attention.

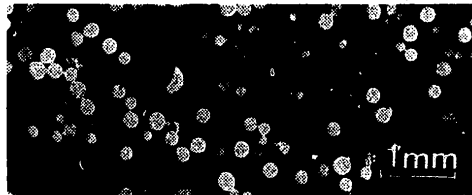


PHOTO CAPTION: Micro-corundum balls manufactured according to new method

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SCIENCE AND TECHNOLOGY

BRIEFS

METHACOAL BY MITSUI--Tokyo (AP)--Japan's Mitsui group of industries will develop a new liquid energy source called methacoal made entirely from coal, an official at Mitsui and Co. said Thursday. The official said that methacoal, to be composed of methanol--methyl alcohol--and coal powder, has potential as an oil-alternative energy source because its liquid form makes it easy to transport and it generates more heat than methanol. The plan calls for the construction of a pilot plant and refinement of production techniques within five years. Mitsui is now seeking Government funds to support the project, which will cost an estimated ¥5 billion (\$23 million), the officials said. Methacoal will have a heat generating capacity of 6,000 kilocalories for every kilogram, lower than oil at 10,000 kilocalories and coal-oil mixtures at 8,000 kilocalories but higher than methanols 5,400 kilocalories. However, it has the big advantage of using no oil, different from coal-oil liquids now under development in several nations, the official said. Japan relies on imports for 99 percent of its petroleum needs. [Text] [Tokyo ASAHI EVENING NEWS in English 14 Sep 79 p 9]

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