REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	7 April 1995	Final Report, Sep 91 - Dec.94

4. TITLE AND SUBTITLE
United State - Japan Industry and Technology Management Training Program, University of Wisconsin at Madison

5. FUNDING NUMBERS
AFOSR-91-0443

6. AUTHOR(S)
James L. Davis
Thomas W. Chapman

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
College of Engineering, Univ. of Wisconsin at Madison
(with subcontractors: National Technological Univ.
: Rose-Hulman Institute of Technology
: Engineering Alliance for Global Education (Univ. of Illinois)

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
AFOSR/NI
110 Duncan Avenue, Suite B115
Bolling AFB DC 20332-0001

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
AFOSR-TR-95
0469

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Distribution Unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)
To meet the four major objectives of the JITMT Program, the University of Wisconsin organized a project with several elements. First, to prepare a significant number of engineering students to work with Japan, funding was provided to the EAGLE consortium of thirteen schools to support training in Japanese language and culture. Second, to reach technical managers in government laboratories, a series of seminars about Japanese technology, information, and management was developed for National Technological University (NTU). Finally, to serve both students and professionals the Wisconsin Technical Japanese Language Program was supported. Instruction in this program is available from Wisconsin directly, and through NTU.

14. SUBJECT TERMS
Japanese Language, Management of Technology, Internships

15. NUMBER OF PAGES
95

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	

Department of Engineering Professional Development
University of Wisconsin-Madison
1527 University Ave.
Madison, WI 53706-1573
tel: 608-262-4810 email: jdavis@engr.wisc.edu fax: 608-265-4734

April 7, 1995

MEMORANDUM

TO: Dr. Koto White, AFOSR

FROM James L. Davis

SUBJECT: Final Report on Grant AFOSR-91-0443, the University of Wisconsin-Madison Program for United States-Japan Industry and Technology Management Training

In September 1991 the University of Wisconsin-Madison received a grant from AFOSR to pursue the objectives of the United States-Japan Industry and Technology Management Training Program. In order to meet the four major objectives of the program, Wisconsin organized a project with several elements. First, to prepare a significant number of engineering students to work with Japan, funding was provided to the EAGLE consortium of thirteen (now fifteen) schools to support training in Japanese language and culture. Second, to reach scientists and technical managers in government laboratories, a series of seminars about Japanese technology, information, and management was developed for the National Technological University (NTU). Finally, to serve both students and professionals the Wisconsin technical Japanese language program was supported. Instruction in this program is available both from Wisconsin directly and through NTU. This final report reviews our accomplishments with regard to each element of the program.

EAGLE Japan Program

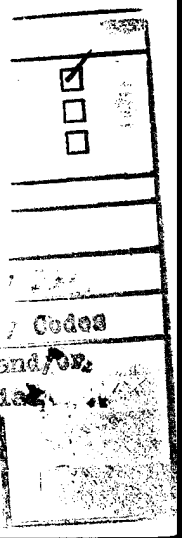
EAGLE, the Engineering Alliance for Global Education, is a consortium of fifteen major engineering schools that have banded together to provide more international experience for their students and new graduates. Under this grant EAGLE is providing enhanced training in Japanese language and culture in order to prepare new graduates for industrial internships in Japan. A brochure giving a brief description of EAGLE appears as Attachment 1 of this report.

Two subcontracts have been established to implement the EAGLE programs. First, a subcontract to Rose-Hulman Institute of Technology is supporting a summer course in Japan. During the summer of 1992 55 engineering students, selected from a pool of 120 applicants, were sent to Japan to participate in the course. Thirty-seven students were placed in Koriyama at the site of the Texas A & M campus, and 18 of the more advanced students were sent to the Hokkaido International Foundation in Hakodate. In addition to language training, these students received specialized cultural training relevant to doing business in Japan and made field trips to learn about Japanese industry. In the summer of 1993 61 engineering students, chosen from 105 applicants, participated in the program. Thirty-three students at the intermediate level were placed in Koriyama, while 25 students at the intermediate-advanced level were located at a new site in Niihama. Three students with unusually strong Japanese language preparation were placed in the Hokkaido International Foundation in Hakodate. A summary of key statistics for the EAGLE Japan Program and information about EAGLE summer program participants from 1990 through 1993 is included as Attachment 2.

Attachment 3 of this memo is a detailed report on the 1992 EAGLE summer program in Japan, which was prepared by Dr. John Mock of Rose-Hulman Institute of Technology, the director of the EAGLE Japan program. In Attachment 4, Dr. Mock presents a summary of student evaluations of the program. It is clear from the evaluations that the quality of language instruction in the program was quite high.

While the EAGLE students were on their home campuses, their targeted study of Japanese language and management methods was supported by a second subcontract, through the EAGLE center at the University of Illinois at Urbana-Champaign, to the individual universities. In order to encourage continuing study of Japan along with busy engineering curricula, the local EAGLE programs provided special support in language tutorials. In addition, the students also had access to Japan-related seminars offered over the NTU satellite network. A summary of the efforts on the various EAGLE campuses will be included in a separate attachment that will be forwarded soon.

Although the AFOSR funding to EAGLE formally provided only language training and orientation to engineering students as preparation for professional experience in Japan, it is EAGLE's objective to place the students upon graduation into such an experience. We believe that direct experience in Japanese industry by our young engineers is the most effective way for them to learn about Japanese technology and management methods. A summary of the work experience by EAGLE participants will also be included in the attachment that will be submitted soon.



National Technological University Japan Programs

With the AFOSR funding, NTU signed up 24 additional DoD and DoE sites as subscribers. A complete list of NTU sites, including both commercial and government laboratories as well as universities, is presented in Attachment 5. In addition, two sites rented NTU subscriber units under the grant. These are the Army Research Lab at Fort Monmouth, New Jersey, and the National Department of Energy Lab at Argonne, Illinois.

NTU offered several types of Japan-related programs. First, a monthly series of Advanced Technology and Management Programs (ATMP) covered various aspects of Japanese management, technology, and culture. These programs were delivered to government laboratory sites with the support of the grant. The schedule of topics and literature on some of these programs are presented in Attachment 6. The series began in May 1992 and continued through September 1993. An average of 35 sites received each of the 14 programs, with a total attendance of 5,033 engineers, managers and students. Summaries of course evaluations indicate that the Japan-related ATM programs generally received above-average ratings.

NTU also delivered Japanese language courses to commercial sites as well as the government labs. During the summer of 1992 seventy-one students enrolled in an eight-week course on elementary Japanese that originated at the University of Wisconsin and was delivered via the NTU satellite. The course was offered again during the summer of 1993, with 17 students participating.

Finally, NTU has broadened its Management of Technology (MOT) masters degree program to include more Japanese material and a residency in Japan. The director of the MOT program, Dr. Alden Bean, has added considerable material on proven Japanese management practices, and additional Japanese examples and case studies are being incorporated into the MOT courses and residencies. For example, distinguished Japanese faculty were invited to participate as guest lecturers in the MOT residencies. With the AFOSR funding eleven DoE/DoD lab employees enrolled in the MOT program as shown in the MOT class rosters given in Attachment 7. In May 1993 NTU conducted a one-week study mission to Japan as part of the MOT curriculum. During their week in Japan seventy MOT students and faculty visited corporate and government laboratories, as well as manufacturing sites, and participated in seminars, workshops and conferences. A summary of this study mission is included as Attachment 8.

Wisconsin's Technical Japanese Program

Wisconsin's interest and capability in Japan and technical Japanese language ties this program together into a coherent entity. Wisconsin has been intimately involved in both the promotion of the EAGLE program and the NTU instructional programs. In 1992 four Wisconsin students participated in the advanced summer course in Hakodate, and all four spent a portion of the following year at a Japanese national university. As a member of the EAGLE executive committee, Tom Chapman has been actively involved in developing the capstone internship program for the EAGLE students. A list of publications and conference presentations by faculty and staff associated with the JITMT program appears as Attachment 9.

A one-day short course entitled "Monitoring Japanese Technical Information" was broadcast via satellite by NTU on June 30, 1992. This course was designed to aid participants in developing their own strategy for monitoring technical developments in the government, academic and corporate sectors in Japan. The course introduced participants to Japanese technical journals, the Japanese patent system, domestic conferences and other sources of information emanating from Japan. Scientific and technical databases, in Japanese and in English, were evaluated. The course was prepared by the Dept. of Engineering Professional Development at the University of Wisconsin-Madison. Prof. Jim Davis was the Course Director and one of the speakers. Other speakers were Ms. Efrat Livny from the UW-Madison and Mr. Mats Tallving from the University of Lund in Sweden. Registration for this course was 421 people at 31 sites throughout the U.S. These sites may be classified as follows:

DoD/DoE	10 sites
Corporate	13 sites
Academic	8 sites

The DoD/DoE sites for this course were as follows:

Los Alamos National Laboratory, Los Alamos, NM
Rome Laboratory, Griffiss Air Force Base, Rome, NY
U. S. Army Cold Regions Research, Hanover, NH
U. S. Army Construction Engineering, Champaign, IL
U. S. Army Corps of Engineers, Vicksburg, MS
U. S. Army Corps of Engineers, Washington, DC
U. S. Army EW/RSTA Directorate, Ft. Monmouth, NJ
U. S. Army Missile Command, Redstone Arsenal, AL
U. S. Army Topographic Engineering, Fort Belvoix, VA
U. S. Dept. of Energy, Morgantown, WV

Another one-day short course entitled "The Structure of Research in Japan" was broadcast via satellite by NTU on November 20, 1992. This course was developed to provide views of the Japanese research system from people with a technical background who have observed the planning and execution of Japanese research projects from the inside. The scope of this course included the Japanese government, universities and corporations. The course was prepared by the Dept. of Engineering Professional Development at the University of Wisconsin-Madison. Prof. Jim Davis was the Course Director. Speakers were Dr. Larry Weber (NSF), Dr. Craig Van Degrift (NIST), Prof. Jay Martin (UW-Madison) and Dr. Kyugo Tanaka (Rohm and Haas Japan). Registration for this course was 368 people at 33 sites throughout the U.S. These sites were classified as follows:

DoD/DoE	11 sites
Corporate	14 sites
Academic	8 sites

The DoD/DoE sites for this course were as follows:

Los Alamos National Laboratory, Los Alamos, NM
Rome Laboratory, Griffiss Air Force Base, Rome, NY
Naval Air Warfare Center, Indianapolis, IN
Naval Surface Warfare Center, Crane, IN
Naval Surface Warfare Center, Dahlgren, VA
Naval Undersea Warfare Center, Newport, RI
U. S. Army Cold Regions Research, Hanover, NH
U. S. Army Construction Engineering, Champaign, IL
U. S. Army Corps of Engineers, Vicksburg, MS
U. S. Army Corps of Engineers, Washington, DC
U. S. Army Harry Diamond Lab, Adelphi MD

An eight-week course entitled "Elementary Japanese" was broadcast via satellite by NTU from June 16 through August 7, 1992. This course was designed to teach the fundamentals of reading, writing, listening and speaking in Japanese to people who have never studied Japanese before. The course was prepared by the Dept. of Engineering Professional Development at the University of Wisconsin-Madison. Prof. Jim Davis was the Course Director and one of the instructors. Ms. Yoshiko Shakal, an instructor in Japanese at the UW-Madison, was the principal instructor for this course. The distribution of the 8 sites and 73 students follows:

DoD/DoE	4 sites	66 students
Corporate	4 sites	7 students

The DoD/DoE sites for this course were as follows:

Rome Laboratory, Griffiss Air Force Base, Rome, NY
U. S. Air Force Cataloging & Standardization Center, Battle Creek, MI
Naval Air Warfare Center, Lakehurst, NJ

Naval Surface Warfare Center, Dahlgren, VA

The "Elementary Japanese" course was offered again from June 14 through August 6, 1993. Ms. Mayumi Mochizuki, an instructor in Japanese at the UW-Madison, was the principal instructor. The total enrollment was 17 students at 8 sites.

DoD/DoE	5 sites	12 students
Corporate	3 sites	5 students

The DoD/DoE sites for this course were as follows:

Rome Laboratory, Griffiss Air Force Base, Rome, NY
Naval Surface Warfare Center, Dahlgren, VA
Robins Air Force Base, GA
Wright-Patterson Air Force Base, OH
Naval Air Warfare Center, Indianapolis, IN

A basic sequence of technical Japanese courses was offered live via NTU and audiographic teleconferencing from September 1992 through August 1993. The basic sequence introduced a technical person who had never studied Japanese before to enough grammar and Japanese characters (kanji) for that person to read documents in his/her field with the aid of a dictionary. This sequence was prepared by the Dept. of Engineering Professional Development at the University of Wisconsin-Madison. Prof. Jim Davis was the instructor for all courses. This sequence comprised three semester-long, credit-bearing courses from the UW-Madison. Students off campus participated in the same class with undergraduate and graduate students on campus. All courses appeared in the regular NTU course listing that was mailed to each NTU subscriber site in the United States.

In order to reach the greatest number of participants possible, "Basic Technical Japanese I" was offered live at two different times each day: one section was broadcast via satellite and one section was delivered via audiographics. Participants at any potential site were able to choose the delivery method that was more convenient for them.

A special promotional tape was prepared, and was broadcast on NTU in February, 1992. Special announcements of these courses were mailed to over 150 DoD/DoE sites in February. An equipment survey and a call for audiographic equipment support requests were sent to the same sites in May. Brochures were sent by the UW-Madison and by NTU in response to inquiries from over 100 corporate sites and to each site that had participated in any of the courses offered up to that time. The larger-than-expected enrollment was testimony to the value of these courses. The distribution of the 20 sites and 50 students enrolled in "Basic Technical Japanese I" for the fall, 1992 semester follows:

DoD/DoE	6 sites	24 students
Corporate	12 sites	14 students
On Campus	1 site	12 students
Academic	1 site	***

*** North Carolina State University requested videotapes of the course for future use on campus.

The DoD/DoE sites that participated in this course were the following:

Robins Air Force Base, GA
Rome Laboratory, Griffiss Air Force Base, Rome, NY
Wright-Patterson Air Force Base, Dayton, OH
Naval Surface Warfare Center, Dahlgren, VA
Naval Air Warfare Center, Indianapolis, IN
U. S. Army Ballistics Research Laboratory, Aberdeen, MD

The continuation course, "Basic Technical Japanese II" was offered by both satellite and audiographics in one section from January through May, 1993. A total of 21 students at 11 sites around the United States enrolled:

DoD/DoE	6 sites	9 students
Corporate	3 sites	4 students
On Campus	1 site	8 students
Academic	1 site	***

*** North Carolina State University requested videotapes of the course for future use on campus.

The DoD/DoE sites that participated in this course are the following:

Robins Air Force Base, GA
Rome Laboratory, Griffiss Air Force Base, Rome, NY
Wright-Patterson Air Force Base, Dayton, OH
Naval Surface Warfare Center, Dahlgren, VA
Naval Air Warfare Center, Indianapolis, IN
U. S. Army Ballistics Research Laboratory, Aberdeen, MD

During the summer of 1993 "Applied Technical Japanese" was offered to students who had completed the basic technical Japanese sequence. In this course each student translated all or part of a document in that student's own field. In this way students were exposed to real documents, rather than textbook examples, and were able to begin absorbing current technical information directly from the Japanese document. Instruction was offered by both satellite and audiographics from June 14 through August 6, 1993. Enrollment in this course was 19 students at 8 sites.

DoD/DoE	4 sites	7 students
Corporate	3 sites	3 students
On Campus	1 site	9 students

The DoD/DoE sites that participated in this course were the following:

Robins Air Force Base, GA
Rome Laboratory, Griffiss Air Force Base, Rome, NY
Wright-Patterson Air Force Base, Dayton, OH
U. S. Army Ballistics Research Laboratory, Aberdeen, MD

To improve the level of technical Japanese instruction in the United States three field-specific companion volumes to accompany the textbook *Basic Technical Japanese* have been prepared. The fields chosen were biotechnology, solid-state physics and polymer science. *Basic Technical Japanese* (BTJ), the only textbook available to technical professionals who have no experience in Japanese but wish to learn to read Japanese technical documents, presents a general scientific vocabulary and provides the student with a solid grammatical foundation. Each of the companion volumes complements BTJ by concentrating on kanji, vocabulary and expressions that are essential for reading technical documents in one specific field.

The preparation of several of these volumes in different fields has permitted the readings in every volume to be tailored to the needs of specialists in that particular field. Each volume has been designed for use as a supplementary text in an introductory technical Japanese course. However, the use of these volumes would add depth and breadth to any technical Japanese curriculum. All volumes may also be used for self-study by practicing scientists or engineers who have studied conversational Japanese and wish to concentrate on the vocabulary and expressions that are important in these disciplines.

The preparation of each volume required the identification of the 100 most frequent and important kanji in a particular field. Such listings for the fields mentioned above had never before been compiled. Therefore, each volume was written by a specialist in the field or by someone with extensive experience reading and translating Japanese documents in that field. The topics and authors were as follows:

Polymer Science	R. Byron Bird, Ph.D. Professor Emeritus Department of Chemical Engineering University of Wisconsin-Madison

Biotechnology	James L. Davis, Ph.D. Assistant Professor Department of Engineering Professional Development University of Wisconsin-Madison
Solid-State Physics	Craig T. Van Degrift, Ph.D. Kanji-Flash Softworks Gaithersburg, Maryland

In addition, a fourth volume has been designed as a companion and study guide for the textbook *Comprehending Technical Japanese* (CTJ); this book may also be used as a supplement to BTJ. It provides detailed explanations of the origin and meaning of the 500 kanji featured in CTJ, which were chosen for their frequency and significance in chemistry, physics, and biology. Each chapter is keyed to a chapter in CTJ, presenting twenty kanji, vocabulary that use those kanji, a kanji-card format for study and review, the Japanese essay that appears at the close of each CTJ chapter, and its English translation. This volume also introduces significant vocabulary in the sciences that include kanji other than the 500 featured in CTJ. All four volumes will be published by The University of Wisconsin Press and the University of Tokyo Press in May, 1995. Sample pages from the spring, 1995 catalog of the University of Wisconsin Press are enclosed as Attachment 10.

Conclusion

In summary, we believe that the Wisconsin program has made considerable progress in achieving the AFOSR program objectives. Especially impressive are the numbers of participants this program has reached: 116 EAGLE students having studied in Japan, 78 government employees having completed elementary Japanese in the summer and 24 enrolled in technical Japanese, 11 government personnel enrolled in the MOT program and 70 technical professionals participating in a week-long study mission to Japan. In addition, hundreds of technical professionals have monitored each of the NTU Advanced Technology and Management Programs. In the future many additional students will benefit from using the new technical Japanese textbooks created in part with support from this program.

We appreciate the continued cooperation and support of AFOSR. If you would like more detailed information about any aspect of our program, please do not hesitate to contact me.

Attachment 2

EAGLE Statistics, 1992-93

Year	1992	1993
Total applicants	120	105
Total participants	55	61
Males	50	49
Females	5	11
African-Americans	0	6 (3F)
Asian-Americans	22 (3F)	20 (4F)
Hispanic-Americans	3	0
University		
Cornell	3	3
University of California-Berkeley	2	3
Georgia Institute of Technology	7	10
University of Illinois	18	9
Lehigh University	2	3
University of Michigan	0	2
University of New Mexico	1	4
State University of New York at Buffalo	4	4
North Carolina State University	2	5
Rose-Hulman Institute of Technology	3	5
Temple University	2	2
Texas A&M	6	5
University of Texas	1	2
Vanderbilt University	0	0
University of Wisconsin-Madison	4	4

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Ader, Richard D.	Wisconsin	T183 Fuchi-shi 2-1 Toshiba-cho Creare Toshiba Fuchu B-516 Tokyo, Japan	2826 S 16th St Sheboygan, WI 53081 (414) 457-9086	Employed by Toshiba Corp. in micro-processor testing since Sept. 1991 until 1994.
Balestro, Todd A.	Lehigh	253 E 78th St apt 27 New York, NY 10021 (212) 772-1894	25 Wagon Hill Lane Avon, CT 06001 (203) 673-1750	Employed by Peterson Consulting as a litigation consultant.
Bradley, Michael T.	TX A&M	Parkside Residence #406 4-11-1 Moto Ima Izumi Utsunomiya-shi Tochigi-ken 321 Japan 81-286-39-2555 HOME 81-286-67-5322 WORK 81-286-67-8854 FAX	33 Carriage Lane Newark, DE 19711 (302) 368-7048	Employed by DuPont Japan K.K. as project engineer. Will transfer to EJ Dupont in Nashville, TN in Aug 1993.
Brooks, Kevin	UIUC		c/o Rudy Xavier 2590 Skylark Way Pleasanton, CA 94566 (510) 484-2373	Studying for Master of Science at UC Berkeley.
Brown, Gary	UC-Berk.	3-45-2-202 Takase-cho Moriguchi-shi Osaka 570 Japan	443 S Almont Dr Beverly Hills, CA 90211-3506 (310) 275-9142	Employed by Matsushita Denki at the Semiconductor Research Center since Oct. '91. Plans to attend Stanford for MSEE and and PhD in Sept. 1993.

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Chan, Robert C.	SUNY-Buffalo	Patio Belleza 705 Numame 2-5-1 Isehara-shi Kanagawa-ken 259-11 Japan Phone: 0463-91-5586	2549 Copa Del Oro Dr Union City, CA 94587 (510) 471-9715	Employed by Nissan Motor Corporation as a project engineer. Plans to pursue an international MBA degree in a year.
Cignarella, Ray		1560 York Ave apt 5A New York, New York 10028	67 Bond St. Bridgewater, NJ 00807	Employed by Furman Selz Inc. as an Equities Research Assistant
DeSantis, Cajetan J.	Lehigh	2 g Queensbridge Court Cockeysville, MD 21030		Employed by Ward Machinery Company in Cockeysville, MD.
Despe, Paul	UIUC	3-4-49 Nakazato #302 Minami-ku Yokohama 232 Japan Phone: 045-731-6378	15755 W 138th St Lockport, IL 60441 (815) 838-6889	Employed by Nakanihon Systems Inc as a software engineer since Aug 1990 until Aug 1993. Plans to study martial arts and Japanese language for 1 year.
Engelkemier, Brett S.	UIUC	c/o Hoshino 7-14-4 Komagome Toshima-au Tokyo, Japan 170	15248 Oakmont Overland Park, KS 66221-2360 (913) 897-9771	Visiting foreign researcher, Space and Time Measurement Research Division-Communications Research Lab in Tokyo until Oct. 1994.

Dhillon, Abmeet

110 Canyon Run
Cary, NC 27513
Work: 919-319-1005
Voicemail: 919-790-2031

Fujitsu Network Switching, Raleigh, N.C.

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Gesteland, Reed	Wisconsin	Higashi Yukigaya 3-16-8 Terao Heights #101 Ota-ku Tokyo 145 Japan Phone: 03-3728-4234		Employed by Mitsubishi Motors Corporation as a representative for overseas affiliated companies' office of information systems.
Greene, Craig F.	Lehigh	51 H Pahir #9 Citangkil, Cilegon Serang, West Java Indonesia 62-254-91781 HOME 62-254-91730 FAX	309 Elm Rd Briarcliff, NY 10510 (914) 762-2247	Employed by Taisei Corporation in Tokyo. Currently assigned at the CPAC Ethylene Plant Construction Project in West Java, Indonesia since May '93. Will return to Tokyo afterward.
Gurley, Kurtis	UIUC	29 1-A Fischer Notre Dame, IN 46556	702 W Burr Oak Arlington Heights, IL 60004	Attending graduate school in Civil Engineering at University of Notre Dame, expected
Johnson, Brice	GA TECH	110 S. 2nd St Zionsville, IN 46077	110 S. 2nd St Zionsville, IN 46077	Employed by Eli Lilly and Company as process engineer-biosynthetic engineering since June 1991.
Jones, David	UIUC	6-13-19 Sagamihara Sagamihara-shi Japan T229	1037 Rescobie Dr Schereville, IN 46375	Employed by ESTECH Corp. in Yokohama since 4/91. Plans to study for MBA in US, 1994.

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Jones, John G.	Rose-Hulman	2805 W. McMicken apt 10 Cincinnati, OH 45225 (513) 961-0827	505 Vermont Rd Elyria, OH 44035 (216) 365-4433	Studying for M.S. degree at the University of Cincinnati. Plans to pursue Ph.D.
Kannankutty, Kumar	Wisconsin	1156 Pike Lake Circle New, Brighton, MN 55112 -6404	1156 Pike Lake Circle New, Brighton, MN 55112 -6404	Studying for MBA at the University of Minnesota, expected graduation: June 1994.
Kenny, Meghan	Lehigh	75 Whitehall Blvd Garden City, NY 11530	75 Whitehall Blvd Garden City, NY 11530	Employed by United Parcel Service as an industrial engineer since 1991.
Klein, Donald	UC-Berk.	NEC Corporation Devices Reliability Department Analysis and Evaluation Technology Ctr 1753, Shimonumabe Nakahara-Ku Kawasaki,Kanagawa, 211 Japan	24746 Acropolis Drive Mission Viejo, CA 92691 (714) 586-0492	Employed by NEC Corporation for a 3-year research position.
Kooyman, David	Rose-Hulman	611 Patriot DR. Lancaster, PA 17601 (717)394-2556	220 Suburban Rd Knoxville, TN 37923 (615) 693-3557	Employed by KAO Infosystems Co Optical Products Division in Lancaster, PA.

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Lee, Yun Chin	Lehigh	105 Arms Blvd #7 Niles, OH 44446 (216) 544-3868	105 Arms Blvd #7 Niles, OH 44446 (216) 544-3868	Employed by Packard Electric (division of GM) as an application engineer.
Lo, Stephen K.	Cornell	Toshiba Ome Creare A820 Shin-machi 2031-1 Ome-shi Tokyo-to 198 Japan Phone: 81-428-33-0345	6611 Nicoll Dr N Ridgeville, OH 44039 (216) 327-5532	Employed by Toshiba as a PC hardware design engineer since Sept. 1991. Plans to stay for 3 to 5 years.
Matthews, Joseph E. IV	Rose-Hulman	606 Philadelphia Dr Kokomo, IN 46902 (315) 455-6031	606 Philadelphia Dr Kokomo, IN 46902 (315) 455-6031	Employed by Delco Electronics in the Hybrid Circuit Assembly Area.
McCandless, Joseph		Co: Ransburg Automotive KK Kanagawa 210 Japan 044-287-2164 WORK 044-287-2180 FAX	909 S Russell Marion, IL 62959	Employed by Ransburg Automotive KK as a field engineer since November 1990. Plans to transfer to sister company in Marion within 2 years.
Minor, John C.	Rose-Hulman	818 Douglas Ave Ames, IA 50010		Studying for Master of Science in ME at Iowa State University.

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Morrison, Thomas	NC State	112-2B Hidden Oaks Drive ~~1-20-12~~ Cary, NC 27513 ~~Sumitomo Seiwa Ryou Iwase, Kamakura-shi Kanagawa, Japan T247~~	2415 Seminary Rd Silver Spring, MD 20910	~~Employed by Sumitomo Electric Company as a project engineer on optical fiber component design and sales for two year work term since August 1992.~~
Myles, Jennifer	UIUC	1231 60th Pl Downers Grove, IL 60516 -1856	1231 60th Pl Downers Grove, IL 60516 -1856	Employed by M-C Power Corporation as Materials Engineer.
Perry, Russ Jr.	Wisconsin	5970 Scott St Omro, WI 54963 (414) 685-6187	5970 Scott St Omro, WI 54963 (414) 685-6187	Employed by Federal Mailing Systems as Automation Coordinator.
Pramenko, Frederick	Wisconsin	2604 Arbor Dr #229 Madison, WI 53711	2147 N 48th St Milwaukee, WI 53208	Employed by Xerox Corporation Corporation. Plans to attend U UW MBA program in June '93 concentrating on international business and Japan.
Sidhom, Sameh	Wisconsin	Shikama Nakamura Copo A-15 Ebisu 116 Shikama-ku Himeji City, Hyogo Japan T672	14814 E Gale Ave #B72 Hacienda Hts CA 91745	Employed by Nippon Giant Tire Company as a manufacturing engineer since Oct 1991 until October 1994.

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Simon, Robert	Lehigh	2101 Chestnut St apt 1620 Philadelphia, PA 19103 (215) 564-0434	2101 Chestnut St apt 1620 Philadelphia, PA 19103 (215) 564-0434	Employed by Deloite Touche as management consultant since August 1991.
Tartikoff, Jeffrey	Cornell	10 Sarah Dr Old Bethpage, NY 11804 (516) 249-7189	1735 Roland Ave Wantagh, NY 11793 (516) 826-1807	Employed by Underwriters Laboratory Inc., as Quality Management Associate Project Engineer since August 1991.
Wada, Bryan	UIUC	Patio Belleza A-201 2-5-1 Numame Isehara, Kangawa 259-11 Japan	8415 McVicker Morton Grove, IL 60053	Employed by Nissan Motor Co as a design engineer.
Webb, Albert Darby	TX A&M	Hirayamahowa-Ryou #2204 530 Toyota-cho Toyota City, Aichi-ken 471 Japan 0565-29-9168 HOME 0565-23-6886 WORK 0565-23-5893 FAX	624 Manning Dr Copperas Cove, TX 76522 (817) 542-1955	Employed by Toyota Motor Corporation as a design engineer in Body Engineering Division since Sept 1991 and plans to stay for 3 to 5 years.
Whitman, Andrew	Wisconsin	P. O. Box 580518 Minneapolis, MN 55458 -0518	P. O. Box 580518 Minneapolis, MN 55458 -0518	Employed by Nestle Foods as Group Leader in Production Improvement team.

EAGLE 1990-1991 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Yu, Robert	Cornell	Phone: (607) 277-9740	Phone: (904) 372-0900	Studying ME at Cornell. Plans to pursue PhD in electrical engineering.

EAGLE 1992 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Angara, Raymond E.	UIUC	904 W. Green St. #403 Urbana, IL 61801 (217) 328-8065	5030 N. Marine Dr. Chicago, IL 60640 (312) 275-3561	Employed by Andersen Consulting in Chicago.
Casasent, Tod	TX A&M	Oikoshi 12-105 Amakubo 2-1-1 Tsukuba-shi Ibaraki-ken 305 Japan		Studying at Tsukuba University as a non-degree research student for 6 months. Plans to take master's degree entrance exam and complete master's degree.
Deligiannis, Bill J.	UIUC	610 E Stoughton #306 Champaign, IL 61820 (217) 351-4121	78 S. Root St. Aurora, IL 60505 (708) 851-2923	Attending graduate school at UIUC in General Eng.
Fischer, Douglas	UIUC	Nifco I Maita #402 3-58-3 Shuku-machi Minami-ku Yokahama Kanagawa Prefecture 232 Japan Phone: 045-711-0672	1138 S Home Ave Oak Park, IL 60304 (708) 383-7993	Employed by Nifco as a research and development engineer. Plans to return to the U.S. to attend graduate school.
Fong, Alexander	UIUC	912 Chimney Rock Inverness, IL 60067-4718 (708) 358-9560	912 Chimney Rock Inverness, IL 60067-4718 (708) 358-9560	Looking for work either overseas or in U.S.
Higuera, Martin	SUNY-Buffalo	P.O. Box 903 Buffalo, NY 14214	P.O. Box 903 Buffalo, NY 14214	Plans to do research for one year at Tokyo University of Agriculture and Technology Technology.
Grom, Brian		130 Robert Drive Lancaster, NY 14086 VB6@14XZ@UBVMS.CC.BUFFALO.EDU		Plans to attend Uof WA @ Seattle for MSE in Comptr Sci & Technical Japanese.

EAGLE 1992 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Hoesley, John B.	UIUC	1801 Sunny Slope Road Bridgewater, NJ 08807	3733 W. Hayford St. Chicago, IL 60652 (312) 767-8242	Employed by National Starch Co., Bridgewater NJ. Job combines research technical service, and sales with possible relocation to Osaka area for joint venture with Oji Chemical.
Joshi, Amol Madhukar	GA TECH	401 MK Heim 1-9-28 Shigita, Johtoku Osaka-shi, Osaka 536 Japan	7904 Folly Lane Columbia, SC 29209 (803) 776-0998	Employed by Matsushita Electric Works as a research engineer in the Acoustics Materials Research Group. Plans to attend graduate school at Dartmouth- MSE/MBA.
Kelly, Thomas J. LTC.	UIUC	Company A ~~USA CERL~~ Headqtrs Command ~~P.O. Box 9~~005 ~~Champaign, IL 61825-9005~~ Ft. Stuart, GA 31314-5000		Studying for PhD at UIUC and employed by CERL as principal investigator, robotic tchnologies for construction.
Klein, Donald	CAL-BER	NEC Corporation Devices Reliability Department Analysis and Evaluation Technology Ctr 1753, Shimonumabe Nakahara-Ku Kawasaki,Kanagawa, 211 Japan	24746 Acropolis Drive Mission Viejo, CA 92691 (714) 586-0492	Employed by NEC Corporation for a 3-year research position.

EAGLE 1992 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Lisota, Kevin	Wiconsin	1018 Eng Res Bldg 1500 Johnson Dr Madison, WI 53706	W226 54385 Coppersmith SQ Waukesha, WI 53186 (414) 547-8612	Studying in Japan through UW's Japan Leadership Program at Tokyo Institute of Technology until Dec. 1993.
Liu, Fu-San	UIUC	2-39-9 Harie Koraru 12-103 urayasu-shi Chiba 279 Japan Phone: 0473-80-6381		Employed by CONTEC Co. LTD as a computer hardware designer for 2 to 3 years. Plans to attend graduate school afterward.
Mabry, Lisa	UIUC	203 Regency Drive #529 Blomingdale, IL 60108 (708) 582-7320	203 Regency Drive #529 Blomingdale, IL 60108 (708) 582-7320	Employed by General Electric in the Technical Sales Program as an automation specialist.
Michael, Bryan		406 Monterey Square Boynton Beach, FL 33436	261 Pinnacle Drive Boone, NC 28607	Employed by Motorola with the Japan Products Group making pagers for export. Possible transfer to Tokyo office wihing 2 years.
O'Connor, Lara Ann	GA TECH	162 4th St. NW Atlanta, GA 30313 (404) 607-1881	4225 Wheaton Ln Clarkston, GA 30021 (404) 294-4184	Employed by Andersen Consulting in Atlanta. Plans to attend graduate school at Johns Hopkins and Wharton in 2 years.

EAGLE 1992 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Sabusay, Gilbert	SUNY-Buffalo	360 Dartmouth Ave. Buffalo, NY 14215	469 Manila Ave Jersey City, NJ 07302	Looking for work in mechanical engineering. Plans to attend graduate school in 1994 at NC State or or George Washington University
Saur, Clemens	GA TECH	~~30936 Ga. Tech Station~~ ~~Atlanta, GA 30332~~ Traberweg 1A 8400 Regensburg GERMANY	c/o Jennifer Chen 2915 Pooter Glad Court Doraville, GA 30360	Working at MITI's Mechanical Engineering Laboratory dealing with Virtual Reality on Robotics Applications. Will start in 1993, International Trainee Program, Siemens Corporation, with two year program in production, planning and logistics. Will spend 3 eight month periods in Atlanta, Regensburg and Seoul.
Schwartz, Kevin		10 Spring Street Princeton, NJ 08542 (609) 924-4025 HOME (609) 490-2185 WORK e-mail: kschwart@astro.ge.com	10 Radcliff Road Bala Cynwyd, PA 19004 (215) 664-3215	Working for Martin Marietta Astro Space in a 2-year rotational engineering leader training program. Taking grad classes part-time toward a MS, Systems at University of Pennsylvania Pennsylvania.
Sillay, Karl	GA TECH	32572 Georgia Tech Station Atlanta, GA 30332	2010 Desmond Dr. Decatur, GA 30033	Attending Georgia Tech graduating in 1994

Savage,
Lt. James C.

4871 Effingham Place
Dayton, OH 45431-1124
phone: 513-256-0938
savagejc@sm3.ascsm.wpafb.af.mil

Fulfilling commitment to USAF as Avionics Systems Engr.

EAGLE 1992 APPLICANTS

NAME	SCHOOL	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Tomaselli, Daniel P.		Koshien Ryou Toyo Construction Co. Ltd Koshien 9-Bancho 13-14 Nishinomiya, Hyogo 663	460 Hillcrest Ave Fort Lee, NJ 07024	Employed by Narvo Technical Research Institute in soil mechanics lab until July '94.
Wada, Bryan	UIUC	Patio Belleza A-201 2-5-1 Numame Isehara, Kangawa 259-11 Japan	8415 McVicker Morton Grove, IL 60053	Employed by Nissan Motor Co as a design engineer.
Wong, Blanche	UIUC	Bell Masion ~~Asashiobashi, Rm 701~~ ~~1-9-27 Yunagi-cho~~ ~~Minato-ku Osaka-shi~~ ~~Osaka 552~~ Japan	3305 S Wood St Chicago, IL 60608 (312) 927-2578	Employed by Nippon Motorola as a software engineer for at least one year. Administrative Ass't for FEW - Osaka Group.
Young, David	UIUIC	506 W. Elm St. #304 Urbana, Il. 61801 (217)328-6829	1100 Harvard Lane Buffalo Grove, Il 60089 (708) 537-7324	Attending Georgetown Law School- International and patent law.

Presearce #503
Nishi Tachibana-cho 2-3-5
Amagasaki-shi, Hyogo-ken
Japan 660

Thirapatana, Ted

463 Cottonfield Circle
Weddington, NC 28173

Starts with Hino Motors in Japan later in 1994.

1993 EAGLE PARTICIPANTS

	NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Texas A&M	Grein, Matthew	409 E. Woodbury Lane #112 Spartanburg, SC 29301 (803) 585-5539 (803) 582-2494 fax	409 E. Woodbury Lane #112 Spartanburg, SC 29301 (803) 585-5539 (803) 582-2494 fax	Currently seeking employment in Japan as an Electrical Engineer. Also applying for graduate schools.
	McCauley, Shanna		1807 A Treehouse Tr. College Station, TX 77845 (409) 693-6145	
	Matsumoto, Frank	2415 Quail Valley East Dr. Missouri City, TX 77459 (713) 437-6418	2415 Quail Valley East Dr. Missouri City, TX 77459 (713) 437-6418	Will begin work for Watanabe Giken in Koriyama for at least 2 years.
	Larson, Katherine	P.O. Box 13972 College Station, TX 77841	P.O. Box 13972 College Station, TX 77841	
	Hooter, Douglas		804 D Natalie Bryan, TX 77801	
NC State	Carlson, Eric	RR 2 Box 4600 Silk Rd. Ext. Bennington, VT 05201 (802) 442-9389	RR 2 Box 4600 Silk Rd. Ext. Bennington, VT 05201 (802) 442-9389	
	Erickson, Michael	403 Faison Box 126 Knightdale, NC 27545	403 Faison Box 126 Knightdale, NC 27545	
	Forkner, Craig	Box 3562, 231 SYME, NCSU Raleigh, NC 27607	311 Springwood Road Asheboro, NC 27606	

1993 EAGLE PARTICIPANTS

	NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
	Hatten, Andrew	2610 Broadwell Drive Raleigh, NC 27606	2610 Broadwell Drive Raleigh, NC 27606	
	Layne, James III	607 Brent Road Raleigh, NC 27606	607 Brent Road Raleigh, NC 27606	
Cornell	Bellows, Gregg	208 Dryden Road, #404 Ithaca, NY 14850		
	Hahne, Bruce	Tsuzuri Building 502 Shonandai 1-7-4 Fujisawa 252, Japan (0466) 44-5652	c/o Rolf and Carolyn Hahne 4515 Oakridge Dr. Midland, MI 48640	Working for Mitsubishi Electric Corporation, in Japan for a few years.
	Chiu, Michael	~~2-354 Mendori-cho~~ ~~Kawanoe City, Ehime Pref.~~ ~~Japan 799-01~~	2318 Wonderview Rd. Timonium, MD 21093-3363 (410) 561-8266	Will begin working for IMC International, Inc. in Japan for at least three years starting March 1994.
Texas	Caldwell, Dervinn	4180 Renard Way Rex, GA 30273 (404) 474-0876	4180 Renard Way Rex, GA 30273 (404) 474-0876	
	Migdol, Michael	3607 Greystone #1633 Austin, TX ~~78705~~ 78731	email: michael@slurpee.asg.arlut.utexas.edu 3607 Greystone #1633 Austin, TX ~~78705~~ 78731	
SUNY Buffalo	Guglielmi, David	302A Roosevelt Hall, SUNYAB Buffalo, NY 14261		
	Hollner, John IV	169 Highgate Avenue Buffalo, NY 14215		

→ 310 White Villa Miyagawa
5-20 Miyagawa 3-Chome
Iyo-Mishima-shi, Ehime

1993 EAGLE PARTICIPANTS

Illinois

NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Ip, Vincent	554 Richmond Quad, SUNYAB Amherst, NY 14261		
Oppenheim, Eric	585 Minnesota Avenue Buffalo, NY 14215		
Plisch, Monica	URH Wardall Urbana, Il 61801 (217) 332-4441	908 Eddy Ct. Wheaton, IL 60187	
Marti, Matsuo	309 N. Busey #12 Urbana, IL 61801 (217) 328-1134	309 N. Busey #12 Urbana, IL 61801 (217) 328-1134	
Rumminger, Brett	106 S. Coler #22 Urbana, IL 61801 (217) 328-2742	106 S. Coler #22 Urbana, IL 61801 (217) 328-2742	
Wu, Chiyang	1105 West Main St #11 Urbana, IL 61801 (217) 337-4944 e-mail: cw35531@uxa.cso.uiuc.edu	3111 White Oak Ln. Oakbrook, IL 60521 (708) 852-9846	Studying for a Master of Science in Biology at the University of Illinois.
Villanueva, Rey	115 Fleetwood Dr. Glendale Heights, IL 60139 (708) 653-0565	115 Fleetwood Dr. Glendale Heights, IL 60139 (708) 653-0565	

1993 EAGLE PARTICIPANTS

NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Erickson, Christian	2223 30th St. Rock Island, IL 61201 (309) 788-8239	2223 30th St. Rock Island, IL 61201 (309) 788-8239	
Vitayaudom, Valdis	6400 N. Cicero #201 Lincolnwood, IL 60645 (708) 673-4249	6400 N. Cicero #201 Lincolnwood, IL 60645 (708) 673-4249	
Takahashi, Alex	810 S Oak #32 Champaign, IL 61820 (217) 328-6131	219 Clarksville Rd Pittsfield, IL 62363	
Yuki, Ushio	203 S. 6th #303 Champaign, IL 61820 (217) 355-4164	14245 SW 94 CR Ln Miami, FL 33186	
Berkeley Defina, Sally	1666 Leroy Avenue Berkeley, CA 94709 (510) 845-6311	1666 Leroy Avenue Berkeley, CA 94709 (510) 845-6311	
Lee, Christopher	2562 Leconte Ave. Berkeley, CA 94709 (510) 549-4484	2562 Leconte Ave. Berkeley, CA 94709 (510) 549-4484	
Sagisi, Patrick	2360 Prospect St. Berkeley, CA 94704 (510) 843-3943	2360 Prospect St. Berkeley, CA 94704 (510) 843-3943	

1993 EAGLE PARTICIPANTS

	NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
	Wang, Rachel	964 Filbert Street San Francisco, CA 94133 (415) 474-2151	964 Filbert Street San Francisco, CA 94133 (415) 474-2151	
Rose-Hulman	Holmes, Patrick	529 Whitham apt A5 Fayetteville, AR 72701	2511 Conestoga Ct. Newburgh, IN 47630 (812) 853-9380	Studying for a doctorate at the University of Arkansas.
	Kays, Harold	100 NE Flatwoods Rd. New Salisburg, IN 47163 (812) 364-4789	100 NE Flatwoods Rd. New Salisburg, IN 47163 (812) 364-4789	Will begin work for Watanabe Giken in Koriyama for at least 2 years.
	Seager, David	Box 498 Rose-Hulman 5500 Wabash Avenue Terre Haute, IN 47803		
	Waldby, Julian	Box 903 Rose-Hulman 5500 Wabash Avenue Terre Haute, IN 47803		
	White, William	Box 557 Rose-Hulman 5500 Wabash Avenue Terre Haute, IN 47803		
Lehigh	Holmes, Vincent	UC#29, Box 329 Lehigh University Bethlehem, PA 18105		

1993 EAGLE PARTICIPANTS

	NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
	Phipps, James	UC Box D21 Lehigh University Bethlehem, PA 18105		
	Kulp, Christopher	P.O. Box 5411 Bethlehem, PA 18105		
Wisconsin	Douglas, Eric	Suite 104 New Green Heights 109 Midori-machi Sukagawa-City Fukushima Prefecture 962 Japan	207 South Henry Apt B Madison, WI 53703 (608) 256-1395	Working for Yamamoto Electric for one year with a renewable contract.
	Rogers, David	8008 N. Santa Monica Blvd. Milwaukee, WI 53217	8008 N. Santa Monica Blvd. Milwaukee, WI 53217	
	Skidmore, Joseph	439 Sullivan Olson Madison, WI 53706-1192	439 Sullivan Olson Madison, WI 53706-1192	
	Rentmeester Charles	410 N. Carroll Street Madison, WI 53703	410 N. Carroll Street Madison, WI 53703	
New Mexico	Bosiljevac, Steven		7812 Harwood Avenue, NE Albuquerque, NM 87110 (505) 298-4163	Working for Yoshida Cement Compan of Fukushima Prefecture starting in January 1994.
	Fears, Angela	214 Vassar, SE Albuquerque, NM 87106		

1993 EAGLE PARTICIPANTS

	NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
	Morinr, Patricia	Residence Center #258, UNM Albuquerque, NM 87131-7015		
	Stark, Glenn		8212 Pickard Court, NE Albuquerque, NM 87110 (505) 299-5953	
GA Tech	Bolden, Ira	2265 N. Jardine Dr. Wichita, KS 67219 (316) 264-5557	2265 N. Jardine Dr. Wichita, KS 67219 (316) 264-5557	
	Chen, Christine	2195 Porter Glade Ct Doraville, GA 30360 (404) 986-9496	2195 Porter Glade Ct Doraville, GA 30360 (404) 986-9496	
	Copeland, Shannon	37158 GA Tech Station Atlanta, GA 30332 (404) 892-4128	215 Threadneedle Rd. Augusta, GA 30907	
	Hathcock, James	Harrison 202 Box 26650 Georgia Tech Atlanta, GA 30332-0310 (404) 676-0013	Harrison 202 Box 26650 Georgia Tech Atlanta, GA 30332-0310 (404) 676-0013	
	Sarmiento, Mary		29534 Georgia Tech Station Atlanta, GA 30332 (404) 351-0847	Will work for Kunimi Denshi in Kunimi, Japan starting in 1994.

1993 EAGLE PARTICIPANTS

NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Shaw, Harvey	2920 Limestone Blvd Charleston, SC 29414 (404) 892-7714	2920 Limestone Blvd Charleston, SC 29414 (404) 892-7714	36220 Georgia Tech Station Atlanta, GA 30332
Takeuchi, Kenji	27599 Georgia Tech Station Atlanta, GA 30332	580 Clubland Circle Conyers, GA 30208	
Chang, Carol	27329 Georgia Tech Station Atlanta, GA 30332	1782 Howell Mill Rd Atlanta, GA 30318 (404) 350-0269	
McDonald, Clayton	2550 Akers Mill Rd, Apt S-10 Atlanta, GA 30339 (404) 980-9317	2550 Akers Mill Rd, Apt S-10 Atlanta, GA 30339 (404) 980-9317	
Reddy, Harish	3341 Trails End Road Roswell, GA 30075 (404) 640-9721	3341 Trails End Road Roswell, GA 30075 (404) 640-9721	
Temple Byrne, John		156 Kerr Place Landsdowne, PA 19050 (215) 622-4497	
Whang, Ji		9952 Wingtip Road Philadelphia, PA 19111 (215) 464-1595	

1993 EAGLE PARTICIPANTS

	NAME	CURRENT ADDRESS	PERMANENT ADDRESS	CURRENT STATUS
Michigan	Freeman, Rhonda		1108 Small Place Ypsilanti, MI 48197-5122 (313) 483-5087	
	Tarr, Cynthia	1131 Elmwood Ave Evanston, IL 60202 (708) 475-0636	1131 Elmwood Ave Evanston, IL 60202 (708) 475-0636	Graduated and looking for employment possibly in Japan.

~~Clark, Michael~~ 310 White Villa Miyagawa
5-20 Miyagawa 3-Chome
Iyo-Mishima-shi, Ehime
JAPAN 799-04

August 27, 1992

SUMMER '92
EAGLE Report

HISTORY REVIEW:

In August, 1991, the University of Wisconsin received a $3,000,000 grant to fund two years of EAGLE and NTU programs. EAGLE intensive Japanese culture and language was to be moved from its previous site at Rose-Hulman Institute of Technology in Terre Haute, Indiana to a site in Japan. As the previous Director of the EAGLE Japan Program, Dr. Barbara Ito, was scheduled to be on sabbatical for the academic year 1991-92, Dr. John Mock, Dr. Ito's replacement at Rose-Hulman Institute of Technology, was appointed Director in her place. Karen DeGrange was appointed Assistant Director on a half-time basis.

During the fall of 1991, various possibilities for sites in Japan were explored. In December, 1991, Dr. James Eifert, a member of the Executive Committee of EAGLE, Dr. Barbara Ito and Alison Kimura made a site examination trip to Japan to look at various possible sites. During part of their trip they were joined by Dr. Thomas Chapman, Associate Dean for International Programs, College of Engineering, University of Wisconsin.

Four sites were visited, Sapporo and Hakodate in Hokkaido, Koriyama in Fukushima Prefecture and Tokyo. On the basis of these visits, Jim Eifert, Barb Ito and John Mock decided to split the EAGLE program between two sites, Hakodate and Koriyama. In Hakodate, the EAGLE Japan would be associated with the Hokkaido International Foundation who would assume responsibility for the intensive language instruction. In Koriyama, EAGLE Japan would be hosted by Texas A & M's branch campus but would develop and implement autonomous culture and language programs. John Mock and Alison Kimura continued the process of discussions with the HIF and TAMU-K staff necessary to set up the EAGLE program. Tentative agreements were reached with both TAMU-K and HIF concerning use of classroom space and staff office space.

The plan developed for utilizing the two different sites involved separating the students primarily on the basis of Japanese language skills with the more competent students (third year and above) in Hakodate and the weaker students (second year) in Koriyama. The thinking was that the stronger students would be able to benefit more from the homestay program in Hakodate and that it would be much less strain on them. The original plan was to have twenty students in Hakodate and thirty students in Koriyama. In the end, eighteen students went to Hakodate and thirty-seven students were in Koriyama. Of the Hakodate students, all but four placed into the higher level classes. The four in the lower level classes were all older students who had been selected for Hakodate specifically to enable them to live in homestays, not because of their language skills.

STUDENT RECRUITMENT:

The EAGLE Secretariat, located at the University of

Illinois, took primary responsibility for developing and distributing recruiting materials (posters and application forms) to the member institutions. Each institution had the responsibility for its own recruiting. Applications were sent into the EAGLE secretariat, then passed along to the Director of the EAGLE Japan program for evaluation, acceptance or rejection. At the December meeting of the EAGLE Executive Committee in Chicago, the committee decided to accept more than the 50 student target with the idea that there would be some attrition and that additional funds might be able to be raised to cover the costs of the extra students. The committee felt it was very important, this first year, to have as many students having a positive experience as possible. Sixty-two students were accepted and fifty-five actually went to Japan.

STAFFING:

Hakodate: Two administrators/cultural faculty were all that were needed because the Hokkaido International Foundation "subcontracted", in effect, for the language instruction.

Associate Director, EAGLE Japan program: David Mosher, Ph.D. candidate in linguistics (specialty in ESL and American/Japanese negotiation styles), Michigan State University. Assumed primary administrative and pedagogical responsibility for the Hakodate component of the EAGLE Japan program.

Faculty: Alison Kimura, graduate student, ESL, University of Washington. Because Ms. Kimura had the original contacts in Hakodate, she also had primary responsibility for building up a functional EAGLE network.

Koriyama: Two administrators and six Japanese language instructors were planned for a group of approximately 35 students.

Director, EAGLE Japan program: John Mock, assumed overall responsibility for both sites and primary responsibility for the Koriyama site, both administrative and pedagogical.

Administrative Assistant: James Savage, a recent Rose-Hulman graduate, had taken three years of Japanese.

Head Japanese Language Teacher: Patricia Kataoka, Ministry of Education Fellow, Tohoku University. Prof. Kataoka had served as the head Japanese Language Teacher in the summer '91 program.

Language Instructors:

Mizue Funakoshi Clark: Indiana State University and Rose-Hulman Institute of Technology
Mayumi Takanashi Steinmetz: Seattle Institute of Languages
Yoko Hoshino: University of Oregon
Francis Nakahama: University of Oregon
Toshie Nakamura Gordon: Willamett University

TRANSPORTATION:

A substantial portion of the grant was provided for transportation of the students and staff to and from the sites in

Japan. CIEE, IACE and a local Terre Haute travel agent, International Tours, were asked to come up with prices for all EAGLE participants. An International Tours employee, in the process of forming her own company, TR GROUPS, solicited very competitive bids from both Northwest and United, both of which were substantially below CIEE or IACE fares, gate to gate. Through TR Groups, Northwest Airlines was given the contract to transport approximately 65 people from 25 sites in the United States to Narita at an average round trip cost of about $1,100. From Narita, ground transportation at the cheapest rate was arranged to take students and staff to Koriyama and Hakodate.

BOARD AND ROOM:

The students going to Hakodate would be participating in HIF's homestay program. Alison Kimura found housing for Dave Mosher and herself.

The situation in Koriyama was more difficult than that of Hakodate. After a considerable search by the Gakko Hojin (the City of Koriyama educational foundation associated with TAMU-K), rooms were found at a new businessman's hotel at a substantial discount from their normal rate. Unfortunately, even heavily discounted, the rooms were Y 4,000/night/person (45 people for 63 nights = Y 11,340,000), a very expensive option. A cheaper option was explored by it was rejected as being unacceptable after a visit by Pat Kataoka.

In spite of the cost, EAGLE food money had already been budgeted at a rate of Y 2,000/day for the Koriyama participants and Y 500/day for Hakodate (who received breakfast and dinner as part of their homestay). This was done because EAGLE applicants had been promised, both verbally and by the EAGLE literature, that food would be provided.

SET UP IN JAPAN:

In May, 1992, Alison Kimura went to Japan to prepare the groundwork, logistic and networking, for the summer '92 program. John Mock went to Japan on June 9, 1992 and, with Alison Kimura, investigated the possibilities of Shiga Prefecture, either at the Japan Center for Michigan Universities in Hikone or at another site, as a possible additional site for summer '93 or later.

On June 13 to 16, a cultural and administrative planning session, covering both sites, was held in Niihama, Ehime Prefecture. Participating were the summer '92 cultural and administrative staff (J. Mock, D. Mosher, A. Kimura and J. Savage) and Dr. Barbara Ito, the past Director of the EAGLE Japan Program. At this session, a unified cultural curriculum was developed and administrative procedures standardized, particularly bookkeeping.

SUMMER PROGRAM '92:

On June 16, 1992, 54 EAGLE students and several of the language teachers were met at Narita airport. The students and faculty who would be based in Koriyama boarded a bus (with an

accompanying truck for the luggage) for the five-hour drive to Koriyama. Dr. James Eifert of Rose-Hulman Institute of Technology accompanied the group as a guest.

The Hakodate group shipped much of their luggage directly to Hakodate, then took a train to Ueno station. Later that evening, they boarded the "night train" for Hakodate, arriving about noon the next day. The Hakodate group immediately joined in the orientation for the Hokkaido International Foundation. The EAGLE staff, however, were excluded from the HIF orientation due to a misunderstanding of the role of the EAGLE staff and the relationship between EAGLE and the HIF. Over the next several days, while the students went through the HIF orientation and language assessment process, Dave Mosher and Alison Kimura negotiated a working arrangement with HIF, something that we thought had been made clear months before.

In Koriyama, the relationship with Texas A & M University had been made much clearer. However, the relationship with the Gakko Hojin, the City of Koriyama academic foundation that hosts TAMU-K, had not been sufficiently clarified. This process that took some time and effort but was successfully completed.

However, the major omission, which had to be dealt with immediately, was the system for transferring funds from the United States to Japan. Rose-Hulman's information had been that there was a Sanwa Bank in Koriyama and that an account could easily be set up after the EAGLE program arrived. Funds could then be wired from Rose-Hulman into the Sanwa account. However, there is no Sanwa Bank in Koriyama and Fuji Bank wanted a personal stamp (hanko) and a permanent address to open an account. After a certain amount of delay, a personal stamp was acquired and Fuji Bank agreed to accept residence at the Toyoko Inn as reasonably permanent so funds could be transferred. However, financial transfers continued to be a major problem for the program.

In Hakodate, the eighteen students were divided up into five different levels. In Koriyama, the original idea was for the thirty-seven students to be divided into two levels but in the first two weeks, it became apparent that two levels were not enough and the decision was made to make a three level system even though this put a considerably greater work load on the language faculty. In addition, in Koriyama, a full "Japanese-only" policy was instituted. In Hakodate, the "Japanese-only" policy only applied to the Hokkaido International Foundation although many students were staying in homestays where only Japanese was spoken.

In Koriyama, twenty hours per week of language classes and eight hours per week of cultural classes were scheduled. Hakodate had 15 formal class hours of language, additional informal or other language classes, and six hours of cultural classes. The differences between the formal contact hours were a result of the different living environments and the opportunities for linguistic and cultural interaction between the two sites.

In Koriyama, field trips were arranged to a local scenic

area (as guests of the City of Koriyama), four local manufacturing companies, the Engineering Faculty of Nihon University (as guests of the Dean of the Faculty), "High-Tech Plaza", the research institute of Fukushima Prefecture and the nearest large city, Sendai. In Hakodate, field trips were to a local mineral springs (as part of the orientation of the Hokkaido International Foundation) two local manufacturing companies, and City Hall. Plans for more ambitious field trips for both sites were canceled because of financial concerns.

A number of visitors from the consortium schools managed to get to one or the other of the EAGLE sites. Jim Eifert of Rose-Hulman rode to Koriyama on the bus with the EAGLE students, was involved in the first day or two of activities, then went on up to Hakodate and helped with the negotiations with the HIF. Roger Mayne of SUNY-Buffalo also visited both sites in June. In early August, John Meertz, the head Japanese language instructor at North Carolina State University visited both sites.

At the end of July, a group of representatives arrived in Koriyama (Howard Wakeland of the University of Illinois, Lee Blank of Texas A & M, Hubert Winston of North Carolina State University, and Tom Chapman and Jim Davis of the University of Wisconsin). The visitors took a look at the ongoing program, were involved in network building specifically aimed at increasing EAGLE student placements, and participated in an extensive discussion with John Mock,the Director of the EAGLE Japan program and the site director at Koriyama, about current and future programs.

After three days in Koriyama, Howard Wakeland, Hubert Winston, Tom Chapman, Jim Davis and John Mock all went up to Hakodate. Again, the visitors were involved in reviewing the program and networking to increase placements for students. After two days, Howard Wakeland and Hubert Winston went back to the United States and Tom Chapman and Jim Davis went up to Sapporo. John Mock stayed an extra day to more fully review the program with the Hakodate EAGLE staff and students and the HIF staff.

After the Hakodate review, John Mock and Tom Chapman had discussions with Hokkaido University about their possible participation in the EAGLE program. These discussions were very enthusiastic but not terribly conclusive. The Faculty of Engineering at Hokkaido University apparently wants to sponsor or even join EAGLE but the bureaucratic infrastructure of the University appears to be opposed.

As the programs neared their end, final Japanese language examinations were given at both sites and program evaluations, both written and verbal, were done by students and staff. In both sites, simple closing ceremonies were held with students getting certificates of participation in the EAGLE Japan program for the summer of 1992.

CONCLUSIONS:

1. Transportation: Everyone got to and from the appropriate sites with an amazing efficiency. TR Groups of Reelsville, IN did an excellent job of planning and following up on details. In addition, we were just lucky. All flights arrived and departed near their scheduled times.

2. Instruction: At both sites we had extremely high quality academic programs in Japanese culture and language. While there are certainly improvements that can be made, notably an increase in field trips and other "hands on" experiences, the quality of the academic program was excellent.

3. Housing and other non-travel logistics: The Toyoko Inn in Koriyama was certainly more than adequate but extremely expensive. In addition, putting a bunch of American students together, in single rooms, defeats some of the purpose of having the program in Japan. In Hakodate, the overload of the HIF homestay program made for less than ideal homestay situations, often with long commutes by students, but the experience, on the whole, was excellent.

4. Internship Placement: In spite of major efforts by Dean Wakeland at the University of Illinois, from the beginning substantial steps needed to be taken, and are still needed, to correct a major weakness in the placement process. Coming into Japan, only two students of the Koriyama group had placements with seventeen more wanting placements. During the summer program, at least eight more students received job offers (sometimes more than one per student) and a lot of ground work was done in Koriyama, Hakodate and Sapporo--with the Chambers of Commerce and networks of businesses--to improve the placement process. The visiting representatives from member institutions were particularly helpful in this effort. In addition, the International Division of the City of Hakodate and the Gakko Hojin in Koriyama have accepted ongoing responsibility to continue helping with the placements both from this year and in the future. We plan, for example, to send the resumes of students accepted for summer 1993 to Koriyama as early as December 1992 so that a reasonable time frame can be attained.

In addition, it is clear that a permanent, long term presence is required in Japan to maintain contact with companies and organizations. One possibility would be for EAGLE to hire Dr. Barbara Ito on a part-time basis precisely to facilitate internship placement. In fact, this will be essential. We may also wish to consider Dr. Alan Engle's proposal, particularly if he were to be working under the supervision of Dr. Ito.

Further, we need to develop better written materials about EAGLE, in English and in Japanese, for dissemination to interested parties. A Japanese language EAGLE brochure and a discussion of the "internships" is crucial.

5. Finances and Bookkeeping: The proposed system for moving funds proved inadequate. An adequate system was developed but the program was always "behind." This problem will be alleviated next year because the accounts are already in place

and we will go back to the original plan, sending the program money over to Japan in advance of the beginning of the program.

The bookkeeping system used this year was adequate, everything has balanced out, but inadequate staffing meant that bookkeeping time had to be taken out of other much needed activities, or the reverse. Any expansion of the program will require a different approach.

6. Staffing: All of the staff worked out very well. However, both Koriyama and Hakodate suffered from having one too few staff. Koriyama needed a second "cultural" instructor/administrator and Hakodate needed a "student assistant". While this will increase the overhead, it will greatly benefit the quality of the program and seriously reduce the stress on the other staff.

7. Recruitment: While the program ran very well during the summer of 1992, it was clear that a few students were not terribly serious about studying Japanese culture and language. While this cannot be completely avoided, steps need to be taken to minimize the number of students with this attitude. In addition, there was a certain amount of confusion between the EAGLE Secretariat (Howard Wakeland at the University of Illinois)and the EAGLE Japan Program (John Mock at Rose-Hulman Institute of Technology) about what data was needed on the application, the selection process, and information given to students. This confusion also needs to be minimized. There seem to be several possibilities:

a) Representatives need to be more knowledgeable about the EAGLE Japan program and become more involved both in the selection process, particularly in interviewing and screening students, and in the dissemination of information about the program.

b) The "ground rules" of the program need to be worked out more carefully, e.g., whether or not EAGLE will pay for student food.

c) Instead of applications first going to the Secretariat, then to the Director of the EAGLE Japan Program, applications need to come directly to the Director. Further, the supplementary information (see attached sheet) is essential for the selection process and needs to accompany each application.

d) Representatives need to identify a person or persons at their institution, preferably who have some knowledge of Japan, who are willing to directly and effectively interact with students.

e) Students need more information about the program and more sense of "connection" once they have been accepted. The Director of the EAGLE Japan Program needs to develop more informational materials providing more frequent contact with accepted students.

INFORMATION NEEDED IN ADDITION TO APPLICATION FORM:

1. BIRTHDATE _____

2. SEX _____

3. CITIZENSHIP _____

4. PASSPORT AND/OR GREEN CARD NUMBER _____

_____

5. CITIZENSHIP OF PARENTS _____

_____

6. LANGUAGE/S SPOKEN AT HOME _____

7. LANGUAGES STUDIED OR SPOKEN- HIGH SCHOOL/COLLEGE, FOR HOW LONG

_____

8. LIST COURSES TAKEN RELATING TO ASIA/JAPAN _____

_____

_____

9. TRAVEL AND LIVING EXPERIENCE OUTSIDE THE UNITED STATES

_____

_____

10. WORK EXPERIENCE _____

_____

11. CURRENT MEDICAL CONDITIONS, INCLUDING ALLERGIES, SHOTS OR PRESCRIBED MEDICATIONS YOU ARE TAKING, AND FOR HOW LONG

_____

12. PLEASE INCLUDE AN UP-TO-DATE PROFESSIONAL RESUME

EAGLE Japan
Summer '93

Recommended Changes

1. More emphasis and resources need to be allocated to placement. Dr. Barbara Ito should be hired on a 1/4 time basis to build up and maintain the EAGLE network (employers, potential employers, Chambers of Commerce, Alumnae, City Employees) in Japan. Resources permitting, a "leg man" such as Dr. Alan Engle should also be seriously considered on a short-term, contract basis.

2. EAGLE Japan recruitment needs to be supported by the Secretariat at the University of Illinois but applications and supporting materials should be sent directly to the Director of the EAGLE Japan program. Further, information about the EAGLE Japan program should come primarily out the Director of EAGLE Japan.

3. Each institution should designate not only an official representative but also should have someone, preferably with some knowledge of Japan and the EAGLE program, to work closely with students and with the EAGLE Japan program. This person can, of course, be the same as the official representative, if appropriate. The EAGLE Japan person would:

a) help screen students in the application process through an interviewing process;

b) help pass along EAGLE Japan information to the accepted students and assist in their preparations for going to Japan;

c) help facilitate the assessment of student's Japanese language capabilities, with the assistance of a Japanese language teacher.

4. EAGLE needs to have explicit, working relationships with associated institutions in Japan (so far, Texas A & M--Koriyama and the Hokkaido International Foundation). This has been done with TAMU-K and needs to be finalized with HIF. Barring unforseen circumstances, it is recommended that EAGLE Japan use the Koriyama site again. If a reasonable agreement can be worked out with HIF, then a return to Hakodate is also recommended.

5. The Summer 1993 program will have the additional cultural/administrative staff as discussed in the report. Each site will have a site director who will be the primary administrator and cultural instructor, a second cultural instructor/network person, and a "student assistant."

6. The EAGLE Japan staff for the summer of 1992 were excellent. It is recommended that all staff for the summer of 1992 be sent letters of commendation and thanks by the Director of the EAGLE Japan program and Howard Wakeland, Director of EAGLE. Further, it is recommended that all appropriate staff officially be offered employment for the summer of 1993.

7. Arrangements for board and room will be refined as much as possible in order to avoid some of the problems of this year. However, we may not be able to control these costs very much.

8. Funding permitting, more "hands on" type field trips, particularly those with a cultural purpose, will be incorporated into the programs.

9. The finance and bookkeeping system will be revised to avoid the problems of the summer of 1992. Funds will be sent to Japan before the beginning of the program. Increased staff (see #4) will help reduce the work load.

10. Travel arrangements will be similar to those of summer 1992. The Director of the EAGLE Japan program will solicit competitive bids for package travel for the whole group and select the best bid.

100 STUDENTS

1. Recommendations 1 - 10 (above) all stand.

2. An additional site or two (probably Sapporo, with the cooperation of Hokkaido University and/or Niihama with the cooperation of Sumitomo Corporation) be selected by the Director of the EAGLE Japan program.

3. If Sapporo is selected, then a part-time, year around staff person living in Sapporo should be immediately recruited to start working on housing, placements, field trips and other items that cannot be arranged from the United States. EAGLE should never go into another site "cold."

3. The EAGLE Japan Director will recruit additional staff appropriate to the number of sites. Since one additional site is the most likely, this would be one (1) site director, two (2) additional cultural/administrative staff, a head language instructor and five (5) Japanese language instructors for approximately forty (40) students. The additional students would be sent to Hakodate if appropriate.

4. The Director of the EAGLE Japan program will function as a site director but will also maintain overall administrative responsibility for the other sites. The Director would plan to visit the other sites at least once during the summer program, preferably twice. Therefore, the second cultural faculty at the Director's site needs to be a particularly strong teacher and be able to administer the site in the Director's absence.

5. Approximately $400,000 in addition to the AFOSR Grant need to be raised and allocated. Suggestions have included $1,000 per student fee and a contribution of $15,000 per institution which would raise $300,000 and allow for about 88 students.

Attachment 4

OCT 0 5 1992

ROSE-HULMAN
INSTITUTE OF TECHNOLOGY

DEPARTMENT OF HUMANITIES, SOCIAL AND LIFE SCIENCES

October 2, 1992

Dear EAGLE Representatives;

Enclosed are the summaries of the evaluations we did on the programs in Koriyama and Hakodate. What we were looking for is broad areas where we can make improvements. In addition to the written evaluations, we also did verbal critiques at both locations where the students got a chance both to say publicly what they did not like and also got a chance to make suggestions to improve the program. Many of their suggestions have been built into the budget for summer of 1993.

On another point, Teresa Finis has produced a supplement to the application that should be given out to any students applying. I presume that she is sending them out to all of you or has already done so.

If you run into any questions or problems that you are not sure about, please feel free to contact me or Karen DeGrange at any time. Karen's e-mail address is not on the address sheet. It is DEGRANGE@HSLS.ROSE-HULMAN.EDU.

The meeting in New York seemed very productive. We are looking forward to a very interesting year.

Sincerely,

John Mock

John Mock, Director
EAGLE Japan Program

EAGLE JAPAN SUMMER 1992 POST-PROGRAM EVALUATION

DATE:

NAME:

SITE:

WHAT INFORMATION (IF ANY) DID YOU NOT GET BEFORE YOU LEFT THE UNITED STATES THAT YOU FOUND TO BE CRITICAL TO YOUR FIRST 48 HOURS IN JAPAN? EXPLAIN.

WHAT WAS YOUR EXPERIENCE AT NARITA? POSITIVE, NEGATIVE, A HASSLE, A BREEZE? DID YOU FIND YOUR GROUP (HAKODATE, KORIYAMA) EASILY?

HOW DID YOU FEEL IN GENERAL ABOUT JAPAN DURING YOUR FIRST 48 HOURS IN COUNTRY? DID YOU FEEL PHYSICALLY ILL AT ANY POINT? (REMEMBER, IT'S OK TO HAVE CULTURE SHOCK.)

ACCOMODATIONS:

KORIYAMA: TOYOKO INN

EXCELLENT 10 9 8 7 6 5 4 3 2 1 UNACCEPTABLE

HOMESTAY (IF APPLICABLE)

EXCELLENT 10 9 8 7 6 5 4 3 2 1 INTOLERABLE

HAKODATE: HOMESTAY

EXCELLENT 10 9 8 7 6 5 4 3 2 1 INTOLERABLE

PLEASE EXPLAIN THE REASONS FOR YOUR RATINGS. ADD ANY COMMENTS YOU WISH.

SITE EVALUATION

PLEASE DESCRIBE <u>THE BEST AND THE WORST FEATURES</u> OF YOUR SITE.

KORIYAMA: TEXAS A & M UNIVERSITY CAMPUS

HAKODATE: HOKKAIDO INTERNATIONAL FOUNDATION

LANGUAGE PROGRAM EVALUATION

<u>SITE:</u> <u>LEVEL</u>:

TEXT, HANDOUTS, WRITTEN MATERIALS USED: ADEQUATE, INADEQUATE.
EXPLAIN:

AMOUNT OF TIME SPENT IN CLASS: TOO LITTLE, JUST RIGHT, TOO MUCH.
EXPLAIN:

AMOUNT OF TIME SPENT COVERING MATERIAL: TOO LITTLE, JUST RIGHT, TOO MUCH. EXPLAIN:

INSTRUCTOR:
APPEARED COMPETENT/KNOWLEDGEABLE POORLY PREPARED
EXPLAIN:

APPROACHABLE/HELPFUL COLD/INDIFFERENT
EXPLAIN:

COULD UNDERSTAND EASILY DIFFICULTY UNDERSTANDING
EXPLAIN:

CULTURAL PROGRAM EVALUATION

SITE:

CULTURAL MATERIAL PRESENTED

INTERESTING OK BORING
EXPLAIN:

ADEQUATE/RELEVANT OK IRRELEVANT/INADEQUATE
EXPLAIN:

WHICH FORMAT WAS USED? CLASSROOM OR FIELDTRIP/EXTERNAL?

IF BOTH, A. WHICH SEEMED MORE EFFECTIVE? PLEASE EXPLAIN.

B. WHICH DID YOU PREFER?

FIELD TRIPS: PLEASE DESCRIBE BRIEFLY THE BEST AND THE WORST.

WHAT DID YOU LIKE THE BEST AND THE LEAST ABOUT YOUR CITY? KORIYAMA OR HAKODATE:

IN GENERAL, HOW DO YOU FEEL ABOUT JAPAN NOW, AFTER COMPLETING AN EIGHT WEEK LANGUAGE COURSE IN COUNTRY? ANY DIFFERENCES FROM WHEN YOU FIRST ARRIVED?

EAGLE EVALUATIONS SUMMER 1992 KORIYAMA 38 students

I. GENERAL

INFO NEEDED IN ADVANCE
Cool weather (jacket) 4, rain 3
Exchange rate, info about money 2
How to use buses, trains 2
How/what to eat (menus) 2
Japanese toilets 1

VISA cards do not work
Traveler's checks good only at bank

NARITA AIRPORT
Very easy 24
More explanation on customs and immigration 6
Got lost 2

GENERAL HEALTH
Tired (lack of sleep) 10
Ill 1
Good 20

ACCOMODATIONS - TOYOKO INN
Helpful ladies at front desk 7
Excellent 30
Too nice, too western, etc. 9
Enjoyed private room 2
Wanted a roommate 5

II. SITE EVALUATION

KORIYAMA: TEXAS A & M UNIVERSITY
Best: Near Japanese students 15
Want more contact with Japanese students 5
Eating meals out 2
Close to hotel 14
Sports facilities 8

Worst: Too much smoking 5
Too easy to speak English 4

III. LANGUAGE PROGRAM EVALUATION

	LEVEL: 1	LEVEL: 2	LEVEL: 3
WRITTEN:	Adeq 6 Inadeq 1	Adeq 11 Inadeq 5 Good handouts	Adeq 6 Inadeq 3 More handouts Prefer Jordan Good games
TIME IN CLASS:	OK 4 Not enough 2 4th hour tiring 3	OK 14 Not enough 1 More conversation 2	OK 4 Not enough 1 Tiring

EAGLE EVALUATIONS SUMMER 1992 HAKODATE 18 students

I. GENERAL

INFO NEEDED IN ADVANCE
Schedule of events during first 48 hours (itinerary) 6
Hakodate weather
HIF description 3

NARITA AIRPORT
Map of Narita Airport 1
Well organized, easy 8
Some problems, slight hassle 5

GENERAL HEALTH
Extremely tired (lack of sleep) 8
Spend night in Tokyo before taking train to Hakodate 3
Physically ill 2
Good 3

ACCOMODATIONS - HOMESTAYS
Homestays:
Excellent 6
OK but some difficulties (language & communication) 2
Major factor in learning Japanese 2
Invasion and lack of privacy 2
Too far from HIF (long commute: 1-2 hours) 4
Boarding house:
I felt I did not have true homestay 8
Easy to speak English 7

II. SITE EVALUATION

HAKODATE: HOKKAIDO INTERNATIONAL FOUNDATION
Best: Great teachers 7
Good fieldtrips 1
Beautiful city 6
Worst: Long commute 7 (commuting was a big expense)
Building in poor condition (smells, no facilities available, ex: gym) 7
Too many extra curricular activities 2

III. LANGUAGE PROGRAM EVALUATION

At HIF there were eight different levels of language instruction, with one being the lowest and eight being the most advanced.

LEVEL 1 (2)	LEVEL 2 (3)	LEVEL 3 (2)	LEVEL 4 (1)
WRITTEN:			
Adeq 2	Adeq 3	Adeq 2	Adeq
Used 3 books by same author, better than Jorden 1	Excellent gram. book* 2		

*Matsuko Endo Simon

TIME IN CLASS:

OK/Just right 2	Not enough 2	OK/Just right 2	Just right

TIME COVERING MATERIAL:

OK/Just right 2	OK 2	OK Not balanced	N/C

INSTRUCTOR:

Excellent 2 Very helpful 1, Spoke English when needed 1	Excel 2 Best lang. tchr I ever had 2	Hardworking 2 OK 2	Competent Helpful

LEVEL 5 (3)	LEVEL 6 (3)	LEVEL 7 (2)	LEVEL 8 (2)
WRITTEN			
Adeq 2 Very good 1	Adeq 3 Text not good 2 review/English	Adeq 2	Adeq 2
TIME IN CLASS			
Just right 2 Too much 1	Just right 3 (too many out of class act.)	Just right 2	Just right 2
TIME COVERING MATERIAL			
Just right 2 Not enough 1	Just right 3	Just right 1 Too little 1	Just right 2
INSTRUCTOR			
Very competent 3 Very helpful 3	Very competent 2 Very helpful 2	Competent 2 Helpful 2	Very competent 2 Very helpful 2

IV. CULTURAL PROGRAM EVALUATION

INTERESTING - BORING OK 7 Interesting 11
Too long 3
More practical information 1
Business practices/negotiations good 2
Had it in college 2

ADEQ/REL - INADEQ/IRREL ADEQ 7 OK 11
Too many readings 2

CLASSROOM VS FIELDTRIP, WHICH PREFERRED
Both good 3
Fieldtrip 4
Class 7
Want more fieldtrips 3
Want more fieldtrips to an engineering-related site 3

BEST FIELDTRIP
Technopolis 6
Fish factory 2
World Onsen Bokujo

WORST
Fish factory (smell) 3

HAKODATE: BEST FEATURE	WORST FEATURE
Festival 4	Far from big cities 7
Size (small) 4	Too rural 2
Nice local people 4	Homestays too far away 1
Few foreigners 2	Transportation closes early 1
Beautiful scenery 3	

V. GENERAL ATTITUDE AFTER PROGRAM

A. Koriyama

My Japanese improved a lot. 10

It changed, clarified my ideas of Japan. 7

It was a good start/base for staying and working or continuing my study of Japanese. 4

I feel much better prepared to work here. 4

The Japanese are not the "superhumans" we think or are led to believe they are. 2

Male Japanese treatment of women not good. 2

B. Hakodate

Frustrated. Japanese language very difficult. (soph)

Helps me evaluate my own culture. Japan did not fill my expectations.

Language skills improved a lot. 4

Feel positive. 2

Japan is different from my expectations. 1

Very excited about continuing Japanese language study in states and working in Japan. 2

Made me a better internationally minded engineer. (German)

Better understand Japanese culture. 2

Want to come back. 2

NTU SITES

Advanced Micro Devices, Inc.
Austin, TX
AG Communication Systems
Phoenix, AZ
Air Products and Chemicals, Inc.
Allentown, PA
ALCOA
Alcoa, TN
Alcoa Center, PA
Davenport, IA
Lebanon, PA
Pittsburgh, PA
Point Comfort, TX
Rockdale, TX
Wenatchee, WA
Alliance for Higher Education
Dallas, TX (11 sites)
Alliant Techsystems Inc.
Hopkins, MN
Mukilteo, WA
Allied Signal Aerospace Company
South Bend, IN
AMP Incorporated
Harrisburg, PA
Analog Devices, Inc.
Greensboro, NC
ARINC
Annapolis, MD
Armco Steel Co., L.P.
Ashland, KY
Atmel Corporation
Colorado Springs, CO
AT&T
Golden, CO
Holmdel, NJ
Lisle, IL
Little Rock, AR
Mesquite, TX
Middletown, NJ
Norcross, GA
North Andover, MA
Phoenix, AZ
Piscataway, NJ
Reading, PA
Shreveport, LA
Skokie, IL
Union, NJ
Westminster, CO
Whippany, NJ
The BDM Corporation
Albuquerque, NM
Bellcore
Lisle, IL
Piscataway, NJ
BNR Inc.
Research Triangle Park, NC
Boeing Defense & Space Group
Seattle, WA
Boeing Commercial Airplane Group
Wichita, KS
Booz-Allen & Hamilton, Inc.
Bethesda, MD
Bull HN Info. Systems Inc.
Billerica, MA
Phoenix, AZ
Burle Industries, Inc.
Lancaster, PA
Carrier Corporation (UTC)
East Syracuse, NY
College Center for the Finger Lakes
Corning, NY
Commtex Inc.
Crofton, MD
CTS Corporation
Berne, IN
A Dallas-Based Info. Management Co.
Plano, TX
datotek, An AT&T Company
Dallas, TX
David Sarnoff Research Center
Princeton, NJ
Deere & Company
Dubuque, IA
Moline, IL
Digital Communications Associates, Inc.
Alpharetta, GA
Digital Equipment Corporation
Annecy-le-Vieux, France
Augusta, ME
Boxboro, MA
Chatswood, NSW, Australia
Colorado Springs, CO
Greenville, SC
Hudson, MA
Kanata, Ontario
Littleton, MA
Maynard, MA
Nashua, NH
Reading, Berkshire, England
Seoul, Korea
Shrewsbury, MA
Solent, England
South Burlington, VT
Stow, MA
Tewksbury, MA
Tokyo, Japan
Unterfoehring, Germany
Valbonne, France
Varese, Italy
Eastman Kodak Company
Kingsport, TN
Rochester, NY
Windsor, CO
Eaton Corporation
Southfield, MI
E.I. du Pont de Nemours & Company
Deepwater, NJ
Memphis, TN
Newark, DE
Orange, TX
Parlin, NJ
Seoul, Korea
Wilmington, DE (2 sites)
EMA Open Learning Pty Ltd
South Melbourne, Australia
E-Systems, Inc.
Greenville, TX
FAA Technical Center
Atlantic City Airport, NJ (2 sites)
General Dynamics Corporation
East Camden, AR
General Electric Company
Bridgeport, CT
Burlington, IA
Cincinnati, OH
Daytona Beach, FL
Erie, PA
Florence, SC
Lynchburg, VA
Lynn, MA
Milwaukee, WI
Mississauga, Ontario, Canada
General Electic Company
Ottawa, IL
Peterborough, Ontario, Canada
Plainville, CT
Rutland, VT
Schenectady, NY (2 sites)
Utica, NY
Wilmington, NC
General Instrument Corporation
Hatboro, PA
Hicksville, NY
Hunt Valley, MD
Nogales, AZ
Phoenix, AZ
San Diego, CA
Georgia Institute of Technology
Atlanta, GA
Georgia Tech. Research Institute
Macon, GA
Glenayre Electronics Corporation
Quincy, IL
GTE Corporation
McLean, VA
San Angelo, TX
Waltham, MA
Hamilton Standard (UTC)
Windsor Locks, CT
Harris Corporation
Quincy, IL
Hartford Graduate Center (UTC)
Hartford, CT
Hawkeye Institute of Technology
Waterloo, IA
Hewlett-Packard Company
Allen Park, MI
Andover, MA
Avondale, PA
Barcelona, Spain
Beijing, China
Boblingen, West Germany
Boise, ID
Bristol, England
Central Hong Kong
Chelmsford, MA
Colorado Springs, CO
Corvallis, OR
Cupertino, CA
Everett, WA
Exeter, NH
Eybens, France
Fort Collins, CO
Greeley, CO
Guadalajara, Mexico
Loveland, CO
McMinnville, OR
Mountain View, CA
New Delhi, India
Palo Alto, CA (6 sites)
Penang, Malaysia
Rockaway, NJ
Rohnert Park, CA
Roseville, CA
San Diego, CA
San Jose, CA
Santa Clara, CA
Santa Rosa, CA
Seoul, Korea
Singapore
Spokane, WA
Stamford, CT
Sunnyvale, CA

Hewlett-Packard Company
Taipei, Taiwan
Tokyo, Japan
Vancouver, WA
Vienna, Austria
Waltham, MA
Wellington, New Zealand

Honeywell, Inc.
Clearwater, FL
Fort Washington, PA
Freeport, IL
Golden Valley, MN
Minneapolis, MN (2 sites)
Phoenix, AZ (2 sites)
York, PA

HRB Systems
State College, PA

IBM
Atlanta, GA
Austin, TX
Boca Raton, FL
Boulder, CO
Bromont, Quebec, Canada
Charlotte, NC
Endicott, NY
Essex Junction, VT
Fishkill, NY
Gaithersburg, MD
Houston, TX
Kingsport, TN
Kingston, NY
Lexington, KY
Owego, NY
Poughkeepsie, NY
Research Triangle Park, NC
Roanoke, TX
San Jose, CA (2 sites)
Thornwood, NY
Tucson, AZ

Illinois Institute of Technology
Chicago, IL

Industry Education Council of Santa Clara County
Cupertino, CA (18 sites)

Instituto Tecnologico y de Estudios Superiores de Monterrey
Monterrey, Mexico

Integrated Device Technology, Inc.
Salinas, CA

Intel Corporation
Chandler, AZ
Folsom, CA
Hillsboro, OR
Rio Rancho, NM
Santa Clara, CA

IOMEGA Corporation
Roy, UT

Iowa State University
Ames, IA

Kerr-McGee Corporation
Oklahoma City, OK

Lexmark International, Inc.
Boulder, CO
Lexington, KY

Magnavox Electro-Optical Systems Company
Mahwah, NJ

Magnavox Electronic Systems Company
Fort Wayne, IN

Martin Marietta Corporation
Bethesda, MD
Denver, CO
New Orleans, LA
Orlando, FL

McDonnell Aircraft Company
St. Louis, MO

Mead Data Central, Inc.
Miamisburg, OH

Metrum Information Storage
Denver, CO

Michigan Information Technology Network, Inc.
East Lansing, MI

The Dow Chemical Company
Midland, MI

Eaton Corporation
Marshall, MI

GM Saginaw Steering
Saginaw, MI

U.S. Army Tank-Automotive Command
Warren, MI

Zenith Data Systems
St. Joseph, MI

Michigan State University
East Lansing, MI

Microchip Technology Inc.
Chandler, AZ

Micron Technology, Inc.
Boise, ID

Milliken & Company
Spartanburg, SC

The MITRE Corporation
Bedford, MA
McLean, VA

Motorola Inc.
Arlington Heights, IL
Austin, TX (2 sites)
Buffalo Grove, IL
Elma, NY
Mesa, AZ
Mount Pleasant, IA
Northbrook, IL
Plantation, FL
Schaumburg, IL (2 sites)
Seguin, TX

NASA
Greenbelt, MD
Hampton, VA
Houston, TX
Moffett Field, CA
Stennis Space Center, MS
Wallops Island, VA

National Semiconductor Corporation
Bangkok, Thailand
Greenock, Scotland
Kowloon, Hong Kong
Lapulapu City, Philippines
Malaka, Malaysia
Penang, Malaysia
Santa Clara, CA
Singapore (2 sites)
South Portland, ME
West Jordan, UT

NCR Corporation
Colorado Springs, CO
Dayton, OH
Duluth, GA
El Segundo, CA
Fort Collins, CO
Hauppauge, NY
Ithaca, NY
Liberty, SC
Naperville, IL
San Diego, CA (3 sites)
St. Paul, MN
West Columbia, SC
Wichita, KS

New Jersey Institute of Technology
Newark, NJ

Norand Corporation
Cedar Rapids, IA

North American Aircraft
Los Angeles, CA
Palmdale, CA

North Carolina State University
Raleigh, NC

Oklahoma State University
Stillwater, OK

Pacific Bell
Pasadena, CA
Sacramento, CA
San Diego, CA
San Ramon, CA
Tustin, CA

Perkin-Elmer Corporation
Wilton, CT

Philips Display Components Company
Ottawa, OH

Polaroid Corporation
Cambridge, MA
New Bedford, MA

Polytechnic University
Hawthorne, NY

Pratt & Whitney (UTC)
East Hartford, CT (2 sites)
West Palm Beach, FL

PSE&G Nuclear Training Center
Salem, NJ

Purdue University
W. Lafayette, IN

Rochester Community College (IBM)
Rochester, MN

Rockwell International Corporation
Cedar Rapids, IA
Downey, CA
Newport Beach, CA

ROLM Company
Norwalk, CT

Schuller International, Inc.
Littleton, CO

Shawnee State University
Portsmouth, OH

Siemens Gammasonics, Inc.
Hoffman Estates, IL

Sikorsky Aircraft (UTC)
Stratford, CT

The Stolle Corporation
Sidney, OH

Tektronix Consolidated
Beaverton, OR
Grass Valley, CA
Redmond, OR

Texas Instruments, Inc.
Abilene, TX
Dallas, TX (2 sites)
Lewisville, TX
Lubbock, TX
Sherman, TX
Temple, TX

3M Company
Hutchinson, MN
St. Paul, MN

The Travelers Insurance Company
Hartford, CT

United Technology Research Center
East Harford, CT

The University of Arizona
Tucson, AZ

University of Florida
Gainesville, FL

University of Houston Center for Applied Technology
Houston, TX

University of Kentucky
Lexington, KY

- **The University of Maryland College Park**
  - College Park, MD
- **University of Minnesota**
  - Minneapolis, MN
- **University of Missouri - Rolla**
  - Rolla, MO
- **University of Washington**
  - Seattle, WA
- **University of Wisconsin - Madison**
  - Madison, WI
- **U.S. Air Force**
  - Air Force Academy, CO
  - Battle Creek, MI
  - Brooks Air Force Base, TX
  - Edwards Air Force Base, CA
  - Eglin Air Force Base, FL
  - Hanscom Air Force Base, MA
  - Hill Air Force Base, UT
  - Holloman Air Force Base, NM
  - Kelly Air Force Base, TX
  - Kirtland Air Force Base, NM
  - Los Angeles Air Force Base, CA
  - McClellan Air Force Base, CA
  - Newark Air Force Base, OH
  - Patrick Air Force Base, FL
  - Peterson Air Force Base, CO
  - Robins Air Force Base, GA
  - Rome Laboratory
    - Griffiss AFB, NY
  - Tinker Air Force Base, OK
  - Vandenberg Air Force Base, CA
  - Washington, DC
  - Wright-Patterson Air Force Base, OH
- **U.S. Army**
  - ARDEC
    - Picatinny Arsenal, NJ
  - Army Research Laboratory
    - Fort Monmouth, NJ
  - Corps of Engineers
    - Vicksburg, MS
  - Engineer District
    - Rock Island, IL
  - Intelligence Center & School
    - Fort Huachuca, AZ
- **U.S. Bureau of Mines**
  - Pittsburgh, PA
- **U.S. Department of Energy**
  - Allied Signal Aerospace Company
    - Kansas City, MO
  - AT&T
    - Los Alamos National Laboratory
      - Los Alamos, NM (2 sites)
    - Sandia National Laboratories
      - Albuquerque, NM
      - Livermore, CA
  - EG&G Rocky Flats
    - Golden, CO
  - Martin Marietta Corporation
    - Oak Ridge, TN
    - Piketon, OH
  - Mason & Hanger
    - Amarillo, TX
  - University of California
    - Lawrence Berkeley Laboratory
      - Berkeley, CA
    - Lawrence Livermore National Lab.
      - Livermore, CA
  - University of Chicago
    - Argonne National Laboratory
      - Argonne, IL
  - U.S. Department of Energy
    - Argonne, IL
  - Westinghouse Electric Corporation
    - Aiken, SC
    - Carlsbad, NM
- **U.S. Government Agency**
  - Washington, DC
- **U.S. Mine Safety & Health Administration**
  - Triadelphia, WV
- **U.S. Navy**
  - Crane Division, Naval Surface Warfare Center
    - Crane, IN
  - Naval Air Development Center
    - Warminster, PA
  - Naval Air Engineering Center
    - Lakehurst, NJ
  - Naval Air Warfare Center, Aircraft Division
    - Indianapolis, IN
  - Naval Research Laboratory
    - Orlando, FL
    - Washington, DC
  - Naval Surface Warfare Center
    - Panama City, FL
  - Naval Surface Warfare Center
    - Dahlgren, VA
- **U S WEST Advanced Technologies, Inc.**
  - Boulder, CO
- **U S WEST Communications, Inc.**
  - Albuquerque, NM
  - Bellevue, WA
  - Denver, CO
  - Lakewood, CO
  - Omaha, NE
  - Salt Lake City, UT
- **Vitacom Corporation**
  - Mountain View, CA
- **Whirlpool Corporation**
  - Benton Harbor, MI
- **Winona State University (IBM)**
  - Rochester, MN
- **Xerox Corporation**
  - El Segundo, CA
  - Webster, NY

Learn

- How the Japanese create competitive advantage
- How to win in negotiations with the Japanese
- How to avoid mistakes of etiquette that can destroy a business relationship
- Sources of Japanese technical information
- Options for monitoring different types of information sources
- Benefits and drawbacks of monitoring strategies

Understand:

- Why the Japanese think the way they do
- Why they work mainly in groups
- Why they have such a strict etiquette
- Why they see work as craftsmanship or meditation
- Why they see themselves as a special race

Gain

practical solutions to problems encountered in foreign entry, international finance, international management of human resources and government red tape. These suggestions should result in savings of time and money, while preparing you for the practical realities of the international work environment in Japan.

An NTU Special Series

U.S./Japan Industry and Technology Management

May 11 & 12, June 29, June 30, July 17, July 28, August 21-September 24, October 22, November 20 and December 3, 1992

Live Satellite Broadcasts: Short Course Series
Audience Question-and-Answer Sessions

National Technological University
Advanced Technology and Management Programs

U.S./Japan Industry and Technology Management

Under a grant from the U.S. Air Force Office of Scientific Research, NTU is pleased to offer this special series of programs about the Japanese and their management and business practices in science, engineering and manufacturing. Call NTU Advanced Technology and Management Programs at (303) 484-6050 for registration information and satellite reception requirements, or to order program videotapes.

Members' Choice

A Primer on Understanding & Working with the Japanese

Monday, May 11, 1992 *Tuesday, May 12, 1992* *Course Number MC920511A1* *11 AM - 5 PM Eastern Time*

SPEAKER: Dr. Michael J. Kane is founder and executive director of the U.S.-Japan International Management Institute at the University of Kentucky. He is a founder of the Association of Japanese Business Studies at the Wharton School of Business, where he has also developed and taught programs for more than 1,000 American and Japanese managers who conduct business together. His expertise has been cited in *The Wall Street Journal, The Asian Wall Street Journal, Fortune, Business Week, Asahi Shimbun, Nibon Keizai Shimbun* and the *Japan Times.*

Everybody these days wants to do business with the Japanese, or so it seems. Western business people invest thousands of dollars and untold hours each year in attempts to do so. But the discouraging fact is that most of us fail. Why? Because we don't make an effort to learn the extremely intricate, often baffling, ways in which the Japansese conduct business. And without this knowledge, we cannot succeed in selling to, buying from or competing with our neighbors on that little island in the Pacific that has become a world economic power in just a few short decades.

What are these mysterious business strategies and techniques with which the Japanese have forged their competitive advantage? Why is their culture so vastly different from ours, and how does it affect our ability to do business with them? This course will provide surprising answers to these and many other perplexing questions.

Michael Kane

RECOMMENDED MATERIALS FOR DR. KANE'S COURSES

Audiocassette: *The Japanese Way*, and the text, *The Japanese Way Workbook*, both by Dr. Michael Kane, are recommended for a full understanding of this course. To order, call Total Information at 1-800-876-4636.

INTENDED AUDIENCE

Anyone interested in understanding how the Japanese think and work. These three courses will enhance your effectiveness in interacting with the Japanese on an individual and organizational level.

The University of Kentucky is sponsoring Dr. Kane's courses

Members' Choice

The Japanese Way: Effective Interactions

Monday, June 29, 1992 *Course Number MC920629A1* *11 AM - 5 PM ET*

SPEAKER: Dr. Michael J. Kane

What happens when the Japanese suddenly stop talking in a meeting? How does body language affect your relationship with the Japanese? What is the best negotiating approach? What are the do's and don't's to effective communication? This course will provide surprising answers to these and many other perplexing questions.

Members' Choice

The Japanese Way: Structure of the Japanese Economy

Tuesday, July 28, 1992 *Course Number MC920728A1* *11 AM - 5 PM ET*

SPEAKER: Dr. Michael J. Kane

How are Japanese companies different from American companies? How does the culture influence the structure of Japan's economy and enterprises? How do Japanese industrial groups work? What is the role of associations, government agencies and unions? This course will provide surprising answers to these and many other perplexing questions.

Members' Choice

Monitoring Japanese Technical Information

Tuesday, June 30, 1992 Course Number MC920630B1 11 AM - 5 PM ET

James Davis

SPEAKERS: James L. Davis is assistant professor of technical Japanese at the University of Wisconsin-Madison. A licensed professional engineer in New York, he has worked as a chemical engineer in industry and has conducted research as a Fulbright Graduate Fellow at Kyoto University in Kyoto, Japan. In addition to research publications and conference presentations in the U.S. and Japan, he has seven years of experience as a translator of Japanese technical documents. He has been teaching technical Japanese since 1990.

Efrat Livny

Efrat Livny is director of the BioInformation Facility of the Biotechnology Center at the University of Wisconsin-Madison. Her work has focused on the design and implementation of an information retrieval and management service that is geared to the needs of biotechnology researchers. For the last three years, she has been investigating and developing mechanisms for improving access by non-Japanese speakers to Japanese R&D information.

Mats Tallving

Mats Tallving is a research assistant at the Research Policy Institute and an assistant teacher in the Department of East Asian Languages at the University of Lund in Sweden. He has been active in the Japanese database and machine translation project at the University of Lund since 1988. An important facet of this project is the integration of machine translation of bibliographic information into a Japanese information retrieval system (JIRS).

The depth and breadth of the technical achievements of Japanese scientists and engineers increase month by month. Detailed information about these advances is important to technical personnel involved in product or process design and to managers who assess the Japanese market in high-technology areas. The increasing emphasis on basic research in Japan means that R&D groups around the world cannot afford to ignore the results of programs now under way in Japanese laboratories. This course will identify important sources of Japanese technical information and present alternatives for tracking progress in various disciplines. You will see specific examples and case studies.

INTENDED AUDIENCE: Engineers, scientists and information specialists who gather scientific and technical information from Japanese sources or wish to follow the research and development activities of Japanese individuals and organizations in specific fields.

SPONSOR: University of Wisconsin–Madison

Members' Choice

The Anatomy of the Traditional Japanese Mind: Some Cultural Roots that Shape Japanese Attitudes Toward Managing Work and People in Organizations

Friday, July 17, 1992 Course Number MC920717B1 11 AM - 5 PM ET

Benjamin Litt

Dr. Benjamin Litt is professor of management at Lehigh University. In addition to his work in the University's College of Business and Economics, Dr. Litt teaches in Lehigh's Manufacturing Systems Engineering Program. He has also been active in NTU's Management of Technology program since its inception. Dr. Litt spent 1974-75 at Kobe University in Japan on a Fulbright-Hayes scholarship. Since that time, he has been an avid student of Japanese culture and society and their impact on Japanese organizational behavior.

Present-day Japanese managerial practices have evolved from many sources, including Western writings. However, even American and European influences have been understood and applied within a cultural frame of reference that is uniquely Japanese. This program explores significant culture-based attitudes that underlie the Japanese approach to managing work and people in organizations.

INTENDED AUDIENCE: This course will benefit any executive or manager who wishes to develop a deeper understanding of Japanese management practices or Japanese culture in general.

REQUIRED TEXTS: The following texts are required reading for this course (all are in paperback): *You Gotta Have Wa: When Two Cultures Collide on the Baseball Diamond* by Robert Whiting (MacMillan Publishing, 1989);*With Respect to the Japanese* by John C. Condon (Intercultural Press, 1984); and *Zen in the Art of Archery* by Eugen Herrigel (Pantheon Books, 1970). To order, call Total Information at 1-800-876-4636.

SPONSOR: Lehigh University

Members' Choice

U.S./Japan Technology Management Structures: A Comparison

Friday, August 21, 1992 Course Number MC920821B1 1 - 4 PM ET

SPEAKERS: **John Stedkey,** executive vice president for Hitachi, Ltd., will review the acquisition of NAS by Hitachi to develop competitive high-speed computers and gain market share. **A speaker** from Intel Corporation will discuss patent protection and proprietary issues. **Dr. Thomas Rohlen,** professor at Stanford University and senior fellow of the Institute for International Studies, will discuss Japan's modern organizational foundations, including corporations and universities and how they contribute to Japan's overall dynamic in economic terms. The panel will reflect on government and university consortia involving technology-based companies.

How have American and Japanese companies structured their organizations for greater productivity? What are the various types of collaboration in place for development of technology innovations? What conditions suggest that a specific organizational structure could enhance research? A panel of industrialists from U.S. and Japanese companies will discuss the choices their firms made and why.

INTENDED AUDIENCE: Engineers, scientists, individual contributors and managers engaged in the research, development, design or production of new products or processes, especially those involving the U.S./Japanese corporate environment.

SPONSORS: Hitachi Data Systems, Hitachi Ltd., Intel Corporation and IETV

Members' Choice

Managing the Mega-Issues of Doing Business in Japan: Art or Science

Thursday, September 24, 1992 Course Number MC920924B1 11 AM - 5 PM ET

Robert Spagnola

Verone Gibb

Robert Spagnola is an assistant professor of strategic management and international business at Colorado State University. **Verone Gibb** is a senior executive officer with the National Bank for Cooperatives in Denver and former executive vice president, Asia Division, for the Bank of America, where he managed bank activities in most of the Pacific Rim countries.

This program will offer suggestions for the strategic management of what Dr. Spagnola and Mr. Gibb consider to be the mega-issues of international activities in Japan. You will learn the methods of international involvement open to corporations and business people interested in expanding their operations to the Pacific Rim in general and to Japan in particular. Special feature: A series of video vignettes will offer the personal experiences of senior corporate executives, public officials and entrepreneurs in confronting and successfully dealing with the issues addressed in the program. Speakers will include representatives of the American Chamber of Commerce in Japan, honorary consuls for Japan, entrepreneurs, and the president of Mitsubishi in the United States.

INTENDED AUDIENCE: Anyone currently involved in international activities in the Pacific Rim and/or Japan or anyone planning such activities in the future. This course will benefit managers and technical professionals at all levels.

SPONSOR: Colorado State University

Members' Choice

Technology Development in Japan

Thursday, October 22, 1992 Course Number MC921022B1 1 - 4 PM ET

SPEAKER: **Hisashi Kaneko** is president and CEO of NEC America, Inc. A graduate of the University of California at Berkeley with an M.S. in electrical engineering, he received his doctor of engineering from the University of Tokyo in 1967. He holds more than 70 Japanese patents and is a recognized member of IEEE and the Engineering Academy of Japan.

This program will contrast the technological expertise between the U.S. and Japan, with a focus on the electronics industry. Using examples of his own company's partnerships to swap technologies, such as with AT&T, Dr. Kaneko will discuss Japan's acquisition of manufacturing support through limited agreements. He will compare the distinct differences in development, and explain his belief that Japan excels in production and quality control because management takes a long view of technology development. This long view, he says, is reflected in the flow and quality of information and communication in Japanese management structures, in the cultivation of trust in business relationships, and the realization that Japanese contributions to American technological know-how are an inevitable by-product of any long-term agreement.

INTENDED AUDIENCE: Engineers, scientists and managers who wish to examine the similarities and differences in technology development between the U.S. and Japan.

SPONSORS: NEC America, Inc., World Forum of Silicon Valley and IETV

Members' Choice

Structure of Research in Japan: The Role of Government, University and Industry

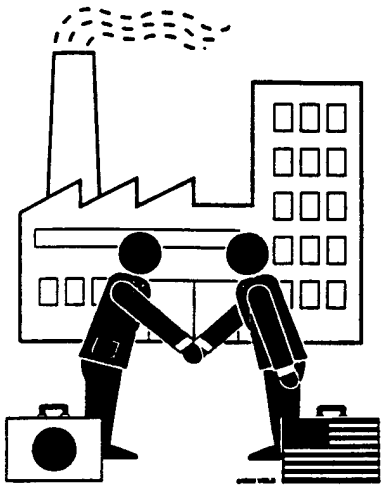
Friday, November 20, 1992 *Course Number MC921120A1* *11 AM - 5 PM ET*

SPEAKER: James L. Davis is assistant professor of technical Japanese at the University of Wisconsin-Madison.

To fully access and benefit from research conducted in Japan, you must understand the structure of research. This is even more true if you wish to participate in research or collaborate on joint projects.

What is the structure of research in Japan? Who conducts research? Who sets the agenda and funds research? What are the roles of the corporations, universities and government institutions? How are facilities located and built? How do individual researchers move from one setting to another? How do the various institutions cooperate? Finally, how is information shared and how are research results accumulated to direct further inquiry? This course will answer these questions and provide you with an understanding of the structure and process of research in Japan.

SPONSOR: University of Wisconsin-Madison



Members' Choice

Software Development in Japan: The Software Factory

Thursday, December 3, 1992

Course Number MC921203A1 *1 - 4 PM ET*

SPEAKERS: John S. Morrison is president of Technology Transfer International, Inc. **Michael Cusumano** is associate professor at Massachusetts Institute of Technology and author of Japan's Software Factories. **Dr. Adele Goldberg** is CEO of ParcPlace Systems, formerly Xerox Parc.

This course will focus on the newly released report completed by Technology Transfer International Inc. on the technology and processes of software re-use and information factories. The speakers will relate interviews and videotaped reports with Japanese industrialists. Further illustrations on the topic will include Europe and the United States.

SPONSORS: Hewlett-Packard Company and IETV

Call (303) 484-6050 today to register

Videotapes available at additional charge

An NTU Special Series

U.S./Japan Industry and Technology Management

Series Number MC920511AC

A Primer on Understanding & Working with the Japanese
Monday, May 11, and Tuesday, May 12, 1992
Course Number MC920511A1

The Japanese Way: Effective Interactions
Monday, June 29, 1992 • Course Number MC920629A1

Monitoring Japanese Technical Information
Tuesday, June 30, 1992 • Course Number MC920630B1

The Anatomy of the Traditional Japanese Mind: Some Cultural Roots that Shape Japanese Attitudes toward Managing Work and People in Organizations
Friday, July 17, 1992 • Course Number MC920717B1

The Japanese Way: Structure of the Japanese Economy
Tuesday, July 28, 1992 • Course Number MC920728A1

U.S./Japan Technology Management Structures: A Comparison
Friday, Aug. 21, 1992 • Course Number MC920821B1

Managing the Mega-Issues of Doing Business in Japan: Art or Science
Thursday, Sept. 24, 1992 • Course Number MC920924B1

Technology Development in Japan
Thursday, Oct. 22, 1992 • Course Number MC921022B1

Structure of Research in Japan: The Role of Government, University and Industry
Friday, Nov. 20, 1992 • Course Number MC921120A1

Software Development in Japan: The Software Factory
Thursday, Dec. 3, 1992• Course Number MC921203A1

U.S./Japan Industry and Technology Management

May 11 & 12, June 29, June 30, July 17, July 28, August 21, September 24, October 22, November 20 and December 3, 1992

Series Number MC920511AC

Why you should watch

This series will help you learn about the Japanese and their management and business practices. It was developed under a grant from the U.S. Air Force Office of Scientific Research. Anyone interested in understanding how the Japanese think and work will want to watch this collection of programs!

How to watch

The following organizations sponsor NTU courses at one or more sites for their employees via satellite. If your organization does not have receiving facilities, you may order videotape copies of the broadcasts.*

Advanced Micro Devices, Inc.
AG Communication Systems
Air Products and Chemicals, Inc.
ALCOA
Alliant Techsystems Inc.
Allied Signal Aerospace Company
AMP Incorporated
Analog Devices, Inc.
Argonne National Laboratory
ARINC
Armco Steel Co., L.P.
Atmel Corporation
AT&T
The BDM Corporation
Bellcore
BNR Inc.
Boeing Defense & Space Group
Boeing Commercial Airplane Group
Booz-Allen & Hamilton, Inc.
Bull HN Information Systems Inc.
Burle Industries, Inc.
Carrier Corporation (UTC)
College Center for the Finger Lakes
Comntex, Inc.
CTS Corporation
A Dallas-Based Information Management Co.
datotek, An AT&T Company
David Sarnoff Research Center
Deere & Company
Digital Communications Associates, Inc.
Digital Equipment Corporation
Eastman Kodak Company
EG&G Rocky Flats
E.I. du Pont de Nemours & Company
EMA Open Learning Pty Ltd
E-Systems, Inc.
General Dynamics Corporation
General Electric Company
General Instrument Corporation
Georgia Institute of Technology
Georgia Tech. Research Institute
Glenayre Electronics
GTE Corporation
Hamilton Standard
Harris Corporation
Hartford Graduate Center
Hewlett-Packard Company
Honeywell, Inc.
HRB Systems
IBM
Illinois Institute of Technology
Industry Education Council of Santa Clara County
Instituto Tecnologico y de Estudios Superiores de Monterrey
Integrated Device Technology, Inc.
Intel Corporation
IOMEGA Corporation
Iowa State University
Kerr-McGee Corporation
Lawrence Berkeley Laboratory
Lawrence Livermore National Laboratory
Lexmark International, Inc.
Los Alamos National Laboratory
Magnavox Government and Industrial Electronics Company
Manville Corporation
Martin Marietta Corporation
Mason & Hanger
McDonnell Aircraft Company
Mead Data Central, Inc.
Metrum Information Storage
Microchip Technology Incorporated
Micron Technology, Inc.
Milliken & Company
The MITRE Corporation
Motorola Inc.
NASA
National Semiconductor Corporation
NCR Corporation
New Jersey Institute of Technology
North Carolina State University
Oklahoma State University
Pacific Bell
Perkin-Elmer Corporation
Polaroid Corporation
Polytechnic University
Pratt & Whitney
Purdue University
Rochester Community College (IBM)
Rockwell International Corporation
ROLM Company
Sandia National Laboratories
Shawnee State University
Siemens Gammasonics, Inc.
Sikorsky Aircraft
Sony Microelectronics Corporation
Southern New Jersey Technology Consortium
The Stolle Corporation
Tektronix Consolidated
Texas Instruments, Inc.
3M Company
The Travelers Insurance Company
The University of Arizona
University of Florida
University of Houston Center for Applied Technology
University of Kentucky
The University of Maryland College Park
University of Minnesota
University of Missouri-Rolla
University of Washington
University of Wisconsin-Madison
U.S. Air Force
U.S. Army (ARDEC)
U.S. Army Corps of Engineers
U.S. Army Engineer District
U.S. Army Intelligence Center & School
U.S. Bureau of Mines
U.S. Government Agency
U.S. Mine Safety & Health Administration
U.S. Navy
US WEST Advanced Technologies, Inc.
Viacom Corporation
Whirlpool Corporation
Winona State University (IBM)
Xerox Corporation

Member Universities

Arizona State University
Boston University
Colorado State University
Cornell University
The George Washington University
Georgia Institute of Technology
GMI Engineering & Management Institute*
Illinois Institute of Technology
Iowa State University
Kansas State University
Lehigh University
Michigan Technological University
New Jersey Institute of Technology
North Carolina State University
Northeastern University
Oklahoma State University
Old Dominion University
Purdue University
Rensselaer Polytechnic Institute
Southern Methodist University
University of Alaska at Fairbanks
The University of Arizona
University of California at Berkeley
University of California, Davis
University of Colorado at Boulder
University of Delaware
University of Florida
University of Idaho
University of Illinois at Urbana-Champaign
University of Kentucky
The University of Maryland College Park
University of Massachusetts at Amherst
University of Minnesota
University of Missouri-Rolla
The University of New Mexico
University of Notre Dame*
University of South Carolina, Columbia
University of Southern California*
The University of Tennessee, Knoxville
University of Washington
University of Wisconsin-Madison

** Contribute solely to Advanced Technology and Management Programs*

*** Call (303) 484-6050 <u>today</u> to register. Videotapes available at additional cost.**

National Technological University
700 Centre Avenue
Fort Collins, CO 80526

Live Satellite Broadcast

The Structure of Research in Japan

Presented by
Dr. Larry H. Weber, Dr. Craig Van Degrift,
Dr. Jay K. Martin, Dr. Kyugo Tanaka

Members' Choice
Friday, November 20, 1992
8am-2pm Pacific · 9am-3pm Mountain
10am-4pm Central · 11am-5pm Eastern
Channel A

Who does research in Japan? How is research funded, and how are projects selected? What are the relationships among government, industry and university laboratories?

This course will provide answers to these and other questions about how research is planned and conducted in Japan. It will include discussion of new initiatives for Japanese research in the coming years.

You will hear how much Japan is spending on research compared to the United States and other industrialized nations. You will find out more about Japan's science and technology goals for the next century. You will learn how foreign firms and foreign researchers can participate in a variety of Japanese research projects.

Benefits

You will:
Learn how research in Japan differs from research in the U.S.
Learn about the scope of Japan's research plans for the next century.
Learn what it is like to be a researcher in a Japanese laboratory.

(see other side for course outline and intended audience)

Sponsored by: University of Wisconsin-Madison

For more information, contact your site coordinator or call NTU at (303) 484-0565

Larry H. Weber

is head of the Tokyo office of the National Science Foundation (NSF). Previously, he served as program associate for U.S.-Japan, Australia, New Zealand programs and program manager for Japan programs at NSF. His professional and research interests include Japanese science and technology, international collaboration in science, phytoplankton ecology, and the antarctic ecosystem.

Craig Van Degrift

is a physicist in the Electricity Division of the U.S. National Institute of Standards and Technology (NIST). He has over 30 scientific publications connected with high-precision physics experiments conducted at low temperatures. In 1989 he participated in research on the quantum Hall effect during a one-year leave at the Electrotechnical Laboratory in Tsukuba, Japan. He is also the founder of Kanji-Flash Softworks, a publisher of Japanese language instructional software.

Jay K. Martin

is associate professor of mechanical engineering at the University of Wisconsin-Madison. His research interests include combustion, internal combustion engines, and diagnostic development for measurements in complex flow and combustion environments. In 1991-92 he collaborated with researchers at Hokkaido University and the Nissan Research Center during a year-long sabbatical in Japan.

Kyugo Tanaka

is executive liaison officer for research and development with Rohm and Haas Japan. He is responsible for the evaluation and acquisition of research information from Japanese academia. His work in the chemical industry has included research and development in chemical manufacturing processes and applications. He holds several patents and has published in the journals of the Chemical Society, Japan and the American Chemical Society.

The Structure of Research in Japan

Friday, November 20, 1992
8am-2pm Pacific · 9am-3pm Mountain · 10am-4pm Central · 11am-5pm Eastern
Channel A

Course Outline and Learning Objectives

11:00 - 12:00 Comparison of the R&D Situation in Japan and in the U.S.
Larry H. Weber

Compare current Japanese R&D expenditures and trends with those in the U.S.

Summarize current Japanese R&D personnel profiles and trends in human resources

Give examples of new research programs from Japanese government agencies

12:00 - 12:30 Lunch Break

12:30 - 1:25 Research in Japanese Government Laboratories
Craig Van Degrift

Describe how projects are selected and the typical scope of a project (time scale, personnel, budget)

Describe the facilities and staff available

Summarize the type of cooperation with universities and with corporations

Describe how American scientists can participate in research at Japanese government laboratories

1:25 - 1:35 Break

1:35 - 2:30 Research in Japanese Universities and Corporations
Jay K. Martin

Describe how projects are selected and the typical scope of a project (time scale, personnel, budget)

Describe the facilities and staff available

Summarize the type of cooperation between universities and corporations, and contrast these activities with typical consortia at U.S. universities

Describe how American scientists can participate in research at Japanese university and corporate laboratories

2:30 - 3:00 Lunch Break

3:00 - 3:55 Participation by Foreign Firms in Japanese R&D Projects
Kyugo Tanaka

Give examples of experiences in projects organized by the Japanese government

Give examples of experiences in projects organized by Japanese industry

Give examples of relationships with Japanese universities

3:55 - 4:05 Break

4:05 - 5:00 Round Table Discussion

Intended Audience

Engineers, scientists and managers with an interest in the current state and future prospects of the research structure and research environment in Japanese government, academic and corporate laboratories.

MOT PARTICIPANTS - CLASS #3
September 10, 1992

COMPANY	STUDENT'S NAME	WORK PHONE NO.	FAX NUMBER	E-MAIL NUMBER (INTERNET ADDRESS)
AT&T				
Ballwin, MO	Doris Reesor	314-891-2221	314-891-4192	doris.reesor@attmail.com
Basking Ridge, NJ	Cary Gilbert	908-221-8270	908-221-5059	csgilbert@attmail.com
Herndon, VA	John Murray	703-713-7600	703-713-7612	jemurray%stfdnc@attbl.attmail.com
Little Rock, AR	Dennis Puhalski	501-569-4210	501-569-5981	djp%lru3b@attmail.com
Mt. Laurel, NJ	Donna Breem	609-273-4766	609-273-4772	dwerkheiser@attmail.com
Newark, NJ	Michele Simeone	201-645-5225	201-645-5411	michelle.simeone@attmail.com
North Andover, MA	Mary Anderson	508-960-3598	508-960-5799	mary.anderson@attmail.com
Reading, PA	Michael Zalewski	215-939-7959	215-939-6017	rdmgz@attme.attmail.com
Warren, NJ	David Anolick	908-580-4747	908-580-4801	dxa@garage.att.com
Boeing Defense & Space Group				
Seattle, WA	Sowmyan Raman	206-234-7666	206-266-9530	
Digital Equipment				
Augusta, ME	Esther Turner	207-623-6955	207-623-6691	turner_esthe@dneast.enet.dec.com
E.I. duPont				
Newark, DE	Pradeep Gupta	302-366-6421	302-366-2251	guptap@engg.dnet.dupont.com
Exxon Chemical				
Baton Rouge, LA	Bernie Pafford	504-359-1744	504-359-4927	
Baytown, TX	John Ou	713-425-5173	713-425-5268	
G.E. Company				
Utica, NY	Stephen Filippone	315-793-7267		
Hewlett-Pacard				
Boise, ID	Andrew Binder	208-323-3440	208-323-2554	andy_binder@hp4600.desk.hp.com
Boise, ID	Theresa Dempsey	208-323-5107	208-323-4004	
Boise, ID	Denise Smith	208-323-3685	208-323-3450	denise_smith@hp4800.desk.hp.com
Corvallis, OR	Jeffrey Kondo	503-750-2980	503-750-3221	kondo@hp-pcd.cv.hp.com
Ft. Collins, CO	Tim Mikkelsen	303-229-3484	303-229-6611	tim@hpfclp.sde.hp.com
Rohnert Park, CA	Roger Stancliff	707-794-3189	707-794-4452	roger_stancliff@hp5300.desk.hp.com
Palo Alto, CA	Fred Harder	415-857-5393	415-852-8508	fred_harder@hpl.hp.com
IBM				
Charlotte, NC	B.N. Bettegowda	704-594-2039	704-594-5153	
Charlotte, NC	Douglas Jones	704-594-1168	704-594-5153	djones@cltvm4.vnet.ibm.com
Endicott, NY	Gerald Lavallee	607-755-6149	607-755-6645	lavallee@endvm5.iinus1.ibm.com
Poughkeepsie, NY	Bill Ray	914-435-7078		wdray@pkmfgvmz.vnet.ibm.com
Roanoke, TX	Mark Davis	817-962-3775	817-962-3462	marked@dalhqic2.vnet.ibm.com
Pacific Bell				
San Ramon, CA	Juanita Lint	510-823-2465	510-277-1732	jplint%pbhye@ns.pacbell.com
Walnut Creek, CA	John McNaught	510-943-4056	510-932-4863	
Polaroid Corp.				
Cambridge, MA	Diego Betancourt	617-577-4874	617-577-1134	
Rome Laboratory				
Griffiss AFB, NY	Joseph Cavano	315-330-4063	315-330-3911	cavanoj@sybil.rl.af.mil
Griffiss AFB, NY	Jerry Dussault	315-330-2925	315-330-3911	dussaultj@lonex.rl.af.mil
Xerox Corporation				
Webster, NY	Karl Steenburgh	716-337-1181		karl_steenburgh.henr801c@xerox.com
	Joseph Swift	716-422-4910	716-422-4343	joe_swift.wbst147@xerox.com
	Jorge Yacila	716-422-0098	716-422-7654	jorge_yacila.wbst147@xerox.com

To send E-Mail to everyone in your class who has capabilities: MOT3@NTUPUB.NTU.EDU

MOT PARTICIPANTS - CLASS #4
August 24, 1992

COMPANY	STUDENT'S NAME	WORK PHONE NO.	FAX NUMBER	E-MAIL NUMBER (INTERNET ADDRESS)
AMP, Inc.				
Middletown, PA	Tom Dlugolecki	717-986-3184	717-986-5987	
AT&T				
East Brunswick, NJ	Martha Davidson	908-519-5659	908-519-8276	methompson@attmail.com
North Andover, MA	Steve Hamilton	508-960-2897	508-960-1186	mvseh@mvgf.attmail.com
Tokyo, Japan	Akio Ogiso	0355613058	0355613280	ogiso@attjpn.attmail.com
Eastman Kodak Company				
Rochester, NY	Ed Cattron	716-253-6298	716-253-5846	cattron@kodak.com
Rochester, NY	Kevin Koek	716-588-6127	716-477-9533	
Hewlett-Pacard				
Andover, MA	Steve Kalenik	508-681-2385	508-686-7262	
Boise, ID	Jennifer Hilton	208-323-3031	208-323-5006	
Boise, ID	Robert Kunz	208-323-4692	208-323-3457	bkunz@hpdmd48.hp.com
Boise, ID	Sandy Lynch	208-323-5068	208-323-4122	slynch@hpdmd48.hp.com
Boise, ID	Kenneth West	208-323-4998	208-323-3715	kenneth_west%09%hp4800@hplabs.hp.com
Boise, ID	Hal Ockerse	208-323-2612	208-323-2251	hal@hpdmd48.boi.hp.com
Camas, WA	Ron Benton	206-944-2998	206-944-3159	rbenton@hp-vcd.hp.com
Ft. Collins, CO	Randy Stout	303-229-2375	303-229-6016	stout@fc.hp.com
Mountain View, CA	Dona Morrill	415-691-3423	415-691-3460	dona@hpksix.mayfield.hp.com
Santa Clara, CA	Terry Harms	408-553-2407	408-249-6225	tharms@dtc.hp.com
Santa Rosa, CA	Kent Stalsberg	707-577-4533	707-577-5216	kent_stalsberg%MN%hp4500@hplabs.hp.co
Santa Rosa, CA	Roger Wylie	707-577-4523	707-577-5216	roger_wylie%05%hp4500@hplabs.hp.com
Sunnyvale, CA	Jeff Spoelstra	408-746-5719	408-746-5571	jeff_spoelstra@hp2200.desk.hp.com
IBM				
Owego, NY	Leonard Portela	607-751-3363	607-751-6038	
Tucson, AZ	Michael Ungs	602-799-4215		mungs@tucvm1.vnet.ibm.com
Motorola, Inc.				
Mesa, AZ	Kevin Chang	602-962-2545	602-898-5173	
NCR Corporation				
St. Paul, MN	John Montague	612-638-8651	612-638-7531	john.montague@stpaul.ncr.com
U.S. Air Force				
Brooks AFB, TX	Patty Boll	512-536-3464	512-536-2761	boll%apache.decnet@hphsd.brooks.af.mil
Eglin AFB, FL	Don Cunard	904-882-2005	904-882-2707	
Kelly AFB, TX	Jay Gendron	512-925-8745	512-925-4916	
Wright-Patterson AFB, OH	Ann Marie Burns	513-255-5007	513-255-2587	
Wright-Patterson AFB, OH	Michael Brinson	513-255-9981	513-258-4822	
Wright-Patterson AFB, OH	Dan Goddard	513-255-3949	513-255-9746	goddardg@wl.flight.wpafb.af.mil
Wright-Patterson AFB, OH	Bill Hale	513-255-8261	513-476-4547	
U.S. Department of Energy				
Argonne, IL	John Adachi	708-252-2777	708-252-2835	
Argonne, IL	Sue Nielson	708-252-2062	708-252-2654	
Xerox Corporation				
Rochester, NY	Mary Beth Anderson	716-427-1940	716-427-3189	mba.henr801@xerox.com

To send E-Mail to everyone in your class who has capabilities: MOT4@NTUPUB.NTU.EDU

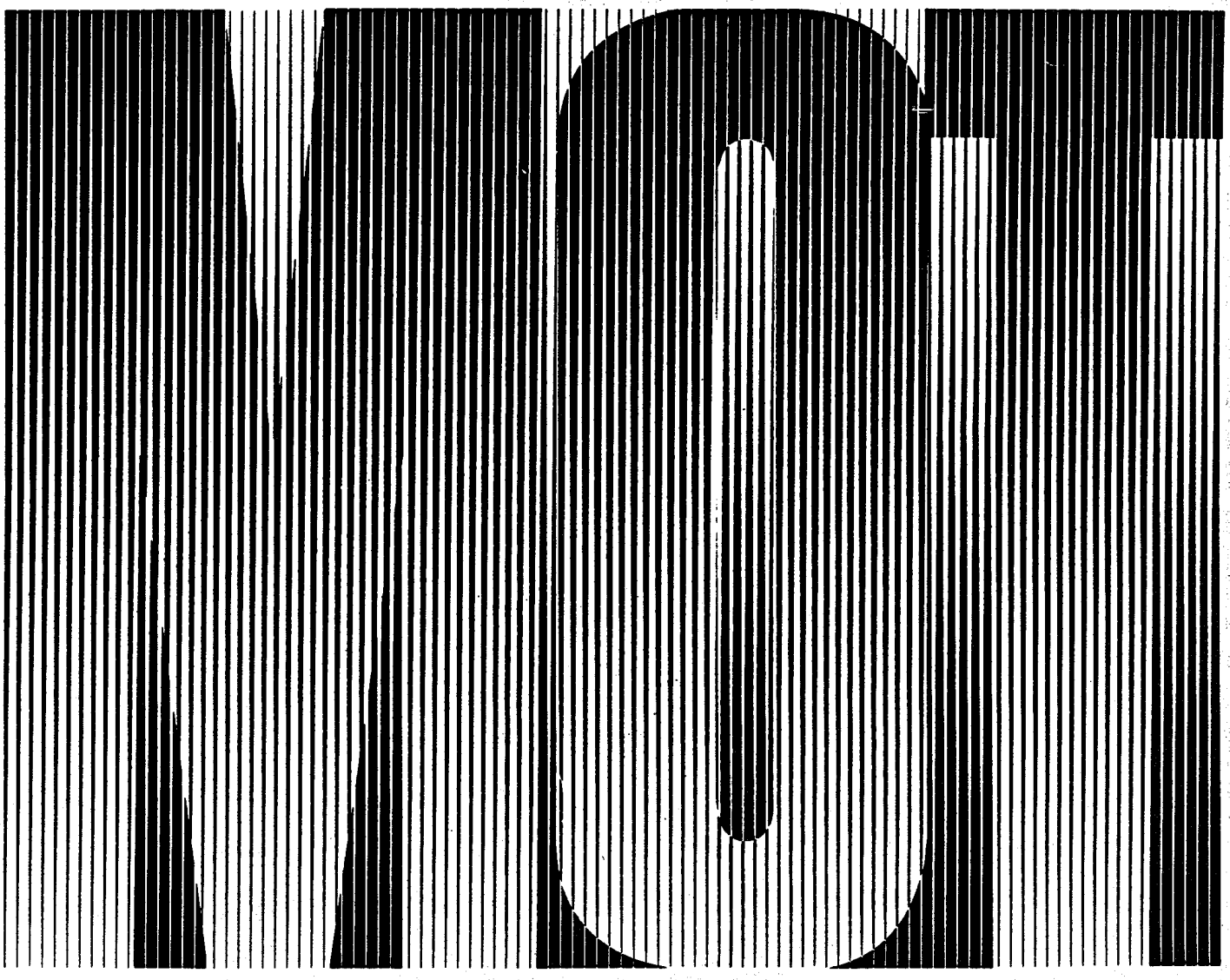
The NTU Masters Program in **Management Of Technology**

An Executive Program for Working Professionals and Managers

National Technological University NTU

STUDY MISSION TO JAPAN: 1993

Executive Summary Report



NATIONAL TECHNOLOGICAL UNIVERSITY
700 Centre Avenue
Fort Collins, CO 80526 USA
Telephone: (303) 495-6400 Facsimile: (303) 484-0668

Executive Summary Report

Alden S. Bean
NTU/MOT Program Director
Director, Center for Innovation Management Studies
Lehigh University

Jeffrey A. Spoelstra
Integrated Systems Division
Hewlett-Packard Company

December 1993

Table of Contents

National Technological University
MOT Study Mission to Japan: 1993
Executive Summary Report

Introduction

On Wednesday, May 12, 1993, seventy NTU students and faculty met in Palo Alto, CA, to make final preparations for the first MOT Study Mission to Japan. After two days of meetings, the group departed from San Francisco for Tokyo, arriving at Narita Airport on Saturday, May 15. Thus began an extremely busy week of plant visits, seminars, conferences and workshops designed to improve the group's collective understanding of management practices associated with the Japanese "miracle;" particularly as they relate to its achievement of a dominant global position in the manufacture of high volume, technology-intensive components and products.

Organization of the Report

This report provides a brief overview of the Study Mission and summarizes the principal findings of the four student-faculty teams and six faculty advisors who participated in the project. The body of this report is organized into six sections, each presenting a set of findings produced by the teams in response to questions prepared in advance of the trip. Each of the sections reviews the questions addressed by the team; presents findings; discusses implications of the findings for the practice of technology management; and makes recommendations for further study. With regard to this last item, NTU recently announced that a second Study Mission to Japan has been scheduled for May of 1995. Thus, this report, can also serve as a preliminary planning document for the new group of students who will participate in that visit.

Study Mission Goals & Objectives

The goal of the Study Mission was to provide an intensive learning experience by which students of technology management could gain a first-hand understanding of the management practices used by Japan to achieve global competitive advantage. In order to probe this question from several perspectives, the trip included visits with Japanese educators and cultural experts; government officials; international consultants who specialize in technology management; as well as industrial executives and managers from a variety of large and medium-sized Japanese firms. Specifically, the following objectives were established:

- observe Japanese technology management practices in various industrial and government settings, including: automotive, electronics manufacturing, software design & development, and government and industrial R&D laboratories;
- discuss topics regarding the role of the Japanese government, the educational system, and the financial infrastructure supporting technological innovation;
- initiate professional and social networking with Japanese counterparts;
- experience Japanese culture and explore interests through personal investigations.

In order to achieve these learning objectives in a one-week visit, the group was divided into four equally-sized teams, each of which focused on one of the following topics:

- Managing Product/Process Innovation in Manufacturing Industries (2 teams)
- Managing the Software Design & Development Process
- Setting R&D Strategies & Priorities

Additionally, two "cross-cutting" topics were identified that each of the four teams agreed to investigate during their site visits and discussions. They were:

- The Use of Quality Management Practices in MOT
- The Role of Technological Forecasting in Technology Planning

Each of the four teams, accompanied by one or more faculty advisors and industrial mentors, visited at least four industrial firms and met with various other resource people during the week-long visit. Each team prepared detailed reports on each topic, and it is those reports that provide the basis for this summary.

TEAM REPORTS

Two teams focussed on the same theme: Managing Product/Process Innovation in Manufacturing Industries. Initially, students with a strong interest in manufacturing were assigned more or less randomly to the two teams. As the pre-study mission planning work progressed, it became clear that the members had different interests. Thus, over the months and meetings preceding the trip, there was some migration of people between the two manufacturing teams, and slightly different agendae emerged for each. For that reason, the Manufacturing topic is addressed by two team reports, each with a somewhat different emphasis.

Team A
Managing Product/Process Innovation in Manufacturing Industries

Team A investigated the following topics:

1) the strategic focus for manufacturing; decisions about selecting technologies for development; appropriate balances between government and the private sector in technology policy; managing human resources, lifetime employment;
2) customer focus in the global economy; tools to measure customer satisfaction; and
3) product and process development; stages in the development of new products; improvements in quality, cost and time-to-market of new products.

The team visited AIST Laboratories, Sanyo Electric, Murata Machinery, NEC and Nippon Steel. Despite the short period of time, team members were able to deduce several key considerations for U.S. companies when evaluating the competitive strategies and capabilities of Japanese manufacturing firms.

Breadth of Focus

All the Japanese companies visited exhibited an impressive capability to manage seemingly diverse technologies and market segments. This is especially true of Nippon Steel and Murata. This capability appears to be engendered in the style used to execute a classical (i.e., hierarchical) organization structure. Determination of strategic level directions occurs at the highest corporation levels with input from the divisional executives. This direction-setting was described as "informal" by Murata. Detailed development and execution of the technical and business plans necessary to comply with the overall direction was delegated to the divisional management.

Importance of Core Competencies

This item can actually be broken down further into three basic elements of management practice which illustrate the value attached to the development and maintenance of core competencies.

- Leverage for new business exploitation
- Personnel development practices
- Teambuilding and communication

The strategy and ability for leveraging core competency yields a competitive advantage in the form of product line breadth. Nippon Steel best exemplified this when they noted that the strength of their technological infrastructure would allow them to use their steel and related metals expertise to surpass the competitive capabilities of electronic and biology companies in the long run.

Personnel Practices

Japanese personnel development practices have long been summarized by simplistic titles such as "lifetime employment" and "consensus focused." The Study Mission confirmed that, as a rule, lifetime employment is no longer a given, even in the larger firms. This is not to say that the Japanese no longer focus on the "lifetime" as a personnel factor. Education and development of personnel is a very high priority and is closely tied to the strategic planning process. Strategic direction drives core competencies, which in turn drives education/development plans. Job rotation is a common practice in sowing the seeds for potential future diversification (as well as being perceived as the most efficient means of technology transfer).

The second aspect of Japanese personnel practices, building an environment that allows consensus, is facing new challenges. Several of the firms visited are revising personnel measurement systems to focus on the individual. This is an especially interesting evolution as many U.S. firms are struggling to change the organizational and measurement basis to be team oriented. U.S. management should observe the results of the Japanese transition closely.

The change to the personnel measurement system does not in any way indicate that the Japanese are reducing the value of teams. Each company visited stressed the degree to which diverse skills were brought together to develop technology, solve customer problems, or determine business direction. The most important message for U.S. firms is that the adoption of a team-based organizational structure is not a panacea for communication and product development problems. Murata was very frank in its discussion of the errors and schedule impacts caused by poor communication. The key message is likely that regardless of organization, management must continue to focus on creating and maintaining an environment of rapid, open communications.

"Kinder, Gentler" Vision Statements

The Japanese companies we visited seemed to be following a vision more than a business plan or set of goals and objectives. Frequent references to environmental impact/compatibility and quality of life concerns may indicate a watershed for Japanese culture. Unavoidably, it may also indicate a new era of consumer demands and competitive technologies.

Recommendations

Future study missions to Japan may want to explore the following topics in more detail:

- The Japanese will be investing in technologies that may be different than those being emphasized by U.S. firms, and
- The softer mission statement will allow employees more freedom in thinking, potentially allowing greater innovation.

In closing, it seems appropriate to paraphrase Tomiura-san of Nippon Steel and his retelling of an ancient Chinese proverb. In it, he likens the U.S. and Japan to a couple who sleep together but have different dreams. Perhaps the challenge for U.S. firms is in determining to which of these dreams the global economy will really awaken.

Team A Members

Faculty Leader:	*Dr. William G. Wells, Jr.*	*George Washington University*

Students:

Mr. Ronald Benton	*Hewlett-Packard*	*Mr. Andrew Binder*	*Hewlett-Packard*
Ms. Donna Breem	*AT&T*	*Mr. Kevin Chang*	*Motorola*
Mr. Cary Gilbert	*AT&T*	*Mr. Stephen Kalenik*	*Hewlett-Packard*
Mr. Bob Kunz	*Hewlett-Packard*	*Mr. John McNaught*	*Pacific Bell*
Mr. John Murray	*AT&T*	*Mr. Akio Ogiso*	*AT&T, Tokyo*
Mr. Leonard Portela	*IBM*	*Mr. Randy Stout*	*Hewlett-Packard*
Ms. Esther Turner	*DEC*	*Ken West*	*Hewlett-Packard*
Mr. Michael Zalewski	*AT&T*		

Team B
Managing Product/Process Innovation in Manufacturing Industries

Team B investigated the following management topics:

1) technology strategy and decision making;
2) technology transfer mechanisms;
3) product/process development and project management;
4) provision of manufacturing support services (such as plant engineering, quality control, maintenance, purchasing);
5) human resource management practices; and
6) future challenges facing Japanese manufacturers.

The team visited the Agency for Industrial Science and Technology (AIST), Hitachi, Toyota, and Kawashima Textiles to gather data for its investigation.

General Findings

Since the 1970's, Japanese national technology strategy has evolved from an initial focus on importation and assimilation of externally developed technologies into a present-day emphasis on "knowledge production" through fundamental research and broadening areas of technological strength. Japanese corporations are looking not only to diversify into new technologies, but they are also creating new opportunities through synergistic combinations of existing core technologies (technology fusion). Formulating technology strategy appears to not have the formal trappings one would expect. To date, there has been a strong reliance on the vision of top government and corporate leaders combined with the diligent followership mentality for which the Japanese are well known. This approach appears to have worked well during Japan's period of emphasizing incremental technological improvements, but a question for further study is whether this approach will continue to work for identifying new basic research or revolutionary technology directions.

Changing Competencies

There appears to be movement towards a common ground in Japanese and Unites States product/process development processes: the U.S. away from total reliance on breakthrough technologies and Japan away from relying exclusively on incremental technology development. The later will be a significant struggle for Japan as cultural preference for the constructive, enhancing, harmonious nature of incremental improvement must yield somewhat to the discontinuous, competency-destroying nature of revolutionary technology.

Product Development

At least within the organizations visited, product development processes are less rigid, and there is less concern for a generalized process, than in the U.S. Flexible organizations, concurrent engineering, cross-functional involvement, and communication are, from the Japanese perspective, the most important factors in successfully developing a product.

Technology Transfer

Having spent such a large part of their history bringing technology in from the outside world, the Japanese view it as less mysterious than we do in the U.S. To the Japanese, effective transfer of

technology is accomplished by communication between people and/or the movement of key experts between organizations. This is also true for international transfer of technology as well. The hiring of foreign researchers provides access to foreign information pools and reduces language barriers. On that particular topic, there is a strong Japanese desire for international cooperation, particularly with the U.S. Despite the difficulties integrating foreign nationals into Japanese organizations, there are a lot of efforts to do so. If issues of trust and confidence can be worked out, there is potential for win-win situations.

Personnel Policies

Japanese firms seem to connect hiring and technology strategy, basing current hiring on expectations for future technology needs. Therefore, they also prefer to hire generalist engineers rather than specialists, and train them to meet specific needs as they arise. Motivation, reward, and compensation focus on groups or teams rather than individuals, consistent with overall Japanese values emphasizing individual contributions to groups and society. But change affects everyone, including the Japanese. Modern economic pressures are forcing Japanese companies to rethink their personnel policies, particularly with regard to hiring, lifetime employment, and employee training. An increasing number of technically trained women entering the work force and an overall decrease in employee-to-employer loyalty are also issues to be addressed.

Quality vs. Productivity

The much publicized Japanese concern for quality may be fading somewhat in favor of increasing productivity. The in-plant signs and slogans seen at a Toyota facility dealt more with production schedules and productivity than quality. That isn't to say that quality isn't still a high priority, but it was apparent that people are working harder to maintain both high quality and high productivity. Perhaps this is due to the more practical, and less dogmatic, approach the Japanese take to meeting goals. It's okay to let employees stop a production line to solve a quality problem, but it's also obvious that they must work faster if they do so to keep up with the production schedule. No question is made of a textile manufacturer producing high-volume fabrics in automated factories along with hand-crafted artistic products; each satisfies a particular goal in the best way.

The Environment

There appears to be a genuine commitment on the part of both industry and government to working on environmental and safety issues. No doubt this is helped by the Japanese educational system that links individuals to groups and to the nation overall. Almost every organization visited was proud to point out the environmental or safety issues being actively pursued. Lest one be too skeptical, national objectives of this sort have a long history in Japan.

Public Perceptions

Finally, the Japanese view of technology as a means of solving problems is contrasted with the prevalent U.S. view of technology as a source of problems. To the Japanese, if application of a technology causes a problem, the answer is to add more technology to fix it. The U.S. answer would probably be to halt or regulate use of the technology. Perhaps this viewpoint, more than any other, accounts for Japan's rise to prominence.

Recommendations

Future study missions to Japan may want to consider gathering information on the following topics:

- For one, Japan is in state of flux. Its economy has entered a recession, forcing companies to rethink policies and practices. Will the same companies interviewed by this team give the same answers in a year or two?
- Also, there are ambiguities in what was learned. For example, the team was told by Toyota that an electric vehicle wasn't being considered until some time in the next century, yet the U.S. arm of Toyota has engineers working on the problem.
- Finally, the team didn't find as much visible evidence of the much-touted Japanese emphasis on quality as was expected. Has quality become so ingrained in the culture as to be invisible or has a shift to productivity taken place? These are examples of issues that future study missions might address.

Team B Members

Faculty Leader:	*Dr. Theodore W. Schlie*	*Lehigh University*
Students:	*Ms. Ann Marie Burns*	*U.S. Air Force*
	Mr. Tom Dlugolecki	*AMP*
	Mr. Stephen Filippone	*Martin-Marietta*
	Mr. Steven Hamilton	*AT&T*
	Mr. Kevin Koek	*Eastman Kodak*
	Mr. John Montague	*NCR*
	Mr. Hal Ockerse	*Hewlett-Packard*
	Mr. Bernie Pafford	*Exxon Chemical*
	Ms. Michele Simeone	*AT&T*
	Ms. Denise Smith	*Hewlett-Packard*
	Mr. Kent Stalsberg	*Hewlett-Packard*
	Mr. Roger Stancliff	*Hewlett-Packard*

Team C
Managing the Software Design & Development Process

Team C's goals were to investigate:

1) the role of software in corporate strategy;
2) processes and technologies used in software development;
3) strategies for improving productivity and quality; and
4) organization and management of software development projects.

The team visited R&D facilities at Toshiba Corporation, Murata Machinery Company, IBM Japan, and Hewlett-Packard Laboratories Japan to gather data for its investigation.

General Findings

Software is playing an increasingly important role in corporate business, both as a component of products and as a part of the corporate infrastructure, as the level of computerization increases in products, business systems, and factories. Rather than being viewed as a "necessary evil," software is perceived as adding value to the products and operation of a business. More and more, software quality improvement is getting attention as part of total quality planning.

Competencies

There exists a wide range of software development capabilities among the companies that were visited. Some of the challenges facing individual organizations include putting theory into practice, overcoming a traditional emphasis on hardware, and motivating development teams to follow standard procedures (complicated even more by the highly customized nature of some software products). Most of the companies visited had documented software development procedures; however, the enforcement of these procedures and maintenance of software and its documentation is a problem. Software development in Japan was acknowledged by most company spokesman as being more of an art/craft than an engineering discipline. Japanese companies appear, in general, to be several years behind the U.S. in using state-of-the-art software design tools and techniques.

Trends

This is not meant to imply that the Japanese are not concerned about software development productivity and quality. Initiatives are underway within companies to improve software development processes. These initiatives are focusing on many of the same managerial, procedural, and technological solutions targeted by similar U.S.-industry efforts. Functional boundaries are giving way to cross-functional teams. Emphasis on the customer as a user, not just a buyer, is resulting in customers being pulled into the process early in the design cycle to work with teams on requirements and prototyping. Usability testing is done early and often. The technologies employed for developing software are changing as well. CASE tools, object-oriented techniques and programming languages, and Unix operating systems are examples of technologies being brought in.

Organization

Responsibility for software development is typically distributed throughout large organizations. Corporate labs typically focus on concepts and designs, while active product improvement work takes place at the subsidiaries. Communication is given top priority in all aspects of product development. Cross-

functional teams and movement of personnel are key mechanisms used to facilitate communication. Project selection and funding are typically decided at the corporate level. Combinations of user feedback, quality metrics, and testing are used to determine project goals, but only a small amount of bottom-up planning is allowed.

Personnel

Software researchers and engineers are compensated well, as are engineers in all professions in Japan. Compensation includes non-monetary benefits, such as special use of company facilities. Promotion is the ultimate reward for a job well done. Education and training are considered vital, with five to ten percent of the budget typically allocated for it. However, most training is done in-house and is job-specific.

Recommendations

Future study missions to Japan may want to consider gathering information on the following topics:

- Do all companies developing software for the global market share a common set of problems that could be solved by a common development approach, or does the particular location of the development effort (in the U.S. or Japan, for example) preclude being able to share approaches?
- Do U.S. companies need to establish development facilities in Japan in order to compete in the Japanese software market?
- Is it possible to have a unified Japanese approach to software development or do the strategic differences among companies prevent such an approach?
- What are the difficulties in prescribing a software development model even for individual companies?

Team C Members

Faculty Leader:	*Dr. George F. Farris*	*Rutgers University*
Students:	*Ms. Mary Beth Anderson*	*Xerox*
	Mr. David Anolick	*AT&T*
	Mr. Michael Brinson	*U.S. Air Force*
	Mr. Edward Cattron	*Eastman Kodak*
	Ms. Martha Davidson	*AT&T*
	Mr. Mark Davis	*IBM*
	Ms. Theresa Dempsey	*Hewlett-Packard*
	Mr. Fred Harder	*Hewlett-Packard*
	Mr. Terry Harms	*Hewlett-Packard*
	Ms. Jennifer Hilton	*Hewlett-Packard*
	Ms. Juanita Lint	*Pacific Bell*
	Ms. Sandy Lynch	*Hewlett-Packard*
	Mr. Tim Mikkelsen	*Hewlett-Packard*
	Ms. Dona Miller	*Hewlett-Packard*

Team D
Setting R&D Strategies & Priorities

Team D participated in the Japan Study Mission to investigate:

1) R&D personnel management practices;
2) role of the government in directing and supporting industrial R&D;
3) treatment of patents and intellectual property rights;
4) R&D planning processes; and
5) R&D program management.

The team visited the Agency for Industrial Science and Technology (AIST), Hitachi, Tsukuba Research Consortium, and Matsushita to gather data for its investigation.

Personnel Policies

Japanese corporations tend to hire new R&D recruits primarily from universities (with which they maintain close ties), and prefer to hire undergraduate students over those with Master's or Ph.D. degrees. Undergraduates can be trained by a corporation for a wide range of jobs, while students with advanced degrees may be too specialized in their interests. A dual-ladder career system appears to be working satisfactorily, but it is interesting to note that most engineers preferred to follow the management path even though the pay scales are the same for both paths. Promotion systems are based on seniority, a practice probably rooted in Japanese cultural values; this may also be due to a desire to develop a global R&D awareness for future researchers and managers.

Government Role in R&D

There are two primary means by which the government influences national research and development. The first is the Prime Minister's Science and Technology Agency (STA), which governs research institutes and public corporations. The other means is the Cabinet's Ministry of International Trade and Industry (MITI), which is typically responsible for the formation of research associations among industry players. Government sponsored programs typically focus on the longer term, higher risk research in the "most innovative technologies." The nature of the research performed (basic or applied) varies on a project-by-project basis. The government generally maintains a hands-off policy towards the operation of the corporations and associations formed, as long as technical progress is shown. Projects run for a fixed length of time, typically five to ten years. The government provides most of the funding for these efforts and shares ownership in the results. Participating industries are free to commercialize what they can use of the results.

Intellectual Property

Protection of intellectual property is a much discussed topic between the U.S. and Japan, particularly with respect to patents. Japanese firms place a high value on invention, innovation, and patents. Managers appreciate the fact that patents can protect intellectual property and can also be used as "currency" in licensing negotiations. Creating patentable inventions was an explicit objective given researchers in each of the organizations visited. Inventors are rewarded financially and/or/with other "perks" for their patents. Perhaps of equal importance in protecting intellectual property is the role patents play in technology diffusion in Japan. The first-to-file and public disclosure aspects of the Japanese patent system virtually assure that interested parties are aware of the latest technologies and who the key players are.

The U.S. is a particularly attractive place for Japanese firms to apply for foreign patents. Candidate applications are carefully screened due to the cost to file and maintain a patent, and also because of pressure from the Japanese government for firms to be more selective in their filings.

R&D Planning

Research and development planning practices varied among the organizations visited. Hitachi and Matsushita recognized two types of projects: those from technological discoveries begun in R&D (technology push) and those from a recognized market need (demand pull). Technology push projects are evaluated against the technology strategic goals. It is less clear how demand pull projects are evaluated, although it was claimed that Return On Investment or Break Even Time are not the critical factors. Projects at the government organizations are selected by agency councils, and are evaluated against the goals of the organization. In all organizations there is the recognition that projects can be proposed by individuals wanting to pursue a technological discovery as well as by marketing or corporate planners wanting to meet a customer or strategic goal, and that funding a mix of these projects is important.

Project Termination

Most government organized projects have a fixed lifetime set at the time the organization was established. Project termination, therefore, comes at an expected point. Private organizations rely on milestone management to determine whether to terminate a project. In any event, project termination does not negatively impact the careers of the leaders involved.

Organization

Cross-functional integration within organizations appears to be sporadic. Hitachi admitted to limited attempts to do so, while Matsushita had a complex process to ensure integration.

Quality

Although quality was not a topic discussed in detail, the team did make some of the same observations as other teams on the Study Mission. Perhaps quality consciousness is so ingrained in the culture as to be invisible to an outside observer, or else there is a change taking place. For example, posters were on display at Hitachi, but the people with whom the team interacted didn't seem to know much about them.

Recommendations

Future study missions to Japan may want to explore the following topics in more detail:

- The JRDC ERATO project and the adoption of Western management practices
- Importance of mentoring in R&D institutions
- Plans for the large surplus of engineering graduates projected
- Role of the government in influencing foreign patenting
- Out-licensing practices for strategically important technologies
- Comparison of the Japanese and U.S. patent systems

Team D Members

Faculty Leader:	*Dr. Daniel Berg*	*Rensselaer Polytechnic Institute*
Students:	*Mr. John Adachi*	*U.S. Department of Energy*
	Mr. Diego Betancourt	*Polaroid*
	Ms. Patty Boll	*U.S. Air Force*
	Mr. Donald Cunard	*U.S. Air Force*
	Mr. Jerry Dussault	*U.S. Air Force*
	Mr. Gerald Gendron	*U.S. Air Force*
	Mr. Daniel Goddard	*U.S. Air Force*
	Mr. Pradeep Gupta	*DuPont*
	Mr. Bill Hale	*U.S. Air Force*
	Mr. Jeff Kondo	*Hewlett-Packard*
	Ms. Sue Nielson	*U.S. Department of Energy*
	Mr. John Ou	*Exxon Chemical*
	Mr. Dennis Puhalski	*AT&T*
	Ms. Doris Reesor	*AT&T*
	Mr. Karl Steenburgh	*Xerox*
	Mr. Joseph Swift	*Xerox*
	Mr. Roger Wylie	*Hewlett-Packard*

Cross-Cut Reports

Each team contributed to the preparation of reports on the following two "cross-cutting" topics that each team was asked to observe.

The Use of Quality Management Practices in MOT

The quality issues team was formed from a cross-section of participants in teams A-D, to identify common observations made by all teams in the areas of:

1) quality improvement and management tools;
2) employee development and motivation; and
3) customer satisfaction metrics.

Tools

The basic tools of quality management are not explicitly evident, but are nevertheless deeply imbedded in the business processes specific to each enterprise. Great value is placed on direct communication. Cross-functional teaming is encouraged. Work environments are designed with people in mind. Quality is not a standalone program, nor is the goal to win awards such as the Deming Prize. Quality is viewed not only as a customer-demanded necessity, but also as an enabler supporting strategic imperatives. These strategic imperatives differ from one company to another. The strategic imperative for NEC is cycle time reduction, while at IBM it's continuous improvement, for example. Software development is an area of growing emphasis, and one where the Japanese are having at least as much trouble as U.S. firms. However, while most companies have goals for improving software quality, they appear unclear on ways to meet them.

Employee Development

There appears to be a lack of formal programs for employee career development. Seniority is the factor that determines upward mobility in many companies. However, managers and team leaders are required to maintain technical excellence. They will not be respected if not flexible, top-of-the-field technically, and visionary. Education and training is generally targeted toward immediate job responsibilities. Some companies had a notable lack of educational opportunities. Evaluations are conducted yearly or twice yearly. In many cases, the number of patents, papers, or publications attributable to an individual is a significant criterion. Poor performance tends to be overlooked. Recognition is handed out both to individuals and to groups. Many times the rewards given are non-monetary, such as the freedom to pursue a pet project or the use of special corporate facilities. Women have a more difficult time obtaining management positions, although that may be slightly less true for multi-national firms than for Japanese domestic firms.

Metrics

Emphasizing quality, cost, and delivery (QCD) is a common methodology employed to achieve customer satisfying results. Customer satisfaction encompasses not just a product with few defects, but a genuine sensitivity to human and environmental issues. Companies are focusing on "useability," and are redefining a defect to include any customer-perceived problem or misuse of a product. Supervisors often hear customer complaints directly. An interesting item is that the people responsible for customer service

or product maintenance are typically very experienced individuals. This is significantly different from a common U.S. approach of assigning the least experienced people to product maintenance problems. Most companies seem to have either process control measures related to customer satisfaction, or have systems that could produce customer satisfaction metrics.

Recommendations

Future study missions to Japan may want to explore the following topics in more detail:

- the relationship between QCD and other manufacturing methodologies
- the means for measuring quality
- career planning in light of the recent Japanese economic changes
- whether the quality focus is different between manufacturers of consumer goods and manufacturers of producer goods
- how the Japanese maintain strong links between customers and technical staff

Quality Team Members

Faculty Advisor:	*Dr. Kenneth E. Case*	*Oklahoma State University*
Students:	*Ms. Martha Davidson*	*AT&T*
	Ms. Theresa Dempsey	*Hewlett-Packard*
	Mr. Gerald Gendron	*U.S. Air Force*
	Ms. Juanita Lint	*Pacific Bell*
	Mr. John McNaught	*Pacific Bell*
	Mr. Dennis Puhalski	*AT&T*
	Ms. Denise Smith	*Hewlett-Packard*
	Ms. Esther Turner	*Digital Equipment*
	Mr. Michael Ungs	*IBM*

The Role of Technological Forecasting in Technology Planning

This summary draws on our colleagues' reports and on highlights of Japanese analyses of emerging technologies taken from Japan's Competitiveness and Technology Strategies (International Productivity Service, Washington, DC, January 1993).

The following are hypotheses concerning technology foresight in Japan:

1) Technology forecasting is considered **vital**. Governmental technology planning is taken quite seriously. Japanese firms forecast to base their investment strategies on catching technological waves (and riding those waves longer than do Americans), as opposed to return on investment analyses. Potential market size is viewed as an important aspect of technology forecasts.
2) Technological agendas also depend heavily on **social forecasting**, seeking to determine near- and far-term human (customer) wants.
3) **Expert opinion** is heavily relied upon, both in national studies and within organizations. Some organizations (including NEC) reported forming groups of their R&D personnel periodically to help set technology targets. MITI's Agency for Industrial Science and Technology, at its ETL lab, and Toshiba's R&D Center, both call upon researchers to do research planning. Priority setting seems to depend upon both top-down and bottom-up contributions.

4) **Technology fusion** (searching for opportunities through the integration of multiple technologies; emphasis on interdisciplinarity) is hot.

Emerging Technologies: the Japanese View
Although the study teams obtained interesting glimpses of technology plans from such companies as NEC and Nippon Steel, it seems most prudent to point toward some of the more systematic projections (cited above). We note that the translation of governmental priorities to company priorities is not direct. On the one hand, the Japanese government provides a smaller percentage of corporate R&D funding (3%) than does the United States, implying less influence. On the other hand, there appear to be important intermediary entities--project administration companies made up of former governmental officials and involving corporate R&D leaders.

General Findings
In comparing the observations during the Study Mission and the general findings from the cited work, three goals emerge:

- o Human co-existence in harmony with the earth (emphasis on environment, energy, and development; recycling)
- o Expension of intellectual stocks (boosting Japanese basic research; trying to enhance global cooperation, as in the Human Frontier Science Program)
- o Structuring a society for stable and high quality of life (e.g., figuring out how to cope with an aging population).

Note that these are far broader than industrial competitiveness.

Conclusions

Previously, Japanese industry imported technology, improved on the production processes, and delivered products with enhanced functions and lower cost. Now the situation has changed; Japan is in a transitional stage toward becoming the developer of new technologies. This places a range of demands on Japanese corporations to develop leading edge technologies; develop new products based upon existing technologies; provide trouble-shooting; improve production processes; provide technical services to production and sales. Corporate R&D investments may now exceed capital investment in plants and equipment. Industries are shifting toward high-value-added and intellectual output. Concerns are raised that the spectrum of technological interests is now so broad that focus will be lost. Engineers are in short supply. Management of R&D is becoming a key issue.

Technological Forecasting Team Members

Faculty Advisor: Dr. Alan Porter *Georgia Institute of Technology*

Student: *Mr. B. N. Bettegowda* *IBM*

CONCLUSIONS

Based on these summary reports, it seems clear that our student-faculty teams learned a lot, in a short time, about a techno-economic system that seems to be in a state of transition. In many ways, Japan's business and management practices are very different from those of the U.S., but they seem to be migrating toward Western ways. Examples include personnel practices, where incentive systems are perhaps becoming more individualized, career paths less structured, and company loyalties weakening. In other areas, they are very different from us and not changing at all. Examples include cooperative technical planning and the execution of long range strategies for social and economic advancement by involving government, industry and individuals in various coalitions and partnerships. One wonders if the U.S. is becoming more Japanese in this regard. Similarly, there were no indications that the first-to-file patent system was in danger of being replaced by a first-to-invent version!

In general, the observations and recommendations of the Study Mission teams need no further interpretation here. They are, in themselves, summaries of thousands of hours of individual and collective reflection about Japanese technology management. They provide us with constructive insights that can be a starting point for future study missions.

A great deal of important learning occurred during the Study Mission to Japan that has not been reflected in this report. Seventy students and faculty travelled together in a strange and wonderful country, many for the first time. A social and professional bonding process was started among an expanded international network of potential friends and colleagues. Hopefully, we will each have a chance to build upon these relationships in the future, as we try to better develop and use technology for social and economic progress.

Acknowledgements

Financial support for the 1993 MOT Study Mission to Japan was provided by the United States Air Force through a grant to the National Technological University. NTU is grateful to Col. Claude Cavender and his staff for their support. We are particularly grateful to Capt. Paul McQuay and Dr. Shiro Fujishiro of the Air Force Office in Tokyo, Japan, for their assistance before, during and after the mission. We are also deeply indebted to Robert S. Cutler for his energetic support of the Study Mission from the earliest stages of the project. His preliminary trip to Japan on behalf of the Study Mission and his guidance were instrumental in its successful execution. We thank our colleagues, Dr. Terry MacDougall, Ms. Hiroko Kawai-Turner, and Dr. Ken-ichi Imai, from the Stanford Japan Center in Kyoto, for their assistance, and Drs. Robert Burmeister and Daniel Okimoto of the Stanford US-Japan Technology Management Center in Palo Alto, CA, for their assistance.

Special thanks go to the Japan Productivity Center staff in Washington and Tokyo for their excellent planning and logistical support. We are particularly grateful to Mr. Daisaku Harada and Mr. Tetsuo Koyama in Washington, and to Mr. Kiyoshi Mizumoto in Tokyo, for their unfailing support at "crunch time." We thank the Industrial Research Institute for its support and co-sponsorship, and for arranging for several of its members from Kodak and W. R. Grace to accompany the Study Mission. We also thank the IRI's sister organization, the Japan Techno-Economic Society (JATES) for co-sponsoring the mission and for hosting us at lunch in Tokyo during the trip. The staff of the National Science Foundation in Japan was very helpful in arranging our stay in Tsukuba, as was the Japanese AIST organization, who helped our group meet with foreign scientists involved in the international science exchange program in Tsukuba.

We greatly appreciate the wonderful keynote address by Professor Fumio Kodama and supporting talks by Mr. Masahiro Miyazaki of AIST and Mr. Kaoru Okamoto of the Ministry of Education, Science & Culture, at the Tsukuba plenary session. We also thank Dr. Alan Kantrow and his colleague, Mr. Walt Shill, of McKinsey & Company in Tokyo for sharing their insights on Japanese technology management with us.

We thank the staff members of the National Technological University in Fort Collins, CO, and the Center for Innovation Management Studies at Lehigh University in Bethlehem, PA, for their constant support of the Study Mission project, and their amazing attention to the details of making this a successful venture.

Finally, our thanks and appreciation is extended to the following Japanese companies and organizations for their many kindnesses during our Study Mission.

Agency for Industrial Science & Technology	*Dr. Kiyoji Ikeda* *Mr. Masahiro Miyazaki*
AT&T Japan Ltd	*Dr. Yoshinao Nakada*
Grace Japan K.K. - Japan Research Center	*Mr. Tsutomu Takeuchi*
Hewlett-Packard Laboratories Japan	*Dr. Nobuo Mikoshiba* *Dr. Tak Kamae*
Hewlett-Packard Company/US	*Dr. Yoshio Nishi*

Hitachi, Ltd.	*Dr. Yasutsugu Takeda*
	Dr. Shin-Pei Matsuda
Hitachi Research Laboratory	*Mr. Motohisa Nishihara*
Hitachi Works	*Dr. Norihiko Ozaki*
Hitachi America, Ltd.	*Dr. Satomi Kobayashi*
IBM Japan, Ltd	*Ms. Yukako Uchinaga*
	Mr. Katsutoshi Shintani
Japan Productivity Center/US	*Mr. Daisaku Harada*
	Mr. Tetsuo Koyama
Japan Productivity Center/Tokyo	*Mr. Kiyoshi Mizumoto*
	Mr. Masahiro Takegami
	Mr. Takuma Ohashi
	Mr. Minoru Okuda
Japan Techno-Economics Society	*Dr. Yoshio Ishikawa*
	Dr. Tomoko Nakanishi
Kawashima Textile Manufacturers Ltd	*Mr. Kazuhide Yamamoto*
	Mr. Isao Tanaka
Matsushita Electric Industrial Co, Ltd	*Dr. Tsuneharu Nitta*
	Ms. Yuriko Enokihara
Matsushita Electric Corp of America	*Mr. James V. Reilly*
McKinsey & Company, Inc. Japan	*Dr. Alan M. Kantrow*
	Mr. Walter E. Shill
Ministry of Education, Science & Culture	*Mr. Kaoru Okamoto*
Murata Machinery	*Mr. Yasuo Akiyama*
NEC Corporation	*Mr. Yasukuni Kotaka*
Nippon Steel Corporation	*Mr. Azusa Tomiura*
	Mr. Keizaburo Hama
Optoelectronics Technology Research Corporation	*Dr. Yasutsugu Takeda*
	Mr. Kiyoshi Hasegawa
Saitama University	*Dr. Fumio Kodama*
Sanyo Electric Company	*Dr. Shigeru Maekawa*
Toshiba Corporation	*Dr. Akinori Kasami*
	Dr. Nobuyuki Goto
Toyota Motor Corporation	*Mr. Yasuo Sasaki*
Tsukuba Research Consortium	*Dr. Robert M. Lewis*

(report.jsm #11)

APPENDIX

Study Mission Team Itineraries

NTU/MOT - STUDY MISSION TO JAPAN - MAY 1993 - STUDY TEAM ITINERARY

STUDY TEAM A: MANUFACTURING

FACULTY LEADER: BILL WELLS

	SUN 5/16 Tsukuba Science City	MON 5/17 Tsukuba	TUE 5/18 Tsukuba	WED 5/19 Kyoto	THU 5/20 Tokyo	FRI 5/21 Tokyo	SAT 5/22 Tokyo
Breakfast	On Own	On Own	On Own	On Own	On Own	On Own	On Own
AM	Free Time	**Plenary Session** AIST Conf Ctr Introduction Mr. Masahiro Miyazaki "Analyzing Japanese High Technology" Dr. Fumio Kodama "Japan's Educ System" Mr. Kaoru Okamoto	**Sanyo Electric** Tsukuba	**Cultural Sites** in Kyoto	**NEC Hdqtrs** Tokyo	**Team Working Session** JPC Conf Rooms Shibuya, Tokyo	**Plenary Session** Team Reports "Children's Castle" Conf Room
Lunch	On Own	AIST Cafeteria	en route	**Stanford Center** & International Community House Kyoto	en route	JPC Office Speakers: Dr. Alan Kantrow Mr. Walt Shill	Adjourn at Noon
PM	Free Time	**Lab Visits** Tsukuba **AIST Labs** -Mechanical Eng Lab -Electrotechnical Lab -Inst of Material/ Chemical Res -Inst for Resources/ Environment **Optoelectronics Tech Res**	**Shinkansen** to Kyoto	**Murata Machinery** Kyoto	**Nippon Steel** Tech Center at Futtsu	JATES Lunch Mtg	
Dinner	Tsukuba Expo Group Dinner	Dinner on own	Dinner on own	**Shinkansen** to Tokyo Dinner on train	Group Dinner w/ Nippon Steel	Banquet at Tokyo American Club	
Lodging	Kenshu Center Tsukuba	Dai-Ichi Hotel Tsukuba	Keihan Hotel Kyoto	Shinjuku New City Hotel Tokyo	Shinjuku New City Hotel Tokyo	Shinjuku New City Hotel Tokyo	

Summary of Site Visits: AIST Lab or Optoelectronics Tech Research, Tsukuba; Sanyo Electric, Tsukuba; Murata Machinery, Kyoto; NEC Hdqtrs, Tokyo; Nippon Steel Tech Ctr, Futtsu.

5/10/93

(itin-rev.a #11)

NTU/MOT - STUDY MISSION TO JAPAN - MAY 1993 - STUDY TEAM ITINERARY

STUDY TEAM B: MANUFACTURING FACULTY LEADER: TED SCHLIE

	SUN 5/16 Tsukuba Science City	MON 5/17 Tsukuba	TUE 5/18 Tsuchiura	WED 5/19 Tsukuba	THU 5/20 Kyoto	FRI 5/21 Tokyo	SAT 5/22 Tokyo
Breakfast	On Own	On Own	On Own	On Own	On Own	On Own	On Own
AM	Free Time	**Plenary Session** AIST Conf Ctr Introduction Mr. Masahiro Miyazaki "Analyzing Japanese High Technology" Dr. Fumio Kodama "Japan's Educ System" Mr. Kaoru Okamoto	**Hitachi** R&D Laboratory Hitachi City (w/ Team D)	**Shinkansen** to Nagoya	**Cultural Sites** in Kyoto	**Team Working Session** JPC Conf Rooms Shibuya,Tokyo	**Plenary Session** Team Reports "Children's Castle" ConfRms
Lunch	On Own	AIST Cafeteria	Hitachi	Toyota	**Stanford Center** & International Community House Kyoto	JPC Office Speakers: Dr. Alan Kantrow Mr. Walt Shill	Adjourn at Noon
PM	Free Time	**Lab Visits** Tsukuba **AIST Labs** -Mechanical Eng Lab -Electrotechnical Lab -Inst of Material/ Chemical Res -Inst for Resources/ Environment	**Hitachi** - Hitachi Works (w/Team D)	**Toyota Mfg** Toyota City (Nagoya) **Shinkansen** to Kyoto	**Kawashima Textile** Kyoto	JATES Lunch Mtg	
Dinner	Tsukuba Expo Group Dinner	**Optoelectronics Tech Res** Dinner on own	Dinner on own	Dinner on train	**Shinkansen** to Tokyo Dinner on train	Banquet at Tokyo American Club	
Lodging	Kenshu Center Tsukuba	Tobu Hotel Tsuchiura	Kenshu Center Tsukuba	Keihan Hotel Kyoto	Hotel Sun Route Tokyo	Hotel Sun Route Tokyo	

Summary of Site Visits: AIST Labs or Optoelectronics Tech Research, Tsukuba; Hitachi R&D & Mfg, Hitachi City; Toyota Mfg, Nagoya; Kawashima Textile, Kyoto.

5/10/93

(itin-rev.b #11)

NTU/MOT - STUDY MISSION TO JAPAN - MAY 1993 - STUDY TEAM ITINERARY

STUDY TEAM C: SOFTWARE DESIGN & DEVELOPMENT

FACULTY LEADER: GEORGE FARRIS

	SUN 5/16 Tsukuba Science City	MON 5/17 Tsukuba	TUE 5/18 Tsukuba	WED 5/19 Kyoto	THU 5/20 Tokyo	FRI 5/21 Tokyo	SAT 5/22 Tokyo
Breakfast	On Own	On Own	On Own	On Own	On Own	On Own	On Own
AM	Free Time	**Plenary Session** AIST Conf Ctr Introduction Mr. Masahiro Miyazaki "Analyzing Japanese High Technology" Dr. Fumio Kodama "Japan's Educ System" Mr. Kaoru Okamoto	Bus to Tokyo	**Cultural Sites** in Kyoto	**IBM Facility** Kanagawa	**Team Working Session** JPC Conf Rooms Shibuya,Tokyo	**Plenary Session** Team Reports "Children's Castle" Conf Rm
Lunch	On Own	AIST Cafeteria	en route	**Stanford Center** & International Community House	IBM	JPC Office Speakers: Dr. Alan Kantrow Mr. Walt Shill	Adjourn at Noon
PM	Free Time	**Lab Visits** Tsukuba **AIST Labs** -Mechanical Eng Lab -Electrotechnical Lab -Inst of Material/ Chemical Res -Inst for Resources/ Environment **Optoelectronics Tech Res**	**Toshiba SW** Kawasaki **Shinkansen** to Kyoto	Kyoto **Murata Machinery** Kyoto **Shinkansen** to Tokyo	**Hewlett-Packard** Kawasaki	JATES Lunch Mtg	
Dinner	Tsukuba Expo Group Dinner	Dinner on own	Dinner on train	Dinner on Train	Group Dinner w/ Hewlett-Packard	Banquet at Tokyo American Club	
Lodging	Kenshu Center Tsukuba	Dai-Ichi Hotel Tsukuba	Keihan Hotel Kyoto	Shinjuku New City Hotel Tokyo	Shinjuku New City Hotel Tokyo	Shinjuku New City Hotel Tokyo	

Summary of Site Visits: AIST Labs or Optoelectronics Tech Research, Tsukuba; Toshiba, Kawasaki; Murata Machinery, Kyoto; IBM, Kanagawa; Hewlett-Packard, Kawasaki.

5/10/93

(itin-rev.c #11)

NTU/MOT - STUDY MISSION TO JAPAN - MAY 1993 - STUDY TEAM ITINERARY

STUDY TEAM D: R&D LABS

FACULTY LEADER: DAN BERG

	SUN 5/16 Tsukuba Science City	MON 5/17 Tsukuba	TUE 5/18 Tsuchiura	WED 5/19 Tsukuba	THU 5/20 Kyoto	FRI 5/21 Tokyo	SAT 5/22 Tokyo
Breakfast	On Own	On Own	On Own	On Own	On Own	On Own	On Own
AM	Free Time	**Plenary Session** AIST Conf Ctr Introduction Mr. Masahiro Miyazaki "Analyzing Japanese High Technology" Dr. Fumio Kodama "Japan's Educ System" Mr. Kaoru Okamoto	**Hitachi** R&D Laboratory Hitachi City (with Team B)	**Tsukuba Research Consortium** Tsukuba	**Cultural Sites** in Kyoto	**Team Working Session** JPC Conf Rooms Shibuya,Tokyo	**Plenary Session** Team Reports "Children's Castle" ConfRms
Lunch	On Own	AIST Cafeteria	Hitachi	en route	**Stanford Center** & International Community House Kyoto	JPC Office Speakers: Dr. Alan Kantrow Mr. Walt Shill	Adjourn at Noon
PM	Free Time	**Lab Visits Tsukuba** **AIST Labs** -Mechanical Eng Lab -Electrotechnical Lab -Inst of Material/ Chemical Res -Inst for Resources/ Environment	**Hitachi** - Hitachi Works (with Team B)	**Shinkansen** to Kyoto	**Matsushita Labs** Osaka	JATES Lunch Mtg	
Dinner	Tsukuba Expo Group Dinner	**Optoelectronics Tech Res** Dinner on own	Dinner on own	Dinner on own	**Shinkansen** to Tokyo Dinner on Train	Banquet at Tokyo American Club	
Lodging	Kenshu Center Tsukuba	Tobu Hotel Tsuchiura	Kenshu Center Tsukuba	Keihan Hotel Kyoto	Hotel Sun Route Tokyo	Hotel Sun Route Tokyo	

Summary of Site Visits: AIST Labs or Optoelectronics Tech Research, Tsukuba; Hitachi R&D & Mfg, Hitachi City; Tsukuba Research Consortium, Tsukuba; Matsushita, Osaka.

5/10/93

(itin-rev.d #11)

Attachment 9

Publications

"Technical Japanese Instruction via Audiographic Teleconferencing"; J. L. Davis, T. W. Smith. *Proceedings of the 53rd Annual Meeting of the North Midwest Section, American Society for Engineering Education*; Platteville, Wisconsin. 1991.

English translation of *Isostatic Pressing: Technology and Applications*; E. E. Daub, J. L. Davis. Originally published in Japanese by Nikkan Kogyo Shinbunsha as *Toho Kaatsu Gijutsu* (Koizumi and Nishihara, Eds.); Elsevier Applied Science. 1991.

"Progress in Biotechnology Applications in the Pulp and Paper Industry in Japan: Are We Well Informed?"; E. Livny, J. L. Davis. pp. 87-91 in *Biotechnology in Pulp and Paper Industry*; M. Kuwahara, M. Shimada (Eds.); Uni Publishers, Tokyo. 1992.

"Computer-Aided Language Learning: Audiographics and Technical Japanese Instruction at the University of Wisconsin-Madison"; J. L. Davis, T. W. Smith. *Proceedings of the Second Conference on Foreign Language Education and Technology*; Nagoya, Japan. 1992.

"Computer-Assisted Distance Learning: Audiographic Teleconferencing and Technical Japanese Instruction at the University of Wisconsin-Madison"; J. L. Davis, T. W. Smith. *Proceedings of the 1992 Frontiers in Education Conference*; Nashville, Tennessee. 1992.

"University of Wisconsin U.S.-Japan Industry and Technology Management Training Program", J. L. Davis. *Technology Management in Japan: R&D Policy, Industrial Strategies and Current Practice*. AAAS "Science in Japan" Symposium Series. 1993.

"Retrieval of Japanese Scientific and Technical Information from the JICST Online Information System (JOIS)"; J. L. Davis, E. Livny. *How to Locate and Acquire Japanese Scientific and Technical Information; Proceedings of the Conference*. NTIS Report PB93-231090. 1993.

"Teleconference Delivery of Foreign Language Instruction: Experience with Technical Japanese at the University of Wisconsin-Madison"; J. L. Davis, T. W. Smith. *International Teleconference Association Teleconferencing Yearbook.* 1993.

"The Technical Japanese Program at the University of Wisconsin-Madison: Computer-Aided Instruction and International Partnerships"; J. L. Davis, T. W. Chapman, T. W. Smith. *Proceedings of the 1993 Annual Conference of the American Society for Engineering Education (ASEE)*; Urbana, Illinois. 1993.

Conference Presentations

"International Engineering Programs: Participation in the Global Economy"; T. W. Chapman, J. L. Davis, W. F. Taranowski. Presented at Engineers' Day Seminars 1992; Madison, Wisconsin. 1992.

"Teaching with Audiographics"; J. L. Davis. Presented at the UW Centers Seminar: Distance Teaching Resources and Techniques for Foreign Languages; Wausau, Wisconsin. 1993.

"Applications of Audiographics in Distance Education"; J. L. Davis. Presented to the Midwest Chapter of the International Teleconferencing Association; Madison, Wisconsin. 1993.

BASIC TECHNICAL JAPANESE

Edward E. Daub, R. Byron Bird, and Nobuo Inoue

Designed for scientists and engineers with no previous training in the Japanese language, this textbook provides an introduction, for classroom use or self-study, to the Japanese writing system, grammar, scientific vocabulary, and readings from actual Japanese technical literature.

1990 LC: 90-50082
800 pp. 8 1/2 x 11
ISBN 0-299-12730-3 cloth $35.00
Copublisher: University of Tokyo Press

COMPREHENDING TECHNICAL JAPANESE

Edward E. Daub, R. Byron Bird, and Nobuo Inoue

This textbook assumes a basic level of competence in reading Japanese and can be used for a formal course or for self-study. It introduces 500 *kanji* frequently used in physics, chemistry, and biology, providing reading and translation exercises.

1975 LC: 74-5900
440 pp. 8 1/2 x 11
ISBN 0-299-06680-0 cloth $35.00

KANJI-FLASH/BTJ

Craig T. Van Degrift

This DOS software is an electronic flashcard companion to *Basic Technical Japanese*. It follows the text chapter by chapter, testing the pronunciation and meaning of all 510 *kanji* and 4000 compound words introduced in the textbook.

1992
ISBN 0-299-97077-9 software $79.00
Distributed for Kanji-Flash Softworks

THE BRECHT YEARBOOK / DAS BRECHT-JAHRBUCH VOLUME 20

Brecht: Then and Now / Damals und Heute

Edited by John Willett

The Brecht Yearbook is celebrating a "jubilee": twenty volumes and twenty-five years of the International Brecht Society. Guest editor John Willett has assembled material from the international Brecht symposium he convened in Bourges, France, in the fall of 1992, as well as interviews, statements, and articles by poets, dramatists, and scholars who feel a critical affinity with Brecht and his legacy. This volume also includes book reviews and an index to all previous yearbooks.

John Willett is former president of the International Brecht Society and was for many years the assistant editor of the *Times Literary Supplement*. He has published books and articles on Brecht and on Weimar Germany.

APRIL *In English, German, & French*
200 pp. (est.) 5 halftones (est.) 6 x 9
ISSN 0734-8665
ISBN 0-9623206-7-6 paper $22.95 (est.)

Distributed for the
International Brecht Society.
Managing Editor: Marc Silberman

Vols. 3-10 and 14-19 may be ordered from the University of Wisconsin Press. Vols. 11-13 may be ordered from Wayne State University Press.