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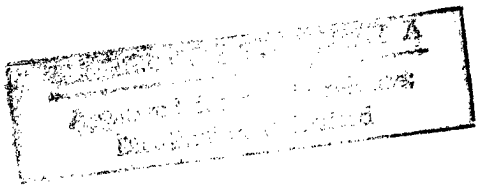

China Report

SCIENCE AND TECHNOLOGY

COMPUTER DEVELOPMENT AND APPLICATIONS--IV

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CONTENTS

NATIONAL DEVELOPMENTS

NATIONAL DEVELOPMENTS

BEIJING DESIGNATED AS COMPUTER CENTER

OW170817 Beijing XINHUA in English 0651 GMT 17 Feb 84

[Text] Beijing, February 17 (XINHUA)--The State Council has designated Beijing as the computer research and production center in the norther part of China, today's ECONOMIC DAILY reports.

The city has readjusted its computer enterprises and their product mix to make the enterprises better coordinated than before. It has set up a municipal computer industry corporation which exercises unified leadership over the 50 research and production units in the city area.

The paper notes that Beijing now has a technical force of more than 33,000 in computer research and production.

They last year produced some 1,860 electronic computers of various kinds and 920,000 calculators, with a combined output value of over 300 million yuan (about 150 million U.S. dollars).

In addition to meeting domestic needs, the city also exports some of the computers it makes to other countries, the paper adds.

At a meeting held recently by the Municipal People's Government, Mayor Chen Xitong urged all city cadres to study computer science and attach importance to the use of microcomputers.

Beijing has drawn up preliminary plans to apply computers in traffic control, population and city planning, environmental protection and financial and technical information in order to computerize the city's civil administration.

The city manufactured China's first generation of analog computers in the early 1960s and designed and produced digital computers in the 1970s. In recent years, it started to make microcomputers with advanced imported technology. The microcomputers, with Chinese language processors attached, are convenient to users and have been favorably commented on.

CSO: 4010/50

NATIONAL DEVELOPMENTS

USE OF MINICOMPUTERS GROWING IN CHINA

OW191059 Beijing XINHUA in English 9731 GMT 19 Jan 84

[Text] Beijing, January 19 (XINHUA)--Chinese economic planners, factory managers and scientists are turning their sights to minicomputers for better efficiency and higher output.

These small, reasonably priced and easily operated machines are now used on a limited scale in industrial and agricultural production and research, natural resources surveys, meteorological observation, hydrological forecasting, data processing, and designing of engineering and construction projects, according to the Ministry of Electronics Industry.

At 8 a.m. every day, an up-to-the-minute report on China's iron and steel production is placed on the desk of the metallurgical industry minister. A minicomputer center in the ministry now does the elaborate job of collecting and processing statistics from 33 key enterprises and mines and finishes it in an hour.

Before the data processing system was put into operation last August, a team of specialists had to get the figures from the mills and mines by telephone for compilation and analysis. The work was not only time consuming, but also not always accurate due to slips of the pen and the tongue.

In Sichuan Province, special efforts have been organized to promote use of minicomputers in industrial energy conservation and other work. The Sichuan Chemical Works spent 600,000 yuan on a minicomputer system to control the consumption of natural gas. In less than half a year, the system had more than paid for itself.

Minicomputers are helping Zhejiang and Jiangsu scientists develop better rice strains and study soil quality.

Examples like these are being cited by the ministry to show what can be done by minicomputers. China reported a 150 percent increase in 1983 in the production of such computers, but output still fails far short of demand.

The Beijing Wired Telecommunications Facilities Factory, for example, increased its output of minicomputers tenfold, from 50 in 1982 to 500 last year, but new orders have been placed by more than 5,000 customers.

"Even if we could produce another thousand, we still cannot meet the growing demand," a factory official said.

Minicomputers received nationwide attention in May last year when a government decision was announced to give priority to their development. The announcement said efforts would be made to establish a national computer system from now till the 1990's.

Computerization has increased the daily profits of the Beijing Capital Iron and Steel Company by 11,000 yuan and trimmed its work force of 70,000 by more than 10 percent.

Nevertheless, no one lost his or her job because of this. The more than 8,000 workers who were no longer needed on their original jobs were retrained or transferred to new jobs ranging from tree planting to recycling of waste and refuse.

Lack of expertise seems to be one of the problems holding back spreading of computer technology. For example, in the Shanghai General Petrochemical Works, one of China's largest, 90 percent of the technicians and engineers have not [been] trained in computer technology.

In view of this, the management of the works has decided to rotate all college-trained technicians and leaders at and above the workshop level through computer technology training sessions.

Last year, Jiangsu Province trained more than 300 people in the use of computers in enterprise management.

Elementary computer courses are being given on an experimental basis at a number of middle schools in Beijing, Shanghai, Hangzhou and other cities.

CSO: 4010/46

COMPUTER ACHIEVEMENTS OF NATIONAL DEFENSE S&T UNIVERSITY REVIEWED

Beijing GUANGMING RIBAO in Chinese 6 Dec 83 p 1

[Article: "Computer Institute of the National Defense Science and Technology University Scores Impressive Results in Both Manpower Training and Research Achievements. Over the Past 20 Years, It Has Developed 18 Types of Specialized and General-Purpose Computers and Has Become a Powerful Force in Computer Design"]

[Text] Item filed by reporters Zhang Zuhuang [1728 4371 3874], Fan Yunfang [2868 0061 5364], and Lou Huguang [2869 3337 0342]: Twenty-five years ago, a small group of nine educators founded the Computer Institute of the National Defense Science and Technology University. Today, the institute has become one of the centers of computer research, occupying a high-rise building, rather well equipped, and employing a staff of several hundred research scientists and teachers. It has been called the "treasure-house for talented people," and the "cradle of scientific results." The National Defense Science, Technology and Industry Commission praises them as "a battalion equal to the most formidable tasks." In 1958, this hardly noticeable group noted the new international trend toward digital computers. Recognizing its relevance to national defense needs, they worked hard and successfully assembled an electron-tube computer, which was welcomed by the offiers and men. In 1961, in line with the country's urgent needs, they planned to assemble a slightly larger electron-tube computer. When they realized that electron tubes were about to be replaced by transistors, they immediately revised their plans, and leapfrogging developments, drew up a program to construct a transistorized computer. In 1964, through their great efforts, China's first general-purpose transistorized computer capable of performing 10,000 operations per second was assembled. After entering batch production, it was used in the fields of defense, scientific research, education, and medicine, with favorable comments. In 1971, they initiated development of a 2-million-operation per-second computer. In 1980, this computer performed great deeds in the test launch of a booster rocket toward the Pacific. This institute was cited for group Merit Citation Class II. Also, Merit Citation Class III was awarded to more than 40 scientific and technical personnel and skilled workers. Over a span of 20 years and more, this institute has developed 18 models of large, medium-sized, and small special-purpose and general-purpose computers. It has contributed generation after generation of new products to the state.

During the course of development of computers [from initial research to assembly], the scientific research ranks at this institute also grew continuously. Presently, not only are there the older generation specialists who graduated before the Liberation, but also the university graduates of the 1950s who have matured into professors and associate professors, plus the university graduates of the 1960s who have become associate professors and lecturers, thus forming a powerful computer research and development echelon with leaders at the top, backbone cares in the middle, and assistants at the bottom, all of them fully supplied with software and hardware. Ci Yungui [1964 0061 2710], computer specialist and member of the Council of Academic Departments of the Chinese Academy of Sciences, although he is over 60 and graying at the temples, holds a tight rein on directional guidance in the organization and the direction of every major research problem; he goes all out to find and nurture talent and has been able to bring forward an unknown but willing and daring group to create the new and has carried the younger generation on his shoulders to guide them toward success. He has enthusiastically guided those comrades who have excelled in studies and also have a certain organizational talent toward leadership roles. At present, of the four deputy directors of the institute and the heads and deputy heads of its more than 20 research laboratories and teaching-and-research sections, the majority are middle-aged intellectuals in their 40s and 50s. According to statistics, of over 30 scientific research achievements at the institute, 11 were awarded prizes at the National Science Conference, and 19 were conferred national defense system science and technology achievement awards. In the last three years, the institute has been responsible for more than 500 papers published domestically and abroad in professional meetings and journals.

CSO: 4008/110

COMPUTER PROCESSING OF CHINESE-LANGUAGE TEXTS NEARS

OW130922 Beijing XINHUA in English 0809 GMT 13 Oct 83

[Text] Beijing, October 13 (XINHUA)--China is in sight of making nationwide use of microcomputers for automatic processing of Chinese-character information within 3 years.

This was stated by Qian Weichang [6929 0251 7022], president of the Chinese Language Information Processing Society of China, to XINHUA after he addressed the opening ceremony of the 1983 International Conference of Chinese Information Processing here yesterday.

China's research in this field was "ripening," he said.

China was now in the world's leading position in designing Chinese information processing systems and in coding Chinese characters, the scientist said.

Qian Weichang, who is also president of the Shanghai University of Science and Technology, was elected chairman of the current conference. Many Chinese-designed information processing systems were now in serial production, he said. Even more were ready for production. Colored picture and Chinese character computers had already been developed recently.

Altogether, Qian Weichang said, China had created more than 400 coding methods for Chinese characters. Over 50 of them were in trial use. Practice would narrow the choice and the technology for manufacturing the equipment would be improved to raise the quality and efficiency.

Unlike the languages based upon an alphabet, the Chinese language has many characters. The number in most common use comes to 3,700. When it comes to literature, history, geography and other subjects, 20,000 to 30,000 characters are needed. The formation of phrases and grammar are complicated. All this makes it very difficult to develop computers to process information in Chinese characters.

More than 1.1 billion people who account for more than a quarter of the world's population use Chinese characters. In some developed countries and regions such as Japan, Singapore, the United States and Federal Germany as

well as Hong Kong, Chinese character computer-processing systems are in wide use. But the designs and coding methods are not ideal.

China began such research at the beginning of the 1970s. Rapid progress in research has been made in the past few years. Now, Chinese-character processing systems are used in enterprise management, population census, commodities transport, ticket sales, financial statistics, telecommunications, information retrieval, printing and other fields.

A computer-laser Chinese character editing and composing system developed jointly by Beijing University and the Institute of Technology of XINHUA NEWS AGENCY replaces the complicated handwork of typing or stereotyping books and documents. It is the best of its kind in the world, Qian Weichang said.

Sponsored jointly by the Chinese Language Information Processing Society of China and the United Nations Educational, Scientific and Cultural Organization, the three-day international conference will close tomorrow. Participating in the conference are more than 180 experts from 15 countries and regions.

CSO: 4010/24

NATIONAL DEVELOPMENTS

CHINA TO STRESS IMPORT OF SOFTWARE OVER HARDWARE

OW130540 Beijing XINHUA in English 1547 BMT 12 Oct 83

[Text] Beijing, October 12 (XINHUA)--China will stress the import of software instead of hardware in the years to come, Lin Zongtang, vice minister of the State Economic Commission, told a group of foreign business leaders here today.

Speaking at the third China-Europe Business Leaders Symposium now in session here, Lin Zongtang said that China plans to import 3,000 items of technology to upgrade its existing small- and medium-sized enterprises in the 1983-1985 period.

He said that a fundamental change in China's guideline for its economic work is that the country will boost its industry by improving the economic performance of the existing enterprises through technical transformation rather than by adding new factories.

To speed up its scientific and technical progress, the vice minister said, the government has worked out 38 key projects and allocated special funds for this effort. Technicians have been organized to tackle some of these projects.

Stressing the technical transformation of the machinery and electronics enterprises, he said, more than 1,000 out of the 3,000 planned import projects, and 18 out of the 38 key projects are involved in the machinery and electronics industries.

He noted that the annual output value of China's machinery and electronics industries now comes to 120 billion yuan (about 60 billion U.S. dollars), accounting for one-fifth of the country's total industrial output value, but China is still weak technically in these fields in terms of variety, quality and economic performance.

The general objective for China's technical progress is that by the end of this century, all branches of economy should widely use the advanced technology popular in the developed countries in the 1970s and the early 1980s and applicable in China, he said.

The major machinery and electronic products should reach the standards of those produced in the developed countries in the 1970s or early 1980s within 10 to 15 years, he said.

The vice minister said that the Chinese government attaches great importance to importing foreign technology to upgrade the existing enterprises. It has called for a more relaxed policy and simplified procedures and transferred more power to lower authorities to make approvals.

He said that some foreign businessmen worry that their foreign trade with China will decrease once their technology is transferred to the country.

"There is no need to worry about this," Lin Zongtang said. "China has a population of one billion. With the constant improvement of its economy, its purchasing power will increase by dozens of times and its foreign trade will certainly go up rather than go down."

CSO: 4010/46

CHINESE LANGUAGE INFORMATION PROCESSING SOCIETY SYMPOSIUM

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 13, 5 Jul 83 p 1

[Article: "Chinese Language Information Processing Society of China Sponsors Second National Symposium"]

[Text] Late last May, the Chinese Language Information Processing Society of China convened its second national symposium in Wuhan. This conference was held on a larger scale than the first one. More than 200 representatives participated. Almost 140 papers were received from 28 provinces, municipalities, and autonomous regions. After serious evaluation, 40 plus papers were selected to be presented later in the fall in Beijing at the International Seminar of Chinese Language Information Processing.

During the conference, two specialized committees, one on Natural Language Processing and one on Chinese Character Information Processing Systems, were formally established. Now, the society officially has five specialized committees, including those on Special-Purpose Chinese Character Information Processing Equipment, Chinese Character Coding, and Basic Theory.

This conference was held in a good scholarly atmosphere. Judging from the papers, thoughts on the design of Chinese character information processing systems maturing by the day; the study of basic theory has shown progress in both depth and scope; research and development on special-purpose equipment is expanding rapidly; the study of Chinese character coding has come in for joint effort; and work on natural language processing is intensifying.

The responsible personnel of the society have indicated that one of the important activities since the conference is to report to the state and related departments on progress made pertaining to Chinese character system, market prediction, and users' needs.

CSO: 4008/129

STANDARDIZATION COMMITTEE FORMALLY ESTABLISHED

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 13, 5 July 83 p 1

[Article: "National Technical Committee of Computer and Information Processing Standardization Founded in Beijing"]

[Text] The National Technical Committee of Computer and Information Processing Standardization was founded recently under the joint sponsorship of the State Bureau of Standards and the Ministry of Electronics Industry in Beijing. Chen Liwei [7115 0500 3634], chief engineer of the Bureau of Computer Management, Ministry of Electronics Industry, has been appointed chairman of the committee. Wu Yuanjun [0702 3293 0193] of the Office of Standardization, Ministry of Electronic Industry, has been appointed secretary general. The secretariat is set up at the Office of Standardization to handle day-to-day operations. Letters of appointment have already been issued to appropriate personnel by the State Bureau of Standards.

This committee is responsible for technical standardization nationwide and for liaison work with relevant organizations abroad such as ISO/TC97, IEC74, and IEC/TC83. Its major responsibilities are: to draw up and put forward specialized standardization work objectives, policies, and proposals; to formulate the tables of organization for this discipline; to assist with the organization and director of research on and formulation and revision of state standards and professional standards for this discipline; to carry out technical examinations and disposition of related standards; and to investigate and issue international technical documents. It is also responsible for related dissemination, interpretation, consultation, and foreign interchanges.

The major tasks for this year were discussed at the founding session: to implement this discipline's standardization program; and to prepare to establish six technical subcommittees on "vocabulary," "character set and code," "programming language," "magnetic disc," "data element display method"; and "peripherals, office equipment and supplies".

CSO: 4008/129

CHINA PUSHES COMPUTER APPLICATIONS THROUGHOUT ECONOMY

Beijing JINGJI RIBAO in Chinese 19 May 83 p 1

[Commentary by Ren Xinfa [0117 2946 4099]: "In the next Few Years We Must Broaden the Scope of Application of Microcomputers, Minicomputers and Industrial Control Computers, and at the Same Time Prepare to Establish a Model Computer Application System, and Expand the Utilization of Computers in Management"]

[Text] The development and broad application of computer science and technology are changing day by day, and have made a significant impact on today's world. The range and depth of application of electronic computers has been recognized as an important indicator of the level of a nation's modernization. Comrade Wan Li pointed out during the National Electronic Computer and Integrated Circuits Planning Conference that, without electronic computers and without large-scale integrated circuits, there is no modernization.

The broad application of electronic computers is a very important task in equipping the various departments of the national economy with the latest technology and accelerating the four modernizations in China. During the past several years, this task has been developed rather rapidly in our country, and progress has been significant. Currently there are over 3,500 large, medium and small model electronic computers in our country. Over 10,000 technical personnel are involved. The scope and domain of computer applications have already proceeded step by step from military projects, scientific research, and education and are now penetrating into all sectors of the national economy. Computers are now being used in varying degrees in China's petroleum, chemical industry, railroads, civil aviation, metallurgy, machinery, communications, electric power, the textile industry, meteorology, financial statistics, tourism, etc.

After employing electronic computers, the various departments of the national economy have made important contributions and reaped significant results in promoting the modernization of enterprise management, and the application of automatic controls and intelligent terminals to production processes, and in utilization of knowledge. In 1981, when a serious flood occurred along the upper reaches of the Chang Jiang, computers were used to make timely and accurate forecasts which indicated that the weather along the upper reaches would clear soon. As a result, the Jing Jiang flood diversion area was not taken. About 600,000 mu of farmland were saved and a severe loss was avoided. In 1981, when computers were used in Zhejiang Province to forecast plant diseases and insect pests, in the 2 counties of Shaoxing and Cixi alone,

grain losses were reduced by 50 million jin. The Beijing Cotton Mill No 1 is equipped with 70,000 spindles. It has adopted electronic computers for management of cotton distribution and can save about 150,000 yuan annually. The Ministry of Textile Industry is now promoting this success, and if it is universally adopted in the country's cotton mills, annual savings could exceed 40 million yuan. The Shanghai Waitan Savings Office of the People's Bank of China carried out computerized processing of over 4 million yuan in fixed and demand deposits, greatly improving work efficiency. At the end of each workday, the day's receipts and disbursements can be calculated in just a few minutes, and the daily report form is produced immediately.

Although there has been definite progress in recent years in our country's computer applications, we are far behind compared to international standards. This is true not only with respect to applications, but also with respect to R&D and production of whole machines, software development and other aspects as well. A pressing mission squarely confronting our nation is that, in the computer science and technology sector, during the economic development in the 1990s, we must reach the international level of the early 1980s. We must improve our knowledge, unify our ideology, and struggle with one heart and one mind to realize this objective.

At the National Eelectronic Computer and Integrated Circuits Planning Conference held on the 15th of this month in Beijing, separate plans were formulated on specific topics: computer applications, computer development, software product development and development of integrated circuits. The conference considered the years 1983 through 1985 as the preparatory phase of the computer applications development. Based on our national status, in the next few years we must broadly exploit the realm of the applications of microcomputers, minicomputers, and industrial control computers, causing them to produce clear benefits immediately in the national economy. At the same time, we must undertake the development and building of several important typical computer application systems, and actively and systematically develop computer applications in the sector of management.

The intensification of computer applications in the management sector is an essential prerequisite for the realization of scientific management. For this, the establishment of a state information management system and a data communications network is a mission of a strategic nature. This computer system will provide a reliable scientific basis for natural economic statistics, forecasts, programs, plans, and dispatching of commands bearing on the national economy.

The work of developing software is one of the keys to success or failure in computer applications. Development of software applications must be expedited, and development and basic research on software must be supported. Those organizations engaged in software development must be reformed and replenished step by step, and personnel qualified in computer applications must be rigorously trained.

The broad application of electronic computers has been recognized as the only way to propel all departments, all regions and all enterprises toward realizing technological progress.

8174
CSO: 4008/133

WAN LI, FANG YI SPEAK AT ELECTRONICS CONFERENCE

Beijing GUANGMING RIBAO in Chinese 16 May 83 p 1

[Article by reporter Zhou Wenbin [0719 2429 2430]: "Wan Li and Fang Yi Speak at a National Computer and IC Planning Conference Urging Accelerated Growth of China's Electronic Computer and Integrated Circuit Undertakings"]

[Text] The National Electronic Computer and Integrated Circuit Planning Conference sponsored by the Electronic Computer and Large-Scale and Integrated Circuit Leadership Group of the State Council was convened in Beijing on 15 May.

Wan Li attended the opening ceremony and made an important speech. He said that this conference was very important, being a key conference, a policy decision-making conference, which will play an important role in China's modernization program. Without computers and integrated circuits there can be no four modernizations. He particularly expressed the hope that scientists and scientific and technical personnel with practical experience and rich scientific knowledge would work together with one heart and mind to do a good job on our country's electronic computers and integrated circuit undertakings with faster, economical and greater results.

During the conference, Fang Yi made a report. He pointed out that, in the past few years, there had been significant progress made in our country's computer and integrated circuit undertakings. New achievements have been attained in the development, production and application of integrated circuits and computers and much attention had been devoted in all sectors to the training of scientific and technical personnel, and their ranks are swelling. However, generally speaking, the development of computers and integrated circuits in our country is still not satisfactory. Product quality is poor; prices are high; equipment is not in complete sets; and they are a long way from meeting the requirements for the development of the national economy and the buildup of national defense. We must earnestly sum up the experience and lessons of history, firmly eliminate the outmoded conventions on management concepts and methods, carry out the correct policies, and take strong and effective measures to fundamentally change the backward situation in our country's electronic computers and integrated circuits undertakings. He expressed the hope that through the study and discussions at this conference,

a common understanding with respect to the basic policies on developing our nation's computers and integrated circuits could be achieved; and that on this basis a development plan for the period of the Sixth Five-Year Plan would be arranged and implemented, and the tasks for the last 3 years should be ascertained.

Lu Dong [0712 2639] and Zhang Zhenhuan [1728 7201 1403] also spoke during the conference. [Lu Dong is Deputy Head of the State Council Leading Group for the Development of Computers and Large-Scale Integrated Circuits and serves concurrently as Vice Minister of the State Economic Commission. Zhang Zhenhuan, also a Deputy Head of the Leading Group, is Chairman of the Science and Technology Committee of the National Defense Science, Technology, and Industry Commission.]

8174
CSO: 4008/133

NATIONAL DEVELOPMENTS

REFORM IN COMPUTER APPLICATIONS DEVELOPMENT STRESSED

Beijing GUANGMING RIBAO in Chinese 16 May 83 p 1

[Commentary: "Developing Computer Applications Begins With Reform"]

[Text] Currently, the scope of electronic computer applications internationally has already expanded from the scientific computing of the past to data processing, information processing and knowledge processing. Some countries have already applied them on a large scale in all sectors of the national economy, including economic and technical management, even penetrating into the various aspects of life in society. China is now on a great journey toward the four modernizations and needs computers to gather all types of information, transmit them, and comprehensively process them at high speed with high efficiency. In addition, computers are needed for the management of market forecasts, product sales, supply of raw materials, production plans, wages for labor, tools and equipment, industrial technology, financial accounting, and so on. The level of computer applications is still low in China, however, and the scope of application is still very narrow. Many important sectors affecting state planning and the people's livelihood have yet to put computers to use or still do not use them fully. For example, national economic information is not readily accessible, statistical work methods are backward, they are neither timely nor accurate, and programs, plans, dispatches and instructions also fall short of a foundation of scientific management. The reasons for this computer application backwardness in China are many-faceted: for a long time there was no discussion or understanding of the economic benefits of computers, and there was a lack of motivation or sense of urgency regarding the adoption of computers; the industrial base for computers was weak, Chinese-made machines were poor in quality, but high in price, systems were not in complete sets, maintenance and repair services were poor and could not meet customers' needs; for a long time there was insufficient understanding of the difficulty of developing computer applications technology, the technical forces were too weak, there was a lack of a strong and relatively centralized software development organization, and progress in development work was slow, and departments working on applications lacked a funding channel for developing and promoting computer applications, and so on.

The solution to the above problems must begin with reform. Only by linking them closely with reform of the economic system can applications be developed

and the development of computers and integrated circuits be promoted. Currently, many problems exist in the scientific research, production and application of computers and integrated circuits in China. Among them are the problem of ideological understanding and, more importantly, the organizational problem. In reforming the system of management of the electronic computer and integrated circuit facilities, it is necessary to concentrate on the crucial areas of departmental authority, divided responsibilities, "everybody his own boss", and replication and dissemination. Research, development, production, utilization, service, and personnel training must be gradually integrated, through reforms, so that there are explicit departmental and regional responsibilities, rational division of labor, close cooperation, coordination of efforts, effective instructions and high efficiency, and so that the enthusiasm of all personnel concerned may be fully stimulated.

We are convinced that, with the concern of and under the direct leadership of the party Central Committee and the State Council, and in the spirit of readjustment and reform, if we do a good job on the various links such as research, development, production, applications, services, etc., China's computer and integrated circuit undertakings will surely enter a new period of development.

8174
CSO: 4008/133

PROVINCIAL DEVELOPMENTS

HUNAN INSTALLS DOCUMENT TRANSFER TERMINAL

HK010811 Changsha Hunan Provincial Service in Mandarin 2310 GMT 30 Jan 84

[Excerpts] According to HUNAN RIBAO, the Provincial National Defense Science and Industry Office put up a new sign in early January: The Hunan international link-up document transfer terminal of the North China Document Research Institute. It installed the province's first international link-up document transfer terminal, and established ties with two foreign international link systems for receiving information and documents. The most up-to-date international documents and data can be received in only a few minutes at a cost of a few score yuan.

This terminal is linked up to the U.S. Lockheed Company's data library and to the European Space Agency information center's data library. The U.S. library alone contains 216 files with over 80 million documents, representing 50 percent of the world's machine-stored documents.

As soon as this new terminal went into operation, it aroused widespread interest. The Yiyang Paper Mill was researching the use of two trees as raw material in paper-making. Personnel from the mill went around the whole country looking in vain for reference materials on the technique and equipment required. They came to the terminal center and eagerly filled out a document request form. The reply came through very quickly. It took only 5 minutes and 80 yuan to receive 148 documents and materials. The first 50 of these documents have now arrived at the mill. After reading them, the technicians said they could use every one; some could be applied right away, and others could be used as reference.

HUNAN RIBAO carries a commentator's article on this report, titled "We Must Not Be Dreamers and Idlers," stressing that it is essential to enthusiastically study and apply new-style science and technology.

CSO: 4008/145

PROVINCIAL DEVELOPMENTS

HUNAN ESTABLISHES COMPUTER APPLICATION GROUP

HK200207 Changsha Hunan Provincial Service in Mandarin 2310 GMT 18 Jan 84

[Text] Yesterday afternoon, the provincial people's government held a meeting at Xiangjiang Hotel's assembly hall to present awards for compatible Chinese and foreign language microcomputer systems, and to pledge mass effort to meet the challenge of the new industrial revolution. Xiong Qingquan, secretary of the provincial CPC committee, and Zhou Zheng, vice governor, attended the meeting and delivered speeches. Comrade Zhou Zheng awarded a large silk banner bearing an embroidered slogan, "Establishing the Province's Information Industry, Being a Vanguard in Invigorating China," to the provincial electronic research institute. The State Council's leading group for science and technology, the Electronics Industry Ministry, the computing center of the State Planning Commission's Statistical Bureau, the Chinese Scientific and Technological Information Bureau, and other units have sent congratulatory messages to the meeting.

At the meeting, Comrade Zhou Zheng said: At present, the issue of a new industrial revolution is under heated discussion internationally. The rise of a new industrial revolution is both an opportunity and a challenge for us to march toward the four modernizations. Once we make good use of the actual conditions and concentrate on the application of new scientific and technological achievements for the development of our country, the gap between our economy and technology and that of the developed countries will then be narrowed. Otherwise, the gap will be further widened. We, the people of Hunan, must take up the challenge bravely and devote our efforts to the development, popularization, and application of microcomputers. We must study boldly the enterprising spirit in scientific and technological research of the provincial electronics research institute so as to make contributions for developing, popularizing and applying microcomputer systems.

The meeting has formed a provincial leading group for application of computers. The groups is headed by Yu Haichao, vice governor, while deputy heads of the group are Ge Hua, chairman of the provincial planning committee; (Wang Huairui), vice chairman of the economic committee; (Zhang Qiren), vice chairman of the science and technology committee; and (Wang Yingang), manager of the Electronics Industry Corporation.

CSO: 4008/145

LIAONING COMPUTER CENTER ACCOMPLISHMENTS DETAILED

Liaoning SHICHANG ZHOUBAO in Chinese 23 Aug 83 p 2

[Article by reporter Wei Runsheng [7614 3387 3932]: "Liaoning Provincial Planning Commission's Computer Center Focuses on Applications; Actively Serves Liaoning Economic Construction"]

[Text] Recently, this reporter visited the Liaoning Provincial Planning Commission's Computer Center. This computer center belongs to several scientific research units which use a large-scale computer for data processing and scientific calculations. In the past 4 years, while focusing on applications and setting service to economic construction as the goal of their work, they have persevered and achieved some success in the management of economic modernization in Liaoning.

Playing an Important Role in Liaoning's Economic Planning and Statistics

The Liaoning Planning Commission's Computer Center has installed an imported FELIX-512 general purpose mainframe computer. During the past 4 years it has provided reliable data and valuable analytical results for Liaoning's economic work.

This center has enthusiastically taken on the tasks of the compilation of annual, quarterly and monthly reports, the computations for large-scale surveys, the collation and processing of historical materials, and the reporting of budgetary statistics for provincial and municipal statistical bureaus. Of the provincial statistical bureau's 147 types of annual, quarterly and monthly reports, the center's computer has been used, in the peak year, to compile 61 types of reports covering industry, agriculture, commerce, commodities, etc. From August 1979 to May 1983, the volume processes was 18.85 million pieces of data. At present, the computer center has carried out the collation and processing of survey cards on a number of large, medium and small industrial enterprises, rural people's communes, and state-run farms in the province, and has stored this information in the computer so that it can be recalled at any time.

To serve provincial planning work, the computer center has developed economic forecasts, macroeconomic models, and construction time sequence files. Under the guidance of the provincial planning commission's Office of Commerce, the

center used econometric methods to forecast purchasing power for social commodities during the Sixth 5-Year Plan and Seventh 5-Year Plan in Liaoning. Newly constructed mathematical models were used to forecast purchasing power for each year prior to 1990. When the provincial planning commission was drawing up the Sixth 5-Year Plan they use these forecasts. In the compilation of the Sixth 5-Year Plan, and on the basis of the requirements of the provincial planning commission, forecasts were made of 10 indices (such as value of output, consumption of materials, [the province's share of] national income and budgetary revenue, and demand for labor) for the five major sectors--industry, agriculture, construction transportation, and commerce--all as they related to the demand for energy province-wide. Partial results were used, allowing Liaoning's computer forecasts to play an important role in the national economy.

Service to Liaoning's Social Sciences and Natural Sciences

In recent years, the computer center has coordinated the mathematical statistics methods used by Liaoning sports scientists to select talented atheletes for the sports departments, providing significant reference data and winning the esteem of the sports departments. It has completed research and analysis for the Liaoning Academy of Agricultural Sciences on the question of the thermoperiodic and photoperiodic responses in goaliang, worked out the analyses and computations for 433 varieties, and provided the basis for determining which kinds of gaoliang are suitable for planting in given areas from Gongzhuling in the north to Hebei in the south. It collected vast amounts of data on seven areas under research for the Liaoning Meteorological Bureau, providing a significant way to explore new methods of forecasting and to improve the accuracy of weather forecasts.

Develop Computer Application Technology to Serve Users

At present, the computer center has successfully transfered an SAP-5 [Symbolic Assembly Program] large-scale structural mechanics program package to a C-512 computer and carried out extensive applications. A dozen units are now using it and all have obtained good results.

To expand applications of the C-512 computer, technical personal at the computer center installed a post-processor program for the APR [Automated Programmed Tools] language and has succeeded in automating numerical controlled machine tools through an editing program. For the Shenyang City Miniature Electric Motor Plant No 3 they have developed a wire-cutting program which saved several thousand yuan in processing expenses and insured the quality of export goods; for the Shenyang Heavy Machinery Plant, they resolved a problem encountered in large gears 9 meters in diameter, and the plant has repeatedly expressed its gratitude.

For the past 4 years, they have also provided users with a great deal of computer time. For 75 users from scientific research, design, universities and colleges, military industry departments and industrial enterprises,

they solved more than 240 problems, and insured the completion of scientific research and production missions, work which has not only improved social economic benefits, but at the same time has helped pay for the operating expenses of the computer center and has trained computer technicians.

At present, the computer center is beginning to do research on an information system, a macroeconomic model and a statistical analysis program for a system of employing macroeconomic analysis to assist with policy decision making in Liaoning Province. The computer center has great potential and an extraordinarily broad service area and should be widely utilized.

8226
CSO: 4008/221

-21 (continued)-

JIANGSU EARNESTLY PROMOTES MICROCOMPUTER APPLICATIONS

Nanjing XINHUA RIBAO in Chinese 29 May 83 p 2

[Article by Zhu Weiwei [2612 5898 5898]: "Our Province Actively Promotes Microcomputer Applied Technology"]

[Text] Our province is actively promoting microcomputer application technology. At present, in such fields as industrial management, agricultural scientific research, transportation, light and textile industries, machinery, water and electricity, medical services, etc., over 80 applications exist. Also, significant economic benefits have been gained.

Our province has definite strengths in the areas of scientific research and production applications of microcomputers. There are five ministry-run and province-run computer technology research institutes and one computer center; seven universities and colleges which have computer departments; and 35 mainframe, peripheral equipment, and accessories production plants with capabilities of batch-producing microcomputers. During the past several years, they have diligently researched computer and microcomputer applications, and have made a positive contribution to the vigorous promotion of microcomputer applications technology.

Through the application of microcomputers in establishing an automatic production control system, and in coordination with microcomputer industrial control and process testing, the level of industrial management has been raised significantly. The Nantong Electronic Computer Plant manufactured and installed a microcomputerized textile machine testing system for Nantong State Cotton Mill No 2, the Nanjing State Cotton Mill No 1 and the Taicang Textile Mill. The system can check the operational conditions of several hundred machines in the loom shop, very rapidly providing over seven types of operational data on output, efficiency, warp stoppages, weft stoppages, loom speeds, etc., thereby achieving optimum operational control. Taking the Nantong State Cotton Mill No 2 as an example, after employing microcomputers, its loom efficiency rose 2 percent. This item alone could increase its annual income by over 200,000 yuan.

The microcomputer is also an effective tool for realizing reforms in industrial technology and enhancing economic benefits. By using them to control production processes, we can realize superior quality, high production,

low consumption of materials, energy savings, and higher productivity. For example, after the frequency counter produced by the Nanjing Telecommunications Instrument Plant was modified for microprocessor control, its functioning was improved, it was reduced to one-third its former size, and its production cost dropped from the original 180,000 yuan to about 50,000 yuan, a reduction of 70 percent. After a microprocessor system was installed to monitor boiler water quality at the Tianshenggang Power Plant in Nantong Prefecture, the optimization of water quality made possible fuel economies and an annual saving of 6,000 kwh of electricity.

8174
CSO: 4008/133

PROVINCIAL DEVELOPMENTS

ANHUI BUILDS PROVINCIAL COMPUTER NETWORK

Beijing JISUANJI SHIJI [CHINA COMPUTERWORLD] in Chinese No 13, 5 Jul 83 p 1

[Article by Lin [2651]: "The Economic Commission of Anhui Province Begins to Build a Computerized Scheduling Network for Industrial and Communications Sectors"]

[Text] In order to achieve timely, accurate, and reliable scheduling of production by industry and communications, the Economic Commission of Anhui Province has decided to establish a provincewide computerized scheduling network for the industrial and communications sectors. The first phase of the project is completed. Beginning early this year, the Anhui Economic Commission has been using computers to handle the statistics and the scheduling of production for industry and communications throughout the province. Currently, all production schedules, including statistics on economic trends in 16 prefectures and municipalities on production of more than 100 major products, and on transportation and sales of coal throughout the province, are compiled by means of a microcomputer with Chinese character output capability.

This computerized scheduling network is a three-level system for distribution and processing. The first level is the scheduling center, located in the provincial economic commission; the second level consists of the intermediate work stations located in all the province-level departments and bureaus in Jefei City and in the economic commissions of the province's 16 prefectures and municipalities; and the third level consists of the grassroots worksites located in related plants, mines and stations. At the present stage, the three levels are interconnected by public telegraph lines of the [Anhui] Bureau of Posts and Telecommunications, with teletype machines at the terminals. The economic commissions of the 16 prefectures and municipalities and key grassroots worksites transmit data by teletype over telephone lines to the local posts and telecommunications bureau and from these it is further linked via Hefei's telegraph exchange to the scheduling center. In the future when conditions permit, teletype machines will be replaced by microcomputers at all worksite terminals, thereby creating a totally computerized network.

Since this network has been in operation, the time spent on statistics and scheduling has been greatly reduced. Originally, using manual methods, only one report could be done in 10 days, and now the entire report can be completed on the same day. The acceleration of data transmission has brought clear benefits in more timely and accurate understanding of the status of production and transportation and more timely and accurate scheduling of them.

CSO: 4008/129-P

FIRM OFFERS USERS REPAIR 'GUARANTEE'

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 10

[Article by Zheng Qinkui [6774 2953 6652]: "Hangzhou Magnetic Recording Apparatus Works Develops Repair 'Guarantee' for Users"]

[Text] In recent years, China has imported a great many Bulgarian N30T-1370 twin disk drives which are mainly used as main external storage for small computers. However, very few units will accept these disk drives for repair so that many customers cannot get prompt repair of broken drives thus affecting normal computer operation. In response to user demand, at the end of last year the Hangzhou Magnetic Recording Apparatus Works N30T-1370 repair service, and in the past year has restored several dozen drives. This works also produces and has prepared a sufficient number of machine parts and spare parts to meet the urgent needs of users generally. After repair, each drive is strictly checked while hooked up to a 130 computer; must pass a diagnostic program and a 10,000 random access check to insure the reliability of the servo system; must pass 10 reliability program checks to insure the realiability of the read-write system; and finally, must carry out an interchangeability test to insure that the changeable disk pack can be interchanged.

This plant's "guaranteed" repair service has been welcomed and generally acclaimed by the customers.

8226
CSO: 4008/182

EDUCATIONAL VIDEOTAPES FOR USE WITH MICROCOMPUTERS

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 13

[Article by Wang Yamin [3769 0068 3046]: "China Computer Technology Service Company Develops Microcomputer Educational Videotapes"]

[Text] In order to meet the needs of industries and businesses to learn more about microcomputers and to promote and expand the use of microcomputers, the China Computer Technology Service Company early this year developed a set of educational videotapes entitled: "Principles and Applications of Microcomputers."

This educational videotape package includes an educational videotape, teaching materials, laboratory guide and exercises. The videotape systematically and comprehensively introduces the basic principles of the Z-80-based microcomputer emphasizing: assembly language, CPU time sequencing, semiconductor memory and interface with the CPU, input and output instructions, interrupt methods, parallel and serial communications and interface chips, interface of D/A and A/D chips with the CPU, and finally, through comprehensive examples, introduces microcomputer applications. The entire educational videotape totals 84 class hours with an additional 7 laboratory class hours. It is suited for microcomputer instruction at institutions of higher learning and for training classes in microcomputer theory and applications. In the future, a sequel, "Microcomputer Applications and Interfaces," will be shot.

In the process of shooting this educational tape, instructional films from abroad were studied in an effort to be organized, dynamic and compact.

This educational film has been used several times recently and very effectively. To satisfy needs from a variety of areas, this company will reproduce this educational tape for users, and hold videotape training classes about microcomputers.

8226
CSO: 4008/182

NJS-I CHINESE CHARACTER PROCESSING SYSTEM

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 1

[Article by Qing Shan [2532 1472]: "Jiangsu Passes NJS-1 Chinese Character Processing System"]

[Text] Early in April, the Jiangsu Provincial Electronics Bureau convened a technical assessment meeting for the NJS-1 Chinese Character Processing System in Nanjing.

This system is expanded and developed by the Jiangsu Radio Plant using the U.S. North Star Advantage microcomputer. Using an improved and developed CGCP/M (Chinese character-graphics CP/M) operating system it can be upgraded to be compatible with the standard CP/M 2.2. In principle, many higher level languages and software supported by the CP/M 2.2 operating system will require little or no modification to have Chinese character and graphics processing capability. The software for this system is extensive including higher level languages such as MBASIC, CBASIC and COBOL which have Chinese character processing capabilities and a suitable amount of applied software.

The structure of the Chinese character library is logical and comes in 16x15 and 24x22 dot matrix forms. The character fonts are in the Song style typeface, and have a wide variety of standard styles of various sizes which can be displayed and printed in both vertical and horizontal formats. There are six possible methods of inputting Chinese characters: State Standard Zone Bit [0575 0143] Code, Standard Telegraph Code, Optical Character Recognition Code, Phoneme [7299 7301 6752 1748] Code, and Dragon [1131 7893] Code, and the Chinese character large keyboard, providing a flexible choice of modes for the user. The Chinese character large keyboard allows such functions as spelling out words that are not on the keyboard, defining word groups, using handwriting [stylus], and creating [new] characters. The meeting agreed that this system is suitable for Chinese character text editing, enterprise management, and data retrieval and that it had achieved advanced domestic levels. It won unanimous approval in the technical assessment.

8226
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DJS-130 EXPANDS ITS BASIC SOFTWARE

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 6

[Article by Czo Xianguo [2580 2009 0948]: "DJS-130 Expands Single-User BASIC Capabilities"]

[Text] The single-user BASIC interpreter for the system software which comes with the domestically manufactured DJS-130 can only output numbers to six significant figures, and this limitation affects the development of applications for this computer. On the basis of interpretive [3194 0553] system software, the Shanghai Institute of Computing Technology expanded the capabilities of the single-user BASIC so that output increased from 6 to 8 significant figures.

To heighten output precision, input precision first must be improved. After the original system software converted the input data from decimal to binary, it was stored in a dense (two cell) format. Since two cells in a 16-bit minicomputer contain only 32 binary bits, after eliminating the bits required to express the characteristic [exponent] and the numeric character [of a number] there are at most only 23 binary bits left to express the mantissa [i.e., the segment after the floating decimal]. From this, it is evident that inputting a decimal system number to 7 significant figures takes up the full space, and the original system could only rationally output 6 significant figures. The only way to resolve this problem was to avoid being limited by using the dense format. The BASIC interpreter also used an operation [i.e., arithmetic] format for expressing numbers. In this format, the mantissa has 32 binary bits. Using the operation format to express raw data clearly can improve the input precision. During data output, binary-to-decimal conversion is carried out by means of a slightly altered binary-coded decimal representation, in which four binary bits express one decimal number. In the original system software, inputting a 6-digit decimal number required 24 binary bits, so one cell was not enough, and if two cells were used there were 8 bits too many, creating just the conditions for expanding by 2 decimal places; moreover, it also could only be expanded to this degree (considering the limitation of 32 binary bits for inputting a mantissa).

Through the above analysis, comprehensive revision was carried out on the important parts of the BASIC interpreter: input, encoding, edit, operations,

and function processing. The capabilities of the revised software (called 8-bit BASIC) were up to requirements and have been used over a long period of time by some units in China with good results.

DJS-131 uses a similar single-user BASIC, and 8-bit BASIC can also be used on this computer.

8226
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NEW REVERSE ASSEMBLER FOR MDS-236 MICROCOMPUTER

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 6

[Article: "New Reverse Assembler for MDS-236 Development System"]

[Text] The existing reverse assembler for the MDS-236 development system, like ordinary reverse assemblers, carries out reverse assembly of the internal content which the user wants assembled item by item beginning at the first address. It has the following problems:

1. The reverse assembler in the existing MDS-236 microcomputer development system can only carry out reverse assembly on absolute addresses in the target program and cannot label relocatable addresses or segmentation and entry of program modules, and this does not make for ease of routine analysis.

2. The reverse assembler in the existing MDS-236 microcomputer development system cannot distinguish the instruction region from the symbolic region, and this creates difficulties in analyzing the target program.

3. Because the first 12K of RAM (H-2FFFH) in the MDS-236 microcomputer development system is the resident region for ISIS-II, the target program cannot be transferred to this region. But, the target program in EPROM is frequently stored beginning with address H, so when the target program is read from EPROM into the RAM region of the development system it cannot use the addresses on a one-to-one basis. Thus, there is a problem in address offset.

Focusing on these problems, the Beijing General Iron and Steel Design Institute developed a reverse assembler for the MDS-236 computer development system which has program branch symbols and offset addresses and distinguishes between the symbolic region and the instruction region. It has the following characteristics:

1. Automatic recognition of instruction region and symbolic region. In this reverse assembler, when reverse assembly of the output inventory is being performed on the target program, at the same time the ASCII code characters for the corresponding internal elements is being output, and this makes it easy to differentiate the instruction region from the symbolic region.

2. Automatic creation of target program address entry labels, so that after reverse assembly of the target program all the program addresses are relocatable.

3. Actual address calculation (offset address processing). When the current loaded address of the target program does not match the absolute address, through man-machine dialogue the reverse assembler can be notified so that the inventory is output with the correct addresses.

4. Page processing. When reverse assembly of the target program is carried out with the existing reverse assembler, the inventory output by the printer is printed continuously and not by the page. Printing by the page has been added to the new reverse assembler so that the program inventory printed out is easier to bind.

The successful development of the new reverse assembler for the MDS-236 microcomputer development system has created favorable conditions for researching, developing and analyzing complex software.

8226
CSO: 4008/182

CHINESE CHARACTER PROCESSING SYSTEM DEVELOPED

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 10

[Article by Zhou Wenhe [0719 2429 4421]: "M-160 Microcomputer Chinese Character Processing System Developed"]

[Text] The M-160 microcomputer Chinese character processing system (the CEF system for short) has been jointly developed by the Tianjin Institute of Applied Electronic Computer Technology and Japan's Fujitsu, Ltd. Debugging has been completed. The system is now in service.

The CEF system was developed on the basis of an original JEF system. For its Chinese characters, the State Standard Chinese Character Information Exchange Code has been adopted in its entirety and includes a total of 7,445 first and second level Chinese characters and non-Chinese characters. In addition, it provides auxiliary storage space for 6,000 additional Chinese characters and 3,000 user-defined Chinese characters. The Chinese character library is formed by 24x24 and 30x30 dot matrix. Standard simplified Chinese characters in Songstyle are the output. Character size can be selected at will: they can be as small as the smallest printed symbol, or as large as newspaper headline characters.

The CEF system runs with the full support of M-160 microcomputer OS IV/F4 operating system, and carries out integrated management of jobs and data. This system is capable of processing a mixture of English, numeric, and Chinese character text and at the same time can carry out scientific calculations as well as Chinese language file processing.

The CEF system hardware includes a Chinese character laser printer and a Chinese character display system. The Chinese character laser printer uses laser beam xerography and electrophotography, with a print speed of 2,000 - 2,670 lines per minute and 68 characters per line (5 characters per inch) or 109 characters per line (8 characters per inch). The character generator can accommodate 4,437 international first level Chinese characters and non-Chinese characters; there are 109 basic characters. This computer can input graphics from a mainframe or use format overlay printing. The Chinese character display subsystem includes three components: a display control unit, a display station, and a printer device. The display station uses a peripheral linkage mode, through a BMC or MXC channel; at the most 8 pieces of equipment

can be interfaced, and the greatest intervening distance is 600 meters. The display station is a 14-inch CRT which can display 960 Chinese characters per frame (40 characters x 24 lines). Chinese character input is by a brush-stroke type large keyboard containing 3,120 Chinese characters. The printer device which acts as a copier of the display is a stylus impact printer that can print 1,500-2,100 characters per minute, printing in either direction according to the shortest distance, and it can use pressure sensitive paper to make up to 5 copies at once.

The CEF system software includes the control program, processing program, service program, application program, table of parts, etc. The control program also includes job management and data management and TSS [time-sharing system]. They all operate under the M-160 microcomputer operating system. The language processing program includes COBOL and FORTRAN77, both capable of processing Chinese characters, with the addition of the processing methods of language precompiler and plug-in shift code. Service programs include a Chinese character sorting program and ADJUST program. The former can sort designated keys, and the latter is all of the software to support Chinese character processing, such as Chinese character file activation, update, literal group management, literal graphics and attribute management, compilation of the code book and format overlay software used by the Chinese character laser printer (the format overlay software can be used to compile various types of graphics, and the formats can be grouped). At present the only application program available is KING, which is a Chinese character information generating program that can output bills and provide page editing capability. It can also make pattern drawings, flowcharts, block diagrams, and dotted-line graphs, and has an interface for other graphics programs (GRAPP, GRACE) to process rather complex graphics. The tabular portion includes a Chinese character attribute dictionary and a Chinese character graphics dictionary.

Because this system has all the clear merits and functions listed above, it has a definite practical value and can use Chinese to perform such enterprise transactions as statistical analysis, reporting, and search and retrieval.

8226
CSO: 4008/182

ORGANIZATIONS

BRIEFS

SHANGHAI COMPUTER CENTER--A computer software technological development center was founded on 7 January in Shanghai. The work of this new organization is to study and develop computer software technology, to train technical personnel in this field, and to provide related information as requested by various units. Among the leaders attending the center's inaugural meeting were vice mayors of Shanghai, Li Zhaoji and Liu Zhenyuan, chairman of the Municipal Economic Commission, Li Jiagao, and chairman of the Municipal Scientific and Technological Commission, Jin Juqing. [Summary] [Shanghai City Service in Mandarin 1100 GMT 7 Jan 84 OW]

JILIN COMPUTER CENTER--The computer center of the Jilin Provincial Planning Commission located in Changchun, was completed recently and will go into operation soon. This computer center is built especially to serve the national economic plan, statistics, and production management. Its major task is to process the data needed by planning and statistical departments. [Excerpt] [Changchun Jilin Provincial Service in Mandarin 2200 GMT 4 Oct 83]

PROSPECTS FOR EXPORTING COMPUTER SOFTWARE--A reporter of this newspaper has learned from parties concerned in building Shanghai into a software center that several items of software exported recently to business companies abroad have won favorable comments regarding quality. Also, negotiations are being made for exporting additional software. Our country's software design capability has reached quite a high level and has great potential. People abroad still lack an understanding of our ability in software design. Some programs have been requested from us. For example, a certain company wanted us to submit two programs concerning depreciation and methods of installment payment. The test results completely met the standards. One company abroad imported software from China and solicited opinions and suggestions from its many users. From the feedback, 99 percent felt optimistic about the future. Thus, many foreign businesses come forward to hold trade talks. The Shanghai computer software technical development center is based on the Shanghai Municipal Institute of Computer Technology. It is a joint effort of many software personnel from Shanghai Jiaotong University, Fudan University, Shanghai University of Science and Technology, East China Normal University, Shanghai Industrial University, Shanghai Spare-Time Industrial College, Shanghai Investment and Trust Corporation, Shanghai Computer Applications and Services Department, and Shanghai Science and Technology Information Institute. [Text] [Shanghai WEN HUI BAO in Chinese 27 Jun 83 p 1]

GUANGDONG JOINT COMPUTER CORPORATION FOUNDED--The Guangdong Provincial Joint Corporations for Computers was formally established recently in Guangzhou to make the most of the special skills of our institutes of higher learning, scientific research institutes, and specialized plants, to facilitate the organization of technical forces to advance research and popularize applications of computers, and to coordinate production, supply, and sales. This company was organized from among 13 units including the Guangdong Electronics Industry Bureau, the Guangdong Provincial Sciences Office, Zhongshan University, South China Engineering College, South China Teachers University, Jinan University, Guangdong Provincial Institute of Electronics, and the Shaoguan Radio Plant. The mission of the company is to supply new computer products, promote computer applications and services and train personnel for customers, so as to unify production, supply, and sales and achieve joint operations by schools, research institutes and factories. This new method of joint operation will play an active role in the development of Guangdong's computer industry. [Text] [Beijing JISUANJI SHIJIE [CHINA COMPUTERLAND] in Chinese No 9, 5 May 83 p 1] 8226

CSO: 4008/182

DOMESTIC PRODUCTS

NIE RONGZHEN, OTHERS HAIL GIANT COMPUTER SUCCESS

HK280749 Beijing RENMIN RIBAO in Chinese 23 Dec 83 p 3

[Report: "Nie Rongzhen, Yang Shangkun, and Zhang Aiping Greet Success in the Manufacture of the 'Yinhe' Giant Computer"]

[Text] Recently, Nie Rongzhen, member of the Political Bureau and vice chairman of the Military Commission of the CPC Central Committee, in a letter to the National Defense University of Science and Technology on the success in the manufacture of the "Yinhe" ["Galaxy"] giant computer, pointed out that in order to develop China's key scientific research projects, we must work hard, dedicate ourselves heart and soul to the cause, and concentrate all forces, twisting them into a rope.

Comrade Nie Rongzhen pointed out in the letter: "Back in the 1950s and the 1960s, we started to develop science and technology from scratch, and by relying on revolutionary enthusiasm and a scientific attitude, firmly proceeded to advance in this sophisticated undertaking. At that time, our slogan was to rely on our own efforts and to work hard; our method was to concentrate all forces and to work vigorously in cooperation, and this became a powerful dynamic force enabling us to be all-conquering and invincible." "The successful manufacture of the 100 million-operations-per-second computer is precisely a further manifestation of this spirit. It has again proved the correctness of the party's policies and principles, and also dealt a direct blow to those good-for-nothing cowards and lazybones who only want to eat 'ready-cooked rice,' as well as to the people with ideas of decentralism and departmentalism without a national concept who are not willing to work vigorously in cooperation, whose only thought is to seek fame and gain." Nie Rongzhen hoped that these comrades would wake up, and "for the sake of building up China, they must work hard; for the sake of the four modernizations of the motherland, they must dedicate themselves heart and soul to the cause, concentrate all forces, twisting them into a rope, and develop our key projects one by one under the leadership of the CPC Central Committee and the State Council!"

Yang Shangkun, vice chairman of the Military Commission of the CPC Central Committee, also sent a letter of congratulations to the University of National Defense Science and Technology.

Zhang Aiping, deputy secretary general of the Military Commission of the CPC Central Committee, also wrote a poem congratulaing the successful creation of this 100 million-operation-per-second computer in China. "Billions of stars gather in the Milky Way. Difficult for mortals to know their number. The ingenious machine has a clever plan. It greets the stars with a smile and lets them sing."

CSO: 4008/145

DOMESTIC PRODUCTS

'GALAXY' SUPER-COMPUTER DESCRIBED

Beijing ZHONGGUO RIBAO [CHINA DAILY] in English 22 Dec 83 p 1

[Text] China has successfully produced its first super-computer capable of doing more than 100 million operations per second, making a great stride in the country's computer technology and making China one of four or five nations in the world with computers capable of such work.

The "Galaxy" super-computer and its peripheral and software systems were developed by the research staff of the National Defense University of Science and Technology after nearly six years of continued effort, and at a cost only one fifth of the original estimate. Some 20 other institutes across the country contributed to the effort.

A 32-member national appraisal committee has certified the computer and its complete system as reliable and up to the national standard.

In a congratulatory message to the university and its research staff, Marshal Nie Rongzhen, who is a member of the party's Political Bureau and vice chairman of the Military Commission, said the success has shortened the technological gap between China and the most advanced countries and marks a new phase in our computer science.

Zhang Aiping, State councillor and minister of defense, who has been personally concerned with the research work, named the super computer "Galaxy" on its birth.

Breakthrough

China began to produce its own computers in the early 60s, after the Soviet Union cut off technological links with this country. Rapid progress was made during the past two decades as shown in the successful launching of a series of space satellites and other science programmes. However, this is the first breakthrough in the super-computer system.

The National Defense University of Science and Technology was assigned the job of developing a super-computer in May 1978. Export of such technology to China was barred by foreign countries. Yet the job was finished in less than six years.

Early this year the National Technical Appraisal Committee began its examination of the finished computer. The super-computer was put into an uninterrupted trial run for more than two weeks, and the results proved better than State requirements. A technical computation essential to the development of the petroleum industry was done in just 0.4 second by the new "Galaxy" computer. The same computation had proved impossible for China's earlier computer, which could handle 2 million calculations per second.

CSO: 4010/46

DOMESTIC PRODUCTS

PRC DEVELOPS NEW LARGE VECTOR COMPUTER

OW152104 Beijing XINHUA in English 1441 GMT 15 Nov 83

[Text] Beijing, November 15 (XINHUA)--China's first large-scale vector computer system (10 million operations per second) has been approved by the state here today. The computer system was developed by the Institute of Computing Technology of the Chinese Academy of Sciences, in collaboration with more than 80 units across the country. Large-scale computer system is listed as one of China's major scientific research projects.

During the 3-day appraisal meeting, all the 26 members of a national committee set up specially for appraising the computer system listened to the reports on computer research and technical examinations delivered by the Institute of Computing Technology. They also discussed relevant documents and technical data. Altogether over 100 computing specialists and technicians attended the meeting. Tests of calculations and system reliability show that the system, introducing new techniques into system and logic designs, is in good performance, and its technical figures are up to or above the designed requirements. The successful manufacture of the machine has promoted the development of China's basic elements for computers and technology for computer aided design, trained a large number of computer technicians and also provided valuable experience for future designing of large computers.

At today's closing ceremony of the meeting, Fang Yi, state councilor and minister in charge of the State Science and Technology Commission, commended the scientists participating in designing and manufacturing the computer system and urged them to work still harder for developing China's large-scale integrated circuits and computer industry. Lu Dong, deputy head of the State Council's leading group for developing electronic computers and large-scale integrated circuits and President Lu Jiaxi of the Chinese Academy of Sciences also attended today's closing ceremony.

CSO: 4010/46

NEW BREAKTHROUGH IN MINICOMPUTER INDUSTRY REPORTED

Shenyang LIAONING RIBAO in Chinese 20 July 83 p 1

[Article by Wang Xiaomeng [3769 2556 1125]: "High-Grade Minicomputers Successfully Manufactured in Jinzhou"]

[Text] The Jinzhou Computer Plant, Qinghua University, and Branch Campus No 2 of Beijing Industrial University have jointly manufactured a high-grade all-purpose digital minicomputer, model DJS-142. These computers are being produced in small lots and formally put to use.

Not long ago, the Computer Industry Administration Bureau of the Ministry of Electronics Industry and the Provincial Electronics Industry Bureau invited more than 100 computer specialists, professors, lecturers and engineers from all over China to conduct an appraisal. They held that the successful manufacture and application of this computer signaled a new breakthrough in the utilization of international know-how and the development of the computer industry.

This new computer not only employs the new design technology of micro-programming commonly used in foreign countries, it boldly embodies new techniques and components such as PLA microprogramming control, a high-capacity semiconductor storage device, a high-capacity magnetic disc and a high-density magnetic tape drive. With fine performance and reliability, it can be extensively used for automatic plotting two-dimensionally by large high-speed electrical devices, for the processing of remote-sensing imagery and information, for the processing of oceanic weather data, and for multiuser teaching and computational systems. It is so far the best multifunctional minicomputer produced in China.

The research workers and engineers have worked with persistent effort since they accepted the task of manufacturing these computers in 1981. In September 1982, the first prototype model was successfully completed. Since last year, the four models used by consumers have proved to be satisfactory. By using the DJS-142 computer, the Space Science and Technology Center of the Chinese Academy of Sciences has found the speed of operation to be more than 10 times faster than the former low-grade computers. The longjiang Instrument and Meter Plant in Harbin has used this computer as the central processing unit in their drafting system. The plotting function and quality of lines are up to the advanced standards of similar foreign products. In the future, there will be no need to spend huge sums of foreign exchange in purchasing these products.

9411
CSO: 4008/181

DOMESTIC PRODUCTS

PERFORMANCE OF DOMESTIC CALCULATORS EVALUATED

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 8, 20 Apr 83 p 1

[Article by Yu Jianrong [0060 7003 1369]: "Fine Performance Seen in 22 Types of Domestic Calculators"]

[Text] In 1982, the Computer Industry Administration Bureau, Ministry of Electronics Industry, conducted a centralized nationwide test on various types of domestic calculators. The test results indicated that the majority of these domestic calculators were of fine quality. Apart from several individual components which should still be imported, China is now capable of manufacturing all the rest.

The test showed a total of 21 types from 11 plants to be of fine quality. These were: Beijing Computer Plant No 2's Model BY-8102 (clock-type); Beijing Computer Plant No 5's Models CS-2115C (desk-type) and EL-5100C (pocketsize function type); Tianjin Radio Plant No 13's Model KK-315F (pocketsize type); Dalian Radio Plant's Model DS-5 (pocketsize function type); Tianjin Electronic Computer Plant's Models X-1200 (desk-type) and X-8003 (pocketsize function type); Fujian Electronic Computer Plant's Models BL-815 (pocketsize function type), BL-809 (pocketsize type), BL-301 (pocketsize type), BL-857 (pocketsize type) and BL-802 (pocketsize type); Guizhou 4292 Plant's Model 816 (pocketsize clock type); Shaoyang Radio Plant's Model DS-781 (pocketsize type); Jiangxi 602 Plant's Models SS-53A (pocketsize function type) and SS-53B (pocketsize function type); Guangzhou Telecommunications Supplies Plant's Models FX-502 (pocketsize function type), KC-132 (pocketsize type) and KC-101 (pocketsize type); and Guangzhou 750 Plant's Model 121A (pocketsize type).

This test also revealed certain problems concerning the quality of domestically made calculators. Those plants manufacturing complete processing units and those responsible for producing components have pledged to cooperate with one another in tackling the key problems in order to push the quality of domestic calculators to still higher levels.

9411
CSO: 4008/181

BRIEFS

JIANGSU PRODUCES MICROCOMPUTERS--Microcomputers are now used in 110 units in Jiangsu Province. It introduced them at the end of the 1970s. A spokesman for the Jiangsu Association of Microcomputer Application, which was just established in the ancient city of Yangzhou, said that altogether 404 microcomputers of 51 models are in use. The microcomputer-control device in the Nantong Cotton Textile Mill No 2 helped raise productivity 1.5 to 2 percent. The warehouse microcomputer control system manufactured in the province has passed its appraisal test. Microcomputers are also used to store the experience of veteran doctors of traditional Chinese medicine. Microcomputer scientists in Jiangsu are now doing research in 110 items, the spokesman said. He hoped there would be more technical exchanges with domestic and foreign counterparts. [Text] [OW221428 Beijing XINHUA in English 1215 GMT 22 Nov 83 OW]

HIGH-SPEED COMPUTER--18 Nov (XINHUA)--A high-speed data collection and real-time control computer, known as Model CKX-80, has been successfully developed by a unit under the Ministry of Astronautics Industry after almost 3 years of efforts. This new computer can be used for automatic control and data processing in various production processes and scientific experiments. [Summary] [Beijing XINHUA Domestic Service in Chinese 0302 GMT 18 Nov 83 OW]

FIRST COMPUTER PRODUCTION LINE REPORTED--China's first electronic computer production line has been put into operation at the Guangzhou Computer Plant. The line was imported from France. It is designed to produce 400 small computers a year. A ceremony was held today to officially accept the production line and the technical transfer from the French Sems Company. Installation of the line began in September 1981. More than 30 computers have been produced since the line was put into trial operation in March. [Text] [OW081436 Beijing XINHUA in English 1426 GMT 8 Oct 83]

MONGOLIAN LANGUAGE COMPUTER--A computer software system designed by China to analyze the Mongolian language has passed inspection in Hohhot on 27 September. The system includes programs for language analysis, dictionary compiling, and vocabulary arrangement according to the frequency of occurrence. The system was developed by scientific and technological workers of the Mongolian information section under the Electronic Computer Center of the Scientific-Technological Commission of Nei Mongol Autonomous Region in cooperation with the Mongolian Language Research Center of Nei Mongol University. [Summary] [OW301001 Beijing Domestic Service in Chinese 0900 GMT 29 Sep 83]

CODING PROGRAM FOR CHINESE CHARACTERS--Zhengzhou, 14 Sep (XINHUA coorespondent Chen Chaozhong)--A newly-developed coding program allows a computer technician using a 26-key keyboard to call up 7,000 Chinese characters. About 400 programs have been developed so far to encode Chinese characters for computer use. This one is based on five strokes and four basic shapes. Speed of use is about 100 characters a minute. At a meeting attended by 40 experts from 26 to 29 August in Zhengzhou, Henan Province, the program was appraised as one of the most advanced of its kind in China and abroad for its simplicity and practical value. The program was developed by Wang Yongmin, a 1968 graduate of China's University of Science and Technology and now an engineer in the Nanyang Science and Technology Committee, Henan Province. [Text] [OW140328 Beijing XINHUA in English 0251 GMT 14 Sep 83]

SICHUAN'S PURCHASING-MARKETING COMPUTER--The Sichuan Provincial Grain and Oil Purchasing and Marketing Corporation has successfully trial manufactured the first computer for the procurement of grain and oil. This computer had already played an effective role in this year's summer procurement. The procurement personnel need no longer worry about memorizing the many different prices of grain and oil, and the peasants are no longer required to wait in long lines to sell their grain and oil. This computer is capable of simultaneous calculations of prices for the varying grades of the state's grain and oil purchases, surplus purchases, etc. with respect to different procurement costs. The results can be stored and be used at any time. [Text] [Harbin HEILONGJIANG RIBAO in Chinese 8 Jul 83 p 4]

DJS-0415 PASSES EVALUATION--On 9 May, Fujian Provincial Electronic Industry Bureau sponsored a technology evaluation meeting for seven products developed by Fujian Institute of Computers in Fuzhou. The seven products are: DJS-0415 single-board microcomputer; Z80-based single-board compatible interface for CY-82H dot printer; Z80-based single-board power source; BYQ-2 type flat wire pressor [1090 0354 0892] and the EPROM emulator developed jointly with the Institute of Physics, Chinese Academy of Sciences; Z80-based single-board A-D channel and u80 printer interface jointly developed with the Department of Mathematics, Fuzhou University. After thoroughly studying the reports of the above-mentioned seven products, it was unanimously agreed that all technological developments would pass evaluation. Furthermore, it was suggested that they be put into prototype production [Text] [Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 13, 5 Jul 83 p 1]

CHINESE-ENGLISH INFORMATION PROCESSING SYSTEM--The CES-831 Chinese-English compatible information processing system is implemented on the EXO (NOBUS) microcomputer after nearly a year's work carried out by the Automation Department, Central-South Institute of Mining and Metallurgy. It has recently passed evaluation. This system fully utilizes the orginal EXO (NOBUS) systems capabilities. The Chinese information processing function is fully implemented at the software level without any hardware modificiation. A Western-style small keyboard is used for inputting Chinese characters by means of coded characters of several different schemes. The average rate is 2.82 key-strokes per Chinese character. Key positions are logical and easy to use. The system provides a strong Chinese text editor, Chinese relational DBMS and graphics (Chinese characters) processing software. There are 32

editing commands, with high speed left-right document windowing, unlimited line-width selectability and adjustable sections capabilities. Users can edit information of up to 140,000 Chinese characters on a CRT display directly and can do tabulation and page layout as well. Thus the problem of matching the width of the CRT and printer is solved. Presently, this institute is collaborating with the Lianyuan Iron and Steel Plant to use this system for the plant's production management. Also, it plans to use the system for other types of machines. [Text] [Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 13, 5 Jul 83 p 1]

BIRTH OF WIRE PRINTER FOR COMPUTER--[Telegram from Suzhou of the 28th]--A wire printer, successfully developed by the Shengli Radio Plant in Suzhou, passed the appraisal test today. It is a piece of output equipment for computers. It uses 24 pins in a crossover array, with continuous dots forming the various strokes of Chinese characters, printing 20 Chinese characters per second. At the same time, it is also able to print forms, curves and foreign language alphabets. Its successful development not only solves a major problem in the computer processing of information in Chinese characters, but also allows electronic computers to render direct service to such endeavors as news transmission, enterprise business management, and railroad transportation. [Text] [Nanjing XINHUA RIBAO in Chinese 29 Jun 83 p 2]

CHINESE COMPUTER OPERATES FOR 15 YEARS--The following information was gathered at the National Electronic Computer and Integrated Circuit Planning Conference: A 109(C) transistorized general-purpose digital computer developed and manufactured by the Chinese Academy of Sciences and used by the Institute of Beijing Applied Physics and Computational Mathematics has been operating normally at high efficiency for 15 years since it was turned over for operation in 1967. During this period, this computer has already provided over 100,000 hours of effective utilization; annual effective operating time has reached 7,000 hours, and its utilization rate has reached 80 percent, which is more advanced than the effective utilization rates for computers of some of the world's developed countries. This 109(C) computer is a second generation product. Its normal operation at high efficiency proves that China's computer design capability at that time had already reached a substantial level. This computer, after being put into operation, has provided reliable service to the development of the national defense and the national economy. Data related to the Gezhou Dam were calculated by this computer. Of all the various types of electronic computer currently in use in China, the utilization rate of most--except for some which receive excellent maintenance and are operated at high efficiency--is very low. The key to such a good record by this old second generation product is that the comrades in the 109(C) computer team are dedicated to their work, have a sense of responsibility, are familiar with the machine, and pay attention to maintenance and management, and many of them have already spent 15 years in the computer room. [By Ren Xinfa [0117 2946 4099]] [Text] [Beijing JINGJI RIBAO in Chinese 20 May 83 p 1]

FAST EDITOR FOR Z-80 BASED MICROCOMPUTER--To resolve the problem of fast input and editing by Z-80 series microcomputers and to develop their full potential, the Jilin Institute of Computing Technology designed an AFC [JS-1] fast editor for Z-80 series microcomputers using RML-ALGOL-60. This software has basic editing capabilities and is comparatively advanced for China in terms of the capabilities of automatic keyword input, flexible format control, automatic lead-in [1714 0354] to library procedure, line editor, and detachable [5141 6043] ASCII disk files. The outstanding characteristics are fast editing speed, ease of operation, and suitability to the national needs. If Z-80 series A, B, or C based computers have ALGOL-60 software they can use the AFC fast editor to set up and update programs in ALGOL, FORTRAN and COBOL at least 3 or 4 times as fast with a much lower error rate and a great saving of computer time. These results have recently passed technical appraisal. [Text] [Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 6]

SOFTWARE FOR IMPLEMENTING GP-IB INTERFACE--The Instrument Laboratory of the Institute of High Energy Physics, of the Chinese Academy of Sciences, recently developed software to implement GP-IB capabilities on an EXO microcomputer and TP801 single-board microcomputer controller. Implementing this scheme requires only about RMB 100 yuan, which compared with the foreign circuit board with similar capabilities is a saving of about 1,500 yuan, so it is a good scheme which costs less money, is easy to implement and is easy to promote. At present, internationally there are over 2,000 GP-IB interface instruments. The GP-IB is not only used in automatic testing, but is also used in data acquisition, data processing and control. The scheme implemented by the Institute of High Energy Physics will make the implementation of the above mentioned capabilities much easier for many instruments. [Text] [Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 13] 8226

CSO: 4008/182

CAPITAL IRON AND STEEL COMPANY USES COMPUTERS TO ENHANCE BUSINESS MANAGEMENT

Beijing BEIJING RIBAO in Chinese 15 May 83 p 1

[Article by Ban Mingli [3803 2494 7787] and Zhou Xiaoying [0719 1420 5391]: "Faster Data Feedback Ensures That Annual Profit Plan Is Realized According to Schedule"]

[Text] The Capital Iron and Steel Company, having used electronic computers to forecast profits and calculate production costs on over 80 production and administrative jobs, has increased the speed of data feedback considerably, and instances of "after-the-fact accounts" in management and administration are steadily decreasing.

Now, at the beginning of each work day morning, the company's management is able to read the status report on the preceding day's profits of the entire company, and the managers of the 10 subordinate plants are able to read the preceding day's cost figures. On the 4th of each month, the company knows the production costs of the preceding month. These figures are now available 5 days sooner than in the past.

In the past, this company's profit and cost figures were all calculated manually. The actual status of the preceding month could not be known until the 10th of the month, and the solution of problems developing during the current month could only be deferred until the following month. Since the emphasis of enterprise production has been shifted to upgrading economic efficiency and benefits, management personnel feel that they can no longer lead a "muddled existence" and urgently want to know as soon as possible the progress of production on a monthly and even daily basis. Last year the company computer station began to use two domestically manufactured computers to calculate daily profit figures. With the help of these computers, the company's 10 subordinate plants, including those in iron-smelting, steel-refining, testing, coking, and sintering, have realized daily cost accounting.

Faster data feedback has provided the company with a timely basis for policy decisions on the adjustment of production volume and product mix. Last year, on the basis of profit forecasts, the company made 4 major and 30 minor adjustments on production volume and product mix, ensuring that the annual profit plan could be realized on schedule.

Previously, the factories and mines of the company computed their costs every 10 days, and for 10 days management and working personnel had no figures to work with. After using computers for daily accounting, they could take the initiative to reduce production costs. In 1982, the power plant, on the basis of the cost figures calculated by computer, took various timely measures to reduce expenses and consumption, thus, reducing the total cost for the year to more than 680,000 yuan less than the planned sum. Comparing January 1983 to the same period in 1982, the cost per kilowatt-hour was reduced by .38 yuan, and the total production cost showed a drop of over 60,000 yuan. This plant also used the computers to analyze variations in power consumption as between active and reactive power on the day in question, as the basis for adjusting the power supply load to meet the requirement of raising the power factor in power supply, and succeeded in making a complete turnaround from past habits. The plant was previously fined for exceeding the limits on the reactive power component of power consumption imposed by the power-supply department and is now being rewarded instead. In 1982, this plant received awards totaling 1.15 million yuan.

8174
CSO: 4008/133

USE OF Z-80 MICROCOMPUTER FOR MARKETING DESCRIBED

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 8

[Article: "Microcomputer Used To Settle Marketing Accounts"]

[Text] The Shanghai Iron and Steel Works No 5 is a large-scale specialty steel mill, with an annual production of steel and steel products in excess of 1.4 million tons in over 10,000 varieties and specifications. Thus, the daily sales in number and volume are considerable. To enable the production management department to comprehend the plant's sales situation in a timely fashion so it can strengthen production planning, adjust production which does not meet objective needs, and attain the goals of guiding production, increasing profits, and strengthening enterprise management, the sales conditions for each day and month should be compiled and such indicators as gross income, net income, taxes and gross profits calculated. Since manual accounting is a great deal of work, and since there is basically no way to carry it out for some measures, such as the current month's plant profits, income, costs, and sales volume, the objectives of guiding production and adjusting planning cannot be achieved in that way.

To resolve this issue, the Automation Divisions of the Shanghai Iron and Steel Works No 5 and the Baoshan Iron and Steel Works jointly tried to use computers to calculate product sales and soon had developed a marketing system using the Z-80 microcomputer which provided business management with a useful technique. The system consists of four kinds of software: the first data file stores data on types of steel in inventory; the second data file temporarily stores the indicators of interim results of recording and updating daily sales; the third is a daily sales data input file which is used by the computer for calculating and printing reports; and the fourth is a Chinese character printing file. At present the system can calculate daily sales volume, income from sales, net income and so forth for each given product, and it can classify aggregate statistics on one day's gross sales volume, gross income, and gross profits; at the end of the month it summarizes by category the monthly inventory, sales volume, and gross income, and computes the month's costs. The system can also conduct random searches of the inventory situation and add or delete types of steel products or data.

8226
CSO: 4008/182

TRS-80 USED TO CONTROL CUTTING MACHINE

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 8

[Article by Yuan Xiangrong [5913 5980 2837] and Ge Yu'ai [5514 3842 8302]: "TRS-80 Microcomputer Control System for Cutting Machine"]

[Text] The No 11 Research Institute of the China State Shipbuilding Corporation recently developed a system for microcomputer control of cutting machines using a TRS-80 as the main frame, which has played an important role in production. If the system's curve-forming part is matched with a plotting device, the TRS-80 microcomputer can also be used as a graphic output terminal.

The curve-forming part of this system is composed of a Z-80 single-board microcomputer and corresponding interface circuits. It uses a digital differential analysis method to form curves and has both linear interpolation and circular arc interpolation. The interpolation precision is less than or equal to 2 pulse-duration. Under current conditions where the CPU main frequency is 2 MHz, the pulse duration is 0.02 mm/pulse, and the maximum velocity is 1.3 m/min. If just the linear interpolation is used, the maximum velocity can reach 2.5 m/min; if the single-board computer has a main frequency of 4 MHz, the maximum velocity can go as high as 5 m/min. If the TRS-80 is installed with the institute-developed data-processing program and curve fitting program, the system can plot any graphics.

In addition, this system also has the auxiliary features of proportional enlargement, image rotation, and conversion of coordinates as well as many operating modes, such as automatic, semi-automatic, sequential segmentation, etc.

8226
CSO: 4008/182

APPLICATIONS

COMPUTER-CONTROLLED MICROPUMP DRIVE SYSTEM

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 8

[Article by Liu Qingwen [0491 1987 2429]: "A Microcomputer-Controlled Micropump Drive System"]

[Text] The Computer Teaching and Research Group of the Shanghai Chemical Engineering College has developed a Z-80 single-board computer-controlled micropump drive system for the micropump which is made by this school. The system uses a Z-80 single-board computer to control two drives, and each drive is capable of "automatic/manual" shift by the operator. Manually, the operator can establish the output on the board at will, as the drive is controlled by a fixed number setting device on the board and will carry out the output value set for a single pump. In "automatic," both drives simultaneously accept signals issued by the microcomputer so that output changes according to a preset q(t) curve (where q(t) is the function of flow with respect to time), and realizes complementary output by both pumps. The system hardware structure is simple, and the control program is already fixed in EPROM for the convenience of the user.

This microcomputer-controlled micropump drive system has already been used in high-pressure liquid-phase chromatography, providing a powerful method for the "gradient analysis method" in liquid-phase chromatography. This device can also be applied to other kinds of micro analysis. In comparison with similar devices abroad, the better characteristics of this system are: convenient and flexible curve-fitting, large scope of control, and good repetitive precision. In addition, the system also retains the ordinary capabilities of the Z-80 single-board computer and, when the drive is not working, this single-board computer can still be used for developing programs and studying microcomputers.

8226
CSO: 4008/182

APPLICATIONS

MICROCOMPUTER-CONTROLLED BLAST FURNACE SYSTEM

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 8

[Article: "Microcomputer Controlled Blast Furnace Burden Regulating System"]

[Text] In the blast furnace smelting process, strict ensurance of the purity of the various raw materials plays a significant role in maintaining a safe and stable operation of the blast furnace, in upgrading product output and quality, and in raising economic and energy norms. On the basis of a study carried out on Wuhan Iron and Steel Company's East Mine which supplies materials to the No 2 blast furnace, the Hubei Provincial Institute of Automation developed a blast furnace regulating system using a SYM-1 single-board computer which met the needs of blast furnace production.

In the burdening process, this system permits each raw material to be weighed each time and--according to different material composition and different weight composition--allows for regulation of the burden. The regulatory method is used to eliminate cumulative errors in raw materials; i.e., the computer reads the relevant parameters for a given type of material when it is weighed at the time of charging in order to determine its variance from the specified value for that weighing, and the original errors are compensated for the next time the material is weighed. In this way, the accumulated errors for raw materials throughout are controlled within the range of error for the final weighing of the materials. In addition, this system can also provide warnings of such situations as "out of material," "accumulated material," "excess," and "wrong setting" in order to ensure that the system can operate safely and reliably.

At present, this system is in operation at the Wuhan Iron and Steel Company's No 2 blast furnace.

8226
CSO: 4008/182

APPLICATIONS

MOS MEMORY USED IN DJS-130 COMPUTER

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 10

[Article by Sun Saiying [1327 6357 5391]: "Shift to MOS Memory for DJS-130 Computer"]

[Text] In order to use the DJS-130 better and to further improve its stability, the Computer Laboratory of the Wuchang No 722 Institute, after great effort finally replaced the original magnetic core memory of the 130 with MOS memory at just one-tenth the expense of the magnetic core memory. More than a month of operation has proved that this MOS memory is reliable.

The principles for replacing the magnetic core memory are:

(1) It does not move the mainframe base board connections, does not change CPU and internal timing sequence, and does not change any structures of the mainframe.

(2) It can be interchanged with original magnetic core board. The original magnetic core board need only be removed and the MOS memory board inserted.

(3) The logic capabilities and signal line correspond one for one with the DJS-130 internal memory.

The MOS memory used was the P2141-2model 4Kx1 static RAM with 4Kx17 as one group, 32K as 8 groups. The chip-select uses 3-8 decoder 74138 control, thus simplifying the chip-select logic. Using a power source of +5 volts greatly reduces the main frame power consumption compared to the magnetic core memory.

8226
CSO: 4008/182

IMPROVED POWERPACK FOR DJS-130

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 10

[Article: "DJS-130 Computer Power Pack Further Improved"]

[Text] In response to increasing user reaction and demands, the Beijing Computer Plant No 3 improved the power pack for the DJS-130 computer which has brought excellent technical and economic benefits.

The DJS-130 power supply excess current protection design is realized with a 3CG3 protection tube, 3CT5A silicon controlled rectifier [thyristor], and JX-3B breaker. The main problem was that the protection speed was slow, and during a load short-out it often could not protect in time and the expensive 3DD9 regulator was burned out. It was also easy for an erroneous protection to occur which caused a crash. After the improvement, during load short-outs, the DJS-130 power supply would cause a definite drop in the signal resistor, making the 3DK4 protector immediately conduct, followed immediately by the 3AX25 switch cut-in, and immediate cut-off of the 3DD9 regulator. Protection speed is extremely fast and thus achieves the goal of a true protective regulator. In addition, the improved power supply also has an undervoltage protector circuit. This is something which is rarely seen in domestically produced computers. Moreover, it can increase power simultaneously (i.e., once).

Summing up, after improvement, the DJS-130 computer power supply has the following features:

(1) Protection capability is increased (protecting against excess voltage, excess current, power drops and undervoltage).

(2) Reliability and stability of protection is improved (fast protection speed, elimination of erroneous protection, good temperature characteristics, protection point is not influenced by bias in power supply).

(3) Circuitry is simple, regulator is convenient, and cost is relatively low.

8226
CSO: 4008/182

SDK-86 SINGLE BOARD MICROCOMPUTER-BASED SYSTEM

Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 13

[Article by Zhao Fang [6392 2658]: "SDK-86 Single Board Computer Based Computer System"]

[Text] The SDK-86 is a 16-bit microprocessor recently promoted by the U.S. Intel Corporation. This processor has flexible and varied addressing capabilities. Its internal addressing is 1M space. The I/O addressing has 64K spaces. The addressing modes are: direct addressing, indirect-addressing register, base addressing, variable addressing, and base-displacement addressing. It is capable of carrying out 8-bit/16-bit arithmetic/logic operations and decimal adjustment; and it has hardware "multiply-divide" instructions. Character strings and prefixes have repetition instructions. This computer can, after expansion, accommodate 64-level interrupts and has upgraded capabilities in data throughput.

Laboratory No 13 of the Institute of Acoustics, Chinese Academy of Sciences, using the SDK-86 microcomputer as the base, added the following: A/D conversion (12-bit) and D/A conversion hardware interfaces and acquisition program; and 8-level interrupt interface and clock interface as well as a calling program; hardware interfaces for the MT-2 and PROLING-200 mini digital magnetic tape drive; and read/write file management programs. The GP-80 and u-80 hardware interfaces and two types of printing programs, along with the expanded synchronous communications interface and applications program, allow RAM to be expanded to 32K. In addition the EPROM firmware circuit was added. This system is suited for: data acquisition, industrial control, front-end processing and communication.

8226
CSO: 4008/182

CENTER FOR MICROCOMPUTER REAL-TIME CONTROL OF HYDROPOWER STATIONS ESTABLISHED

Wuhan HUBEI RIBAO in Chinese 24 Mar 84 p 1

[Text] China's first experimental center for hydroelectric power station economic operation with microcomputer real-time control was given the go-ahead yesterday and will be set up at the Huazhong Industrial College. Both Chinese and foreign experts are of the opinion that establishing this experimental center will create a positive and sure way for the nation's electric power industry to use new technology.

This experimental center is a major state research project, with the research being handled by the Hydropower Resources Institute of Huazhong Industrial College and the Hunan Provincial Computer Technology Institute. The research personnel of these two units have been conducting research since 1980 and the building of the experimental center was completed in October 1983. At the same time, they succeeded in developing a hydroelectric power station economic operations microcomputer real-time control system and undertook experimental operations. The appraisal certifies that this control system is capable of some 18 functions, including start-up, shutdown, frequency modulation, voltage regulation, and danger alerts. The system operates with great speed, and can process within a tenth of a second multiple feedback signals that reflect changes in the station's operations the instant they happen. It can also make decisions and issue instructions within one-tenth of a second, so that the station's generators can operate at optimal conditions at all times. This assures that operations at the station will be safe and reliable, the economic return high, and the power quality good; the amount of electricity generated can be increased by 2 to 3 percent. The mathematical models, simulation technology, hardware, and software for this system, when tailored to the general requirements of various power stations, can provide the experimental means and the theoretical basis for modernization of the nation's large- and medium-scale hydroelectric power stations through the realization of microcomputer real-time control.

In industrially developing nations, it is common practice to use medium- and small-scale computers to provide real-time control of hydroelectric power stations. The S&T personnel of this experimental center, from the standpoint of conditions in China, and displaying bold innovation, are using real-time microcomputer control of hydroelectric power stations to achieve greater economic return for a smaller investment.

CSO: 4013/142

BRIEFS

COMPUTER USE IN ZHEJIANG--Hangzhou, January 3 (XINHUA)--A new computer system cataloging silkworm data in Chinese characters has been developed by two research institutes in Zhejiang Province. The system has stored 1,000 items of information for each of 517 silkworm species, including: name, origin, incubation time, rearing information and cocoon size. Data can be retrieved in 2 or 3 minutes. The system was developed by the sericulture research institute under the Zhejiang Provincial Academy of Agricultural Sciences and the Zhejiang Provincial Institute of Computer Technology. [Text] [OW031102 Beijing XINHUA in English 1036 GMT 3 Jan 84 OW]

COMPUTERIZED BUS TRANSPORT INFORMATION SERVICE--Beijing Municipal Transportation Information Station attracted a great deal of interest at today's opening of the National Electronics Industry Exhibition. This reporter inserted 20 cents and less than a minute after pressing the code for his office location--Dongbianmen--the screen displayed the message "Take Route 15 to the Zoo, transfer to Route 103 trolley to Chongwenmen, transfer to Route 43 and ride to the first stop." This transportation information station uses mainly a microcomputer developed by the Information Science Institute of the Northwest Telecommunications Engineering College. The information station also can have different designs and devices depending on the different demands of the user. For example, it can display bus fare, and simultaneously provide a print-out; inquiries can be made on routes between any two points, on routes from a point of origin to any point of interest; it can be used to ask for information concerning railway, airline and highway or waterway transportation, as well as recommend sightseeing locations to travelers; and it can serve as department store directory and provide information on prices of goods for customers. [Text] [Shanghai WEN HUI BAO in Chinese 26 Aug 83 p 1] 8226

COMPUTER MANAGEMENT OF GUESTHOUSE--Beginning today, the newly constructed Shanghai Guesthouse will use a computer for administration and management. This is the first hotel in Shanghai to do so. This guesthouse's computer system includes over 90 functions, such as guest forecasting and reservations, registration, inquiries, finance, billing and statistics. This can raise efficiency several dozenfold over manual operations. For example, only seconds are needed to achieve room assignment, from searching for empty rooms and accepting information, to issuing a service ticket. When the operator enters incorrect information, the computer can either indicate the error or reject the entry. [Text] [Shanghai WEN HUI BAO in Chinese 26 Aug 83 p 1] 8226

TIBET USES MICROCOMPUTER FOR WEATHER INFORMATION--Xizang Autonomous Region Meteorological Observatory currently uses a microcomputer to provide weather information. The microcomputer is used to calculate every aspect of statistical analysis pertaining to weather information, not only using less labor and less time but also raises the accuracy of weather forecasts. [Text] [Lanzhou GANSU RIBAO in Chinese 25 Aug 83 p 3]

COMPUTER HEART DIAGNOSIS--Chen Kewang's [7115 0668 2598] computerized system for diagnosis and treatment of coronary heart disease, developed jointly with the China University of Science and Technology Computer Science Department and the Anhui College of Traditional Chinese Medicine's Hospital, passed appraisal at the end of July in Hefei. Using computer software technology, this system was developed on the basis of Chen's expertise in diagnosing and treating coronary disease. Professor Chen Kewang's associate dean, Anhui College of Chinese Medicine. More than 2 million prescriptions can be formulated on the basis of more than 300 case symptoms and 200 Chinese medicinal herbs. Thus, the system is suitable to be used for complex heart disease cases appearing clinically. It also features case history files, analysis support capability and built-in overlay capability. After one year of clinical assessment, the rate of coincidence of the computer diagnosis and treatment reached over 90 percent. [Text] [Shanghai WEN HUI BAO in Chinese 18 Aug 83 p 1] 8226

PRC'S FIRST COMPUTER-CONTROLLED TELEPHONE EXCHANGE--Our country's first computer-controlled telephone exchange was officially placed into service on 29 April in Fuzhou. Imported from Japan, this type of electronic telephone switching system is a small, high-speed system with a large capacity and a high degree of automation. It can offer a number of special services: making "wakeup calls" like an alarm clock, allowing automatic "call forwarding" when the subscriber is away, making "three-party connections" for three parties to converse simultaneously, and so on. [Text] [Hangzhou ZHEJIANG RIBAO in Chinese 12 May 83 p 3] 8174

CHINA'S FIRST WEATHER REPORT PROCESSOR--With the help of concerned units, the Shanghai Institute of Computing Technology recently developed a weather message processor which is the first special use of computers for weather report processing in China. This processor can manage real-time surface reports, upper atmosphere reports, and wind measurement reports. Surface reports can be generated on the basis of the required hourly weather charts obtained automatically from selected weather stations. Upper atmosphere reports and wind measurement reports from abroad can be selected from the reports of the three levels beginning with 85, 70, and 50 and can also be based on additional 200 millibar level reports requested from each station. Baud rate can be either 75 or 50. After the processor was developed, it was used on a test basis for over 6 months by the local weather bureaus in Nanning and Guilin in Guangxi. The error rate was less than one in 100,000, which demostrates that the processor is accurate, is easy to use and satisfies the customers. [By Wang Zhengsan] [Text] [Beijing JISUANJI SHIJIE [CHINA COMPUTERWORLD] in Chinese No 9, 5 May 83 p 1] 8226

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