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3 February 1983

China Report

SCIENCE AND TECHNOLOGY

No. 186

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CHINA REPORT

SCIENCE AND TECHNOLOGY

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HEBEI'S LIU BINGYAN ON IMPORTING TECHNOLOGY

HK040452 Beijing ZHONGGUO XINWEN SHE in Chinese 1127 GMT 3 Dec 82

[Text] Beijing, 3 Dec (ZHONGGUO XINWEN SHE)--People's deputy and Hebei provincial acting Governor Liu Bingyan said at an NPC discussion meeting on 2 December: In order to develop industry, we must import a lot of advanced technology of the 1970's and 1980's from the developed countries and spend about 8 years absorbing it, to serve China's industrial modernization.

He said: Hebei Province is located on the North China Plain, with the Taihang Mountains to the west, the Bohai Gulf to the east and the Yanshan Mountains to the north. The province abounds in mineral resources; there are coal, oil, iron, various non-ferrous metals. There are also natural conditions for promoting agricultural diversification. During their discussions on Premier Zhao Ziynag's report on the 6th 5-year plan, the deputies have proposed that Hebei should make its proper contribution to fulfilling the state plans. They envisaged the following: In the first 10 years, industrial and agricultural production should grow at an annual average of 5.7 percent, including a 5 percent growth at an annual average of 5.7 percent, including a 5 percent growth in agriculture and 6 percent in industry. In the second 10 years, the annual growth rate should be 8.7 percent, including a 5.5 percent growth in agriculture and 9.9 percent in industry. By the end of the century, the province's total industrial and agricultural output value should reach 133.2 billion yuan, the figure for agriculture being 31.1 billion yuan and that for industry 102.1 billion yuan. Liu Bingyan said, Hebei ranks third in the country in coal and oil output. To ensure the energy needs of industrial and agricultural development, we must get a good grasp of prospecting and exploitation, do well in improving old shafts, speed up the construction of new ones, and produce more good coal.

The acting governor also said: We should bring the industrial enterprises and the commune and brigade enterprises into the technical improvement plans in a unified way, make rational all-round allocations of capital, and coordinate the technical policies. He said: We should carry out technical improvements by trades, and stress the notion of the whole country as a chessboard; we cannot just organize a provincial industrial system. We must therefore boldly make our choices, take advantage of our superior features, develop our outstanding trades and products and speed about 8 years absorbing a lot of advanced tech-

nology of the 1970's and 1980's from developed countries, for our own use. He said: There are 55 technical improvement projects in Hebei's metallurgical industry, with a total investment projects in Hebei's metallurgical industry, with a total investment of over 8 billion yuan, and 36 of these projects have already yielded results and generated over 6 billion yuan in tax revenue and profits. Their economic returns are outstanding. In the future we should vigorously import advanced technology to improve our economic returns.

CSO: 4008/39

INITIAL ACHIEVEMENTS IN DOMESTIC USE OF MICROCOMPUTERS MADE

Beijing GUANGMING RIBAO in Chinese 29 Oct 82 p 1

[Article: "Initial Achievements in the Use of Microcomputers in China"]

[Text] According to our reporter Bai Jingzhao [4101 0079 0340], the first session of the "China Microcomputer Application Symposium" recently held in Fuzhou indicates that microcomputers are beginning to be used in some fields of producton, economy, and scientific research in our country.

Microcomputers are micro-scale electronic computers composed of large-scale integrated circuits; they are basic tools of modern information processing technology. In recent years, China's microcomputer enterprise has developed at a relatively fast pace; a contingent of professionals engaged in research and development, designing, production, application and technical service has been formed on a preliminary scale; 60 percent of the microcomputers in our country are domestically produced; and quite a few departments, local industries, enterprises, research and development organizations, and institutions of higher education are beginning to use microcomputers. The Capital Steel Company is using a microcomputer for energy conservation applications. Its smelting blast furnaces are equipped with a Chinese-made interactive microcomputer prediction system which not only can accurately simulate the practical experiences of a blast furnace operation foreman, but also summarize certain kinds of temperature variation patterns which can not be detected by man. Following the installation of this kind of system, a pig iron blast furnace with annual output capacity of one million tons can now conserve 4,000 tons of coking coal each year, and increase annual pig iron output by 10,000 tons.

At present, some organizations directly affiliated to the Ministries and Commissions of the State Council have begun to stress the application of microcomputers in management work. Beijing Research Institute of Information Control is using a microcomputer to develop an information transfer and processing network system for related plants and institutes in Beijing and other parts of the country. It is also planning to add a Chinese character microcomputer system in the near future for such management work as planning, finance, supply, records, statistics and analysis. The Ministry of Machinery Industry is trying out a microcomputer Chinese language information processing system developed and manufactured by our country alone. During the Science and Technology Planning Conference last November, the system was used for drawing up this year's plans for scientific research work, and various kinds of annual planning tables for different categories were printed out in Chinese language. In the past, this kind of work would have taken several months to complete; now it takes only a couple of days.

9119
CSO: 4008/28

NEW ACHIEVEMENTS IN MICROCOMPUTER APPLICATION RESEARCH

Fuzhou FUJIAN RIBAO in Chinese 8 Nov 82 p 2

[Article: "New Achievements in Research on Microcomputer Application"]

[Text] Relying on its own resources, Fujian Province's Electronic Technology Research Institute has successfully designed and developed uc-AD analog channel boards, uc-TV video display interface boards and MCS-48 single chip microprocessors, thus attaining new results in the drive to widen the application of microcomputers.

Developed by the Institute late last year, the uc series single board microprocessor is extensively used by scientific research and education organizations, as well as industrial and mining enterprises. This year, the Institute has successfully designed and developed the preceding new products, thus completing the support units for the uc series single board machines and expanding the scope of application. The uc-TV video frequency display interface board is comparable to foreign-made products along the same line; it is characterized by simple circuitry, reliable operation, and can be used as a simple interface between microcomputers and television sets. The three products have been evaluated and approved by specialists from Fujian and other provinces, as well as concerned departments. The MCS-48 single chip microprocessor is currently batch produced by Fujian's Computer Peripheral Plant.

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CSO: 4008/28

MULTIPLE-USE ZD-065 MICROCOMPUTER

Guangzhou YANGCHENG WANBAO in Chinese 26 Oct 82 p 1

[Article: "ZD-065 Microcomputer Passes Technical Evaluation"]

[Text] Suitable for China's medium and small scale enterprises, the ZD-065 digital microcomputer passes a technical evaluation held in Foshan today.

This type of microcomputer was jointly designed by Zhongshan University's Department of Physics and Nanhai Radio Plant for many medium and small scale enterprises which are striving to improve the quality of their products, and realize automated management. In the course of designing the microcomputer, they carefully studied foreign microcomputer technology, and made improvements based on conditions in this country. A fully configured system only takes up the space of an office desktop. The model is modular structured and compact; its power consumption is low. It is, moreover, easy to operate and cheaper than similar products produced both in China and other parts of the world. Besides industrial production, it is suitable for many other kinds of applications, such as scientific research and education.

9119
CSO: 4008/98

PHYSICS INSTITUTE RANKS FIRST IN COMPUTER UTILIZATION RATE

Beijing GUANGMING RIBAO in Chinese 29 Oct 82 p 1

[Article: "Beinjin Institute of Applied Physics and Computational Mathematics Ranks First in Domestic Utilization Rate of Computers"]

[Text] For the past 15 years since it first swung into operational mode, the computer system of Beijing Institute of Applied Physics and Computational Mathematics has enjoyed an annual mean utilization rate of over 80 percent, with the highest annual record reaching as high as 95 percent; its annual up time is about 7,000 hours, thus ranking first place in utilization rate of computers in China.

The computer system currently used by the Institute was developed in the early 1960's by the Computing Technology Institute of the Chinese Academy of Sciences. It is China's first large-scale transistorized general-purpose electronic computer, and was given to the Institute of Applied Physics and Computational Mathematics in 1967. Due to the Institute's conscientious efforts in maintaining, developing and using the system, plus the close coordination of the Chinese Academy of Sciences in supplying electricity and ventilation, for the past fifteen years, this system has made tremendous contributions to the construction of our country's national defense and national economy. For this reason, the China Computer Society organized a seminar in Beijing on September 28 at which the comrades of Beijing Institute of Applied Physics and Computational Mathematics were invited to present a technical report on the use and maintenance of computer systems. The scientific and technical people participating at the seminar unanimously agreed that the use and maintenance of computer systems should be as long as major efforts are put into the care, development and use of equipment, Chinese made computers are fully capable of making greater contributions to the Four Modernizations Construction Program. At present, the average utilization rate of computers throughout the whole country is less than 20 percent. If the utilization rate can be increased to over 80 percent, it would be equivalent to adding new computers by three or four times without putting in any additional investments.

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CSO: 4008/28

APPLIED SCIENCES

ZD-065 MICROCOMPUTER PRODUCED

Guangzhou NANFANG RIBAO in Chinese 27 Oct 82 p 1

[Article: "Guangdong Province Develops Digital Microcomputer System Suitable for Date Processing and Process Controlling in Scientific Research and Industrial Automation"]

[Text] Developed by the Physics Department of Zhongshan University and Nanhai Radio Plant, the ZD-065 digital microcomputer system passed a technical evaluation test yesterday afternoon. All of its technical specifications met the designed requirements, and the model was approved for batch production.

As part of a new branch of electronics industry which emerged in the 1970's, microcomputers are becoming increasingly popular in a wide range of applications; but our country is currently still dependent on imports. Moreover, due to the complex model systems, we still have to depend on foreign countries for maintenance and expansion. To speed up the growth of electronics industry, several middle aged faculty members in Zhongshan University's Department of Physics formed a microcomputer research and development group. While completing their teaching assignments, they spent their winter and summer vacations as well as after-work hours working energetically on the project. They studied foreign advanced technologies in the course of the development. With the help of Nanhai Radio Plant, they finally succeeded in developing the ZD-065 microcomputer system after a relatively long period of hard work. Seventy percent of the components were made in China. The system was put to trial use in several organizations and, shown at the Education Ministry Products Exhibition and the Provincial Microcomputer Application Exhibition where it was well received by users.

The digital microcomputer system consists of mainframe, terminal, expandor, thermal printer, A-D converter, PROM, multiplex parallel interface, etc., and is suitable for data processing and process controlling in education, scientific research and industrial automation, etc. It is compact, and the entire system can be placed on a desktop. The model is equipped with many capabilities and functions, and enjoys extensive applications. The user can combine or expand according to his specific needs by adding a number of interface boards. The system is especially suitable for process controlling in factories with automated production lines. Mines can use the system for

monitoring safety operations; hydrology departments can use it for gathering data; post offices can use it for separating parcels and letters automatically; students can use it for tests and scoring marks; the railway can use it for dispatching trains, etc. The system is quality dependable, low cost, and suitable for medium and small scale enterprises. Half a year ago, the plant produced more than sixty machines for trial use by pilot organizations. The users are satisfied with both the quality and performance of the products.

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CSO: 4008/28

APPLIED SCIENCES

CS-4000 CHINESE CHARACTER COMPUTER EXHIBITED IN SHANGHAI

Shanghai WENHUI BAO in Chinese 5 Nov 82 p 1

[Article: "New Key-Stroke Chinese Computer Typewriter Exhibited in Shanghai"]

[Text] Beginning on the third of this month, an easy-to-learn Chinese language computer typewriter has been put on exhibition in Shanghai.

The CS-4000 Chinese language computer typewriter can accomodate 4,000 commonly-used characters. By hitting the keys in the correct stroke order on a 36-key keyboard, the user can display Chinese characters on the video display screen.

This new type of Chinese language typewriter was jointly developed and manufactured by the China Electronic Equipment System Engineering Company and Hong Kong Antuo Information, Ltd. The keystroke encoding method is employed in the system, and the scientific principle lies in the digitization of Chinese characters. It uses five numbers, i.e., 1, 2, 3, 4 and 5, for expressing the dot stroke, horizontal stroke, vertical stroke, left-falling stroke, and right-falling stroke; and the information is punched according to the basic strokes of Chinese calligraphy. This kind of typewriter is fast; each character requires an average of 3.7 keystrokes to complete. On an English typewriter, it takes an average of 5 keystrokes to complete one word.

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CSO: 4008/28

BCN-II MICROCOMPUTERS MAKE DEBUT IN INTERNATIONAL MARKET

Kunming YUNNAN RIBAO in Chinese 26 Oct 82 p 3

[Article: "Chinese-Made Computers Enter International Market for First Time"]

[Text] Developed and manufactured by Beijing Research Institute of Computing Technology, the BCN-II microcomputer system passed an evaluation test recently and was approved for batch production. Orders are already being placed for this particular system by domestic and foreign users. This is the first time Chinese-made computers have ever entered the international market.

The BCN-II model is an 8-bit general purpose microcomputer system with powerful capabilities; it is a high speed machine with large capacitance and compact structure. The BCN-II system is moreover aesthetically designed and easy to operate. Its memory can hold 2,400,000 bits of information. Each minimum work beat measures 1/4,000,000th of a second. This type of microcomputer can be used in a wide range of applications, such as scienfific calculations, data processing, business management, software development, automatic control and testing. As it can also be configured with a Chinese character processing system which can handle some 5,000 commonly-used characters, the BCN-II model can be popularized in China.

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MICROCOMPUTERS INTRODUCED IN GUANGZHOU

Guangzhou GUANGZHOU RIBAO in Chinese 26 Aug 82 p 2

[Article: "Microcomputers Make Debut in Guangzhou"]

[Text] Some twenty research and development organizations, institutions of higher education and factories in the Guangzhou District have already begun to employ new microcomputer technologies in more than forty applicative research projects, such as developing machine tool controls, intelligent instruments, data processing systems, information retrieval systems, payroll management systems, etc. People are gradually learning about the role of microcomputers in economic construction. It has been listed by the Provincial Economic Committee as one of the major items of new technologies to be extensively introduced to Guangdong Province's industry and communications. The City District Economic Committee provides users with special funds for purchasing microcomputer equipment, thus helping to popularize the use of microcomputers.

In modern production, some processes are not suitable for manual operation; microcomputers are the key to improving quality, enhancing production efficiency, conserving energy, and reversing backward conditions in production techniques and business management. In course of designing electric motors according to user specifications, the Guangzhou Scientific Research Institute of Electrical Devices found it extremely difficult to manually calculate and select blueprint specifications due to the complex computations involved in comparing large numbers of blueprints. Now that they have switched over to a microcomputer system, it takes only a few minutes to complete a blueprint which would have taken several days to accomplish before. Computers are accurate and can make optimum choices from a multitude of blueprints. With the help of the microcomputer system, they were able to design a motor meeting all the technical specifications for use on an agricultural washer-grader. Printed circuit boards in radio and television sets are full of small and closely punched holes which are impossible to drill manually; using a high-speed single-spindle lathe controlled by a microcomputer system, the Guangzhou Machine Tool Research Institute can drill 60 densely-packed holes per minute with great precision. Other current microcomputer applications in Guangzhou District include: wire cutting machine tools, telex typewriters, diode separaters, material testers, etc. Approximately 200 microcomputers are playing an important role in production, scientific research and education.

Jointly organized by the Guangdong Economic Committee and Provincial Committee for Science and Technology, the concerned personnel of the Bureau of Electronics Industry, the Guangdong Industrial and Communications Technical Reform and Popularization Center, and the Automation Society of Guangdong Province are pooling their efforts on investigation, research and pilot projects centered on the province's economic features and needs of production growth, thus carrying out popularization work in a down-to-earth manner.

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CSO: 4008/28

BAILING BRAND COMPUTER AWARDED FOR QUALITY

Fuzhou FUJIAN RIBAO in Chinese 23 Oct 82 p 1

[Article: "Bailing Electronic Computer Awarded First Prize for Quality"]

[Text] Recently, the Ministry of Electronics Industry sponsored a special session in Hefei City, Anhui Province to evaluate the quality of Chinese-made computers. Several tens of different makes of computers produced in various parts of the country were put to test, including five Bailing models produced by Fujian Electronic Computer Plant. The first four awards went to models BL-802, BL-857, BL-815 and BL-301 respectively. BL-809 won sixth place. The overall evaluations were conducted on the basis of various standard quality requirements released by the Ministry. Fujian Computer Plant's Bailing models account for one half of the annual number of computers produced throughout the country. As Bailing computers are well established as top quality machines, Hong Kong imports them without inspection requirements, and the machines are also marketed in Europe, North America and Southeast Asia.

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CSO: 4008/28

SOUTH CHINA COMPUTER COMPANY UNDER CONSTRUCTION AT ACCELERATED PACE

Guangzhou GUANGZHOU RIBAO in Chinese 30 Oct 82 p 2

[Article: "Computer Industry Construction Project Stepped Up in South China"]

[Text] According to reports by our reporter Ma Guining [7456 2710 1380] and correspondants Li Fengchun [2621 7685 2504] and Li Wanshen [7812 5502 8590], encouraged by the spirit of the Twelfth Congress of the Chinese Communist Party, efforts are being made to speed up the construction of a large scale electronic industrial enterprise in China, i.e., the South China Computer Company. On October 11, China imported the first electronic computer production line from France which is already being installed in the Guangzhou Computer Plant owned by the company.

To promote the growth of China's computer industry and meet the demands of the Four Modernizations Construction Program, the South China Computer Company was established in Guangzhou last April with the approval of the State Planning Commission and the State Machinery Commission. It is jointly invested by Central Government and local organizations. Together with the Guizhou Nanfeng Machinery Plant which is affiliated to the Computer Industry Administration under the Ministry of Electronics Industry, the Guangzhou Computer Plant is jointly manufacturing the entire equipment of the Solar-16 series computer system.

Solar-16 is a minicomputer series in today's world market; it is characterized by wide series overlay, high operation speed, powerful processing capabilities, high throughout rate, excellent availability, rich library of software, etc. It has nine programming languages, ten operating systems, a total of approximately 1 million instructions, and can reach as high as 1 million operations per second. This type of minicomputer is suitable for industrial control and automation, communications and transportation control, scientific calculations, as well as education, hospital, bank, business and management. It has many functions and uses, and can serve a very extensive range of applications in our country. After the imported computer production line is installed and put into production mode, the immediate-future annual output will be 150; but the projected capacity will be as high as the gross annual output of mini-computers currently produced throughout the whole country.

A few days ago, our reporter went to visit the building of Guangzhou Computer Plant where the Solar computer assembly and debugging production line were being installed at high speed. It is reported that each floor of the five-story building covers 816 square meters, and will accomodate a total of six workshops chiefly designed for testing incoming components, testing incoming peripherals, manufacturing cards and cables, debugging units, debugging assembled systems, and reproducing documents. All the workshops are being constructed according to modernized production requirements, and will provide very comfortable working environment. Each workshop is equipped with neat plastic floorings, thermal protective walls, and air conditioning systems which will maintain constant temperature and humidity, and clean the air as well, thus creating a clean and quiet production environment for computer manufacturing. Zhang Jiajun [1728 1367 7486], manager of the company, told the reporter that the key to the great goals set forth by Party's Twelfth Congress lies in the modernization of science and technology, which comes both as an encouragement and inspiration to the staff and workers engaged in the construction of computer industry. Now, the construction speed has been greatly accelerated, and French engineers and technicians are arriving one after another to assist in the installation and provide technical supervision.

The participants in the construction of this imported engineering project come from nine provinces and cities across the country; some are engineers with some twenty years of experiences in the computer industry, some are technically skilled veteran workers, and some are young members just graduated from universities and colleges. They are all resolved to cooperate with the French engineers and technicians, and build this production line with greater and better results.

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CSO: 4008/28

APPLIED SCIENCES

CHINESE ASTRONOMICAL INSTRUMENTS DESCRIBED AS 'WORLD CLASS'

Beijing XIANDAIHUA [MODERNIZATION] in Chinese No 12, 16 Dec 82, inside front cover

[Article: "A Visit to Beijing Observatory's Shahe Facilities"]

[Text] The laser astrolabe is a device that measures the time for a fixed star to pass through an altitude circle. For accuracy, these instruments rank in the forefront of comparable foreign-made devices.

Fig 1. A photoelectric astrolabe

▲ 光电等高仪的控制台

Fig. 2. Console for the photoelectric astrolabe

◀ 光电等高仪

定人造卫星位置的光学仪器。

Fig. 3. The theodolite is an optical instrument used to track and measure the position of artificial satellites

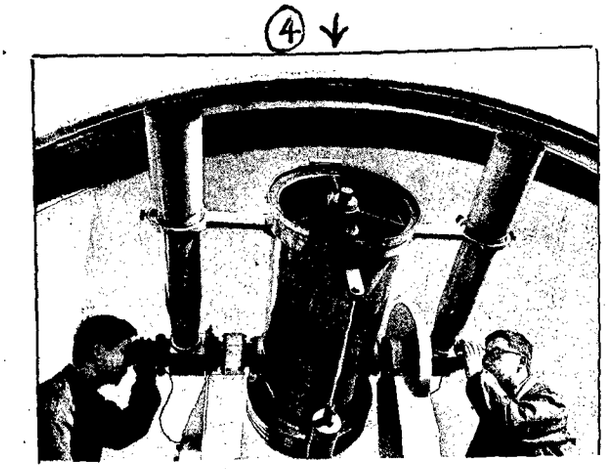

Fig. 4. The laser rangefinder is a device used to measure the distance to the laser reflector mounted on an artificial satellite

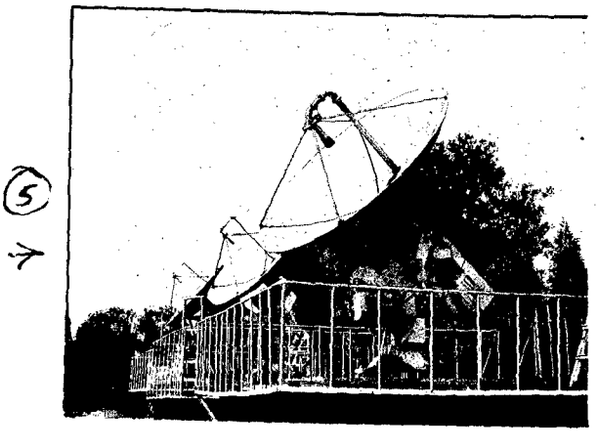

Fig. 5 Three-centimeter and 10-centimeter wavelength radio telescopes used to observe solar radio emissions

CSO: 4008/40

BRIEFS

MEDICAL TEAM IN UGANDA--Kampala, 18 Jan (XINHUA)--The advanced group of a 14-member Chinese medical team arrived here today. The team is to work in Uganda according to a protocol concluded between the Governments of China and Uganda. It will be based in Jinja, an industrial city 80 kilometers east of Kampala. Upon its arrival, the head of the group told XINHUA that they have come to offer medical assistance to the Ugandan people and help improve Uganda's medical service together with their Ugandan colleagues. He said that the rest of the Chinese team will arrive as soon as the preparations are completed. This is the first Chinese medical team to work in Uganda. [Text] [OW190140 Beijing XINHUA in English 0110 GMT 19 Jan 83]

CSO: 4010/33

AUTHOR: CHEN Hongcai [7155 3163 2088]
SHEN Shichang [3088 0013 2490]
CHEN Deyu [7155 1795 3768]

ORG: All of Zhaozhou Machine Tool Plant

TITLE: "Drum Hand Brakes are in Production"

SOURCE: Changchun QICHE JISHU [AUTOMOBILE TECHNOLOGY] in Chinese No 10, 25 Oct 82 p 64

ABSTRACT: The JiefangCA10B automobiles have disk hand brakes, the cumulative error of which usually exceeds the original specification after about 2-3 years of use. The parts are too worn to be reused so that the repair cost is high. The hand brake of the trucks imported from Rumania has a belt type structure and users have complained about its not being convenient. The Zhaozhou Machine Tool Plant started to try to make drum type hand brakes in Apr 81. Before the year ended, 2000 prototypes were produced and satisfactorily tested by related units. After the approval of the Provincial Certification Conference, the brakes have officially been in production and large batches of them may be purchased from the marketplace. The brakes are in 4 models: the JS-290 is suitable for Jiefang automobiles, the BS-290 is suitable for Buqieqi trucks made in Rumania, the DS-290 is suitable for Dake automobiles, and the KS-290 is suitable for Longjiang buses. A brief test report of these drum brakes is included.

6248
CSO: 4009/65

AUTHOR: WANG Guozhong [3769 0948 1813]
LU Bingquan [0712 3521 0356]
QUAN Songqing [0356 2646 7230]

ORG: All of Tongji University

TITLE: "The Discovery of Pleistocene Dolomite on Hainan Island Its Diagenetic Environments"

SOURCE: Shanghai TONGJI DAXUE XUEBAO [JOURNAL OF TONGJI UNIVERSITY] in Chinese No 4, 1982 pp 18-26

TEXT OF ENGLISH ABSTRACT: In May 1981 in the Paipu commune of Zuan County, Hainan Island, Guangdong Province, late Pleistocene dolomite has been discovered in the intertidal region on the abrasion flat. It was confirmed as a sandy dolomite by identification with thin section and scanning electron microscopy, staining techniques, X-ray diffraction techniques and thermocouple analysis. This dolomite is of an euhedral rhombic form, very finely crystaline (6-18 μ), with zonal texture. More iron substitutes for magnesium in the dolomite lattice to form a solid-solution; the clastic grains in the rock comprise 20-25 percent.

Pleistocene dolomite of Paipu, Hainan Island, is of replacement origin. It occurs in Pleistocene sandy and rubbly sediments as an abrasion terrace in the

[Continuation of TONGJI DAXUE XUEBAO No 4, 1982 pp 18-26]

intertidal zone and in environments of subsurface water mixed with marine salty water and with intermittent subaerial exposure resulting from tides. The discovery of intertidal sandy dolomite can enrich the types and diagenesis of Quaternary dolomite. It plays an important role in the interpretation of the formation of old dolomite.

9717
CSO: 4009/68

AUTHOR: None

ORG: Research Team of Dalian Diesel Locomotive Research Institute, Ministry of Railways

TITLE: "Opinions Concerning Accelerated Development of Diesel Towing"

SOURCE: Dalian NEIRAN JICHE [DIESEL LOCOMOTIVE] in Chinese No 11, 15 Nov 82 pp 1-3

ABSTRACT: Most recently, the Research Team of Dalian Diesel Locomotive Research Institute, Ministry of Railways carried out experiments and surveys on problems of developing China's railway towing power and technology and wrote 8 papers to analyze the subject; all are published in this issue. This paper is the first of the eight. The major theme of the paper is to present arguments against electrification of China's 5 trunk lines of Beijing-Guangzhou, Shanghai-Ningbo, Beijing-Shenyang, Harbin-Dalian, and Tianjin-Pukou, as some comrades have proposed. The arguments include: (1) Under current limits of 3,500 tons of towing capacity, 80 km/hr of cargo train speed, and 8-10 minutes between trains, electric locomotives are not suitable for the plain regions; (2) As locomotives for heavy cargo trains must be heavy, if 2 locomotives are needed to pull a train, 2 diesel locomotives should be preferred; (3) Under the conditions of China, it is not possible to raise the speed of passenger trains, yet it may be necessary to enlarge a passenger train to 16-20 cars, for which the 2700 hp Beijing or Dongfanghong-3 diesel locomotives should be suitable; (4) With China's experience in producing diesel locomotives, there is no need whatsoever to buy locomotives from foreign countries.

AUTHOR: None

ORG: Research Team of Dalian Diesel Locomotive Research Institute, Ministry of Railways

TITLE: "Diesel Locomotives Should be Preferred for 'Bottleneck' Lines Which Cannot be Electrified Within a Short Period of Time"

SOURCE: Dalian NEIRAN JICHE [DIESEL LOCOMOTIVE] in Chinese No 11, 15 Nov 82 pp 7-8

ABSTRACT: At present, about 80 percent of cargo transport on China's railways are still by steam locomotives. The capacity has now reached the satuation point in some sections and bottlenecks exist in many places. For these bottlenecks, changing the form of towing to diesel or electric locomotives is the most effective relief and is a way of saving energy as well. For some years, due to a pessimistic estimate of China's petroleum future, the policy on railway towing technique has wavered. Some lines are awaiting electrification and others designed and constructed for diesel have retreated to steam locomotives. Beijing Locomotive Plant No 27 has a capacity of producing 60-70 locomotives a year, is only producing 16-20 (1981 and 82 respectively.) Using the conditions of one of the bottleneck lines, the Yingtan-Xiamen Line as the example, this paper explains the merits of diesel locomotives for lines of low technical standards, large grade limits, numerous curves, small curve radius, and high cargo density. More importantly, electrification requires much more capital than what is available now while a great deal of diesel locomotive production capacity is being wasted.

6168
CSO: 4009/60

AUTHOR: NAN [0589]

ORG: None

TITLE: "Exchange Conference of Application of NCL-1 Numerical Control Experimental System"

SOURCE: Zhuzhou SHUKONG JISHU TONGXUN [COMMUNICATION ON NC TECHNIQUE] in Chinese No 4, 82 p 55

ABSTRACT: The Exchange Conference of Application of NCL-1 NC Experimental System was held in its manufacturing organization, Nanjing School of Machine Manufacture, on 23-28 Sep 82. Participants included more than 40 persons, representing related schools of higher education, research institutes, and factories. They listened to an introduction of the design idea, system theory, constituent parts, and special functions of the system and observed various types of experimental demonstrations. The Shanghai University of Industry and other units reported their experiences and understandings in applying the system. Changzhou Semiconductor Plant introduced the special characteristics of TTL,CMOS integrated circuits and their application as well as their development condition here and abroad. The conference proceeded in a manner of observing, practicing, and discussing to enable the delegates to become familiar with the properties and applications of the A,B,C,D boards and the accessories E,F,G,H,I. This was an extraordinarily active conference. The delegates were also very impressed by the school's emphasis on both theory and practice in training NC technology specialists and believed that personnel training is the key to China's extension and application of NC automation. All regarded the system to have exceeded the traditional concept of NC technology and hoped it will be produced in batches soon.

AUTHOR: WANG Zhong [3769 1813]

ORG: Jilin Provincial Research Institute of Machine Industry Designing

TITLE: "ZJS-5 Composite Industrial Robot Technical Certification Conference"

SOURCE: Zhuzhou SHUKONG JISHU TONGXUN [COMMUNICATION ON NC TECHNIQUE] in Chinese No 4, 82 p inside backcover

ABSTRACT: The ZJS-5 composite industrial robot is a product of research of Jilin Provincial Research Institute of Machine Industry Designing. Its certification conference was held in Changchun on 26-29 Jul 82. By the request of Ministry of Machine Industry, the conference was called by Jilin Provincial Science Committee and Bureau of Machinery and attended by 40+ representatives of Automation Institue, Harbin University of Engineering, Jilin University of Engineering, Shanghai Municipal Machinery and Electrical Power Designing Academy, and Automobile Plants Nos 1 and 2. The robot includes components of vertical rotation, up and down movement, extension and contraction arm, fixed arm, moveable wrist, rotating claws, hydraulic parts, and ZJS-TK sequential control. The robot is extensively applicable in machine processing, casting, forging, stamping and punching, heat treatment, etc. to replace man in material conveying to realize automation and to guarantee production safety. Major technical parameters of the robot are introduced. The delegates believed it to be suitable for China's conditions and its success has placed the institute in a leadership position in the field in China.

6248

CSO: 4009/55

AUTHOR: SUN Jingmin [1327 7231 3046]

ORG: None

TITLE: "First National Conference of Optimization Designing of Machines"

SOURCE: Beijing JICHUANG [MACHINE TOOL] in Chinese No 11, Nov 82 p 47

ABSTRACT: The First National Conference of Optimization Designing of Machine Tools, jointly sponsored by Machine Designing Society China Society of Mechanical Engineering and Gansu Provincial Society of Mechanical Engineering, was held in Lanzhou City of Gansu Province from 30 Aug to 4 Sep 82. A total of 72 papers were delivered. Of these, 7 papers dealt with optimal designing of machine parts, including the main transmission system, input system, main axle, bearings, etc. Due to complexity of structure, the finite-element method is mostly adopted to calculate the static and dynamic properties of some parts of machine tools at present, but the finite-element method is only an important structural analysis method and if the optimization method is used the optimal structural parameters may be determined. On this subject, there were extensive discussions in 2 papers delivered by Harbin College of Shipbuilding Engineering and Xian Jiaotong University. The problems of improving the efficiency and reliability of calculation in the optimization designing process of machine tool parts and components were discussed in all the papers. Although the methods proposed in these papers have yet been used in production to demonstrate actual economic benefits, judging from the scientific nature of the optimization researches, they are indeed practicable. Their fast application and extension in the machine tool industry are expected.

AUTHOR: ZHANG Risheng [1728 2480 2573]

ORG: Correspondent of JICHUANG

TITLE: "First Precision Machining Technology Exchange Conference Called by China Society of Meters and Instruments"

SOURCE: Beijing JICHUANG [MACHINE TOOL] in Chinese No 11, Nov 82 p 47

ABSTRACT: The First Precision Machining Technology Exchange Conference, under the auspices of the Precision Machining Group, Meter Technology Society China Society of Meters and Instruments was held in Guiyang of Guizhou Province on 3-9 Jul. Subjects discussed in the papers submitted include "Action of blade radius in microcutting," "Investigation in the bending and deformation of the chromium-molybdenum-aluminum-steel slideway," "Superprecise axle system for precision measurement and superprecise machining," "Application of laser control for grinding and cutting of high precision and small modulus cogs with hobbing blades," etc. To a certain extent these papers demonstrated the achievements in precision machining technology by the instrument and meter industry. Precision machining theories, machining technologies of key components and their inspection techniques, domestic and foreign levels of precision machining and the trend of its development were extensively discussed to clarify the direction of future research. Judging from the present conditions, the work process of all the units is even weaker than their designing capability. On this point, the delegates agreed unanimously.

6248
CSO: 4009/57

AUTHOR: CUI Junzhe [1508 0971 0772]
XIE Xingyao [6200 5281 1031]

ORG: None

TITLE: "Conference for the Establishment of Thermal Material Specialty Committee and Photo Radiation Specialty Committee of China Society of Metrological Testing Held in Chengdu"

SOURCE: Beijing JILIANG JISHU [MEASUREMENT TECHNIQUES] in Chinese No 6, 18 Nov 82 p 71

ABSTRACT: The conference to establish the Thermal Material Specialty Committee and the Photo Radiation Specialty Committee was held simultaneously in Chengdu of Sichuan Province in May 82. It was resolved that the Thermal Material Specialty Committee will be organized by 17 comrades under the leadership of Prof. WANG Buxuan [3769 5943 1357] of Qinghua University; the Photo Radiation Specialty Committee will be organized by 17 comrades under the leadership of FENG Jiazhang [7458 1367 3864] a researcher of Changchun Research Institute of Optical Machines. The first scientific exchange meetings of the 2 specialty committees were held immediately after their establishment. The 62 papers delivered at the meeting of the former committee demonstrated the urgent need for unifying the values of thermal material parameters in China for quick formulation of parameter samples and standard testing methods. The 45 papers delivered at the meeting of the latter represented research results of radiation light measurement and photo radiation detectors. Research and manufacture of standard source of infrared radiation, property testing of infrared detectors and infrared materials were unanimously proposed by the delegates.

AUTHOR: ZHAO Tianchuan [6392 1131 1557]

ORG: Guangdong Provincial Research Institute of Metrology

TITLE: "China's First Ultrasonic Power Standard Installation Successfully Made"

SOURCE: Beijing JILIANG JISHU [MEASUREMENT TECHNIQUES] in Chinese No 6, 18 Nov 82 p 72

ABSTRACT: The project of establishing an ultrasonic power standard, assigned by the National Bureau of Metrology was completed by Guangdong Provincial Research Institute of Metrology and China Research Academy of Metrology in late 1981, with the help of Chengdu Branch Academy, Shantou Ultrasonic-Electronic Instrument Plant, and the Experimental Factory of China Research Academy of Metrology. The scope of measurement of this instrument is 1 mW-500 mW and 0.5 W - 20 W. The measurement precision is better than ± 5 percent and the sensitivity is as high as 14.5 μW. A certification conference, held in Guangzhou in early 1982 has approved it. It was judged to be highly precise, with strong interference resistance and stable properties. It has been suggested that this instrument should be used as the temporary standard in China.

AUTHOR: GU Xiwen [7357 6932 2429]

ORG: Technological Information Office, Shanghai Huguang Instrument Plant

TITLE: "Successful Manufacture of BG-8 Series Standard Self-induction"

SOURCE: Beijing JILIANG JISHU [MEASUREMENT TECHNIQUE] in Chinese No 6, 18 Nov 82 p 72

ABSTRACT: The BG-8 series self-induction, most recently successfully made by Shanghai Huguang Instrument Plant has 5 specifications: 1 H, 0.1 H, 1000 μH, and 100 μH. Its average error is ±0.02 percent (it is ±0.05 percent for 100 μH.) The annual instability of electric inductance is $\pm 8 \times 10^{-5}$ and its temperature coefficient is $\pm 2 \times 10^{-5}/°C$. Observations of 3 years by Chinese Research Academy of Metrology and one month by Shanghai Municipal Research Institute of Metrological Technology, and 5 other organizations proved it to be highly accurate, with low annual instability, and small temperature coefficient. It is regarded as the best product of the intermediate class in the country at present. Its major technical indices are judged to have reached the level of similar products of the 1900 series made by Solomen Company of England.

6168

CSO: 4009/56

AUTHOR: ZHANG R nsheng [1728 3387 3932]

ORG: The Secretariat of China Society of Mechanical Engineering

TITLE: "The Equipment Maintenance and Repair Society China Society of Mechanical Engineering Called a Third Annual Conference"

SOURCE: Shanghai JIXIE ZHIZAO [MACHINERY] in Chinese No 11, 20 Nov 82 p 4

ABSTRACT: The Third Annual Conference of the Equipment Maintenance and Repair Society was held in Chengdu, Sichuan Province on 11-16 Nov. A total of 150 delegates attended. A great deal of attention is given to this conference by the Equipment Maintenance and Repair Branch Societies of the various provinces, cities, and autonomous regions, as equipment maintenance and repair are indispensable for all factories and enterprises. Of the 203 papers received, 6 papers were delivered, dealing with the following:"On the management of equipment breakdown and its methods," "On the economy of equipment repair, " "A report of surveys of equipment renewal and reconstruction of 14 machine manufacturing enterprises in Shenyang," "Summarization of reconstructing the 15 m end mill made in W. Germany, using static pressure technique," "Reconstruction of the CARO Bearing and the Processing Theory," etc. The scientific activity plan for 1983 and the next 5 years were discussed and revised. The branch societies were requested to keep stronger ties with the national society.

AUTHOR: None

ORG: The Secretariat of China Society of Mechanical Engineering

TITLE: "Brief Introduction of the Structure of Shanghai Municipal Society of Mechanical Engineering"

SOURCE: Shanghai JIXIE ZHIZAO [MACHINERY] in Chinese No 11, 20 Nov 82 p 46

ABSTRACT: Shanghai Municipal Society of Mechanical Engineering now has 3500+ members. The membership at large has elected its Fifth Board of Directors. Under the Board of Directors, there are five work committees, including training and popularization, international exchange, scientific activity, organization, and editing and translation. Under these committees, there are 5 branch societies of equipment maintenance and repair, heat treatment, casting, machine designing, and machine processing, as well as 19 specialty groups and one college of after-work training. The Editorial Department, under the Editing and Translation Committee, publishes the society's journal, JIXIE ZHIZAO. The daily affairs of the society are administered by the Secretariat, which is under the Standing Committee, which is directly responsible to the Board of Directors. A chart is included to denote the organizational structure of the municipal society.

6248
CSO: 4009/61

AUTHOR: XU Peirong [1776 1014 2837]

ORG: Nanchang Heat Treatment Plant

TITLE: "Some Understandings in Organizing and Establishing A Specialized Heat Treatment Plant"

SOURCE: Beijing JINSHU RECHULI [HEAT TREATMENT OF METALS] in Chinese No 11, 25 Nov 82 pp 59-62

ABSTRACT: China's middle-sized cities usually have complete lines of industries. For example, almost every large or small machine factory in Nanchang has a heat treatment machine-shop. Judging from their production scale, technical capability, and equipment capacity, these shops may be divided into the following: (1) Large shops with complete routine equipment, inspection capability, and dozens of workers; (2) Medium sized shops of parts-producing factories of 10-20 workers, with equipment and inspection capacity to satisfy production needs of the factory; (3) Small heat treatment teams with 1 or 2 machines and 1 or 2 workers and no means for inspection. During the organization to establish specialized heat treatment plant, units of the 3rd type were mostly eliminated. A nearby suburban location was chosen for the new plant, which began not as highly specialized quenching or high frequency treatment plant. It was constructed to include salt bath, box-type furnace, high frequency, and chemical treatment procedures, with the goal of saving energy, reducing cost, and improving quality. On the basis of quota completion and profit accumulation, the new plant has been expanding every year since its establishment in 1977. The workers [the exact number not given] are mostly university and special middle school graduates of the 60's to make it possible to include scientific research, quality management, and technological improvement in the daily routine.

AUTHOR: None

ORG: None

TITLE: "Activities of Scientific and Professional Societies"

SOURCE: Beijing JINSHU RECHULI [HEAT TREATMENT OF METALS] in Chinese No 11, 25 Nov 82 pp 64, 24, 42

ABSTRACT: Eight short items are included: (1) Metallographic Heat Treatment Exchange Conference held in Anshan Steel Science and Technology Hall with 185 delegates in attendance; (2) Symposium on Heat Treatment of Chinese Construction Material and Machinery Industries held in Harbin, on 16-20 Jul; experiences in soft nitriding, prevention of deformation and crack in heat treatment, quenching medium, etc. extensively exchanged; (3) 2nd Annual Heat Treatment Conference of Gansu Province held in Tianshui, 26-31 Jul; Martensite Phase Change Symposium held in Lanzhou, 3-12 Aug; (4) 4th North China Heat Treatment Experience Exchange Conference held in Qingdao, 11-27 Aug and attended by 196 delegates; (5) Conference to establish Henan Provincial Society of Mechanical Engineering Heat Treatment Branch held in Zhengzhou, 29-31 Aug; (6) National Symposium on Infrared Heating Technology held in Changchun Automobile Plant No 1, on 1-3 Sep; infrared heating under low temperature experience of the past years summarized and problems discussed; (7) Heilongjiang Provincial

[continuation of JINSHU RECHULI No 11, 1982 pp 64, 24, 42]

Machine Industry Heat Treatment Experience Exchange Conference held in Jul in Dudanjiang City; scientific research results and advanced experiences in the new heat treatment process for dies, boronification, carburization, prolonging the life of cutting tools, new materials, energy conservation, and equipment reconstruction among subjects exchanged; (8) Third Annual Heat Treatment Conference of Sichuan Provincial Society of Mechanical Engineering Heat Treatment Committee held in Ziyang, 18-21 Sep and attended by 86 delegates representing 60 organizations.

6168
CSO: 4009/62

AUTHOR: HU Xie [5170 6200]

ORG: None

TITLE: "Certification Conference of Ji-2YK2145 Round Vibrating Screen For Mining Use Held in Dalian"

SOURCE: Luoyang KUANGSHAN JIXIE [MINING MACHINERY] in Chinese No 11, Nov 82 p 34

ABSTRACT: In early Oct a certification conference was held in Dalian to examine the Ji-2YK2145 round vibrating screen, designed by Luoyang Research Institute of Mining Machines. The prototype was made by Luoyang Mining Machinery Plant. During the conference, the related units reported on the design, the experimental manufacture, and the industrial tests of the screen. The delegates observed the operating condition of the 2YK2145 and examined all items required for certification. All agreed that some advanced foreign and domestric technologies are absorbed in the design of the screen. Aside from the fact that it is rather difficult to inject oil and some change is necessary, the product is judged to be a leader among similar products.

AUTHOR: CAO Zili [2580 5261 4539]

ORG: Taiyuan Research Institute of Heavy Machinery Designing

TITLE: Conference to Verify Research Subjects Related to the 16 m^3 Excavator Held in Taiyuan"

SOURCE: Luoyang KUANGSHAN JIXIE [MINING MACHINERY] in Chinese No 11, Nov 82 p 34

ABSTRACT: The 16 m^3 excavator research subject verification conference, presided by Taiyuan Heavy Machinery Plant due to a request of the General Bureau of Heavy Mining Machinery Ministry of Machine Industry, was held in Taiyuan in late Oct. The 16 m^3 excavator will be the key large equipment, among other tools, to form a coordinated set for opencast mining and is an emphasized research project assigned by the State. Research subjects being discussed at the conference include: experimental research on the composite scraper-teeth structure and its useful life, microcomputer aided control of the excavator, sealed thin lubricant for the large excavator, dust control for the excavator and the operator's cab, the electrical transmission system of the excavator, and the method of improving the useful life of the cogwheels. All who attended the conference agreed that these 6 research subjects proposed by Taiyuan Heavy Machinery Plant are all necessary, and the contents, methods, and adopted measures of experimentation for these subjects as proposed are all feasible.

AUTHOR: BIAN [1701]

ORG: None

TITLE: "Verification Conference of Key Research Items of Large Mining Machineries Held in Luoyang"

SOURCE: Luoyang KUANGSHAN JIXIE [MINING MACHINERY] in Chinese No 11, Nov 82 p 68

ABSTRACT: In order that the scientific research work in 1983 will meet the needs of 4-modernizations of the nation, a conference was held in Luoyang to discuss, appraise, and verify key items of research regarding large mining equipment. The items being reviewed at the conference included 16 sets of equipment for strip mining, for hoisting from mine pits, and for equipping a coal dressing plant of a capacity of producing 3,000,000 tons a year. All comrades, invited from all over the country to participate in the conference, unanimously agreed that these items, as arranged by Luoyang Research Institute of Mining Machines are both reasonable and necessary and hoped satisfactory results will soon be obtained from the research work. The 16 items are not individually named in the paper.

6248
CSO: 4009/49

AUTHOR: ZHANG Genlin [1728 2704 2651]

ORG: Gansu Geological Survey Brigade

TITLE: "Preliminary Understanding the Mechanism of Asbestos Formation of the Ultrabasic Fibrous Serpentine of a Certain Area of Gansu"

SOURCE: Beijing FEIJINGHU KUANG [NONMETALLIC ORES] in Chinese No 4, 28 Nov 82 pp 33-38

ABSTRACT: At present, the formation of ultrabasic fibrous sperpentinic asbestos remains a debated problem, while the purpose of its investigation is to make it easier to find such commonly called warm asbestos ores. On the basis of his participation in the field geological research of such deposits in Hongliugou of Gansu [a brief map describing the geological structure is included] the author suggests the following: (1) In the long run, the serpentinized pyroxenic peridotite is the site to look for asbestos-containing ores; (2) As warm asbestos is a mineral of low temperature formation, nearby acid magmatic activity is not favorable; (3) The development of antigorite is not favorable; (4) Talcosification (rising temperature), magnesitization (increased gaseous CO_2 content), and carbonation (increased CaO content) are all unfavorable for the formation of warm asbestos.

6248
CSO: 4009/63

END