
GLOBAL ELECTRONICS

INFORMATION NEWSLETTER

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T.I.-SINGAPORE

Texas Instruments will be the first major American semiconductor manufacturer to establish wafer fabrication facilities in non-Japan Asia. It plans to begin production of 64K random access memories by the end of 1983. To encourage TI and other semiconductor firms to establish such front-end processing there, Singapore officials have offered a ten-year tax holiday and have expanded technical and engineering education programs. (*Electronics News*, January 5, 1981)

RECESSION

In December, 1980, the recession finally hit the semiconductor industry. Texas Instruments reduced the work week of 15,000 employees, and it joined numerous Silicon Valley firms, such as Signetics, AMD, and National Semiconductor in closing down part or all of their operations during the Christmas season. Other firms merely established short-term hiring freezes. Most companies expect business to pick up soon, so they are not laying off any employees. (*Peninsula Times Tribune*, December 4, 1980; *San Jose Mercury*, December 19, 1980)

HONG KONG

Three independent Hong Kong firms are planning to begin integrated semiconductor production, including wafer fab, this year. RCL Semi-Conductor, Elcap, and Hua Ko Electronics are all sited in the Taipo Industrial Estate. An Elcap spokesman reports that it has not been able to win approval for the use of arsine gas, a highly toxic arsenic compound. Unless it receives a waiver, it will have to use a more expensive, solid form of arsine. It's ironic that Hong Kong's Dangerous Goods Ordinance is more protective than government regulations in environmentally conscious Silicon Valley. (*South China Morning Post*, December 9, 1980)

COMMODORE

Commodore, the manufacturer of calculators and personal computers, has switched its Hong Kong plant from the assembly of consumer products to semiconductor assembly. Meanwhile, it has arranged for the partial processing of its liquid crystal displays (LCD's) in Canton, China. (1980 Annual Report)

FAIRCHILD MILITARY CIRCUITS

Fairchild Semiconductor for three-and-a-half years shipped more than 13 million transistors to the U.S. military without proper testing. Pentagon regulations require the testing of each component, but Fairchild conducted burn-in tests on only a sample. There have been no reports of component failure, and subsequent tests have shown a low defect rate, but the military and its contractors have impounded many of the untested transistors.

All of the devices in question were assembled in Fairchild's Hong Kong plant. **Aviation Week** reported, "Because it is not feasible for government inspectors to monitor overseas manufacturing facilities, a procedure was introduced several years ago whereby corporate officials would sign a 'certificate of compliance' assuring that devices produced in off-shore facilities to Mil Specifications had been subjected to the required tests. (**Aviation Week**, December 8 & December 29, 1980; **Washington Star**, December 11, 1980)

SIEMENS

Siemens, the German electronics multinational, has announced plans to shift its RAM (random access memory) wafer fabrication to Villach, Austria, from Munich. The new 40,000-sq. ft. plant will cost the company US\$25 million. **Electronics News**(December 1, 1980) reports that Siemens is moving production to Austria to take advantage of "good and lower cost engineers."

A German collective, Entwicklungspolitische Korrespondenz, has published a German-language pamphlet, "Siemens in the Third World." It can be ordered for 3.00 DM plus shipping from E.K., Postfach 2846, 2000 Hamburg 19, W. GERMANY.

START-UPS

Despite the enormous capital needs required to establish new integrated semiconductor manufacturing capacity, at least three new firms have recently entered the business in Silicon Valley. Two of the ventures intend to specialize in custom circuits, a market segment generally overlooked by established companies. These are ZyMOS, backed by Intermedics, and former Fairchild chief exec Wilfred Corrigan's LSI Logic. The third start-up, VLSI Technology, will be a "silicon foundry," providing production capacity to other firms which, like LSI Logic, specialize in design. This vertical disintegration of the industry--that is, the division of the industry into designers, wafer fab firms, and assemblers--may bring a whole new wave of innovation into an industry characterized by consolidation in the last several years. (See **Business Week**, January 26, 1981)

WAFER RECYCLING

Because semiconductor production is characterized by discards at each step of production, it should not be surprising that Dyna-Craft, of Santa Clara (Silicon Valley), has established the capacity to reclaim 35,000 defective silicon wafers each week. Defective wafers make up 10% to 20% of all wafers, and approximately half can be reclaimed with existing chemical and mechanical polishing. (**Semiconductor International**, December, 1980)

SIGNETICS

In September, Signetics (subsidiary of Philips) broke ground for the first building on its 58-acre site in Albuquerque, New Mexico. The company plans to spend \$100 million there, employing 2,000 employees by 1986. About 60% are projected to be working in manufacturing.

GENERAL ELECTRIC

Though **Intersil's** stockholders have approved the company's takeover by GE, consummation has been held up by anti-trust questions from the Federal Trade Commission.

Still, GE is moving ahead with other, related acquisitions. In December, 1980, it announced plans to acquire **Great Western Silicon**, the Chandler, Arizona-based producer of polycrystalline silicon. Great Western is a joint venture of Fairchild Camera & Instrument (Fairchild Semiconductor) and Applied Materials (45% and 55%). reportedly, GE owns 10% of Applied Materials.

In addition, GE is buying Sunnyvale (Silicon Valley)-based **Calma Co.** from United Telecommunications, an independent telephone company. Calma manufactures computer graphics systems, including computer-aided design and manufacturing equipment. The price, linked to Calma's future sales figures, may reach \$170 million, ten times as much as United paid for the firm in 1978. (**Peninsula Times Tribune**, December 9, 1980 & January 7, 1981; **Electronics News**, December 8, 1980)

REVERSE ENGINEERING

The Silicon Valley trial of Peter Gopal, head of Semiconductor Systems International Inc., for selling Intel trade secrets, brought an interesting defense. Gopal's attorney argued that his client was not selling the technology for the Intel 2114 circuit, but a reverse engineered copy. Semiconductor Systems, he said, had been contracted by Maruman Integrated Circuits (now a Toshiba subsidiary) to reverse engineer the circuit, a legal practice under current law. (**Peninsula Times Tribune**, January 1, 1981)

RESOURCE GUIDE

ISIS, the Women's International Information and Communication Service, has published the **Resource Guide on Women and Development**. It can be ordered from ISIS, C.P. 301, 1227 Carouge, Switzerland, for US\$7.00 (US\$10.00 air mail).

"This **Resource Guide** is the first thorough-going feminist analysis of the much-used concept of 'women and development.' It makes a critical and hard-hitting analysis of theories of development and integrating women into development, and elaborates in detail the way in which women are and have always been central to all the major social and economic processes in the world, both in developing and industrialized countries.

Careful analysis in the areas of multinational corporations, rural development, migration, tourism and prostitution, health, communication and education show how women have been not only 'by-passed' by 'development,' but systematically degraded by the very processes in which they play a central part."

A.M.D.

Advanced Micro Devices, of Sunnyvale, California, has delayed plans to build a new wafer fabrication facility in Gilroy, at the rural southern end of Silicon Valley. While attempting to overcome local opposition in Gilroy, AMD will build a 100,000-sq. ft. plant on 10 acres in San Antonio, Texas. The \$20 million San Antonio plant will also include wafer fab. (**San Jose Mercury**, January 10, 1981)

JOB STRESS

The **Peninsula Times Tribune** (January 2, 1981), has rated electronics assembly as one of the five most stressful occupations in the Silicon Valley area. The other four are air traffic controller, intensive care nurse, police officer, and teacher. The paper cites monotony, discipline, and the quota system as major contributors to assembly-line stress.

SAFETY GROUPS MOVE

The two, affiliated Silicon Valley worker health and safety groups have moved from Mountain View to San Jose. The new address for the OSHA-funded Project on Health and Safety in Electronics is 630 N. First St., suite 202, San Jose, CA, 95112. The PHASE phone is now (408)998-4050. The Electronics Committee on Safety and Health is next door, in suite 201. The ECOSH phone is (408)294-COSH.

BANGLADESH

Bangladesh is seeking applications from foreign investors for its Chittagong export processing zone, the first of three planned in the South Asian country. The 660-acre site is located between Chittagong's seaport and its international airport. The United Nations Industrial Development Organization, the organization which has been instrumental in the spread of EPZ's, is sponsoring an investors' forum to help recruit foreign manufacturers. (**Far Eastern Economic Review**, January 9 1981)

SOVIET CIRCUITS

Intel Corporation has evaluated a 1977 Soviet adaptation of a 1974 Intel microprocessor, and has found the Soviet chip to be inferior. The chip was obtained by Control Data from a Hungarian electronics company. (**Aviation Week**, December 8, 1980)

address correction requested

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