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# GLOBAL ELECTRONICS

# INFORMATION NEWSLETTER

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## **AUTOMATED ASSEMBLY**

In his April, 1981 editorial, Donald Levinthal, editor of **Semiconductor International**, argued that U.S. semiconductor companies should move their assembly operations "back onshore." He points out that IBM, Western Electric, Delco (General Motors), and Texas Instruments, as well as most Japanese firms, have automated their assembly operations, and conduct the bulk of assembly at home plants.

Levinthal argues that offshore operations, though useful in the early stages of the industry, make U.S. semiconductor producers vulnerable to political turmoil abroad. He says, "It would be an almost impossible task to immediately begin onshore assembly in the event of serious political unrest."

Not too many merchant semiconductor firms are likely to follow Levinthal's advice, however. As he points out, "People who make the monetary decisions are always quick to bring up the argument that even if they automated their operations, personnel to operate and maintain the equipment are still less expensive offshore than here in the U.S."

Meanwhile, Electronic Arrays, the Silicon Valley-based subsidiary of Nippon Electric, has introduced automated bonding devices at its

Mountain View plant. Assembly, reports **Electronics** (June 2, 1981), is carried out in a "clean room." One worker, using the automated equipment, replaces 30 manual bonding employees. Equally significant, it takes only two weeks to train a machine operator, while it normally takes about three months "for a worker to become competent at manual bonding."

## **SUB RENEWALS**

PSC has been publishing this newsletter for one year. Therefore, many subscriptions are due for renewal. If you subscribed beginning with the first issue, even if ordered later in the year, please send in your renewal.

We have circled, on the back of this issue, the address labels of subscribers we believe to be due for renewal. However, our records, particularly those covering early subs, are not quite complete. If we have erred, please let us know. If you have an exchange or complimentary subscription, please remind us.

The basic subscription rate remains US\$5.00 per year. Foreign subs cost an additional US\$5.00 to cover air post, while Canadian and Mexican subscribers need pay only US\$1.25 for first class delivery. Thus, subscription rates are \$5.00, \$10.00, and \$6.25.

## H-P IN ASIA

The September-October, 1980 edition of *Measure*, Hewlett-Packard's house organ, gives an interesting perspective on the company's assembly operations in Singapore and Malaysia. Those two plants "turn out 90 percent of all components for the company's operations around the world." The plants serve seven of H-P's U.S. divisions.

*Measure* cites Lee Ting, the managing director of Southeast Asian production, "We're automating whenever possible." It has introduced quality control circles at both locations. And it is gearing up for research and development in Singapore, in accordance with the government's plan to upgrade industry.

*Measure* tries to show that electronics work has been liberating for the company's young female workers, but that it has not destroyed their family and cultural ties. It states, "They are more affluent and independent than they have ever been." *Measure* profiles a young woman assembler at the Penang, Malaysia plant. She lives with her family, but rides a company bus and wears a company uniform. "She and the 1200 other employees at HP Malaysia's plant work to the beat of piped-in American rock and popular music."

The article emphasizes that this woman's life, outside work, is traditional. But it points out that **kampong** (village) life is changing. Her **kampong**, in fact, "is scheduled eventually to be razed and residents relocated in order to widen the road leading to Penang's new airport."

*Measure* chose to profile a young married woman from H-P's Singapore plant. She lives with her husband and daughter in a government-built housing estate. They have a stereo and color television, and like to watch "Dallas." She is a star member of her plant's netball team.

## MOTOROLA IN SRI LANKA

Motorola, the first major foreign electronics firm to agree to set up shop in Sri Lanka's highly promoted export processing zone, has extracted an important concession from the country's conservative government. The government has announced plans to renounce the International Labor Organization rules which prohibit nightshift work by women.

Motorola Semiconductor has announced plans to build a US\$22 million assembly and test plant that should employ 2,600 people on three shifts when it reaches capacity. (Sri Lanka Investment News, First Quarter, 1981)

## INDONESIAN WORKERS

Since the 1965 coup it has been extremely difficult to obtain information on working conditions and labor activism in Indonesia. This May, however, the Indonesian Documentation and Information Center in Leiden, the Netherlands, published **Indonesian Workers and their Right to Organize**, a 160-page book containing recent reports from and about Indonesian workers.

Of particular interest, INDOC briefly describes Fairchild Semiconductor's Jakarta assembly plant, which currently employs more than 4200 people. Fairchild dismissed two union members, charging them with "seeking information about the firm to make it available to the workforce." Though one was re-hired, the two complained of other dismissals. INDOC also reported, "They also stated that there was a trade union unit in the enterprise but that it did nothing to fight for an improvement in working conditions since its board was appointed directly by the management."

INDOC cites a 1976 interview with Fairchild Indonesia's top executive, an American: "If management works well, then a labor union is hardly necessary . . . That is why we do not work on the basis of a Collective Labour

Agreement.' He regarded himself as less of a manager than a father 'taking care of his family.'" (p. 39)

**Indonesian Workers** can be ordered (via surface mail) by transferring Hfl17,50 to INDOC Leiden, Account Number 56.60.95.122 of Algemene Bank Nederland, Box 11034, 2301 EA Leiden, NETHERLANDS.

### **MORE ON EL SALVADOR**

**Business Latin America** (April 15, 1981) provides more news on electronics in El Salvador than the **Business Week** story cited in the April edition of this newsletter. **BLA** describes the experiences of one un-named U.S. electronics firm which was originally financed in part by the US government's Overseas Private Investment Corporation. Operating from the Free Trade Zone in San Bartolo, the company exports one quarter of its product.

**BLA** says the company has fared remarkably well in El Salvador, and it credits the local management: "Local managers typify the centrists in the Salvadoran power struggle and create - against the unremitting opposition of an anarchic left and a reactionary right - the openings for modern industry and commerce." It repeats the firm's recipe for success, which includes paying wages above the legal minimum; providing uniforms for production workers; exchanging workers among its plants; hiring relatives of existing employees; dismissing labor organizers; and maintaining "a complete stock of spare parts."

### **FOREIGN E.E. RECRUITING**

Many top engineers and scientists in the U.S. semiconductor industry are foreign nationals. A large number of those have immigrated for their schooling. Now, some U.S. firms are actively recruiting abroad. In particular, Monolithic Memories and GTE Microcircuits have sought design engineers in the United Kingdom. (**Electronics New**, April 20, 1981)

### **JAPANESE TARIFF**

U.S.-based semiconductor manufacturers have won their fairest request in their battle to stay ahead of their Japanese competitors. Japan has agreed to reduce its tariffs on semiconductors to from 10.1 percent to 4.2 percent by April 1, 1982. This supersedes an earlier accord, in which the Japanese were decreasing the tariff in stages to a goal of 4.2 percent in 1987. The U.S. tariff, also now scheduled to reach 4.2 percent in 1982, had also been declining gradually toward the 1987 goal. However, the current U.S. tariff is lower, at 5.6 percent.

Given the Japanese semiconductor industry's strong competitive base, Japan could not justify the imposition of a higher tariff than the U.S. Still, it is not clear that the lower duties will encourage imports either from the U.S. or U.S. subsidiaries in Asia. Integrated Japanese electronics firms already buy from the U.S. those products they cannot supply themselves.

### **MATTEL**

Mattel, the toy and game maker based in Southern California, has moved the production of its "Intellivision" video games from the U.S. to Hong Kong, apparently to cut costs on a product that had been priced way above the market. **Business Week** (June 22, 1981) reports that the move has "kept store shelves bare of the basic Intellivision game for most of this year."

PSC's long-delayed feature article on Mattel's international operations has finally appeared in **Pacific Research** (Volume XI, Number 2), and can be ordered from PSC for US\$1.50 plus 50¢ shipping. (That issue also contains an article on Japan-U.S. semiconductor competition.)

## SINGAPORE DATA

The U.S. Commerce Department has made available, through its Foreign Market Report service (DIB-81-01-023), a State Department report on the Singapore electronics industry. Among its findings, the report states, "The electronics industry has always ranked as American investors' second largest sector in Singapore after petroleum refining. As of the end of 1978, assets of fifteen large American electronics firms operating in Singapore were estimated at US\$359 million." Most produce electronic components.

In 1979, Singapore's 155 electronics firms employed about 66,000 workers, one fifth of the island nation's manufacturing workforce. The report concludes, but fails to explain, the following: "Because of the labor-intensive assembly-line operations, 75 to 80 percent of its workforce is female." (!!!)

The report mentions two major employment cutbacks by American firms in 1980. General Electric "axed" 278 of its 2500 components production workers. ITT closed a television module factory, laying off 500.

The report contains several tables describing Singapore's electronics employment, sales, and exports. In 1978, for instance, 89 electronics component-makers employed 32,384 workers. Sales in that sector totalled S\$1,769,509,000. (For that year, US\$1 = S\$2.27.) Direct exports (in component form) made up 91 percent of that total. Value added in Singapore, however, made up only 34 percent of the total value of component production.

## SINGAPORE STAMP

Singapore is so proud of its electronics industry that it has issued a colorful commemorative stamp. The young woman pictured appears to be soldering a stereo, or perhaps operating an electronic tester.



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