

ROCKWELL INTERNATIONAL

Microelectronic Product Division

In February 1975, top executives of the Microelectronic Product Division of Rockwell International were reviewing Rockwell's recent entry into the consumer calculator market. While pleased with Rockwell's early results, they were not certain that a continuation of Rockwell's introductory marketing strategy would be the best course to follow. In particular, Rockwell's introductory program had been designed to obtain maximum support from leading department stores and calculator specialty stores. Rockwell executives felt this strategy had been quite effective, but there were signs that the market might now be shifting from department stores and specialty stores to mass merchandising channels of distribution as industry price levels continued to drop. According to trade rumors, the industry leader, Texas Instruments (TI), was planning to broaden its distribution to include mass merchandisers in mid-1975. Rockwell executives had to decide whether to continue their planned roll-out through emphasis on department stores and calculator shops or to anticipate TI's move into mass distribution.

Company Background

Rockwell International was a large, diversified firm with fiscal 1974¹ sales of \$4.4 billion and profits after tax of \$130.3 million. It was divided into five major operations -- Automotive, Aerospace, Electronics, Utility and Industrial, and Consumer. In recent years, the company had been decreasing the portion of its business represented by government defense and aerospace contracts. While government contracts had represented 74% of its business in 1967, this figure had dropped to 36% by 1974.

Rockwell's Microelectronic Product Division was one of three parts of the Electronics Operations whose fiscal 1974 sales had approximated \$900 million. Microelectronic was a manufacturer of sophisticated semiconductor devices, business machines, and consumer calculators. It was one of the world's largest manufacturers of LSI (large-scale integrated) circuits,

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This case was written by Nancy J. Davis, Research Associate, as a basis for class discussion and not to illustrate either effective or ineffective handling of an administrative situation.

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displays, and keyboards, the major components in electronic calculators. In an industry in which rapidly declining component costs and learning curve pricing had established the competitive climate, and nonintegrated or small volume manufacturers appeared to be at a serious competitive disadvantage, industry sources estimated that Rockwell's manufacturing costs were as low as those of any other firm in the industry.

Prior to the fall of 1974, Rockwell had not marketed a calculator under its own name. It had, however, been a principle supplier of components for thirty-six brands of calculators and had produced over a million of the private label calculators sold by such firms as Sears Roebuck and Company, Unicom, and Lloyds Electronics. Up to mid-1974, the Microelectronic Group produced more than 65 models of private label calculators. According to industry estimates, Rockwell had been the third largest manufacturer of calculators (after TI and Bowmar Instruments Corporation) in both 1973 and 1974.

In early 1974, Rockwell management decided to enter the branded calculator business with a line of Rockwell calculators, while maintaining its large private label and components businesses. At that time, it was becoming increasingly clear that the cost advantages and aggressive pricing of such integrated firms as TI and National Semiconductor were about to cause an industry shakeout which would most seriously affect those firms which relied on components purchased from larger electronics companies such as Rockwell.

The U.S. Calculator Industry

The development of integrated circuits (IC's) in the early sixties made possible the creation of the first electronic calculators. Sumlock Comptometer Co., Ltd., an English firm acquired by Rockwell in 1973, developed the first electronic calculator in 1961 as a replacement for electromechanical machines. Its high cost prevented widespread use, however. In the mid to late 1960's, a number of American business equipment manufacturers, using more advanced integrated circuits, brought machines in the \$1,000+ range on the market. In 1969-1970, using American IC's manufactured by TI and Rockwell, the Japanese surprised U.S. business machine manufacturers with a wide range of calculators costing as low as \$395 for a 4 function (+, -, *, X) unit. By 1971 Japanese manufacturers had captured more than 60% of the small but rapidly expanding calculator market.

In the early seventies, a second technological breakthrough, the development of low cost integrated microcircuits, allowed for the production of small hand-held calculators and enabled U.S. manufacturers to compete with Japanese manufacturers. Most of these small calculators had four or five functions (addition, subtraction, multiplication, division, and percentage), a floating decimal point, and an eight-digit display. The least expensive models had only four functions, a six-digit display, and a fixed decimal point. More expensive models contained a memory, while models for business and scientific purposes often contained a memory plus up to fifteen engineering and mathematical functions and had twelve-digit displays.

In 1971, Bowmar introduced a four-function pocket calculator which retailed for \$240. By late summer, Rapid Data Systems and Equipment, Ltd., TI, and Commodore Business Machines, Inc. introduced competing machines.

Many other firms soon entered the business, but Bowmar held its dominant market position through 1972. In mid-1972, Rapid Data introduced a calculator which retailed for under \$100, and this began an industry-wide downward trend in pricing. TI soon came out with its TI-2500 at \$149 retail, \$30 less than a competitive Bowmar model. Bowmar quickly matched TI's price, whereupon TI dropped its price another \$30. By late 1974, the TI-2500 was retailing for \$44.95. Such price erosion was prevalent throughout the industry.

As prices plummeted, unit sales skyrocketed. Total industry unit sales went from half a million in 1971 to about twelve million in 1974. Industry estimates as to when the market would reach saturation were mixed. One source stated that saturation level would be 1 to 1.3 calculators per household, and that there were about sixty million households in the U.S. He estimated the average life span of a calculator to be about three years, and he said the replacement rate for calculators would eventually level off at twenty to twenty-five million annually. The transistor radio industry, with which the calculator industry was frequently compared, had leveled off at about thirty-five million units annually. (See Exhibit 1 for historical and projected unit and dollar sales.)

The cost of producing calculators had also shown remarkable reductions. Semiconductor components for the early calculators which retailed for about \$400 had cost about \$170. In 1974 these components had been replaced by an LSI chip which cost under \$5, and it was thought that an integrated manufacturer with a volume output could save another dollar on these chips. Assembly time for calculators now ranged from a few minutes to half an hour. In fact, labor and manufacturing overhead had been driven down so far that the chip, the display, and the keyboard now normally represented seventy to eighty percent of a unit's cost.

By the end of 1974, an estimated twenty-five to thirty U.S. and Japanese calculator manufacturers had dropped out of the business, and less than a dozen were expected to survive through 1975. In addition to Rockwell, Packard (HP), National Semiconductor, Commodore, Casio, and Litronix.

TI was the largest semiconductor and calculator manufacturer in the world. It also produced low-cost keyboards and LED displays, and it supplied chips to more than twenty other calculator manufacturers. It had one of the broadest product lines in the industry. In 1974, TI held almost thirty percent of the U.S. unit market and about 19% of the world unit market and had dollar sales of nearly \$250 million worldwide. TI's strategy consisted of four elements: aggressive pricing to follow learning curve reductions in cost (25% to 35% for each doubling of accumulated production); continuing efforts to improve products and reduce costs; building on shared experience; and keeping capacity growing ahead of demand. TI concentrated on high-growth markets which would allow both rapid increases in cumulative volume and increases in market share which did not seriously affect competitors' growth. Its 25 person sales force called on 250 to 400 accounts whose retail outlets totaled approximately 5,000.

Bowmar produced its own displays and in 1974 it began producing its own keyboards. Its ICs were purchased from either TI, Rockwell, or MOS Technology. Lack of IC capacity prevented Bowmar from responding rapidly to changes in technology and design and thus limited its growth. Bowmar had made a \$7 million investment in an IC production plant, but for the year ending September 30, 1974, it had shown a \$13 million after tax loss on sales of \$83 million, and there was some speculation that it might soon be forced into bankruptcy. Bowmar relied on manufacturers representatives (reps)¹ to sell its products.

HP was a major manufacturer of electronic instrumentation, computers, calculators, components, and medical electronics. In the calculator industry, it had concentrated on the more complex, more expensive units for scientific and business use, though by the end of 1974 it had begun to market some medium-priced models. It was expected that competition from TI, Rockwell, and Bowmar would force HP to lower its prices, but that they would still be \$30 to \$50 above competing models because of the products recognized excellence and advanced design. HP calculators were sold by reps to major department stores and to over 250 college bookstores.

National Semiconductor's consumer products group, Novus Electronics, concentrated on lower-priced models which were often used as promotional items, and on private labeling for mass merchandisers such as Montgomery Ward and W.T. Grant. It also marketed calculators through drug and grocery outlets. Its products were sold by reps. National was a sound, fully integrated, and highly competitive semiconductor manufacturer. It had low overhead, strict cost accountability, and a strong international base in both sales and marketing. It was expected to continue to hold a large unit share of the market, but not a large dollar share unless it started producing more sophisticated, more costly calculators.

Commodore had been very aggressive in the world market, but was not doing very well in the U.S. market. Some industry sources felt that Commodore had to offer a more reliable product and faster repair turnaround to attain a better position in the U.S.

Other companies which were considered strong contenders in the U.S. calculator industry were Litronix, whose lower-priced calculators (\$19.99 and \$29.99) were said to be especially good values, and Casio, a company which imported most of its calculators from Japan. Casio's calculators were considered especially reliable, with a defect rate as low as one half of one percent. Its \$19.99 hand model and \$99.95 printing calculator were especially successful

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Manufacturers representatives ("reps") were independent businesspeople who served as the sales force for several complimentary but noncompeting products. Reps who sold calculators were usually known as consumer electronics reps. Their product lines often included radios, television sets, cameras, stereo equipment, and so forth. These reps usually sold directly to retailers, though some sold to distributors who in turn sold to retailers. Reps were paid a commission consisting of a specified percentage of sales.^a In the case of calculators, their commission was usually about 5%.

products. Many considered its \$129.95 C-100P to be the best printing calculator on the market. Another company which was strong in the low end of the market was Unisonic. As calculator prices dropped, Japanese manufacturers began to make a comeback. They were expected to sell three times as many calculators in 1975 as they had sold in 1974 and to capture as much as 35 to 40 percent of the market as measured in units. (See Exhibit 2 for 1974 U.S. unit sales and market share data by manufacturer, Exhibit 3 for calculator lines produced by major manufacturers, and Exhibit 4 for 1974 U.S. sales by product categories.)

Patterns of Distribution

In the early days of the calculator industry, the bulk and price of calculators resulted in their being used primarily in offices. Therefore, they were mainly sold through business equipment stores. In the early seventies, when scientists, engineers, architects, and business people began to get interested in calculators, manufacturers started selling them through department stores and direct mail and to credit card companies who resold them via advertisements in monthly statements. By 1973, mass merchandisers were becoming popular outlets, and they were expected to become even more important as the market matured.

The trend toward distribution of calculators through mass merchandise outlets caused problems for both manufacturers and mass merchandisers. Though mass merchandisers welcomed the high volume and profits offered by calculators, the products' price instability, the need for secure means to prevent counter-top theft, and lack of trained salespeople caused them problems. Department stores usually were not hurt so badly by a manufacturer's price cut because they usually purchased relatively small quantities per order which they could promote heavily and sell fairly quickly and because manufacturers offered them some degree of price protection. However, mass merchandisers usually ordered basic inventory for the first five months and the last seven months of the year, and they could not react as quickly as could department stores to price decreases nor could manufacturers offer as good price protection on the larger inventories. Thus, mass merchandisers needed to know well in advance what the manufacturer planned to do with regard to pricing.

The third problem mass merchandisers faced was finding personnel qualified to demonstrate the calculators or finding ways to get around demonstrating them. As had been the case earlier with cameras, consumers usually needed more explanation about calculators than about most of the products mass merchandisers sold. Many mass merchandisers did not have adequate personnel to handle this task, and those who did usually did not have time to train them, especially since calculator models changed so rapidly. Some manufacturers provided instructional services for the stores, but they had problems with rapid personnel turnover. "Training new people become a full time job with an item as technical as the calculator," one manufacturer commented. "We've started sending instructions on cassettes to salespeople so that they can listen to explanations of the products while keeping one hand on the calculator."

Traditionally, different manufacturers had concentrated on different distribution channels. Bowmar had focused primarily on office machine outlets, direct mail, and mass merchandisers, while HP's and TI's primary outlets had been major department stores and college bookstores. In 1973 TI had tried unsuccessfully to enter the mass merchandiser market with its Exactra model which retailed for \$20 to \$30. The fact that Exactra was a TI line was not emphasized in its advertising. Novus sold its products primarily through mass merchandiser, drug, and grocery outlets. Unisonic, the major supplier to K-Mart, concentrated on mass merchandisers. (See Exhibit 5 for 1974 U.S. unit sales by distribution channel.)

The Rockwell Entry

Rockwell executives decided in early 1974 to begin manufacturing calculators under the Rockwell brand. To handle the marketing of the calculators, they hired Mr. James Donaldson from a major consumer products company to be Vice President of Marketing for the Microelectronic Product Division. Mr. Donaldson joined Rockwell in April 1974. Rockwell's aim was to gain at least 12% penetration of the market within a year after entry.

Rockwell's initial marketing plan focused on department stores and calculator shops in twenty key markets. This plan would place Rockwell products in 548 outlets. Once this target was met, Rockwell would begin opening similar accounts in twenty secondary markets. This would add another 188 outlets. Rockwell management thought the prestige of department stores such as Bloomingdale's and Neiman Marcus would help establish the company's reputation and that stores such as Macy's, Bamberger's, and Gimbels were essential to generate large sales volume. They also hoped to get supplemental distribution through premium accounts, hardware stores, and internal business within the company. (See Exhibit 6 for primary and secondary markets and the number of target accounts in each.)

Rockwell executives felt strongly that, to compete in a market in which competition was so firmly entrenched, their support of the trade would have to be exceptionally strong. They decided to market a family of six calculators whose distinctive color styling and graphics would develop a strong brand identification so that Rockwell products could be easily recognized and each would help sell the others. Furthermore, they felt that having a complete line of calculators would allow for replacement and trade-up purchases among Rockwell consumers. The first line consisted of the following:

<u>Product</u>	<u>Manufacturers suggested retail price</u>
10R, 8-digit electronic calculator	\$29.95
20R, electronic calculator with memory and percent	49.95
30R, slide rule memory electronic calculator	59.95
*51R, universal converter electronic calculator	109.95
*61R, advanced slide rule electronic calculator	119.95
*80R, 10-digit printer electronic calculator	169.95

*Rechargeable

(See Exhibit 7 for descriptions and manufacturers selling price of each model.)

Rockwell sold its calculators through a direct sales force consisting of Mr. Adam Thomas, national sales manager, five regional sales managers, and 17 district sales managers. This group met for the first time August 4-8, 1974. It began its sales efforts in Rockwell's 20 target markets during the week of August 12. Salespeople were assigned a product mix objective, and they were in turn responsible for the even distribution of products by models for each of their target accounts.

To decrease the problems which defective or unsatisfactory calculators might cause retailers, Rockwell instituted a consumer satisfaction policy. Under this policy, if a consumer returned his Rockwell calculator within thirty days of purchase for refund or exchange, the retailer was authorized to accept the calculator and return it to the nearest Rockwell Customer Service Center. He would then be issued a credit for that product at the quantity price of his last order consistent with the current price sheet. (Other manufacturers usually issued the same or similar products for returned merchandise.) Moreover, each calculator carried a one year warranty under which Rockwell repaired or replaced free of charge any parts which became defective through normal use. If the defect became evident thirty days after the purchase, the owner sent the calculator to one of Rockwell's Consumer Service Centers in New York, Chicago, Dallas, and Los Angeles, not to the retail outlet where he purchased it. Rockwell's goal was to complete each service request within 48 hours of the calculator's arrival at the service center. In order to maintain a consumer image for high quality and reliability, Rockwell's goal was to have less than 3% customer returns for warranty repairs.

In three out of five instances, Rockwell's regional sales offices, consumer service centers, and distribution warehouses were located in one facility. The central distribution facility was in El Paso, near the source of most of Rockwell's calculator production. Weekly sales reports plus six month sales estimates by account and by model were sent from computer terminals in regional distribution warehouses to the central computer in El Paso where they were used for inventory control and sales projections. Efficient communication between sales, service, and distribution were essential, management felt, if Rockwell were to support adequately the trade and its consumers.

Another method by which Rockwell supported the trade was through liberal stock adjustment and price change policies. If a retailer found it necessary to adjust his inventory, Rockwell accepted up to five percent of the prior six months purchases without restocking charge provided the products returned were listed on the current price sheet, were new, unused, and in their original cartons, and were authorized by the account's district sales manager. Returns had to be prepaid to a Rockwell customer service center, and an equal dollar value order had to be placed at the same time as the return. In the event Rockwell reduced prices, dealers received a credit for the difference between the old and new price for shipments made in the prior thirty days. Dealers were advised of price changes ten days before they occurred.

Rockwell management considered training retail salespeople to be an essential part of its program. Rockwell's salespeople were instructed to emphasize the company's in-store retail training programs in all sales presentations. Rockwell's salespeople were also expected to arrange formal group training meetings for retail salespeople whenever possible and to conduct on-going over-the-counter training at each retail outlet.

The primary thrust of Rockwell's initial advertising campaign was a cooperative program under which Rockwell paid an advertising allowance of up to three percent of a retailer's net purchases. Rockwell made available prepared scripts, films, newspaper ads, specification sheets, mailers, and point of purchase displays to retailers who wished to use them. For retailers who preferred to prepare their own advertisements, Rockwell insisted that the name "Rockwell" appear in the headline, that the name be used as many times as the retailer's name, and that one or more Rockwell calculators be identified and described. Rockwell ads appeared in local newspapers, on local radio and television stations, in metro editions of Time, Newsweek, and Sports Illustrated, and on billboards. Moreover, in November and December, Rockwell ran a few national television commercials, and calculators were occasionally mentioned in some major corporate television ads. Industry sources estimated Rockwell's 1974 advertising expenditures to have been about \$1.3 million. (See Exhibit 8 for samples of advertisements Rockwell supplied and Exhibit 9 for advertising expenditures of different calculator manufacturers.)

Since TI was already well established in most of the accounts Rockwell wanted to enter, Rockwell management felt it should offer better retail and wholesale prices than TI offered. For example, the suggested retail price for its lowest priced model, the 10R, 8-digit electronic calculator, was \$29.95, as compared to \$44.95 for TI's lowest priced model, the TI-2500. Moreover, Rockwell offered retailer margins of from 28% to 40%. Industry sources reported that department store margins on calculators usually ranged from 30% to 35% while mass merchandiser margins on calculators were usually from 10% to 18%.

Rockwell delivered its first branded calculators in September 1974, and by the end of 1974, it had sold approximately 500,000 units. It had succeeded in opening most of its primary and secondary target accounts plus many others, and in all it had about 300 accounts which together had 2,500 outlets. In January 1975, it introduced five new models. The 12R, 21R, and 31R, which retailed for \$29.95, \$49.95, and \$59.95 respectively and all of which were rechargeable, then became the lower end of Rockwell's regular line, and the nonrechargeable 10R, 20R, and 30R became promotional items. (See Exhibit 10 for details of Rockwell's new product line.)

Industry and Market Developments, Early 1975

During the early part of 1975, the calculator industry was characterized by continuing price reductions and further manufacturer shakeouts. It was thought that the companies that had the marketing clout, the manufacturing ability, the component capability, and the cash on hand would force marginal companies out of the business, and retailers were becoming increasingly conscious of the need to have a good solid company as their supplier.

The distinction between products for mass merchandisers and products for department stores was increasingly blurred because of the drop in all prices. Many felt that, if general economic conditions were better, department stores might get out of the calculator business entirely. Most felt it was only a matter of time before mass merchandisers took over the vast majority of the calculator business.

The movement toward using distributors also appeared to be increasing, and some people thought that distributors would eventually handle as much as 80% of calculators sold. Moreover, more sophisticated marketing practices were expected to be introduced. "Calculator manufacturing companies have traditionally been run by engineers, and the only marketing tactic they've known is to cut price," one retailer commented.

Though there had been little consumer research done in the industry, that which had been done indicated that the average age of purchasers was decreasing, that male heads of households were the primary users, followed by female heads of households, and that usage by the latter group was increasing. Thirty-eight percent of the purchasers said they paid less for their calculators than they had expected to pay. Twenty-six percent said they bought TI products, and 31% of the people who said they were planning to purchase a calculator in the future said they would buy a TI product. Half said they knew what brand they wanted before they went into the store, and that they did, in fact, buy that brand.

Survey by Home Furnishings Daily

Early in 1975, Home Furnishings Daily surveyed fifty retailers in twenty-six major markets to determine how the various calculator manufacturers were perceived by the trade. TI was carried by 88% of the retailers surveyed, Litronix by 50%, Rockwell by 48%, Bowmar by 38%, HP by 34%, and Casio by 30%. No other manufacturer was in more than 25% of the accounts.

In terms of brand awareness, TI was clearly the market leader, with 98% of the retailers saying that TI had the most consumer recognition of any of the brands. TI was followed by Bowmar, HP, Rockwell, Litronix, and Casio, in that order, while Canon, Commodore, Corvus, Craig, Lloyds, Novus, Sharp, and Unisonic received very limited mention. TI was especially well known in the moderate priced segment of the market, while HP was more popular in the higher-priced, scientific segment. Bowmar received its highest brand recognition on the East Coast, while Commodore, Novus, and Litronix were better known on the West Coast.

In terms of profitability for retailers, TI ranked first, Bowmar second, and Casio third. However, retailers reported that calculators were so frequently used as promotional items to generate traffic that retailer margins were not very large on any line. Generally speaking, the higher-priced products had higher percentage markups, usually around forty percent. Litronix products, followed by Rockwell and TI, were said to represent the best value. TI held the number one ranking for machine cosmetics, followed by HP and Rockwell. HP was said to offer the best training program for retail salespeople. TI ranked second and Rockwell third. Many retailers stated, however, that no manufacturer offered really good training, and they considered this a serious gap in manufacturers' services.

In overall advertising assistance, TI ranked first, followed by Litronix and Rockwell. HP was said to offer the most attractive and instructional point of purchase aids. It was followed by Rockwell and TI. Retailers said that most manufacturers offered a "rolling" cooperative advertising plan under which they paid up to three percent of sales within a specified time period, usually three months. HP's cooperative advertising allowance was only two percent of sales.

The industry as a whole was given high marks for product reliability, with an average defect rate of only two to three percent. HP's defect rate was said to be less than two percent, and Litronix, Casio, and Rockwell were also rated very high in product reliability. No one emerged as the clear leader in offering price protection. Most offered thirty-day price protection programs, though Lloyds offered a ninety-day plan while Casio had a sixty-day plan. In terms of growth potential, Rockwell ranked highest, followed by HP, Litronix, and Novus.

This survey indicated that TI was the undisputed industry leader. In nearly half of the outlets surveyed, TI had at least a fifty percent market share. However, there was some indication that TI's dominance might be slipping. Some retailers said TI was losing market share in their outlets, and others said they were anxious to reduce their dependence on TI because of its dictatorial manner. One buyer said there was a lack of communication between TI's field salespeople and its headquarters staff, and that this resulted in the salespeople's inability to supply information to help retailers plan their product lines. Another said he got double shipments around Christmas and that it was very difficult to cancel an order from TI. The company was also criticized for its rapid price-cutting policies and for a price structure which many retailers considered far too high for the products offered. Another source of contention between TI and retailers was that TI had recently opened some retail units in Europe, one in Dallas, and one in San Francisco and was thought to be considering opening such outlets across the country to sell its calculators plus other consumer electronic products which it was expected to introduce soon.

The retailers stated that Bowmar was the only manufacturer to raise retail prices in 1974, and doing this yielded retailer profits as high as forty percent even on lower-priced products. Nevertheless, Bowmar was known to be in a very weak financial position, and this made retailers cautious about reordering the line. They expected Bowmar to trim its line and concentrate more on low-end goods in an attempt to reestablish its position in the market.

While HP was widely praised for its product quality, it was criticized for not allowing for larger retail margins. One retailer said HP gave him only about a twenty-five percent markup. Furthermore, some retailers said they had problems getting orders on time, but they felt this was due to HP's only recently entering the consumer market. In February, HP began a new sales effort to build a broader retail base. Its lowest price machine was the HP-21 which retailed for \$125.

Rockwell was the only supplier mentioned by at least four percent of the retailers in all fifteen rating categories. Many retailers said Rockwell's pricing had been extremely aggressive, especially since it had introduced its lower-price rechargeable units in January. However, retailers gave mixed reports about how well the products were moving. Some said the products had not moved well in the fall of 1974 because of delivery problems and because advertising support had been late. Other retailers thought Rockwell had tried to get into the market too late in the year, after a lot of retailers had placed their orders for Christmas. Many thought Rockwell would become a more attractive supplier as time went on because retailers were increasingly looking for a solid company to buy from. "Rockwell has the money behind it to survive in this business," one industry source said. "That's what's going to make the difference in the future."

The Decision

As Rockwell executives considered the company's future in the calculator industry, they felt sure that Rockwell could get substantially more volume from its current department store and specialty shop accounts. However, they thought the company could not afford to overlook mass merchandisers if, in fact, that was where the future of the market lay. To get into mass merchandisers, however, Rockwell's advertising and selling costs would increase substantially. For example, in February Rockwell's 1975 budget, assuming it remained with its current outlets, was about \$2 million for advertising and about \$3 million for selling and distribution. If Rockwell decided to pursue mass merchandisers, the executives felt the advertising budget would have to be increased to \$5 million and the selling and distribution costs would probably rise to about \$4 million.

They thought that Rockwell would probably focus on 50 major mass merchandisers, who had a total of 2,000 outlets. Some thought that Rockwell might have trouble getting into a few mass merchandisers because relationships between retailers and suppliers were often stronger in the mass merchandiser market than in the department store market. They pointed out that Unisonic had a secure position as K-Mart's supplier, and that there was no way that Rockwell could get into K-Mart outlets. Most thought, however, that Rockwell would be wise to try to get into mass merchandise channels before TI established a foothold there, and they felt sure that mass merchandisers would prefer working with Rockwell to working with TI.

Exhibit 1

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Total U.S. Calculator Sales

	<u>Units</u>	<u>Dollars</u>
1971	500,000	\$100,000,000
1972	2,500,000	350,000,000
1973	8,000,000	560,000,000
1974	12,000,000	680,000,000
1975	15,000,000 (est.)	630,000,000 (est.)
1976	18,000,000 (est.)	600,000,000 (est.)

Source: Various published sources.

Exhibit 2

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1974 U.S. Unit Sales and Market Share Data, by Manufacturer

	<u>Unit Sales in Millions*</u>	<u>Market Share</u>
Texas Instruments	3.3 - 3.5	29%
National Semiconductor (Novus)	1.1 - 1.3	10
Bowmar	1.1 - 1.3	10
Rockwell	.9 - 1.1	8
Commodore	.9 - 1.1	8
Unisonic	.7 - .9	7
Litronix	.5 - .7	5
Casio	.5 - .7	5
APF	.4 - .6	4
Hewlett Packard	.35 - .45	3
Remington	.25 - .35	3
Corvus	.2 - .3	2
Unitrex	.15 - .25	2
Other	.5	4
Total	10.85 - 13.05	100%

*Includes both branded and private label sales.

Source: Estimates of industry analysts.

Exhibit 3

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Calculator Lines Produced by Major Manufacturers

	<u>Simple 4-5 Functions</u>	<u>Simple, With Memory</u>	<u>"Slide Rule"</u>
Texas Instruments	X	X	X
National (Novus)	X	X	
Bowmar	X	X	X
Rockwell	X	X	X
Commodore	X	X	X
Unisonic	X	X	X
Litronix	X	X	X
Casio	X	X	X
APF	X	X	X
Hewlett Packard			
Remington	X		
Corvus	X	X	X
Unitrex	X	X	X

Exhibit 4

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1974 U.S. Sales by Product Category

<u>Product Category</u>	<u>Unit Sales</u>	<u>Average Retail Selling Price</u>	<u>Total Retail Sales (in millions)</u>
(1) Simple 4 or 5 functions	7,000,000 - 8,000,000	\$35	\$245 - 280
(2) Simple 4 or 5 functions, with memory	1,100,000 - 1,300,000	\$65	\$ 72 - 85
(3) "Slide Rule" -- i.e., any unit with a square root or 1/x function	2,400,000 - 2,600,000	\$75	\$180 - 195
(4) Scientific/Professional	<u>600,000</u> - <u>800,000</u>	\$225	<u>\$135 - 180</u>
	11,100,000 - 12,700,000*		\$632 - 740

*Total differs from unit totals in Exhibit 2 because numbers were derived from different sources. Industry analysts repeatedly emphasized the difficulty of gathering accurate market data.

Source: Estimates of industry analysts.

Exhibit 5

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1974 U.S. Unit Sales by Distribution Channel

	<u>Estimated Unit Sales</u>	<u>% Total Industry Sales</u>
Department Stores	5,400,000 - 7,200,000	45 - 60%
Mass Merchandiser	3,000,000 - 4,200,000	25 - 35%
Others (Drug, book, specialty, appliance, and office equipment stores; catalog houses; mail order)	<u>1,800,000 - 2,400,000</u> 10,200,000 - 13,800,000	15 - 20%

Source: Estimates of Industry Analysts.

Exhibit 6

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Rockwell's Introductory Target Markets

New York

3 key retailers with total of 39 stores

Los Angeles

3 key retailers with total of 68 stores

Chicago

3 key retailers with total of 66 stores

Philadelphia

3 key retailers with total of 31 stores

Boston

2 key retailers with total of 18 stores

San Francisco/Oakland

4 key retailers with total of 44 stores

Detroit

3 key retailers with total of 37 stores

Cleveland

3 key retailers with total of 24 stores

Washington

3 key retailers with total of 30 stores

Pittsburgh

3 key retailers with total of 22 stores

Dallas/Ft. Worth

4 key retailers with total of 24 stores

St. Louis

1 key retailer with 9 stores

Minneapolis/St. Paul

2 key retailers with total of 13 stores

Houston

3 key retailers with total of 19 stores

Miami

2 key retailers with total of 20 stores

Seattle/Tacoma

2 key retailers with total of 16 stores

Atlanta

2 key retailers with total of 19 stores

Indianapolis

2 key retailers with total of 17 stores

Baltimore

3 key retailers with total of 20 stores

Tampa/St. Petersburg

1 key retailer with 12 stores

Secondary Introductory Markets & Dealers

New Orleans

2 key retailers with total of 13 stores

Tulsa

1 key retailer with 8 stores

Phoenix

1 key retailer with 5 stores

Portland

1 key retailer with 6 stores

Richmond

1 key retailer with 16 stores

Sacramento

1 key retailer with 6 stores

Salt Lake City

2 key retailers with 8 stores

San Antonio

2 key retailers with a total of 12 stores

San Diego

1 key retailer with 10 stores

Akron

1 key retailer with 9 stores

Denver

2 key retailers with total of 15 stores

Exhibit 6 (continued)

Birmingham

1 key retailer with 7 stores

Cincinnati

1 key retailer with 8 stores

Columbus

1 key retailer with 9 stores

Charlotte

1 key retailer with 6 stores

Hartford

1 key retailer with 4 stores

Jacksonville

1 key retailer with 3 stores

Honolulu

1 key retailer with 8 stores

Milwaukee

2 key retailers with a total of 16 stores

Boise

1 key retailer with 19 stores







Source: Company records.



Microelectronic Product Division
P. O. Box 3669
3310 Miraloma Avenue
Anaheim, California 92803

Exhibit 7
ROCKWELL INTERNATIONAL
Microelectronic Product Division
Rockwell's Initial Product Line

CALCULATOR
PRICE LIST
EFFECTIVE: JULY 15, 1974
ISSUED: JULY 15, 1974

MODEL & DESCRIPTION	*MFR SUGGESTED RETAIL	STANDARD SHIPPING QUANTITY	APPROX WEIGHT LBS	96 TO 482	488 TO 960	996 TO 1998	2004 & UP
10R, 8-digit Electronic Calculator  <ul style="list-style-type: none"> Basic Answer features: • 8 digits • 4 functions • Algebraic logic • Floating decimal • Repeat function • Battery operated, and included • AC jack 	\$29.95	12	12	21.75	21.75	21.75	21.75
20R, Electronic Calculator with Memory and Percent  <ul style="list-style-type: none"> All Basic Answer features PLUS Full accumulating memory Automatic constants • % key Automatic mark-on and discount Battery operated, and included • AC jack 	\$49.95	12	12	35.00	34.50	34.00	33.50
30R, Slide Rule Memory Electronic Calculator  <ul style="list-style-type: none"> All Basic Answer features PLUS Full accumulating memory Automatic constants • % key Automatic mark-on and discount Sign change • Register exchange Reciprocals • Square • Square roots Battery operated, and included 	\$59.95	12	12	42.00	41.50	40.75	40.00
51R, Universal Converter Electronic Calculator  <ul style="list-style-type: none"> All Basic Answer features PLUS full accumulating memories Two-place or floating decimal Automatic constants • Fraction calculations • 224 fixed conversions plus programmable conversion Extra-large display • Rechargeable batteries plus AC charger and case 	\$109.95	6	12	71.50	70.75	70.00	69.25
61R, Advanced Slide Rule Electronic Calculator  <ul style="list-style-type: none"> All Basic Answer features PLUS Full accumulating memory Automatic constants • Register exchange • Sign change • Reciprocals Sum of the squares • Square roots Log functions • Trig function in degrees of radians • Extra-large display Powers • Rechargeable batteries plus AC charger and case 	\$119.95	6	12	78.00	77.25	76.50	75.50
80R, 10-digit Printer Electronic Calculator  <ul style="list-style-type: none"> 4 functions • Commercial logic 10 digits plus 2 columns of symbols Thermal printer • Floating decimal with override • Automatic constant and repeat • Subtotals, group totals and grand totals • Operates on AC Easily obtainable additional tapes • U. L. Listed 	\$169.95	2	12	107.00	105.50	103.75	102.00

*Manufactures suggested retail price.

For shipment of less than 96 units, but 12 or more units to a location in standard shipping quantity, add 2% for each location.

Exhibit 8
ROCKWELL INTERNATIONAL

Microelectronic Product Division

Rockwell Advertisements

**If squares,
square roots
and
reciprocals
are your
problems...
we have The
Answer.**



A calculator with a liquid crystal display (LCD) and a numeric keypad. It is shown from a slightly elevated angle.

STORE NAME HERE

**What's the right
price to pay for
a good basic
calculator?**



\$29⁹⁵ That's The Answer.

A calculator with a liquid crystal display (LCD) and a numeric keypad. It is shown from a slightly elevated angle.

STORE NAME HERE

**What's $\frac{2}{3}$ of
5 $\frac{1}{2}$ gallons?**



We have The Answer.

A calculator with a liquid crystal display (LCD) and a numeric keypad. It is shown from a slightly elevated angle.

STORE NAME HERE

A specific Answer.

Want to advertise a certain model? We'll help you do it with illustrations and copy for each individual calculator in the line.

Exhibit 8 (continued)

**Because life is full
of little problems...
we have all
The Answers.**



STORE NAME HERE

All The Answers at once.

We'll help you advertise the whole line together, too. Use both our copy and our artwork—
or just the artwork with your own copy.

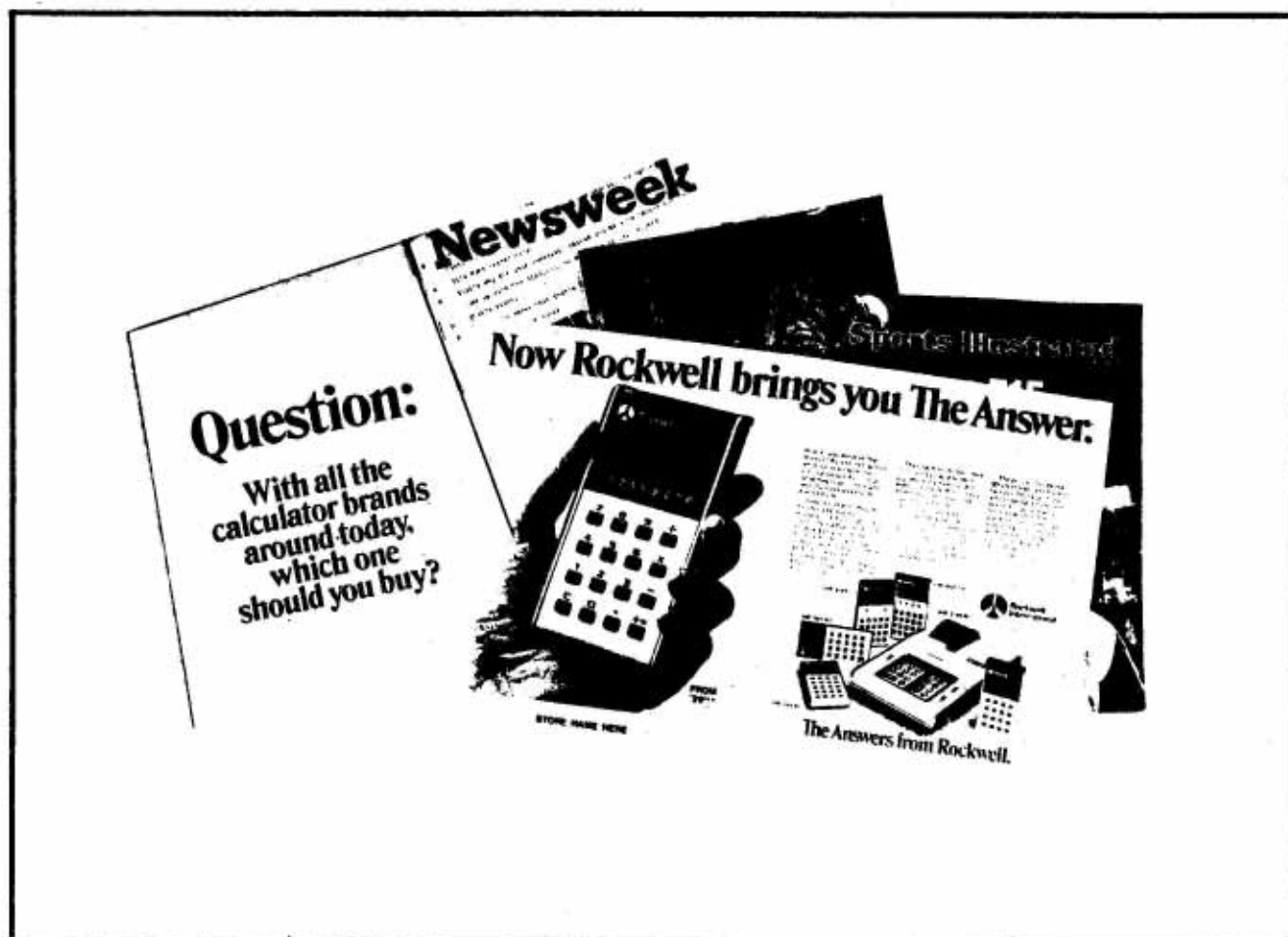
Exhibit 8 (continued)



TV and you? Here's The Answer.

We've prepared a series of 20-second TV commercials with a 10-second close reserved especially for you—so you can tell your customers that you have The Answers.

Exhibit 8 (continued)



The Answer in October magazine advertising.

This is our 3-page announcement ad—the opening gun in our arresting campaign in Metro editions of *Time*, *Newsweek* and *Sports Illustrated*. Our aim: to create customers who'll be Answerable to our brand—and ours alone. The body of this advertisement will remind readers who we are, tell them what we have and build awareness and preference. What's more, they'll leave the ad knowing exactly where to go to get an Answer . . . *because your name goes right on the bottom of the page.*

Exhibit 8 (continued)

**Rockwell announces The Answers.
And now for the questions:**

Give your favorite person a little sum thing for Christmas.

The Answers from Rockwell
STORE NAME HERE

The Answer again and again.

In November and December, we'll follow our introductory advertisement—in the same magazines—with these two attention-getters: A full-color spread, plus a color page reminding people that The Answers make great Christmas gifts. Each advertisement will contain another round of informative, persuasive copy. And each will again show the dealer name at the bottom of the page . . . a profitable place for your store name to be.

Exhibit 8 (continued)



The Answer on TV.

We've scheduled a series of delightful, people-oriented commercials to run from the latter part of November to mid-December. Air time? During periods when large numbers of men and women will learn about our product. The content? Examples of ways people can use and benefit from our product. The goal? To get more people to look for The Answers.

Exhibit 8 (continued)

Question:
With all the
calculator
brands
around today,
which one
should you
buy?

Model 100, \$59.95*
3-digit Electronic Calculator
Basic Answer features:
• 8 digits • 4 functions
(+, -, ×, ÷) • Algebraic
logic (order 2 - 3 =
to get the answer, 2)
• Floating decimal • Re-
peat • Battery operated!

Model 200, \$69.95*
Electronic Calculator
with Memory and Percent
• All Basic Answer
features PLUS • Full
accumulating memory
• Automatic constants
• % key • Automatic
mark-on and discount
• Sign change • Register
exchange • Reciprocal
• Squares • Square roots
• Battery operated!

Model 300, \$79.95*
Universal Overwriter
Slide-Rule Calculator
• All Basic Answer
features PLUS • Full
accumulating memory
• Automatic constants
• % key • Automatic
mark-on and discount
• Battery operated!

Model 400, \$89.95*
Slide Rule Memory
Electronic Calculator
• All Basic Answer
features PLUS • Full
accumulating memory
• Automatic constants
• % key • Automatic
mark-on and discount
• Sign change • Register
exchange • Reciprocal
• Squares • Square roots
• Battery operated!

Model 500, \$109.95*
Advanced Slide Rule
Electronic Calculator
• All Basic Answer
features PLUS • Full
accumulating memory
• Automatic constants
• Register exchange
• Sign change
• Reciprocal • Sum of
the squares • Square
roots • Log functions
• Trig functions in
constants • Fraction
calculations • 224
fixed conversions plus
programmable con-
version • Extra-large
display • Rechargeable
batteries plus AC
charger and case

Model 600, \$119.95*
10-digit Printer
Electronic Calculator
• 4 functions
• Commercial logic • 10
digits plus 3 columns of
symbols • Thermal
printer • Floating
decimal or dollar decimal
with override • Automatic
constant and repeat
• Subtotals, group totals
and grand totals • AC
operation • Additional
features easily obtainable



The Answer in a leaflet.

This leaflet contains a picture of The Answer calculators, plus a list of the main features of each. Put it on your counter. Enclose it in your customer mailings. Let it remind. Inform. Tempt. Let it raise questions . . . to which you have The Answers.

Exhibit 9

ROCKWELL INTERNATIONAL

Microelectronic Product Division

1974 Advertising Expenditures on Calculators by Manufacturers

Texas Instruments	\$4,575,800
National Semiconductor (Novus)	672,200
Bowmar	1,202,400
Rockwell	1,310,200
Commodore	2,300
Litronix	174,200
Casio	510,800
Newlett Packard	297,700
Total	<hr/> \$8,745,600

Source: Leading National Advertisers, Inc., Multi-Media Survey,
January - December 1974, pp. 70-73. This survey included
magazines, newspaper supplements, network television, spot
television, network radio, and outdoor advertising.

**Rockwell International**

Business Equipment Division
950 De Guigne
Sunnyvale, California 94086
(408) 735-7000

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Exhibit 10**ROCKWELL INTERNATIONAL**

576-094

CALCULATOR PRICE LIST

Page 1 of 2

EFFECTIVE DATE: 15 JAN 1975**ISSUE DATE: 5 JAN 1975**

MODEL NUMBER AND DESCRIPTION	STD SHIP QTY	48-96	96- & UP
PROMOTIONAL ROCKWELL LINE			
 10R, 8-digit Electronic Calculator Basic Answer features: • 8 digits • 4 functions • Algebraic logic • Floating decimal • Repeat function • Battery operated, and included • AC jack • Weight: 9 oz. Mfr Suggested Retail: \$24.88	12	18.00	18.00
 20R, Electronic Calculator with Memory and Percent All Basic Answer features PLUS: • Full accumulating memory • Automatic constants • % key • Automatic mark-on and discount • Battery operated, and included • AC jack • Weight: 10 oz. Mfr Suggested Retail: \$39.88	12	28.75	28.75
 30R, Slide Rule Memory Electronic Calculator All Basic Answer features PLUS: • Full accumulating memory • Automatic constants • % key • Automatic mark-on and discount • Sign change • Register exchange • Reciprocals • Square • Square roots • Battery operated, and included • Weight: 10 oz. Mfr Suggested Retail: \$49.88	12	35.75	35.75
THE ANSWER-ROCKWELL LINE			
 12R, 8-digit, Electronic Calculator with Square Root Basic 8 features: • 8 digits • 4 functions + square root • Algebraic logic • Floating decimal • Repeat function • Battery operated, and included • AC jack • AC adapter included • Weight: 9 oz. Mfr Suggested Retail: \$29.95	12	21.75	21.75
 21R, Rechargeable Electronic Calculator with Memory and Percent All Basic Answer features PLUS: • Full, addressable memory • Automatic constants • % key • Automatic mark-on and discount • Rechargeable batteries • AC charger jack • AC charger/adapter & case • Weight: 10 oz. Mfr Suggested Retail: \$49.95	12	35.50	35.00
 31R, Rechargeable Slide Rule Memory Electronic Calculator All Basic Answer features PLUS: • Full addressable memory • Automatic constants • % key • Automatic mark-on and discount • Sign change • Register exchange • Reciprocals • Square • Square roots • Rechargeable batteries • AC charger jack • AC charger/adapter & case • Weight: 10 oz. Mfr Suggested Retail: \$59.95	12	42.50	42.00
 61R, Advanced Slide Rule Electronic Calculator All Basic Answer features PLUS: • Full accumulating memory • Automatic constants • Register exchange • Sign change • Reciprocal • Sum of the squares • Square roots • Log functions • Trig function in degrees of radians • Extra-large display • Powers • Rechargeable batteries plus AC charger/adapter, and case • Weight: 1 lb 10 oz. Mfr Suggested Retail: \$79.95	6	54.00	53.50

Shipments to one or more additional locations of 12 or more units in standard shipping cartons will be made for a 2% handling charge.

**Rockwell International**

Business Equipment Division
950 De Guigne
Sunnyvale, California 94086
(408) 735-7000





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576-094

CALCULATOR PRICE LIST
Page 2 of 2

EFFECTIVE DATE: 15 JAN 1975
ISSUE DATE: 5 JAN 1975

Exhibit 10 (continued)

MODEL NUMBER AND DESCRIPTION	STD SHIP QTY	48-95	96-& UP
63R, Scientific Slide Rule Electronic Calculator  <p>All Basic Answer features PLUS: • Full addressable memory • Scientific notation • Two level parenthesis • Automatic constants • Register exchange • Sign change • Reciprocal • Square roots • Log functions • Trig functions in degrees or radians • Degree/radian conversion • Factorial • Extra-large display • Powers • Rechargeable batteries plus AC adapter and case • Weight: 1 lb 10 oz. Mfr Suggested Retail: \$99.95</p>	6	65.50	65.00
51R, Universal Converter Electronic Calculator  <p>All Basic Answer features PLUS: • Full accumulating memories • Two-phase or floating decimal • Automatic constants • Fraction calculations • 224 fixed conversions plus programmable conversion • Extra-large display • Rechargeable batteries plus AC charger and case • Weight: 1 lb 10 oz. Mfr Suggested Retail: \$99.95</p>	6	65.50	65.00
30R, 10-digit Printer Electronic Calculator  <p>All Basic Answer features PLUS: • 4 functions • Commercial logic • 10 digits plus 2 columns of symbols • Thermal printer • Floating decimal with override • Automatic constant and repeat • Subtotals, group totals and grand totals • Operates on AC • Easily obtainable additional tapes • U.L. listed • Dust cover • Weight: 6 lbs Mfr Suggested Retail: \$139.95</p>	2	90.00	88.25
82R, 12-digit Printer Electronic Calculator  <p>All Basic Answer features PLUS: • 4 functions • Commercial logic • 12 digits plus 2 columns of symbols • Thermal printer • Floating fixed monetary decimal selection • Automatic constant and repeat • Subtotals, group totals and grand totals • Operates on AC • Percent, 4-key memory, • Non-add key • Easily obtainable additional tapes • Dust cover • U.L. listed • Weight: 6 lbs Mfr Suggested Retail: \$169.95</p>	2	109.00	107.00

ACCESSORIES	STD QTY	DEALER COST		STD QTY	DEALER COST
01R AND 02R ACCESSORY KITS			107R AND 108R AC ADAPTER/CHARGER		
01R - Brown Vinyl Case, AC Adapter, for Models 10R, 20R, and 30R; Input 120V-60 Hz; Output 7.9 VDC, 50 Ma Mfr Suggested Retail: \$5.95	6	\$3.60	107R AC Adapter/Charger 120/60 for 51R, 61R, 63R, 21R, 31R Mfr Suggested Retail: \$4.95	6	3.00
02R - Brown Vinyl Case, AC Adapter, for Models 10R, 20R, and 30R; Input Switchable between 120V-60Hz and 220V-50 Hz; Output 7.9 VDC, 50 Ma Mfr Suggested Retail: \$8.95	6	\$5.40	108R AC Adapter/Charger Switchable 120/220 for international use Mfr Suggested Retail: \$6.95	6	4.20
105R AND 106R AC Adapter			206R CARRYING CASE		
105R AC Adapter 120V-60 Hz for 10R, 20R, 30R, 12R Mfr Suggested Retail: \$4.95	6	3.00	Carry case for 10R, 20R, 30R, 12R, 21R, 31R Mfr Suggested Retail: \$2.00	12	1.20
106R AC Adapter Switchable 120V-60 Hz for international use Mfr Suggested Retail: \$6.95	6	4.20	207R CARRYING CASE		
			Carry case for 51R, 61R, 62R Mfr Suggested Retail: \$3.00	12	1.80
			TT270 TAPES		
			Three Tapes for Models 80R/82R 2 1/4" x 164' Each	3	\$1.95

Shipments to one or more additional locations of 12 or more units in standard shipping cartons will be made for a 2% handling charge.