

PLAINTIFF'S EXHIBIT

CAP-520

ASBESTOS

devoted to the
International Asbestos Industry

(ISSN 0004-4237)

MATERIALS HANDLING
& PROCESSING

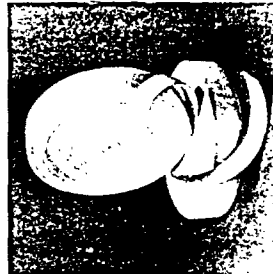
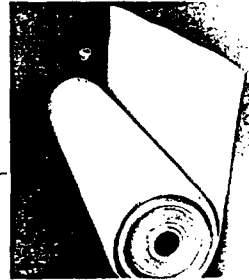
September 1980

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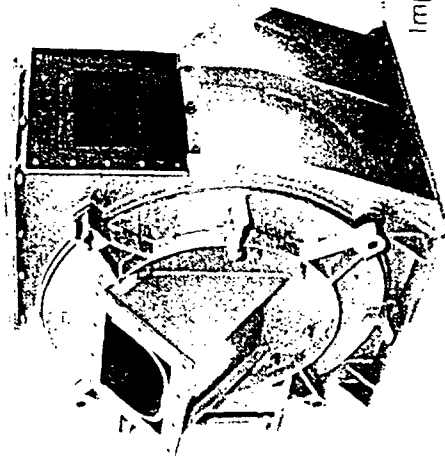
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ASBESTOS

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ASBESTOS—September 1980

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MATERIALS HANDLING/PROCESSING

ALPINE CLASSIFIERS

Alpine American Corporation, Natick, Massachusetts, announced the new *Turboplex high-efficiency air classifier*, available in four models and capable of end product fineness of $d_{97} = 4-40$ microns and feed capacities to 60 tons per hour, depending on product and classifier size. Principal advantage of the unit is a capability to produce fine product from coarser feed than was previously possible from classifiers of this type. Alpine also manufactures the *Multipler zigzag classifier* and the *Microplex MPVI spiral air classifier*.

ANDCO ACTUATORS

A 20-page catalog from Andco Actuator Products, Inc., Buffalo, New York, introduces the company's new line of electro-mechanical linear actuators, the *Series 7000 Posi-Tork*, which features adjustable thrust and position limit switches for precise and accurate positions in applications involving lifting/lowering, pushing/pulling and opening/closing. The machines are completely enclosed, weatherproof units, with all electrical connections internal, within a common cast housing, with two NPT conduit entrances.

BIMEX CAPABILITIES

Bimex Corporation, Wales, Wisconsin, via a full-color brochure, details its capabilities to manufacture centrifugally-cast, bimetal cylinders for the transporting, heating, mixing and processing of materials which cause severe wear and/or corrosion problems. The barrels can be made in lengths to 20 feet and with inside diameters from 1" to 15". They are commonly used in conjunction with feeder screws in extrusion and injection-type operations. In addition to machining and fabricating the cylinders according to need, existing units can be repaired, relined for extended life or retrofitted to meet new requirements.

CARBORUNDUM LININGS

Its new 87% aluminum oxide *Duralfrax refractory linings* are a cost effective replacement for 96% wear alumina products, with no appreciable difference in lining life, according to *The Carbor-*

DIAGONAL SEAMED WIRES
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MADE OF PHOSPHORBRONZE OR STAINLESS STEEL



FAST AND EASY STRETCHING ON YOUR
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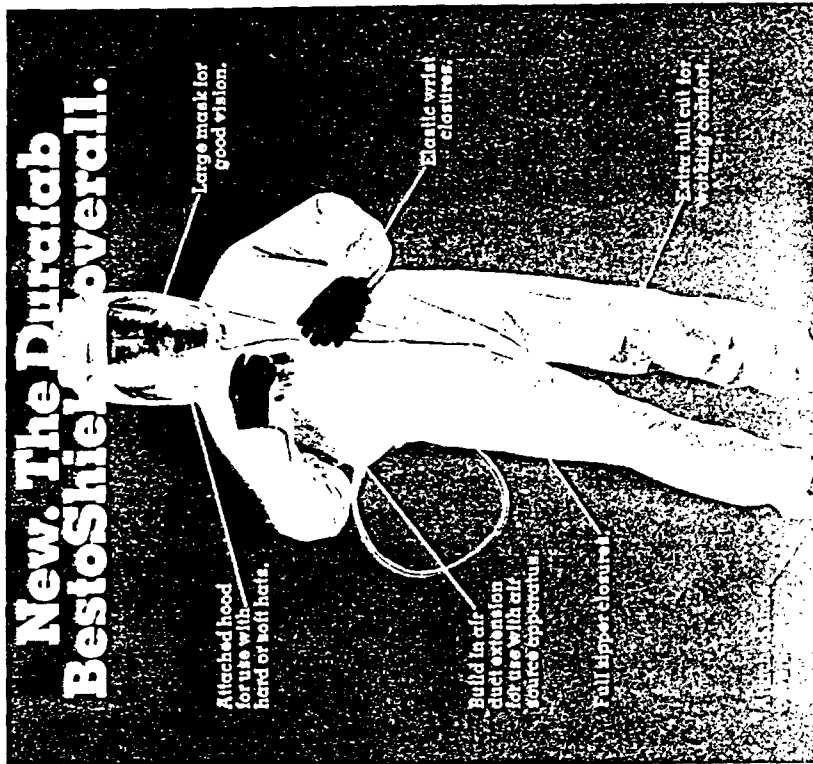
undum Company, Niagara Falls, New York. The wear materials have excellent corrosion resistance and a much denser structure than common 85% aluminas. They are available in plain and Weld-Al tiles in the broadest range of sizes and thicknesses available from any wear alumina manufacturer. Carborundum recently announced an average 25% price reduction for Durafab 87% alumina platelets, commonly used as linings or patches on pneumatic handling systems which transport abrasive materials.

THE COMBIMIXER FROM DAY

Engineers at Day Mixing, Cincinnati, Ohio, have combined the NAUTA twin-screw mixer with the double-cone design mixer to produce a complete new and highly versatile, large-capacity mixing machine called the *Combimixer*. The huge machine has a mixing capacity of 35,000 pounds or 1,350 cubic feet and is used for precise color standardization. It is composed of two mid-section joined conical tanks with four orbiting spiral agitators, two to each tank. Separate 40-horsepower motors provide for the axial screw mixing actions of the four agitators. With four screws operating at the same time, the massive new mixer has an additional intermixing feature by having currents occurring through the juncture of the two tanks. With this mixing action added to the others, 16 simultaneous mixing actions occur on a continuing basis as a batch is being processed. The unit is especially suited to the mixing of flaky products where breakage is to be avoided but is also ideal for the gentle blending of agglomerates to prevent particle breakdown. Some of the products which can be handled are adhesives, brake lining compounds, colored cement mixes and textile sizing compounds.

DELTECH DRYERS & DRAIN VALVES

Deltech Engineering, Inc., New Castle, Delaware, released several brochures to describe its various *dryers* and *drain valves*. Bulletin 340 covers Deltech's extended line of *PS series heatless dryers* which remove moisture to pressure dew points as low as minus 150°F. Benefits emphasized include low maintenance, low power consumption, increased desiccant life and ease of installation. Capacities range to 2,500 scfm at rated conditions of 100 psig inlet pressure, 120°F inlet temperature and minus 40°F dpd. Deltech's energy efficient *heat pump dryers* combine the best advantages of both refrigeration and dual-tower desiccant drying into a single cost-efficient system. The only energy required is that used to operate the refrigeration compressor. Since 75% of



A low cost disposable coverall specially designed for protection against asbestos and other carcinogens.

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The BestoShield coverall is also available coated with polyethylene

Sold through distributors only.

the moisture is removed from compressed air by cooling, only 25% must be absorbed by the desiccant. The dryers prevent moisture problems by drying compressed air to a pressure dew point as low as minus 100°F. They are equally suited to drying other gases such as natural gas, hydrogen, oxygen and special mixtures. . . . Bulletin 300H describes the G series heatless dryers for low dew point compressed air. A diagram illustrates operation of the dryers and simulates a unique color change signal which verifies at a glance proper dryer performance. . . . A new addition to the company's line is the D series refrigerated dryer for compressed air and other gases which provides low cost protection against moisture condensation in compressed air systems when air lines are not exposed to temperatures below freezing. Salient features include fully automatic operation, capacities from 140 to 550 scfm at 100 psig, low initial cost, lowest operating cost, easy installation and compactness. . . . Deltech also released an updated Bulletin 701A to describe a drain valve which provides fully automatic draining of water from aftercoolers, separators, receivers, dryers, filters and other components of compressed air systems where condensate collects. The electrically timed drain cycle minimizes the possibility of moisture carry-over into the compressed air system by assuring the unattended removal of condensate from drip legs and other similar collection areas.

DEVCON REPAIR LITERATURE

Abrasion control and repair is the topic of a brochure available from Devcon Corporation, Danvers, Massachusetts, which describes preventive maintenance and repair methods for equipment subjected to severe abrasion. Introduced are Devcon plastic carbide, wear-resistant epoxy and plastic steel SF, all products reported to extend the operating life of equipment and reduce replacement costs. A description is given as to how these products are used in power plants, mines and dredging operations for the maintenance and repair of pulverizers, pipe elbows, pumps and other heavy equipment. . . . Another bulletin from Devcon announces the *Flexane belt repair kit* for complete conveyor belt repair. Flexane is a room-temperature-curing urethane.

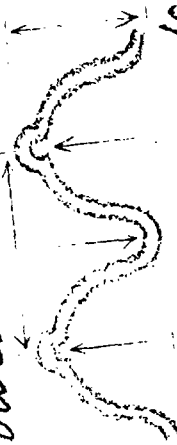
FROG, SWITCH CRUSHERS

The Frog, Switch & Manufacturing Company, Carlisle, Pennsylvania, offers low capital investment, low cost installation, economical operation, high capacity and a choice of sizes with its newly designed 200 series Pulvomatic crushers. The simple design and

Reminder

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SYRO

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rugged construction reportedly offer years of trouble-free production. The base is a solid steel plate; drive pedestals and housings are made of heavy steel sections, fully welded; the flywheel-sheave equalizes the loading on the double race tapered roller bearings which are mounted in cast steel pillow blocks; and a high tensile special alloy steel shaft provides full diameter through the bearings which are mounted in cast steel pillow blocks; and a high automatic lubrication or oiling systems to maintain, nor is there build-up welding of worn parts. Breaker plates form outside shell and can be replaced quickly without complete disassembly of entire machine. Rotor replacement can be accomplished in about three hours. The crushing chamber is designed to provide 90° impact to the material being crushed, contributing to excellent particle shape of the product and improved impact hardening of the manganese wear parts. *Prudential International Corporation*, New York City, is the International Marketing and Export Department for Frog, Switch.

KAY-RAY SYSTEMS

Kay-Ray, Inc., Arlington Heights, Illinois, announced its 6000X non-contacting digital weigh scale which features totally automatic recalibration, immunity to environmental effects or conveyor misalignments and drift-free microprocessor-based electronics. The scale requires no mechanical spares or maintenance and can be installed on belt, screw or drag chain conveyors without process downtime or conveyor modification. . . . Also, Kay-Ray published a catalog which explains operating principles, features, application criteria and typical applications for density, level, conveyor scale and percentage of moisture measurement and control systems for solids, liquids or slurries. The accurate, non-contacting sensors operate on the principle that gamma energy penetrates all materials but is attenuated relative to the mass of material through which it passes. Kay-Ray has expanded its unique measurement capabilities to include digitally-based signal processors and control systems. These systems provide continuous, non-contacting measurement and automated control. Sensor accuracy and reliability are unaffected by extreme product and process operating conditions. Continuous, on-line measurement makes possible effective, reliable control.

LAMSON PALLETIZER INSPECTION

A new, semi-automatic inspection system which is said to virtually eliminate palletizer downtime due to defective pallets was announced by *Lamson Company*, Syracuse, New York. After the

To meet clean air standards you not only need a centralized dust collector, you also need a decentralized dust collector.

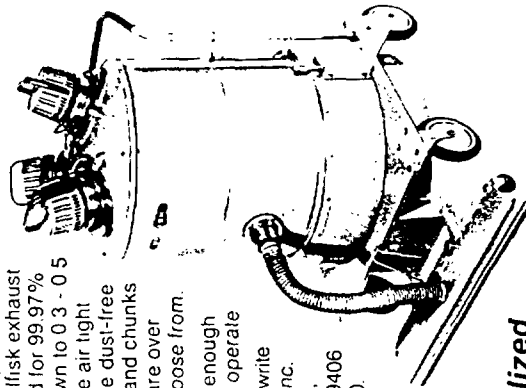
Clean air standards being what they are, you may not be meeting them even with a central dust collector. And this year, standards are being tightened even further.

So you ought to look at the Nilfisk GA 73 portable industrial vacuum cleaner. It picks up where central systems leave off. And it does that with Nilfisk's exclusive multi-stage filtration system. The oversize main filter resists early dust clogging, and can be shaken and cleaned at all times without exposing the operator.

In addition special Nilfisk exhaust filters can be installed for 99.97% average retention down to 0.3 - 0.5 microns. Heavy gauge air tight container liners insure dust-free disposal of fine dust and chunks of debris. And there are over 50 attachments to choose from.

Yet the GA 73 is light enough for a single person to operate

For more information, write to Nilfisk of America, Inc., 201 King Manor Drive, King of Prussia, PA 19406 or call (215) 277-3900.



**NILFISK
GA 73.**
**The decentralized
dust collector.**

pallets are stacked on the delivery conveyor by a fork truck, the driver pushes a start button and the stack automatically moves to the dispenser for individual inspection. If the pallet is defective, it can be removed manually. The good pallets are then transported to the collector for automatic restacking and removal. Approximately 400 pallets can be inspected by one man in an hour, at a cost of about 1.7¢ per pallet. The system also reduces product damage from protruding nails and splinters and prevents unstable loads caused by missing pallet boards. A powered section for removing rejected pallets can be included.

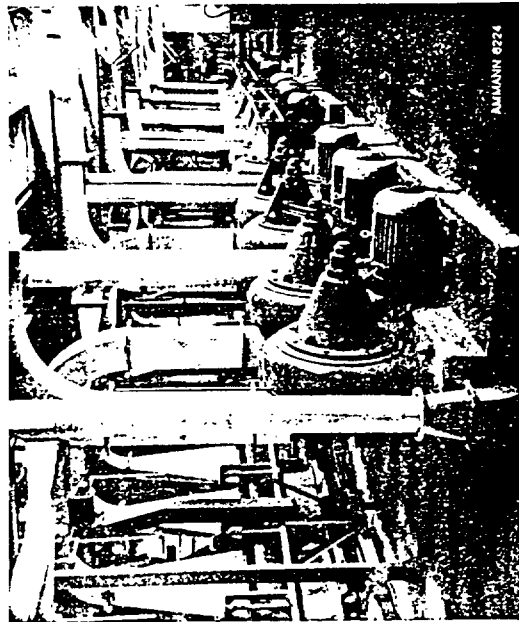
MACAWBER DOME VALVE

Plant engineers responsible for handling abrasive bulk solids and slurries can forget about the problems of jamming stop valves by using its new power-operated, single-action, pressure-tight *Dome Valve*, according to *Macawber Engineering Inc.*, Maryville, Tennessee. The valve, now being introduced to world markets, is a totally new concept which avoids the problems of seal damage associated with traditional knife blade valves and of material obstructions which can occur with butterfly valves. In just one operation, the new valve closes through a static or dynamic head of material and gives a pressure tight seal, even with materials at temperatures up to 896°F. In approved applications the valve is rated for 160,000 cycles between inspections. The valve is available in two standard versions. The bulkhead configuration is for applications where controlled environments are required in process vessels, after filling or emptying. The valve can also be attached to bulk storage hoppers when remote controlled power operation of tank emptying is required. The in-line configuration is for slurry pipeline or bulk materials conveying where a line stop valve is needed. In these applications, a reliable pressure seal must be maintained after closure.

MOTOROLA MOISTURE ANALYZER

Motorola Process Control Inc., Phoenix, Arizona, a subsidiary of *Motorola Inc.*, introduced the *Computrac II*, an improved computerized moisture analyzer which determines the moisture content of organic and inorganic materials. Principal modification in the new unit is the replacement of its load weighing cell by a newly developed force balance which is an electronic device that measures changes in weight. This force balance provides long-term sta-

AMMANN Asbestos Mill



The ONLY DISINTEGRATOR treating the asbestos fibres without breaking them. Disintegrator used so to say by the most important Asbestos Mines of the whole world.

The above illustration shows a large plant comprising several AMMANN disintegrators in an asbestos mine.

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bility, accuracy and repeatability. The analyzer is the only microcomputer-controlled moisture analyzer that can be pre-set to any temperature between 75°C and 165°C in 1° increments, designed to hold that setting throughout a test. It can quickly determine the moisture/volatiles content of any solid sample of 3 to 6 grams mass and display the result in a digital LED form. In actual operation, the start button is depressed and a sample of the material to be tested is placed in the sample tray which rests on a flat surface, so the same tray can be used for both dry and liquid samples. A built-in computer automatically determines the proper weight of the sample. The lid is then closed and the test is automatic from then on, with predicted moisture percentage being displayed every few minutes until completion of the test. The machine shuts off when the sample has been dried to 0% moisture, although the final moisture reading remains on the digital LED display. Material to be tested with moisture content of 5% to 20% will have final results displayed within 7 to 10 minutes. Material with moisture content of 70% or above requires a longer drying time to reach 0% moisture, normally about 30 minutes. Compu-Trac II has no moving parts, is self-calibrating, self-zeroing and self-diagnostic. Accuracy is guaranteed to $\pm 0.1\%$ moisture

NATIONAL-STANDARD WIRE CLOTH

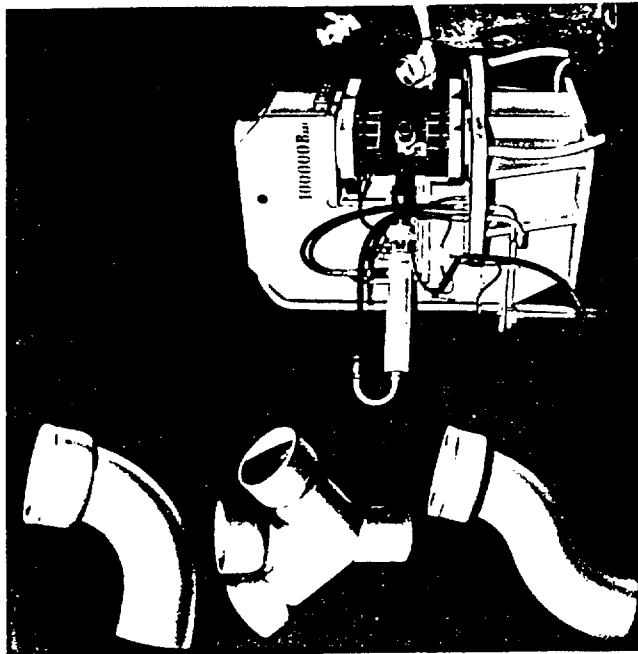
Industrial wire cloth is the subject of a 28-page catalog published recently by *The Woven Products Division of National Standard Company*, Corbin, Kentucky. The literature describes types of weaves, materials and unique characteristics of wire cloth in addition to listing the wide range of wire cloth available in standard and special weaves. It contains a glossary of wire cloth terms and information on the physical properties of steel wire.

GRANT THERMOSTATIC EQUIPMENT

Science/Electronics, Inc., Dayton, Ohio, recently announced the availability of a 20-page 1980 catalog on *Grant thermostatic equipment*. Included is detailed information on over 40 models which yield a product line temperature range of minus 30°C to plus 400°C, in bath sizes ranging from 3.5 to 50 liters. Featured are thermostatic baths, shaking incubators, boiling unit, individual controllers, circulators, block heaters, refrigeration accessory units and independent thermal safety devices for use with any temperature limiting/controlling device

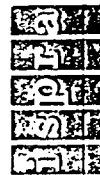
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for pipes, gutters and
similar articles



Automatic INJECTION Plants

NEWS OF COMPANIES & PRODUCTS

SUPRADUR SHINGLES

Mineral fiber roofing shingles are the subject of product brochures recently made available by *Supradur Manufacturing Corporation*, New York City and Wind Gap, Pennsylvania. Among the products described are **WESTERN SHAKES**, a quality shingle which looks like handsome wood shakes with all the warmth and beauty of the natural product while being practically indestructible. Another material is **SUPRA-SLATE** which features the look and durability of natural stone and is manufactured in colors of real quarry slate. The shingles provide maximum protection from the elements while contributing to the beauty of the structure. . . . *Terry Burners Inc.*, Montreal, Quebec, a maker of heating equipment, has been acquired by Supradur, effective April 1, 1980.

DUKE REFERENCE PARTICLES

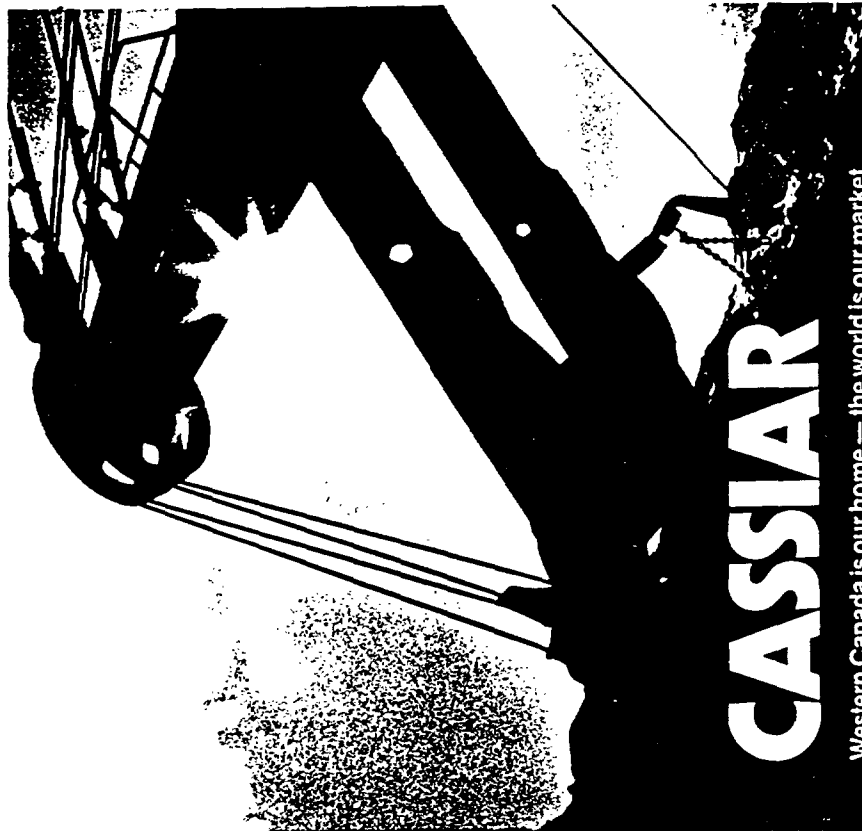
Duke Scientific Corporation, Palo Alto, California, announced an expanded line of over 100 analytical reference particles covering a range of sizes from 0.1 to 900 micrometers. The highly uniform spheres, fibers and irregularly shaped particles are made of polystyrene, glass, asbestos, alumina and a variety of other materials and are packaged in dropper-tipped polyethylene or glass vials for convenient laboratory use. Small quantities of narrowly sized particles are used as reference materials in the fields of pollution control, chemical engineering, biomedical sciences and instrument development. Typical applications include analytical methods evaluation, filter checking, fluid dynamics and laser optics instrumentation.

CAPE PRODUCTS

Cape Boards and Panels Ltd. has received one of its biggest orders, for the single largest civil engineering project currently being undertaken anywhere in Europe. The order, valued at £227,000, is for the supply of **VERMICULUX** and **SUPALUX** asbestos-free, fire-resisting boards for the Dinorwic pumped-storage power station under construction in North Wales. The boards are to be used to provide vital underground fire protection casings to the structural steelwork and for ceiling linings in the turbine hall, switchgear room and ancillary buildings. The structure has been based underground to preserve the beauty of the area. . . . **VERMICULUX** also was selected to provide fire protection to the massive steel beams and columns of the 30-meter-high air-

Page 16

ASH-STOS—September 1980



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Western Canada is our home — the world is our market

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CAPE PRODUCTS—CONTINUED

craft hangars at Heathrow Airport. . . . In February CBPL launched a new asbestos-free, external grade board called MASTERCLAD. A comprehensive testing program indicates the material should have an external life expectancy well in excess of 50 years, under the worst of British weather. It was developed to meet the cladding needs of the industrial, housing and system building markets. It also has many internal and external applications within the agricultural market. The product has a Class I surface spread of flame and is Class O to the building regulations. It is dimensionally stable, immune to the effects of dampness and humidity, will not rot or support mold growth and has been tested to BS690:Part 3:1973 for impermeability and ability to withstand frost. . . . MONOLUX 40, another noncombustible product, has found an interesting new use as cladding for mansard roofs. The roofs have a slope in excess of 70° and often incorporate windows. . . . A £10,000 contract, the first of its type, has been won by Cape Insulation Services Ltd. to supply and install ROCKSIL fire barriers to provide half-hour fire protection barriers in the void above suspended ceilings over fire doors in the main buildings at Bradford University. . . . Orders for asbestos-cement sheeting and pitch fiber from Hong Kong, Singapore and Malaysia have been a major feature this year for Cape Universal Claddings Ltd. In spite of the unrest in the Middle East, trade still continues and there is evidence of increased activity in the building materials markets. Among the orders was £165,000 worth of pitch fiber pipe for Yemen.

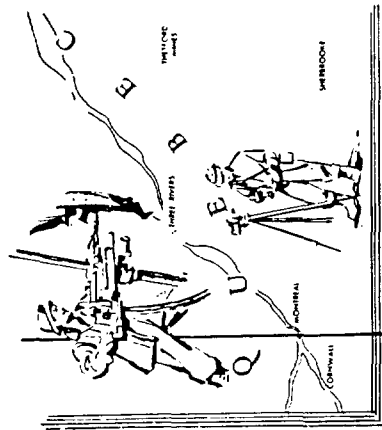
JIM WALTER PRODUCT LINE

Jim Walter Corporation, Tampa, Florida, has issued a brochure to outline the various products it manufactures and markets for use in residential and nonresidential construction, renovation and remodeling, industry, water and wastewater transmission and homebuilding. Also described are Jim Walter's insurance, savings and loan and research services. Among the familiar trade and product names covered are Briggs, Celbex, Colombia Moulding, Gamble, Georgia Marble, Miami-Carey, Southeastern Bolt & Screw, U.S. Pipe, Vestal, Carey Canada, Hamer Lumber, Southern Precision and Wedlo.

BENDIX CLOSES WINDSOR PLANT

Bendix Corporation has announced it will permanently close the Windsor, Ontario, operations of its Canadian subsidiary, putting 490 people out of work. Mr. Earl Smith, President and General Manager of Bendix Automotive of Canada Ltd. said the sharp

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BENDIX CLOSES PLANT—CONTINUED

downturn in the automotive industry has left Bendix with substantial excess plant capacity in North America and associated fixed costs. The plant, which manufactures and assembles automobile brakes, will be sold and production moved to the company's plant at South Bend, Indiana.

NEW CAPCO NAME & FACTORY

CAPCO Pipe Company, Inc., Birmingham, Alabama, is the new name of Cement Asbestos Products Company, symbolic of the company's recent expansion into product lines other than asbestos-cement pipe. . . . CAPCO recently purchased a 72-employee, polyvinyl chloride (PVC) pipe plant at Evansville, Indiana, from Robintech, Inc., for approximately \$2-million. CAPCO currently markets PVC pipe and manufactures asbestos-cement pipe and cast-iron fittings at its plants at Van Buren, Arkansas, and Ragland, Alabama. The company was founded in 1963 and is a wholly-owned subsidiary of Asarco Inc.

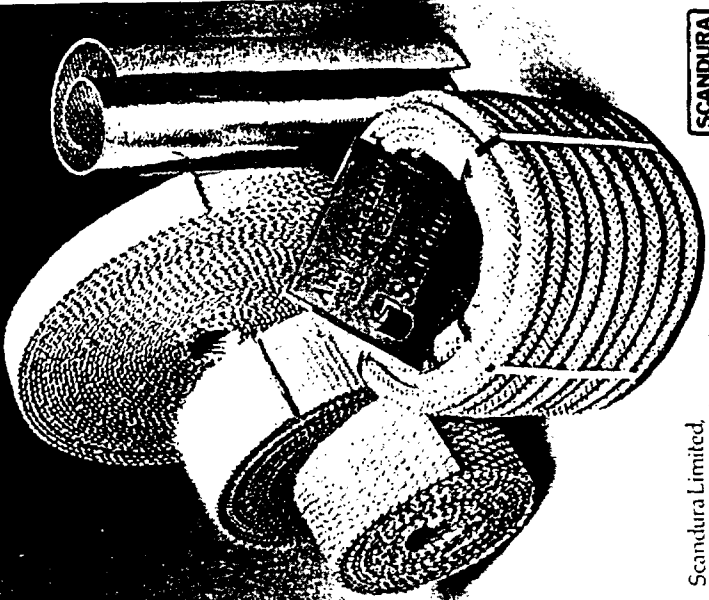
HUMES TO MANUFACTURE IN INDONESIA

P. T. Hume Sakti Indonesia has been formed as a new associate company by Humes Ltd., Melbourne, Australia, together with Hume Industries (Far East) Ltd., Singapore, and a local Indonesian company, P. T. Kenjana Sakti. The first factory is now being constructed at Cakung, near Jakarta, at a cost of A\$2.5-million (1.8-billion Rupiah). It will make pipes from 300 mm to 2100 mm and should be in operation by early 1981. Indonesia has just begun its third five-year development program, hence offering a potential market for Humes' prestressed and reinforced concrete pipes, products and components.

PLASTICS FILLERS MARKET GROWING

Business Communications Company, Inc., Stamford, Connecticut, predicts growth for fillers, extenders and reinforcements in plastics will increase from the present level of 5.1-billion pounds annually to about 11.9-billion pounds in 1990. This represents a compound increase of 8.8% per year. Consumption of asbestos is calculated at 518-million pounds in 1980, 645-million pounds in 1985 and 803-million pounds in 1990, an average annual increase of 4.5%. According to BCC, asbestos, which has one of the lowest growth rates of all the materials studied, is a mature market and has come under some severe environmental and health restrictions.

NIMATEX



SCANDURA
PVC COMPANY

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MARKET CONDITIONS

GENERAL BUSINESS

Figures just released show the Index of Leading Economic Indicators rose a record 4.6% in July, the second substantial increase in succeeding months, but other statistics indicated the transition from recession to recovery is still not in sight. Contrary to expectations, interest rates, after a lengthy and substantial decline, have turned sharply upward, raising fears that continuing rises could jeopardize the recovery which is widely anticipated to begin around the turn of the year. In late August, the prime interest rate stood at 11½% and was expected to move to 11¾% soon if other rates continued their upward course.

As was suggested last month, food prices have begun a strong upward move and the Consumer Price Index already reflects this increase which promises to become more serious in the months ahead. Thus far, the effect of inclement weather has been evidenced mainly in rising grain prices. Other factors are likely to push grain prices still higher and this will result in rising prices for meat later in the year.

The President has outlined a set of new economic proposals designed to combat the recession and to lay the groundwork for a "revitalization" of the American economy without increasing inflation. It includes an assortment of tax cuts and credits, slanted mostly toward business, loan guarantees and other subsidies to encourage investment in distressed areas, anti-recession aids to certain government bodies and, particularly, tax credits to partially offset the substantial increases in Social Security taxes over the next few years. It is obvious the program has strong political overtones and equally certain it contains no sweeping new strategies for improving the state of the economy over the longer term.

In addition to the specific proposals which many observers consider as strictly of the "band aid" variety, Mr. Carter also announced plans for an Economic Revitalization Board composed of labor, business and government representatives and designed to "mobilize both public and private resources . . . to help revitalize American industry in areas most affected by economic dislocation or industrial bottlenecks." In effect, the Board would attempt to foster increased cooperation among industry, labor and government in place of the generally adversary relationships which now exist. With the President of the AFL-CIO and the Chairman of the Du Pont Company heading the Board, there is hope that its work will eventually prove fruitful, but even the most optimistic see no

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chance for quick correction of an unhealthy situation which has been many years in the making. In truth, some very knowledgeable people have already voiced the fear that such an arrangement will lead to even further government intrusion into economic affairs, with predictably disastrous results.

MOTOR VEHICLE FACTORY SALES

FIRST HALF 1980—Motor vehicle factory sales from plants in the *United States* totaled 4,267,328 during the first six months of 1980, compared with 6,686,574 in the like period a year earlier. Breakdown for the latest half-year was: 3,415,398 passenger cars (down 29%) and 851,730 trucks and buses (down 54%).

Factory sales from plants in Canada reached 726,312 motor vehicles to June 1980, 23% less than a year earlier. [Motor Vehicle Manufacturers Association of the United States, Inc.]

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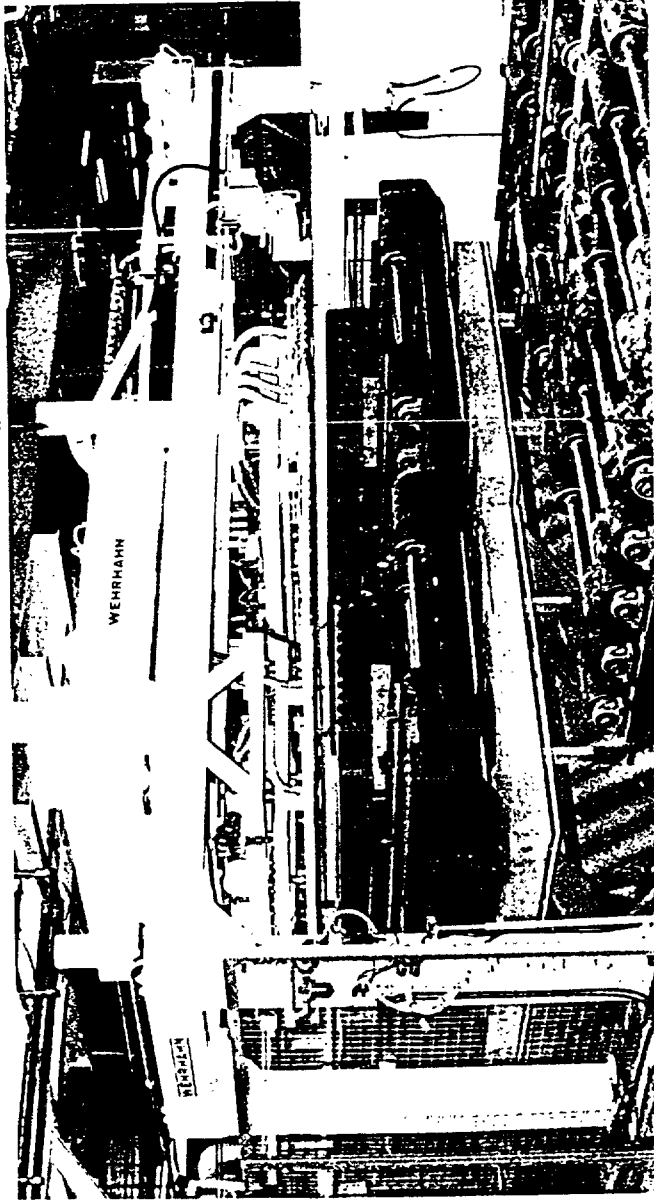
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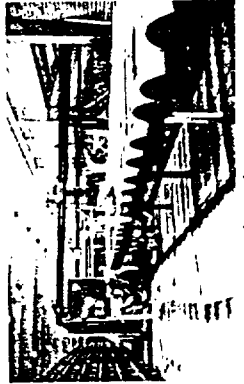
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dust-free asbestos bag-opening machine

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PRODUCTION—IMPORTS—EXPORTS

IMPORTS INTO THE UNITED STATES

From: U.S. Bureau of the Census

UNMANUFACTURED ASBESTOS:

		MAY 1980
Amosite, South Africa	19	\$ 101,268
Crocidolite, South Africa	1,857	1,074,026
Chrysotile Spinning Fibers, Canada	330	210,367
Rhodesia	20	20,819
South Africa	298	253,455
Chrysotile, Other, Canada	25,265	4,585,353
Germany, Fed. Rep.	21	2,368
South Africa	519	322,968
Other Crudes & Fibers, Canada	691	216,775
Germany, Fed. Rep.	7	10,857
India	46	13,890
Rhodesia	20	21,045
	29,093	\$ 6,833,191

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos yarn, cloth, tape, etc.	Lb	504,861	\$ 946,231
A-C pipes, tubes & fittings	Lb	398,121	54,681
Other asbestos-cement articles	Lb	7,871,468	1,237,851
Other asbestos articles		447,119	
			\$ 2,685,882

UNMANUFACTURED ASBESTOS:

		JANUARY-MAY 1980
Amosite, South Africa	115	\$ 151,902
Crocidolite, Canada	57	11,672
South Africa	7,040	4,410,710
Chrysotile Crudes, Rhodesia	22	29,592
Chrysotile Spinning Fibers, Canada	3,014	2,252,345
Rhodesia	522	494,547
South Africa	298	253,455
Chrysotile, Other, Canada	173,124	40,467,551
Germany, Fed. Rep.	21	2,368
Mexico	27	783
South Africa	758	432,262
Other Crudes & Fibers, Canada	4,097	1,121,537
Germany, Fed. Rep.	21	28,280
India	46	13,890
Japan	13	4,440
Mexico	1	1,750
Rhodesia	100	101,170
South Africa	976	647,675
United Kingdom	1	712
	190,253	\$50,426,641

U.S. IMPORTS—CONTINUED

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos yarn, cloth, tape, etc.	Lb	3,202,591	\$ 5,461,026
A-C pipes, tubes & fittings	Lb	3,703,460	548,253
Other asbestos-cement articles	Lb	28,492,352	5,240,625
Other asbestos articles			2,571,547
			\$13,821,451

January-May 1979 U.S. imports of unmanufactured asbestos totaled 268,881 short tons, valued at \$65,212,494, imports of manufactured asbestos products were valued at \$12,945,928

CANADIAN FIBER SHIPMENTS

Primary Canadian Producers' shipments of asbestos (including tonnage for own use and concentrate shipped from Asbestos Hill) amounted to 125,291 metric tonnes in June 1980 compared with 138,836 tonnes in the sixth month a year earlier. Cumulative total for January-June 1980 was 601,473 tonnes; 511,976 tonnes from plants in Quebec and 89,497 tonnes from plants in Newfoundland and British Columbia. Total shipments for the first six months of 1979 were 715,703 tonnes; 633,606 tonnes from Quebec plants and 82,097 tonnes from the remaining operations. [Canadian Department of Energy, Mines and Resources]

FELT SHIPMENTS FROM CANADA

Canadian domestic shipments of wet felts and jackets for the First Half of 1980 totaled 326,422 kilograms, valued at C\$15,347,421. These figures include 1,740 kg, valued at \$33,819, to manufacturers of asbestos-cement pipes and/or sheets. Foreign Shipments during the half-year reached 178,805 kg, valued at \$9,610,019, including 23,821 kg, valued at \$579,388, to a/c pipe and/or sheet makers. . . . Total Canadian shipments of dryer felts and fabrics for the six months amounted to 280,279 square meters, valued at \$12,856,189. . . . Shipments of Canadian plastic forming and paper machine felts totaled 137,742 m², valued at \$14,108,484. . . . Total Shipments of pulp machine felts during the latest half-year reached 6,268 m², valued at \$541,975. [Statistics Canada]

SOUTH AFRICAN PRODUCTION & EXPORTS

Asbestos production in the First Nine Months of 1979 totaled 178,711 metric tonnes, against 192,255 tonnes in the like 1978 period (down 7%). Breakdown for the latest nine months is: 84,644 tonnes of Cape Crocidolite (down 19%), 65,837 tonnes of Chrysotile (up 14%), 28,230 tonnes of Amosite (down 4%), and no Transvaal Crocidolite vs. 117 tonnes in the prior like period. . . . Exports in the January-September 1979 period were valued at R74,763,823, down 10%. By variety of asbestos, the values for the latest nine months were: Cape Crocidolite—R49,985,027 (down 12%), Chrysotile—R12,025,537 (up 11.5%), and Amosite—R12,753,259 (down 18%). [South African Department of Mines]

EXPORTS FROM THE UNITED STATES

From: U.S. Bureau of the Census

UNMANUFACTURED ASBESTOS:		MAY 1980
Asbestos crudes, fibers & stucco	s tons	4,214
Asbestos sand & refuse	s tons	2,085
		6,299
		\$ 2,502,453

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos yarn, cloth, tape, etc.	Lb	555,491	\$ 1,072,087
Asbestos-Cement shingles & clapboard	Lb	2,348,401	416,028
Other asbestos-cement articles	Lb	1,523,155	546,042
Asbestos gaskets	Lb	94,992	252,580
Asbestos packings & seals	Lb	1,796,271	1,796,271
Asbestos insulation	Lb	882,976	1,040,559
Brake linings & disc brake pads		4,455,478	4,455,478
Clutch facings & linings		1,885,543	1,885,543
Other asbestos articles		2,612,394	2,612,394
			\$14,076,982

UNMANUFACTURED ASBESTOS:

Asbestos crudes, fibers & stucco	s tons	15,216	\$ 6,476,558
Asbestos sand & refuse	s tons	6,006	1,888,834
		21,222	\$ 8,365,392

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos yarn, cloth, tape, etc.	Lb	1,727,739	\$ 3,209,046
Asbestos-Cement shingles & clapboard	Lb	5,690,134	1,218,632
Other asbestos-cement articles	Lb	13,062,762	4,216,555
Asbestos gaskets	Lb	439,837	1,338,546
Asbestos packings & seals	Lb	2,082,022	6,593,014
Asbestos insulation		2,832,636	2,832,636
Brake linings & disc brake pads		23,442,334	23,442,334
Clutch facings & linings		5,366,359	5,366,359
Other asbestos articles		12,932,224	12,932,224
			\$61,149,346

January-May 1979 U.S. exports of unmanufactured asbestos reached 16,043 short tons, valued at \$5,541,221; exports of manufactured asbestos products were valued at \$60,262,074

— ASBESTOS is pleased to welcome the following new advertiser—
PENN ENVIRONMENTAL HEALTH, PITTSBURGH, PENNSYLVANIA
(See Page 49)

EXPORTS FROM CANADA

From: Statistics Canada

UNMANUFACTURED ASBESTOS:	Crude	Milled Gp 3	Milled Gp 4&5	Short tons MAY 1980
Western Europe	158	11,672	6,344	
Eastern Europe	134	625	562	
Middle East		60		
Africa		1,056		
Asia	58	3,364	7,631	
Oceania		1,862	38	
So. & Cen. America & Antilles	50	2,467	2,341	
United States	150	29,604	10,624	
	550	50,710	27,560	

The total amount of unmanufactured asbestos exported in May 1980 was 78,820 short tons (71,504 metric tonnes), valued at C\$38,712,000.

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos cloth, dryer felts & sheets	C\$	206,000
Asbestos brake linings & facings		316,000
Asbestos-Cement building materials		726,000
Other basic asbestos products		1,336,000
	C\$	2,584,000

JANUARY-MAY 1980

UNMANUFACTURED ASBESTOS:	Crude	Milled Gp 3	Milled Gp 4&5	Short tons JANUARY-MAY 1980
Western Europe	1,872	88,318	57,848	
Eastern Europe	1,186	4,544	781	
Middle East	100	2,799	330	
Africa		6,662	3,738	
Asia	771	33,949	48,625	
Oceania	5	6,820	473	
So. & Cen. America & Antilles	603	23,083	16,584	
United States	2,006	62,355	138,296	
	6,543	228,530	266,675	

The total amount of unmanufactured asbestos exported in January-May 1980 was 501,748 short tons (455,182 metric tonnes), valued at C\$213,502,000.

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos cloth, dryer felts & sheets	C\$	1,914,000
Asbestos brake linings & facings		1,440,000
Asbestos-Cement building materials		8,123,000
Other basic asbestos products		5,936,000
	C\$	17,413,000

January-May 1979 Canadian exports of unmanufactured asbestos totaled 650,739 short tons (590,426 metric tonnes), valued at C\$238,085,000; exports of manufactured asbestos products were valued at C\$12,594,000.

CURRENT ASBESTOS PRICES

QUOTED FROM COMPANY PRICE LISTS

ASBESTOS CORPORATION

AS OF JANUARY 1, 1980

Grades 3Z to 3F spinning fiber
Grades 4T to 4A asbestos cement fiber
Grades 5R to 5D paper fiber
Grade 6D paper and shingle fiber
Grades 7TS to 7D shorts

PER TON OF 2000 LBS. F.O.B. MINE

CANADIAN DOLLARS

\$1125 to \$1750
846 to 1102
530 to 626
380
122 to 233

CASSIAR RESOURCES

AS OF JANUARY 1, 1980

AAA nonferrous spinning fiber; Canadian Group 3
AA nonferrous spinning fiber; Canadian Group 3
A nonferrous spinning fiber; Canadian Group 3
AC nonferrous spinning fiber; Canadian Group 3
AK asbestos cement fiber; Canadian Group 4
AS asbestos cement fiber; Canadian Group 4
AX asbestos cement fiber; Canadian Group 4
AY asbestos cement fiber; Canadian Group 5
AZ asbestos cement fiber; Canadian Group 6

PER TON OF 2000 LBS. F.O.B. NORTH VANCOUVER, B.C.

CANADIAN DOLLARS

\$2000
1600
1150
1050
975
900
825
825
575
375

Specialty grades AK100, AS100, AX100 and AY120 are increased an additional \$25.00 per ton above list price of base grade

VERMONT

AS OF JULY 1, 1980

Grade 3Z fiber
Grade 4D fiber
Grade 4T fiber
Grade 5K fiber
Grade 5R fiber
Grade 6D waste
Grade 7D shorts
Grade 7R shorts
Hooker No. 1
Hooker No. 2

PER TON OF 2000 LBS. F.O.B. MORRISVILLE, VERMONT

U.S. DOLLARS

\$ 996
760
661
512
434
318
205
117
108
1480
840

CALIDRIA ASBESTOS

AS OF JANUARY 2, 1980

SG-103 pellets in bags
SG-104 pellets in bulk
SG-130 open fiber in bags
SG-200 pellets in bags
SG-210 open fiber in bags
HPP pellets in bags
HPO open fiber in bags
RG-110 open fiber in bags
RG-144 open fiber in bags
RG-244 open fiber in bags

PER TON OF 2000 LBS. F.O.B. KING CITY, CALIFORNIA

U.S. DOLLARS

\$ 122
106
170
160
220
204
220
240
560
2500

ASBESTOS PRICES—CONTINUED

CALAVERAS ASBESTOS

AS OF JANUARY 1, 1980

Grade 4T surface area 6000
Grade 5R surface area 8000
Grade 6D surface area 8000
Grade 7R surface area 10000

PER TON OF 2000 LBS. F.O.B. COPPERPOLIS, CALIFORNIA
U.S. DOLLARS

\$ 661
434
318
115

ARIZONA

AS OF JULY 1, 1976

No. 1 Crude (Soft)
No. 2 Crude (Soft)
AAA

PER TON OF 2000 LBS. F.O.B. GLOBE, ARIZONA
U.S. DOLLARS

\$3000
1800
1300

Group No. 3 nonferrous filtering—plastic
Group No. 4 nonferrous filtering—plastic
Group No. 7 white shorts

\$ 750 to 840
750 to 840
100 to 200

BRAZIL

AS OF APRIL 1980

Grades 4Z to 4K asbestos cement fiber
Grades 5D to 5R asbestos cement fiber
Grade 7TF asbestos cement shorts
Grade 8S shorts

PER TON OF 2000 LBS. F.O.B. MINE
BRAZILIAN CRUIZEIRO \$

\$17778 to \$19952
7991 10935
3157
1493

In Memoriam

JOSEPH W. GREENEN—August 21, 1980; Vice President of Account Development, Nutrun Corporation; formerly with Worldbestos Company, Auto Friction Corporation and the Grizzly Division of Maremont Corporation; was a Past President of the Friction Materials Standards Institute, Inc.

FRED KOLBERG—June 1980; Co-Founder of Kolberg Manufacturing Corporation, a wholly-owned subsidiary of Portec, Inc.; had a distinguished career in the construction equipment industry for over 50 years

JACK L. RECHT—July 2, 1980; Manager of the Statistics Department of the National Safety Council; joined NSC in 1955 as a senior statistician; was the chief contributor to the Council's "Accident Facts."

WILLARD D. RYDER—August 7, 1980; Chairman of the Board, Standard Asbestos Manufacturing & Insulating Company; had been associated with the firm for more than 40 years; was a Charter Member of the Houston Engineering and Scientific Society.

WILLIAM J. SLATTERY—July 1980; Manager of the Standards Information Service of the U.S. National Bureau of Standards; was in charge of SIS' reference collection of 240,000 U.S., foreign and international standards and responsible for providing current data on standards and standardization activities to government agencies and the public; was a recipient of the Meritorious Service Award of the American National Standards Institute.

PEOPLE ON THE MOVE

AMERICAN SOCIETY FOR TESTING AND MATERIALS

Robert C. Moore, Senior Vice President of Elson T. Killam Associates, Inc., Milburn, New Jersey, was elected Chairman of ASTM Committee C-17 on Asbestos-Cement Products. He will head the 55-member committee concerned with the promotion of knowledge, stimulation of research and the formulation of test methods, specifications and definitions relating to roofing, siding, flat sheets, corrugated sheets, pipe and similar products deriving their essential properties from asbestos and cement.

CERTAINTED CORPORATION

Michel L. Besson, Vice Chairman and Chief Executive Officer, has been elected to the additional positions of President and Chief Operating Officer of Certainteed Corporation. *Franklin R. Winnert*, who recently resigned as President and Chief Operating Officer, is now President and Chief Operating Officer of Safeguard Business Systems, Inc., Fort Washington, Pennsylvania. *Rene Goutte*, *Fred Timpe* and *John W. Bell, Jr.*, were recently named as Corporate Vice Presidents of Certainteed. Mr. Goutte had rejoined the company in 1979 and most recently had been President of the Insulation Group. Mr. Timpe started with the firm in 1971 and had been President of the Pipe & Plastics Group. Mr. Bell, who has been with the company since 1972, had been President of the Vinyl Building Products Division. *Dorothy C. Wackerman* is now Assistant Vice President of Public Relations. Her first responsibility with the company was in 1969 as an advertising assistant for Certainteed-Saint Gobain Insulation Corporation.

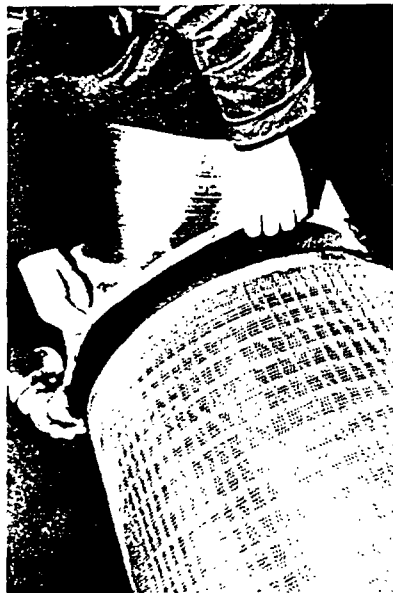
GAF CORPORATION

Juliette M. Moran, an Executive Vice President and member of the Board of Directors of GAF Corporation since 1974, was elected Vice Chairman. She joined the company as a chemist in 1943. *Richard Fleming* has been elected President, Chief Operating Officer and a member of the GAF Board. He joined the company in 1969 as Group Vice President and a Director. Dr. Jesse Werner continues as Chairman of the Board and Chief Executive Officer. *Abraham Lindenauer* is now Vice President for Technical Services, responsible for corporate, environmental, industrial and maintenance engineering. He succeeds *Thomas A. Dent*, who took early retirement in July 1980.

JAMES HARDIE INDUSTRIES LTD.

R. W. Hardie was named Company Secretary of James Hardie Industries Ltd., succeeding *R. O. Banks*, who retired in early July 1980. Mr. Hardie joined the firm in 1974 as Assistant Company Secretary. Newly appointed Directors of Hardie include *D. G. A. Say* and *W. A. Butler*.

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and how they fit!

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PEOPLE ON THE MOVE—CONTINUED

SOUTHERN TEXTILE CORPORATION

Southern Textile Corporation has announced the promotion of Alexander Smith to the position of Vice President of Manufacturing. Based at the Charlotte Works, Mr. Smith has assumed, as of September 1, 1980, full responsibility for all manufacturing, engineering, purchasing, personnel and research and development. He had been Vice President-Sales. Frank Williams was named General Sales Manager, responsible for all customer sales and service, markets and the supervision of all field sales representatives throughout the United States. He joined the company in 1958 as a Territory Sales Representative.

R. M. GORDON RETIRES FROM RAYBESTOS



Robert M. Gordon, (center) Vice-Chairman of Raybestos-Manhattan, Inc., Trumbull, Connecticut, received a silver tray upon his retirement on June 30, 1980. The gift, engraved with the signatures of all of the Directors of R/M, was presented on behalf of the Directors by William S. Simpson (right), Chairman of the Board, and Frederick J. Ross (left), President and Chief Executive Officer.

Mr. Gordon had been a Director of Raybestos-Manhattan since 1972 and had served as President and Chief Operating Officer from 1974 to 1979. His career with the company, its subsidiary, The Milford Rivet & Machine Company, and a predecessor firm spanned nearly 40 years.

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ASBESTOS—September 1980



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Asbestos, whose low heat build-up and inability to catch fire, even at temperatures where steel melts, makes it indispensable to air travel.

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AND CZECHOSLOVAKIA)
Fibramanto, Società a R.L., Piazza P. Clotilde 6, 20121
Milano, Italy. (FOR ITALY, GREECE, TURKEY, IRAN AND
ETHIOPIA)
Other representatives world-wide.

BIRTHDAY GREETINGS to . . .

Norman Visnes, Vice President-Mining, Asarco Incorporated, New York City, October 16.

R. C. Castellani, Manager, Distribution Center, Atlas Turner Inc., Surrey, British Columbia, October 18.

Sir Neville "Jimmy" Slack, Director General, Asbestos International Association, London, England, October 19.

Monroe Harris, Senior Vice President, Mining Group, Johns-Manville Corporation, Denver, Colorado, October 22.

James H. Plummer, Chairman of the Board, Pars Manufacturing Company, Ambler, Pennsylvania, October 22.

James P. Power, Vice President and Operations Manager, Asbestos Fibre Division, Johns-Manville Canada Inc., Asbestos, Quebec, October 25.

John Ramsay Sim, Personnel Director and a Director, Cape Industries Ltd., London, England, October 30.

A. T. Reid, a Director, James Hardie Industries Ltd., Sydney, New South Wales, October 31.

Millon Q. Scowcroft, Asbestos Litigation Consultant, Raybestos Industrial Products Company, N. Charleston, S. Carolina, November 3.

Sam E. Brasher, President, Celotex Roofing Products Division, Jim Walter Corporation, Tampa, Florida, November 5.

William Maasland, Sales Manager, Amalex Corporation, Norristown, Pennsylvania, November 5.

Dr. Robert J. Merrill, Managing Director, Chrysler Corporation of Australia Pty. Ltd., Barraba, New South Wales, November 6.

Dr. Hilton C. Lewinsohn, Corporate Medical Director, Raybestos-Manhattan, Inc., Trumbull, Connecticut, November 7.

Richard G. G. Ph.D., a Director, Technical, Cape Industries Ltd., London, England, November 9.

John A. McKinney, Chairman of the Board and Chief Executive Officer, Johns-Manville Corporation, Denver, Colorado, November 9.

Richard O. Moebius, Textile Mill Superintendent, Industrial Division, Raybestos-Manhattan, Inc., Manheim, Pennsylvania, November 10.

Monte C. Carpenter, President and Chief Operating Officer, The Flintkote Company, Irving, Texas, November 12.

Wade W. Cloyd, Vice President, heading the Communications Division, Raybestos-Manhattan, Inc., Trumbull, Connecticut, November 12.

William A. Sells, Vice President, Production and Engineering, Johns-Manville Corporation, Denver, Colorado, November 12.

Victor Puskar, Senior Research Engineer, Asbestos Laboratory, Asarco Incorporated, South Plainfield, New Jersey, November 13.

Terrell L. Ruhlman, Chairman and Chief Executive Officer, The Ansul Company, Marinette, Wisconsin, November 13.

W. B. Callan, Vice President-Operations, Asbestos Corporation Ltd., Thetford Mines, Quebec, November 14.

K. H. Dixon, Corporate General Manager-Mining, Turner & Newall Ltd., Manchester, England, November 14.

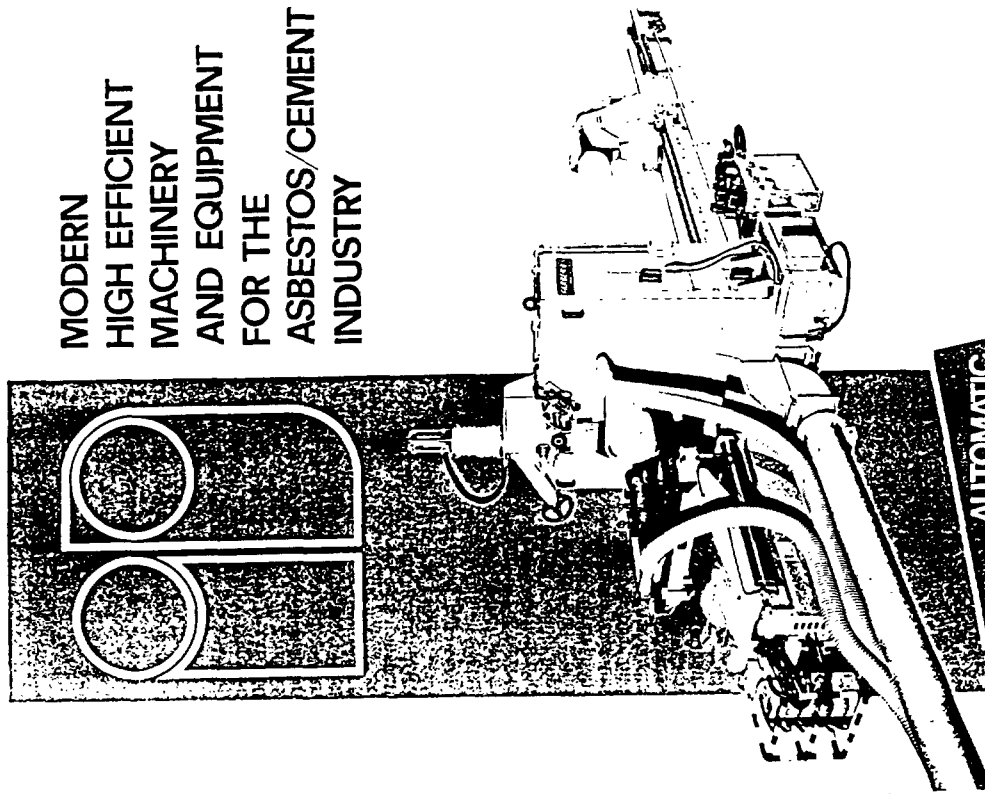
Dr. Karl V. Lindell, Eng., Executive Vice President, Hazemag (Canada) Ltd., Pointe-Claire, Quebec, November 14.

George L. Romine, President, Friction Products Group, Abex Corporation, New York City, November 14.

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ASBESTOS—September 1980

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AND EQUIPMENT
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INDUSTRY



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ANNUAL REPORTS—1979

BBA GROUP LTD.

For the year ended December 31, 1979, BBA Group Ltd., Cleckheaton, West Yorkshire, England, reported a turnover of £137,316,000 compared with £120.5-million the previous year. Trading profit rose to £9,676,000 from £8.6-million and profit after taxation was £5,500,000 vs. £5.2-million. Exports, together with overseas companies' sales, raised the total sales to customers overseas to nearly £87-million, or 63.3% of Group turnover. Profits earned overseas rose 29.9%, with improvements showing in West Germany, France, the United States, Canada, the Republic of South Africa and Australia. Companies in the United Kingdom generally did not fare so well, their margins having been affected early in the year by a transport strike, rising costs and the strong pound. Capital expenditure in 1979 amounted to £7,411,000 and £10,489,000 is authorized for 1980.

Automotive—Consolidated automotive sales were 11.1% over 1978, with each operating company contributing to the increase. Overall, profits rose 3.2%. Mintex Ltd., in the U.K., achieved a considerable increase in sales, although profits were lower. New materials for commercial vehicle brake linings were well received by domestic and foreign customers and an additional plant was installed for the production of this product line. Textar GmbH, West Germany, again increased sales and profits and good progress was made in the replacement field against fierce competition. This company manufactures and distributes brake and clutch linings and associated automotive components. Frenos y Embragues SA, Spain, had higher overall sales in spite of a lower demand for original equipment in its home market. BBA's marketing company in France enjoyed record sales and profits. Both Mintex Canada Ltd. and Cantex Corporation, U.S., improved their positions, the latter trading profitably for the first time. South Africa was particularly affected by the fuel crisis, but Frima Holdings Ltd. nevertheless showed improved trading results. BBA's associated company in Australia, Bendix Mintex Pty Ltd., had another excellent year, with notable advances in sales and profits. Raiko Ltd., maker of reinforced plastics, bearings and components, had a successful year although it was affected by the general depression in the U.K. engineering industry. Large orders were obtained for railway applications in the Sudan and for British Rail's Hicap bulk freight rolling stock.

Industrial—BBA'S industrial companies showed an overall improvement, with increases of 22.5% in sales and 18.6% in profits. Scandura Ltd., U.K., achieved substantial increases in sales and profits. Positive developments included an important contract for Gold Line mining belting in China and a higher sales volume of asbestos yarn for export. Scandura Inc., U.S., passed its previous record production figures for belting, as sales and profits rose well above the 1978 level. The market for mining belting continued to be difficult. Scandura Canada Ltd., maintained its position, although sales of mining belting were reduced. At Regina-Fiberglass Ltd., in the U.K., progress was slow and the resultant deficiency in sales volume caused a trading loss. The overseas glass fiber companies in Australia and South Africa again achieved excellent trading results. Sovex Marshall Ltd., designer and manufacturer of mechanical

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ASBESTOS—September 1980

BBA ANNUAL REPORT—CONTINUED

handling systems and equipment, began the year with a poor order book and later, when activity had revived, was affected by an engineering industry strike. Comprehensive Computer Services Ltd. had a satisfactory year, increasing income and extending its range of equipment. BBA Properties Ltd. continued to provide additional properties for operating companies.

ADVOCATE MINES LTD.

Advocate Mines Ltd. owns and operates an openpit asbestos mine and mill complex at Baie Verte, on the northeastern coast of Newfoundland. The mine has a projected life of about 14 years and the mill has a daily operating capacity of 6,500 metric tonnes. Total A-25 fiber production in 1979 was 48,127 tonnes, with a fiber recovery of 2.28%. The value of fiber produced was \$30,958,071 in 1979 compared with \$21,357,433 in 1978. Two grades of asbestos cement fiber are produced and sold pursuant to long term sales contracts with Compagnie Financiere Eternit S.A., Belgium, and Johns-Manville Sales Corporation, United States. Operations are managed by Johns-Manville Canada Inc. At year-end 1979, Advocate's workforce included 527 hourly-paid and 81 salaried employees who were paid in excess of \$12-million during the year in wages, salaries and benefits. In the past three years, the company has contributed on average approximately \$2.6-million to the economy of Newfoundland in municipal, mining and income taxes and social security benefits.

Advocate Mines continued to be plagued by financial problems, losing \$10.3-million (\$1.72 per share) and ending 1979 in a deficit position. The loss is attributable to increased depreciation and amortization charges resulting from a re-evaluation of ore reserves, substantially lower than anticipated ore recoveries, high waste-to-ore ratios and rapidly escalating operating costs. The average percentage of fiber recovered from ore crushed in 1979 was 2.78%, compared with 3.67% in 1977 and 4.06% in 1976, the last two years in which the company operated profitably. Similarly, waste-to-ore ratios were 5.32:1 in 1979, 4.0:1 in 1977 and 4.3:1 in 1976.

Ore reserves have been recalculated and reduced 10.2-million metric tonnes to 28.9-million tonnes. Barring unforeseen operational problems, a new pricing structure and an injection of new financing should be sufficient to enable Advocate to continue to meet its obligations, return to a positive cash flow position by 1981 and permit the orderly development and mining of substantially all of its ore reserves. On this basis, the Advocate orebodies should be depleted by 1993. This outlook is contingent upon ore availability, the development of the West Pit orebody and the company's ability to control costs. Substantial operational improvements are continuing and a cost reduction program has been implemented. In addition, the waste removal program begun in 1978 to make more ore faces available for mining in the North and West Pits continues satisfactorily.

In its continuing effort to improve environmental conditions, Advocate's \$2.2-million changehouse comprising shower, double-locker and improved lunch room and sanitary facilities and the new dry rock storage dust filtration system became operational in the first half of 1980.

ASBESTOS—September 1980

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Environmental projects completed in 1979 included the \$2.3-million air handling system in the crusher and dryer building and a drive-through car wash for employees.

WOODSREEF MINES LTD.

Woodsreef Mines Ltd., Barraba, New South Wales, Australia, has presented its 10th annual report for the period ending December 31, 1979. Because of the change in its year end, the report covers a 14-month period. The 1978/1979 financial period showed an operating loss, including interest, and depreciation, of \$6,937,000, compared with a loss of \$7.3-million a year earlier. During the latest year, the federal and state governments provided funds to cover operating losses, excluding depreciation, interest and royalties. However, due to a 4-month delay in installation of the tailings recovery circuit, it has been estimated that revenue in the vicinity of \$900,000 was lost. The additional losses were funded by the Commercial Bank of Australia Ltd. Negotiations were initiated with the bank and preliminary agreement was reached in December 1979 whereby the bank agreed to accept, in full settlement of Woodsreef Mines' indebtedness, the same amount of money it would have realized if the mining/milling operation at Barraba was liquidated.

Chrysotile Corporation of Australia Pty. Ltd.—There was a substantial improvement in the markets for asbestos in 1979, especially evident in Asia. World prices for asbestos increased an average 14% at the beginning of 1980 and the average increase in revenue for a metric tonne of Chrysotile Corporation fiber was 17%. Fiber sales in the calendar year 1979 totaled 78,000 tonnes, compared with the previous highest year (1978) when sales reached 64,000 tonnes. The tailings recovery circuit, now operating entirely satisfactorily, quickly proved it could increase revenue the predicted 15%. The mining situation at Barraba continues to pose difficulties due to a backlog in waste rock removal of approximately 2-million tonnes. The strong demand for asbestos has continued into 1980 and there are indications that a world shortage is developing. Discounting of fiber prices has practically disappeared and there is a strong possibility of a further price increase in mid-1980. Operating costs rose an average 11%, principally for fuel oil, electricity and tires. Operating statistics in the latest 14-month period for the mining/milling complex are 14,330,912 tonnes of ore mined, 3,498,649 tonnes crushed, 2,326,343 tonnes milled and 83,770 tonnes of fiber produced. The average revenue per tonne of fiber produced was \$313.00 vs. \$290.00 a year earlier. Proven ore reserves, reviewed as of December 1, 1979, total 24,238,000 tonnes, sufficient to maintain a mine life until mid-1988.

Asbestos Mines Pty. Ltd.—The small asbestos mine at Baryulgil was closed in April 1979 due to continuing losses.

Fiber Milling Process—The joint venture research work on the wet milling process continued in 1979 and results continue encouraging. A test program involving using the wet processed fiber to produce asbestos-cement sheets was successful and the company is now in a position where construction and operation of a wet process prototype mill, to produce 1½ tonnes of fiber per day, is justified. Woodsreef Mines was successful in obtaining grants from the Australian Industrial Research &

Development Incentives Board covering approximately half of the cost of research and development and the Board has agreed to fund half the cost of constructing and operating the prototype. Under an agreement dated February 1, 1979, Woodsreef Minerals Ltd., Canada, is funding all costs associated with the wet process. In exchange, the parent company can earn up to a 45% interest in overseas rights to the wet process. Woodsreef Mines retains exclusive rights for use of the process in Australia.

ASBESTOS STOCK QUOTATIONS

CLOSE: AUGUST 19, 1980

Abitibi Asbestos	C\$ 95	G&W (pid 3.87)	113
Advocate Mines	C\$1.75	G&W (pid 5.75)	63
Armstrong World Ind.	17%	IC Industries	32
Armstrong (pid 3.75)	35	IC Ind. (pid 3.50)	47 1/4
Asarco	36 1/4	Johns-Manville	24 1/2
Asbestos Corporation	C\$30.00	J-M (pid 5.40)	50
Bendix	48%	Kennecott Copper	27 1/2
Bendix (pid)	44%	Lear Siegler	26 1/2
Carlisle	38%	Lear Siegler (pid 2.25)	68
Cassiar Asbestos	C\$14.125	McAdam Mining	C\$ 74
CertainTeed	15%	National Gypsum	24
Charter Conso.	pence 230	Pathfinder	C\$ 57
Colt Industries	45 1/4	Porter, H. K. (pid 5.50)	70%
Colt Ind. (pid 1.60)	36 1/2	Raybestos-Manhattan	21 1/2
Colt Ind. (pid 4.25)	100	Rio Algom	C\$33.00
Conwest A	C\$5.50	Rio Algom (pid 5.80)	C\$60.25
Conwest B	C\$4.95	Rio Algom (pid 8.5%)	C\$4.45
GAF Corporation	11 1/4	Supradur Bid 4 1/4	Asked 4 1/4
GAF (pid 1.20)	14%	Union Carbide	47
Genstar	31%	United Asbestos	C\$6.00
Genstar (pid 1.68)	28%	Walter, Jim	34
Gulf & Western	18%	Walter, Jim (pid 1)	10 1/4
G&W (pid 2.50)	48	Walter, Jim (pid 1.60)	36
		Woodsreef Minerals	C\$ 52

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International asbestos-cement review

VALUABLE MINING LITERATURE

ORDERS FOR THE FOLLOWING BOOKS MAY BE PLACED THROUGH ASBESTOS MAGAZINE. PLEASE INCLUDE REMITTANCE WITH ORDER AND SPECIFY SEPTEMBER 1980 AS DATE OF LISTING. ALL CHECKS MUST BE ISSUED IN U.S. FUNDS ON A U.S. BANK.

HOMOGENISATION/BLENDING SYSTEMS DESIGN AND CONTROL FOR MINERALS PROCESSING (WITH FORTRAN PROGRAMS)—Provides an introductory text for the unified treatment of raw material blending and homogenization systems for minerals processing, bringing together into one volume the techniques and principles involved in their design; topics include optimal stockpile prehomogenizer design and control in the face of random materials quality variation, accurate mineral deposit characterization through the use of geostatistical techniques, the application and design of selective quarrying procedures, sampled data systems, optimization theory and the accurate determination of processing unit dynamic models and high-speed, digital minicomputers. [Trans Tech Publications; 332 pages; \$62.50 per hard cover or \$42.50 per soft cover]

FINANCIAL TIMES MINING INTERNATIONAL YEAR BOOK 1980—Lists over 700 companies, in over 80 countries, involved in the mining of metals, minerals and ores; entries carry names, titles and job functions of directors, executives and chief personnel, head office addresses, telephone numbers and operating locations; also included is information on inter-company interests, operating results, ore reserves, financial structure and shareholdings, latest company dividends and accounts, a ten-year record of dividends, and high and low stock quotations for the last three years [Longman Group Ltd.; 750 pages; \$56.00 per copy by surface mail; \$79.00 via airmail]

MINE DRAINAGE—Proceedings of the First International Mine Drainage Symposium held May 1979 at Denver, Colorado; over half of the 38 papers are dedicated to practical dewatering applications, with numerous excellent case examples of solutions to openpit and underground mine water problems; also covered are methods for investigating and evaluating surface and subsurface drainage and seepage and contamination problems associated with tailings dams. [World Mining; 848 pages; \$55.00]

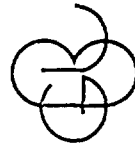
CANADIAN MINES HANDBOOK 1980/1981—In addition to a Toronto Stock Exchange index, this book lists trade/mining/professional associations, Canadian mining companies and their dividends, charters cancelled or revived, federal and provincial mines departments, gold and silver and mining stock prices, securities commissions, smelting plants and refineries, Stock Exchange Commission rates and transfer agents; it also contains a conversion table, a producing mines summary and maps of mining areas and gives statistical data on Canadian mineral production and exports. [Northern Miner Press Ltd.; 372 pages; \$17.00 paper bound or \$20.00 per leatherette copy]

ROSKILL'S SOURCEBOOK FOR METALS AND MINERALS DATA—A unique reference book, now in its third edition, contains listings of 50 international sources, 244 sources for individual metals and minerals and 180 national sources of metals and minerals data, including asbestos; contains a guide to the pitfalls in using metals and minerals statistics [Roskill Information Services Ltd.; 139 pages; \$15.00]

Page 44

ASBESTOS—September 1980

- Machinery for asbestos-cement since 1912, therefore take advantage of our experience.
- Complete plants with high capacity for corrugated and flat sheets, flat pressed and coloured sheets.
- Production of special sheets up to 9 mt length.
- Auxiliary machines for special sheet profiles.
- Complete plants with high production for pressure and sewage pipes.
- Special plants for preparation of wet and dry Asbestos.
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PAPERS AND ARTICLES

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CHARACTERISTICS OF A POTASSIAN WINCHITE-ASBESTOS FROM THE ALLAMOORE TALC DISTRICT, TEXAS—By Ann G. Wylie, University of Maryland, and Charles W. Huggins, U.S. Bureau of Mines; appeared in "Canadian Mineralogist," [7 pages]

THERMAL TRANSFORMATION OF CHRYSOTILE STUDIED BY HIGH RESOLUTION ELECTRON MICROSCOPY—By Helena de Souza Santos, University of Sao Paulo, and Keiji Yada, Tohoku University; appeared in "Clays and Clay Minerals," [15 pages]

EMPLOYER PROTECTION AGAINST THE HAZARDS OF AN OSHA INSPECTION—By Robert D. Moran, Attorney at Law, Washington, D.C.; formerly Chairman of OSHA's Occupational Safety and Health Review Commission. [14 pages]

SETTLING THE DUST—Discusses a new concept in settlers which will reduce the size of underground excavations and dramatically reduce the capital outlay; appeared in "Prospect" and reprinted in "Mining and Engineering," [2 pages]

DIAMOND AND ITS ROLE IN DIAMOND DRILLING—By R. Welch, Boart Research Centre in South Africa; paper featured in the Proceedings of the South African Drilling Association Symposium held in 1979 [4 pages]

GRINDING MILL CONTROL SYSTEMS USE ACOUSTIC FEEDBACK—First appeared in "ELB," a publication of E. L. Bateman (Pvt) Ltd.; reprinted in the "Chamber of Mines Journal," [2 pages]

LASERS IN MINING—By R. W. Whitehead, Shanghai Mining Corporation Ltd. and the Association of Mine Managers of Zimbabwe Rhodesia, appeared in the "Chamber of Mines Journal," [1 page]

ASBESTOS/A BALANCED PERSPECTIVE—By Robert G. Edwards, Ph.D., Director of Laboratory Services, Martel Laboratories, Inc.; a brief discussion on asbestos, its uses and health aspects. [4 pages]

TEMPERATURE AND MOISTURE ANALYSIS IN COMPOSITES—A computer program to study environmental effects; appeared in "NASA Tech Briefs," [2 pages]

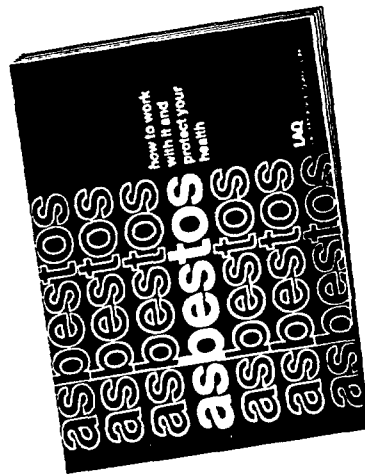
FLAME RESISTANT TEXTILES—A continuous process treats fabric by the surface photoaddition of fluorocarbons; describes work done by Science Applications, Inc., for the Lyndon B. Johnson Space Center, appeared in "NASA Tech Briefs," [1 page]

HIGH TEMPERATURE INSULATION—A lightweight insulating material works over a very broad temperature range; study done by Rockwell International Corporation for the Marshall Space Flight Center, appeared in "NASA Tech Briefs," [1 page]

FIBER CEMENT PLANT IN IRAN—By Prof. Dr.-Ing. Heinz Posch, discusses planning, installation and start-up. [Contact the author for further information, at: Koenigsallee 14 H, D 1000 Berlin 33, Germany]

METHODS AND APPLIANCES FOR MAKING THIN WALLED STRUCTURAL ELEMENTS OF FIBROUS MATERIAL, IN PARTICULAR WITH ASBESTOS—By Prof. Dr.-Ing. Heinz Posch; gives a short survey of fiber-reinforced cement building materials, i.e., glass fiber concrete, steel reinforced fiber concrete, asbestos fiber cement and wood fibre cement. [Contact the author, address as above]

LEARN THE PROPER WAY TO WORK WITH ASBESTOS



Send for a free copy of this booklet.

Asbestos is used in thousands of products and many of them, such as brake linings and fireproof clothing, protect and save lives every minute of every day. And in many of these products there is no adequate substitute for asbestos. However, as with any fibrous material, precautions should be taken to minimize exposure to airborne fibers.

The booklet points out eight measures which employers should take to protect the health of employees who work with products containing asbestos. It also details 10 steps that employees should

take to protect their own health. As a major producer of asbestos fibers, LAQ has many years experience in working with this versatile mineral. Based on our experience, we prepared this booklet to provide information to manufacturers who use asbestos in their products. While each situation deserves individual attention, the guidelines in this booklet are helpful in providing a working environment that meets government regulations and protects the health of employees. Write for your copy, Lac d'Amiante du Québec Ltée, P.O. Box 608, Black Lake, Quebec, Canada G0N 1A0.

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CALENDAR OF EVENTS

OPTICAL SOCIETY OF AMERICA—1980 annual meeting, Chicago, Illinois, October 13-17.

NONWOVENS—5th international exposition and conference sponsored by the Association of the Nonwoven Fabrics Industry, Rosemont, suburban Chicago, Illinois, October 14-16.

OCCUPATIONAL RESPIRATORY PROTECTION—NIOSH Course #593 sponsored by Midwest Center for Occupational Health and Safety, Kansas City, Missouri, October 14-17.

DIGITAL COMPUTER APPLICATIONS TO PROCESS CONTROL—6th international conference of the International Federation of Automatic Control (IFAC) and the International Federation for Information Processing (IFIP), Dusseldorf, West Germany, October 14-17.

ENVIRONMENTAL LAWS AND REGULATIONS—Announced by Government Institutes; introductory course at Dallas, Texas, October 16-17; masters' seminar at Washington, D.C., November 17-18.

MINERAL WASTE UTILIZATION—7th symposium hosted by IIT Research Institute in conjunction with the U.S. Bureau of Mines, Chicago, Illinois, October 20-21.

OCCUPATIONAL EXPOSURE TO NOISE AND VIBRATION—an industry-oriented seminar on effects, measurement and control, announced by the National Research Council of Canada, Montreal, Quebec, October 20-21.

68TH NATIONAL SAFETY CONGRESS—To be held by the National Safety Council; Chicago, Illinois, October 20-23.

INSTRUMENT SOCIETY OF AMERICA—35th annual conference and exhibit; Houston, Texas, October 20-23.

AMERICAN TEXTILE MACHINERY—1980 international exhibition sponsored by the American Textile Machinery Association and Textile Hall Corporation; Greenville, South Carolina, October 20-24.

SOCIETY OF MINING ENGINEERS OF AIME—1980 fall meeting and exhibit; Minneapolis, Minnesota, October 22-24.

HAZARDOUS WASTE ENGINEERING—Seminar provided by Vanderbilt University; October 22-24 at Toronto, Ontario; November 3-5 at Phoenix, Arizona.

CONTROL PROBLEMS AND DEVICES IN MANUFACTURING TECHNOLOGY—3rd IFAC/IFIP symposium, Budapest, Hungary, October 22-25.

SYSTEMS ENGINEERING APPLICATIONS TO INDUSTRIAL ENERGY GENERATION AND PROCESSES—IFAC workshop announced by Instrument Society of America; Houston, Texas, October 23-24.

SAMPLING AND EVALUATING AIRBORNE ASBESTOS DUST—A NIOSH course conducted by the University of Southern California, Los Angeles, California, October 28-31.

EUROPEAN WASTE-TO-ENERGY TECHNOLOGY—Conference sponsored by the U.S. Department of Energy and the U.S. Environmental Protection Agency; Reston, Virginia, October 29-31.

WATER POLLUTION CONTROL LAWS AND REGULATIONS—Seminar offered by Government Institutes; Washington, D.C., October 30-31.

HYDRAULIC TRANSPORT OF SOLIDS IN PIPES—7th international conference announced by BHRA Fluid Engineering (British Hydro-mechanics Research Association); Sendai, Japan, November 4-6.

SAMPLING AND EVALUATING AIRBORNE ASBESTOS DUST—NIOSH Course #582, sponsored by the Midwest Center for Occupational Health and Safety, Minneapolis, Minnesota, November 10-13.

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DEADLINE—October 20, 1980

Remember When?

(August 1930 ASBESTOS)

New Advertiser: Johnson's Company, Thetford Mines, Quebec.

This issue reported the death, June 24, 1930, of Frederick Stirling Newall. Mr. Newall was Chairman of the Washington Chemical Company and had been chairman of Turner & Newall Ltd.

Emco Asbestos Company announced its purchase of Automatic Piston Pin Company, Los Angeles, California. Starting with its original line of asbestos brake linings and clutch facings, Emco had, through various acquisitions, become a major supplier of automotive replacement parts.

The name of the Beton & Mollith asbestos-cement products plant at Moll, Belgium, was changed to Johns-Manville, S.A. The plant was established in 1923 and became J-M's first European production unit when it was acquired in 1928.

The asbestos raw material section of Hobdell, Way & Co. Ltd. was taken over by Raw Asbestos Distributors Ltd. and the insulation and other businesses of Hobdell were absorbed into the Turner & Newall organization.

J. M. Weaver, formerly connected with the Keesbey & Mattison Company, joined Raybestos-Manhattan, Inc., to assist in that company's expansion of its asbestos textile product lines.

The Kubar Manufacturing Company, Davidson, North Carolina, announced its name was being changed to Carolina Asbestos Company. J. A. Tennant, formerly Eastern Representative for Southern Asbestos Company, was appointed Sales manager of the newly-named firm.

(September 1930 ASBESTOS)

This issue reported the first regular use of a fireproof mail bag in the airmail service between New York and Chicago. The bag was made of a layer of pure asbestos cloth protected inside and out by layers of heavy canvas, the three layers being quilted by steel rivets.

The death of Frederick L. Pilliod, a Director of Johns-Manville Corporation, was noted. Mr. Pilliod had been associated with Keesbey & Mattison Company and, upon joining J-M, was placed in charge of purchasing and installing the machinery with which J-M entered the asbestos textile and packing businesses.

Also reported was the death of Patrick J. Smith, a founding member of Smith & Kanzler, Elizabeth, New Jersey, a well known manufacturer of asbestos paper, aircell insulation and asbestos-cement products.

Herbert Abraham announced that the Ruberoid Company, of which he was President, had acquired a controlling interest in Eternit, Inc., of St. Louis, Missouri, a maker of asbestos-cement shingles, lumber and corrugated sheets.

Page 50

ASBESTOS—September 1980

Our word is as good as our felt

Our felts are of the highest quality: as they should be coming from the only company which manufactures exclusively for the asbestos-cement industry. And we make a special effort to ensure our back-up service meets equally high standards. We have the technical know-how to produce exactly what our customers demand, and the enthusiasm to make sure they are entirely satisfied.

Prove our claims for yourself: write or ring for details.



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SCAPA Group Company

We're helping industry use asbestos wisely with ads like this one.

We want our customers to continue taking advantage of the unique properties of asbestos. Too often, their ability to do so is hindered by decisions based on emotion rather than factual information. So we're calmly and repeatedly explaining the facts about asbestos-containing products in a series of full page, four-color ads, appearing regularly in *Industry Week* and the industrial edition of *Business Week*.

The advertising program is designed to let industry management know that in an extensive range of finished products, such as asbestos/cement sheets and pipe, gasketing materials, asphalt-based coatings, latex and resin-bound papers, and friction materials, the asbestos is "locked in" by various binders to form environmentally safe materials. This ad lets them know that by following certain practices, asbestos can be handled and processed safely.

Our investment in advertising is not nearly as large as that directed toward developing safer ways to ship, handle, and use asbestos. But in many ways, it's equally important. We think it's part of our job as the world's leading producer of asbestos. And part of our continuing commitment to the future of asbestos.

Asbestos is not a problem when handled properly.

You can do something about it.

In thousands of finished products, asbestos serves an essential function that has not been duplicated on a cost performance basis. Like other naturally-occurring minerals, asbestos can be a potential health hazard when inhaled. However, with technological advances and established work practices, along with industry and Federal regulations, it can be safely processed, transported, and handled. In addition, there are virtually no hazards associated with the proper end use of products in which the asbestos fibers have been encapsulated or "locked-in" by environmentally safe binders. For this reason, we advocate the elimination of its use in friable products in which it cannot be safely bound. As the world's leading asbestos supplier, we are vitally concerned with its safe handling and application.

For more information, please write to Denis Kelleher, Asbestos Fiber Division, Johns-Manville, Ken-Caryl Ranch, Denver, Colorado 80217.

Use of personal protective equipment provides increased safety for a variety of work situations



Floors and all work surfaces should be kept free of fiber accumulations by using industrial vacuum cleaners equipped with proper exhaust filters. Asbestos should be vacuumed, never swept.



Fiber handling technology has evolved a diverse range of products and practices to assure safer handling and shipping.



Totally enclosed, negative pressure automatic bag openers facilitate in-plant dust control.



Fabrication tools require proper hooding and should be connected to a source of exhaust air that includes a fabric bag filter. When grinding, sanding, or cutting should be employed.

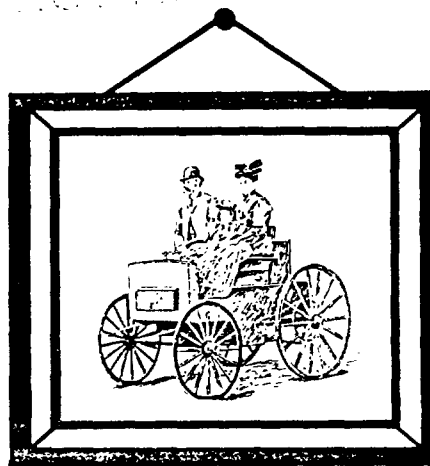


Johns-Manville

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INTERNATIONAL INDUSTRY REVIEW—1979
PART III:
THE ASBESTOS PRODUCTS INDUSTRY

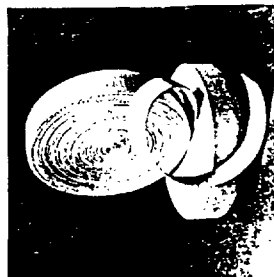
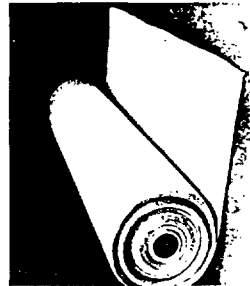
January 1980

Cleaner than OSHA requires... NOVATEX®

Now there's an asbestos textile that emits fewer fibers than the current OSHA standard when used with proper work practices. It's NOVATEX. Its yarns are extruded wet through a nozzle—not formed dry—which makes it cleaner. Then the NOVATEX products are treated with SEALSAFE™, our exclusive process that further locks in fibers.

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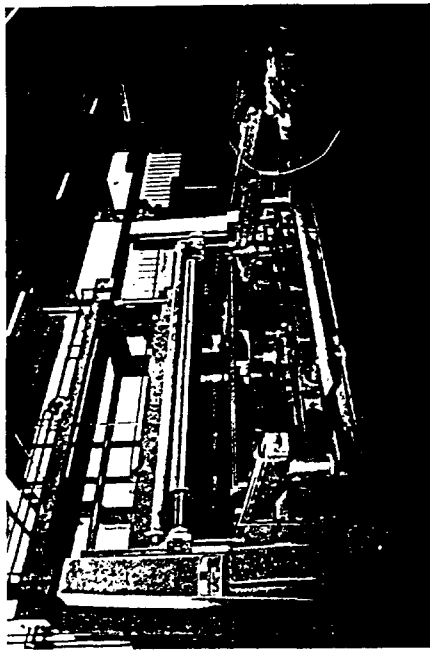
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ASBESTOS

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INTERNATIONAL INDUSTRY REVIEW—1979

PART III: THE ASBESTOS PRODUCTS INDUSTRY

U.S. PRODUCT IMPORTS

In compiling statistics for the past six annual periods to August, it is noted that the value of asbestos-containing products imported into the United States continues to increase. Values were \$34,355,059 to August 1979, an increase of 12.3% over 1978 (\$30,598,414), 15.9% over 1977 (\$29,637,523), 71.9% over 1976 (\$19,984,210), 41.8% over 1975 (\$24,227,826) and 87.1% over 1974 (\$18,360,227).

Comparing quantities, imports of asbestos yarn, cloth and tape were down 7.3% from 1978 but up 26.3% over 1977, 40.8% over 1976, 16% over 1975 and 17.7% over 1974. Imports of asbestos-cement pipes, tubes and fittings rose 47.8% over 1978, 82.6% over 1977, 222.1% over 1976, 83.6% over 1975 and 123.6% over 1974, making the latest annual period the highest in the past six years. The amount of other asbestos-cement products imported into the U.S. increased 99.4% over 1978, decreased 1.5% from 1977, rose 94.8% over 1976 and 2.6% over 1975 and dropped 8.7% from 1974.

U.S. IMPORTS OF ASBESTOS YARN, CLOTH & TAPE

By order of importance, sources in 1979 were Mexico (33.5%), Canada (29.6%), Taiwan (11%), United Kingdom (9.2%), West Germany (7.4%), Korea (4.4%), Japan (2.9%), Brazil (1.5%), France, Greece, Venezuela, Hong Kong, Norway, Colombia, Sweden

Year to August 1979—	9,685,062 lbs. valued at \$15,124,587 (\$1.56 per lb.)
Year to August 1978—	10,450,344 lbs. valued at \$16,589,044 (\$1.59 per lb.)
Year to August 1977—	7,666,978 lbs. valued at \$14,784,257 (\$1.93 per lb.)
Year to August 1976—	6,876,990 lbs. valued at \$ 9,952,008 (\$1.45 per lb.)
Year to August 1975—	8,346,483 lbs. valued at \$11,140,270 (\$1.33 per lb.)
Year to August 1974—	8,227,759 lbs. valued at \$ 7,211,755 (\$0.88 per lb.)

U.S. IMPORTS OF ASBESTOS-CEMENT PIPES, TUBES & FITTINGS

By order of importance, sources in 1979 were Mexico (73%), Canada (28.9%), United Kingdom
Year to August 1979—29,606,894 lbs. valued at \$4,506,300 (\$1.56 per lb.)
Year to August 1978—20,033,092 lbs. valued at \$2,349,425 (\$1.22 per lb.)
Year to August 1977—16,215,625 lbs. valued at \$1,724,187 (\$1.16 per lb.)
Year to August 1976— 9,192,970 lbs. valued at \$ 911,021 (\$1.06 per lb.)
Year to August 1975—16,125,671 lbs. valued at \$1,466,765 (\$1.96 per lb.)
Year to August 1974—13,243,692 lbs. valued at \$ 889,065 (\$1.74 per lb.)

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U.S. IMPORTS OF OTHER ASBESTOS-CEMENT PRODUCTS

By order of importance, sources in 1979 were Canada (38.5%), West Germany (29.8%), Mexico (13.2%), Belgium (12.9%), Dominican Republic (4.4%), Costa Rica, Italy, Netherlands, France, Brazil, United Kingdom

Year to August 1979—	44,565,985 lbs. valued at \$8,604,578 (19¢ per lb.)
Year to August 1978—	22,350,071 lbs. valued at \$4,693,368 (21¢ per lb.)
Year to August 1977—	45,223,782 lbs. valued at \$7,112,457 (16¢ per lb.)
Year to August 1976—	22,882,933 lbs. valued at \$3,610,490 (16¢ per lb.)
Year to August 1975—	43,426,447 lbs. valued at \$6,065,923 (14¢ per lb.)
Year to August 1974—	48,832,297 lbs. valued at \$6,074,241 (12¢ per lb.)

U.S. IMPORTS OF OTHER ASBESTOS ARTICLES

By order of importance, sources in 1979 were Canada (31.8%), Japan (24.3%), United Kingdom (19.9%), Brazil (10.1%), Yugoslavia (3.9%), West Germany (3.5%), France, Mexico, Taiwan, Belgium, Spain, Hungary, Sweden, Switzerland, Italy, Norway, Denmark, Austria, Netherlands, Dominican Republic

Year to August 1979—	\$6,199,594
Year to August 1978—	\$6,966,577
Year to August 1977—	\$6,016,822
Year to August 1976—	\$5,510,691
Year to August 1975—	\$5,554,868
Year to August 1974—	\$4,185,166

U.S. PRODUCT EXPORTS

The total value of all asbestos-containing products exported from the United States in the year ended August 1979 rose 35% over 1978, 85% over 1977, 146% over 1976, 125% over 1975 and 165% over 1974, i.e.: 1979—\$140,350,636, 1978—\$103,997,594, 1977—\$75,912,352, 1976—\$57,089,565, 1975—\$62,478,339, 1974—\$53,027,036. For the latest year, 20,190,987 lbs. of asbestos-cement shingles and claspboard were exported from the United States, valued at \$4,582,435 (23¢ per lb.) The figure for other asbestos-cement articles reached 40,072,110 lbs., valued at \$14,710,119 (37¢ per lb.) Total exports of all asbestos-cement materials amounted to 60,263,097 lbs., an increase of 5.9% over 1978, 3.9% over 1977 and 12.7% over 1976, but a drop of 18% from 1975 and 16.3% from 1974. Exports of gaskets in 1979 totaled 14,464,514 lbs., valued at \$5,421,990 (37¢ per lb.) and of packings and seals reached 4,749,373 lbs., valued at \$12,773,129 (\$2.69 per lb.). Total exports of gaskets, packings and seals rose 84.3% in quantity and 20.5% in value over 1978. Concentrating asbestos yarn, cloth and tape, 5,816,594 lbs., valued at \$6,995,100, were exported in 1979. Comparing quantities with those in prior years, the trend continues downward—a decrease of 45.6% from 1978, 66% from 1977, 64.8% from 1976, 52.9% from 1975 and 67.7% from 1974. U.S. exports of brake linings and disc brake pads were valued at \$56,231,124 for the latest year, 35.6% ahead of the annual period to August 1978. Also on the increase were exports of clutch facings and linings with 1979 valued at \$10,018,135 or 19.2% higher than 1978. The value of asbestos insulation exported in 1979 dropped 6.2%, to \$4,686,992.

ASBESTOS PRODUCTS CENSUS, 1977

The preliminary report of the 1977 Census of Manufactures for Asbestos products (SIC 3292) states that the total value of shipments by establishments classified in the asbestos products industry amounted to \$882-million in 1977, an increase of 16% over 1972. The value of shipments of primary products was \$958-million, an increase of 29% from 1972.

PRIMARY PRODUCT SHIPMENTS (\$ million)	1977	1972
Woven & Molded Brake Linings	\$181.0	\$123.3
Disc Brake Pads & Clutch Facings	90.5	82.6
Other Friction Materials	3	3.6
Asphalt & Vinyl-Asbestos Floor Tile	232.0	208.4
Asbestos Yarn, Cord & Thread	15.7	13.7
Asbestos Cloth	17.4	15.1
Other Asbestos Textiles	17.2	8.4
Asbestos Felts	100.7	36.5
Asbestos Insulation	11.1	33.5
Flat Sheets & Wallboard	23.5	20.7
Pipe, Conduits, Ducts & Corrugated Sheets	215.4	143.3
Shingles & Clapboard	18.7	20.8
Other Asbestos Products	34.6	32.7
	\$958.1	\$742.6

Value added by manufacture, at \$440-million in 1977, was 3% above value added in 1972. In 1977 the industry had 13,900 employees, a decrease of 34% from 1972. The leading States in employment were Pennsylvania, California, New York and Illinois, accounting for approximately 45% of the industry's 1977 employment. The amount of asbestos crudes & fibers consumed by this industry reached 311.2-million short tons valued at \$104.2-million in 1977, down 30.5% in quantity and up 32.4% in value from 1972. All dollar figures are reported in current dollars, therefore they are not adjusted for changes in price levels.

GASKETS/PACKINGS/SEALINGS CENSUS, 1977

According to the preliminary report of the 1977 Census of Manufactures for SIC 3293, operators of U.S. plants manufacturing gaskets, packings and sealing devices reported a value of shipments for the industry of \$1,245-million, 87% above the 1972 figure of \$665-million. Value added by manufacture amounted to \$733-million in 1977, 71% over the 1972 figure. Shipments of gaskets, packing and sealing devices by all primary manufacturing establishments, including those not classified in this industry (secondary), were valued at \$1,201-million, an increase of 68% over the 1972 shipments value of \$715-million.

ASBESTOS - January 1980

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U.S. EXPORTS OF ASBESTOS-CEMENT PRODUCTS

Primary destinations for asbestos-cement shingles and clapboard were West Germany (59.4%), Italy (24.8%) and the Bahamas (5.2%). The countries receiving the largest amounts of other asbestos-cement articles were Saudi Arabia (56.4%), Ecuador (19%) and Jamaica (12.1%).

Year to August 1979—20,190,987 lbs. valued at \$ 4,592,435 (23¢ per lb.)
 Year to August 1978—56,908,826 lbs. valued at \$15,346,292 (27¢ per lb.)
 Year to August 1977—58,015,001 lbs. valued at \$14,144,486 (24¢ per lb.)
 Year to August 1976—53,456,671 lbs.
 Year to August 1975—73,536,492 lbs.
 Year to August 1974—71,960,099 lbs.

U.S. EXPORTS OF GASKETS, PACKINGS & SEALS

Ireland was the most prominent recipient of gaskets, 91.1% of the total. Primary destinations for packings and seals were the United Kingdom (24.6%), Mexico (16.1%), the USSR (10.6%), Canada (10.3%) and Colombia (4.3%).

Year to August 1979—19,213,887 lbs. valued at \$18,195,119
 Year to August 1978—10,423,867 lbs. valued at \$15,098,633
 *Year to August 1977—5,953,116 lbs. valued at \$14,364,621
 *Year to August 1976—4,623,273 lbs.
 *Year to August 1975—6,054,573 lbs.
 *Year to August 1974—6,616,871 lbs.

*Gaskets and Packings, only

U.S. EXPORTS OF ASBESTOS YARN, CLOTH & TAPE

Primary destinations were Mexico (32.3%), Saudi Arabia (27.3%), New Zealand (8.6%), United Arab Emirates (6.7%), Canada (3.3%), France (3.4%) and Ireland (2.4%).

Year to August 1979—5,816,594 lbs. valued at \$ 6,995,100 (\$1.20 per lb.)
 Year to August 1978—10,690,682 lbs. valued at \$ 8,469,029 (79¢ per lb.)
 Year to August 1977—17,108,562 lbs. valued at \$10,749,851 (63¢ per lb.)
 Year to August 1976—16,342,879 lbs.
 Year to August 1975—12,345,006 lbs.
 Year to August 1974—18,027,429 lbs.

U.S. EXPORTS OF BRAKE LININGS & DISC BRAKE PADS

Primary destinations were Canada (72.3%), Colombia (4.0%), Venezuela (3.8%), the Netherlands (3.6%), Belgium (3.1%) and Mexico (2.8%).

Year to August 1979—\$56,231,124
 Year to August 1978—\$41,480,113 (estimated)

U.S. EXPORTS OF CLUTCH FACINGS & LININGS

Primary destinations were Canada (31.7%), the United Kingdom (9.6%), Mexico (8.7%), West Germany (8.5%), Venezuela (7.4%), Australia (4.1%), Saudi Arabia (3.4%), Norway (2.6%), Spain (2.6%), Switzerland (2.2%), Italy (2.1%), Colombia (1.9%), Japan (1.8%) and Belgium (1.5%).

Year to August 1979—\$10,018,135
 Year to August 1978—\$ 8,404,865

U.S. EXPORTS OF ASBESTOS INSULATION

Primary destinations were Canada (26.8%), Saudi Arabia (17.5%), the United Kingdom (8.5%), Mexico (8.2%), Japan (4.7%), Guatemala (3.7%), Venezuela (3.2%), and Greece (3.0%).

Year to August 1979—\$ 4,686,992
 Year to August 1978—\$ 4,997,775

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ASBESTOS - January 1980

PRIMARY PRODUCT SHIPMENTS (\$ million)	1977	1972
Compressed Asbestos Gaskets	\$ 58.7	\$ 24.5
Beater-Saturated Asbestos Gaskets	15.9	19.2
Asbestos Gasketing Cloth (Rubberized or Fluorocarbon Impregnated)	7.4	2.4
Other Gaskets & Gasketing Materials	410.2	218.5
Packings & Sealing Devices	657.7	403.2
Other	50.6	48.9
	\$1,200.5	\$714.7

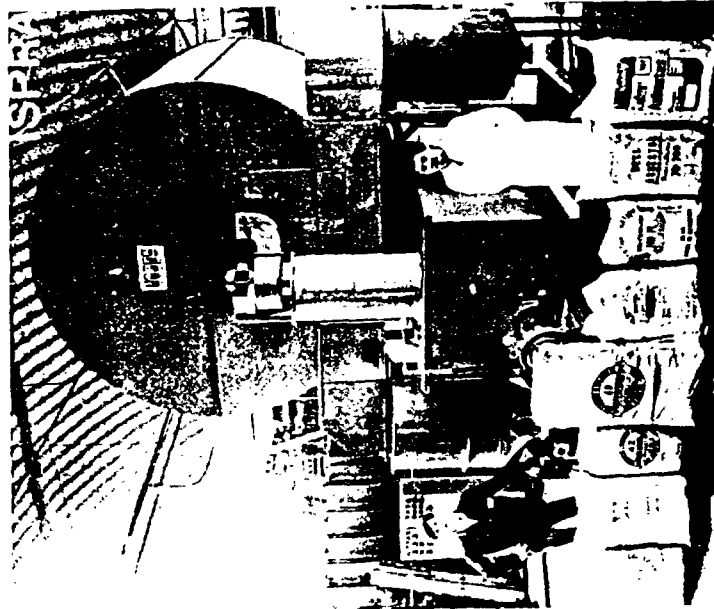
The delivered cost of asbestos crudes and fibers consumed by this industry reached \$22-million in 1977 vs. \$13.6-million five years earlier.

ASBESTOS VS. SUBSTITUTES

Demand for asbestos for use in the construction industry is projected to the year 2000 at an average annual growth rate of zero to 2.4%. The most promising opportunities for increases appear to be asbestos-cement products, which compete with lumber and other building products, many of which are rapidly increasing in price. The growth rate for asbestos-cement products could average 4% per year. Use of asbestos in floor tile has been on the rise in recent years because of shortages and higher prices of some competing materials. Paper products are used in electrical appliances as well as in construction and although the quantity for such asbestos use is relatively small, it is expected to grow more than 1% per year. Demand for asbestos in friction products is projected to the year 2000 at an annual growth rate of 3.4%. These materials include automotive brake linings and the super-tough, asbestos-containing paper which covers metal transmission discs. Demand for asbestos in textiles is projected to zero tons by the year 2000. Among the factors which might tend to increase asbestos demand within the next decade is the newly developed potential for large-scale production of low-priced asbestos from domestic deposits. This potential should, in time, spur research into new uses and new ways to substitute short-fibered asbestos for the longer, more expensive grades. One possible application for the shorter grades is in asphalt paving materials for use on airport runways and hangar areas, street curbing and road resurfacing.

The number of materials which are economically competitive with asbestos is limited. Although much research has been directed to synthesizing fibers with properties similar to those of asbestos, it has met with only limited success. For potential world demand to be met, technology must come up with competitive synthetic asbestos or asbestosiform products and make them available in significant quantities before the end of the 20th century. The mineral raw materials needed for production of synthetic asbestos and other inorganic fibers are abundant. Substitution is possible in some of the end uses for asbestos, particularly in asbestos-cement products, where a variety of alternative ceramic and new plastic materials are available, and in paints and caulking, where asbestos has a

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wide range of substitutes. Also, there are materials used as insulation which could replace asbestos for some purposes.

THE ABOVE COMMENTS CONCERNING ASBESTOS AND SUBSTITUTE MATERIALS WERE EXCERPTED FROM "MINERAL COMMODITY PROFILE ON ASBESTOS," BY ROBERT A. CLIFTON, U.S. BUREAU OF MINES, JULY 1979

VOLUNTARY LABORATORY ACCREDITATION

Voluntary Program—Procedures for accrediting laboratories under the National Laboratory Accreditation Program (NVLAP) were established February 25, 1976. The procedures (Part 7a) require a finding of need by the Secretary of Commerce, and the development, by the U.S. Department of Commerce, of accreditation criteria, with the aid of a public advisory committee.

Private Sector Organizations—On October 26, 1978, the Commerce Department proposed additional optional procedures for private sector organizations which meet certain conditions related to due process. The proposal would allow such an organization, when it has concluded there is a need for an accreditation program, to request the Commerce Department to develop a program without making the required "formal finding of need." The options would also permit the organizations to suggest criteria for evaluating testing laboratories and would encourage the use of a single set of procedures in a variety of programs. In response to comments on the proposal, the Commerce Department has decided that final procedures should be issued, based on the proposed procedures but with two significant changes. First, the procedures will be available to any private sector organization which makes a request for a laboratory accreditation program as a result of a proper public meeting, where such a request represents substantial agreement of all participants. Second, the provisions for cessation of accreditation programs have been changed in that only the Secretary of Commerce can initiate action to cease programs which have been promulgated under these procedures. [Federal Register of April 25, 1979, pages 24274-82; Effective April 25, 1979]

Additional Standards & Test Methods—In December 1979 the Commerce Department proposed an amendment to the procedures of the NVLAP to provide a method by which additional standards and test methods can be included in the list of standards and test methods in a laboratory accreditation program established under those procedures. The inclusion could occur when such addition is requested, in writing, by any member of the public and such standards and test methods meet certain conditions. Interested parties are requested to submit their comments to the Commerce Department by February 26, 1980. [FR of 12/28/79, pages 76810-11]

Thermal Insulation—In October 1979 the Commerce Department announced the granting of accreditation of 30 laboratories found capable of conducting specific tests on thermal insulation materials, under the provisions of the NVLAP. In January 1980 the Department published a directory of accredited laboratories, listing all of the test methods for which

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each has been granted accreditation. Also listed is each test method for thermal insulation materials covered by the program, and all of the laboratories which are accredited to perform each test. [FR of 10/17/79, pages 60051-54; FR of 1/14/80, pages 2682-99]. Also in January 1980 the Commerce Department published the text of the final general and specific criteria to be used in accrediting laboratories which voluntarily request accreditation for the testing of thermal insulation materials. The final criteria will go into effect on March 7, 1980. A form for requesting an application is included with the notice. [FR of 1/23/80, pages 5571-5600]

NATIONAL BUREAU OF STANDARDS

High Temperature Thermometer—Scientists at the U.S. National Bureau of Standards (NBS) and its Italian equivalent, the Istituto di Metrologia "G. Galvani," are developing a high-temperature thermometer which is expected to be 20 times more accurate and, therefore, replace the present international standard for the 630°C to 1064°C range. Other collaborating institutions include the national standards laboratories of France and Japan.

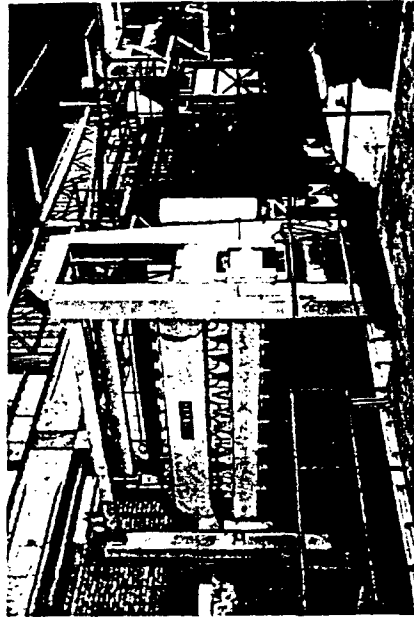
Standards Program Changes—Substantial reductions in the Voluntary Product Standards program of NBS were proposed by the U.S. Department of Commerce (DOC). If approved, all standards in the program would be withdrawn unless it is demonstrated that DOC sponsorship should continue for such reasons as substantial public impact or inability of private standards-writing groups to process or maintain the standard. New standards or revisions would not be undertaken, except under the same conditions. If DOC agrees to sponsor a program, the services of NBS would be provided on a cost-reimbursable basis.

New Grants Program—NBS announced in January 1980 it will coordinate a new inter-agency grants program to encourage the gathering and evaluation of useful scientific reference data. The program will begin with some \$500,000 supplied by NBS, the National Science Foundation, the Department of Energy and the Office of Naval Research. Examples of the data desired include thermodynamic properties of pure substances and mixtures; energy levels of atoms, molecules and nuclei; rate constants for chemical reactions; optical properties of solids; alloy phase diagrams; reference data for the design and construction of energy systems; and data on the physical properties of novel materials of particular interest to the sponsoring organizations. The program is open to researchers in any organization, academic or non-academic, non-profit or commercial.

COMMITTEE APPROVES FTC BILL

Legislative efforts aimed at ending Federal Trade Commission (FTC) intervention in standards and certification are proceeding well, reports the American National Standards Institute. The FTC Authorization Bill (S. 991) has been approved by the Senate Commerce Committee and it now has been sent to the full Senate for vote. Included in the Bill is an amendment

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which specifically prohibits the FTC from developing or promulgating a trade regulation rule on standards and certification. A companion bill was approved in November by the U.S. House of Representatives. However, it does not include a standards amendment. [ANSI Reporter, a publication of the American National Standards Institute, Inc.]

PRODUCT LIABILITY

The U.S. Department of Commerce offered, in October 1979, its Model Uniform Product Liability Act, for voluntary use by the States. The law, if enacted by the States, would introduce uniformity and stability into the law of product liability which, in turn, would help stabilize product liability insurance rates. The current system of having individual State Courts develop product liability law on a case-by-case basis is not consistent with commercial necessity. Product sellers and insurers need uniformity in product liability law so they will know the rules by which they are to be judged. At the same time, product users are entitled to the assurance that their rights will be protected and will not be restricted by "reform" legislation formulated in a crisis atmosphere. [FR of 10/31/79, pages 62713-50]

PRODUCT SAFETY GUIDELINES

Manufacturers have a responsibility to produce products which satisfy the safety expectations of society. These expectations have recently accelerated, with the result that safety must receive more emphasis than ever before in decisions concerning the design, production and marketing of products, including ultimate intended and foreseeable uses. Product safety activities need to be integrated into certain specific management procedures and specific functions of an organization. Recognizing this need, the American National Standards Institute, Inc., has published "Guidelines for Organizing A Product Safety Program" to present general guidelines and a detailed checklist to aid the manufacturer in developing the necessary activities and procedures. The Guidelines are available, at \$1.25 per copy, from ANSI, 1430 Broadway, New York, New York 10018.

EXPORT TRADE ASSOCIATIONS

The U.S. Senate is considering legislation (S.864) to amend the Webb-Pomerene Act. If enacted, the ability of smaller companies to compete in international markets would be significantly improved. The Act permits the formation of export trade associations and exempts certain export activities by these associations from antitrust laws. Its intent is to promote, encourage and expand U.S. exports and specifically to aid smaller manufacturers who individually are unable to bear the large costs of marketing and distributing goods in foreign countries. Via S.864, it is hoped to revitalize the role of export trade associations by eliminating weaknesses in the Act which have limited the effectiveness of existing export trade associations and hindered the creation of new associations. Many in the business community believe that the Act in its present form does not necessarily protect

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ASBESTOS—January 1980

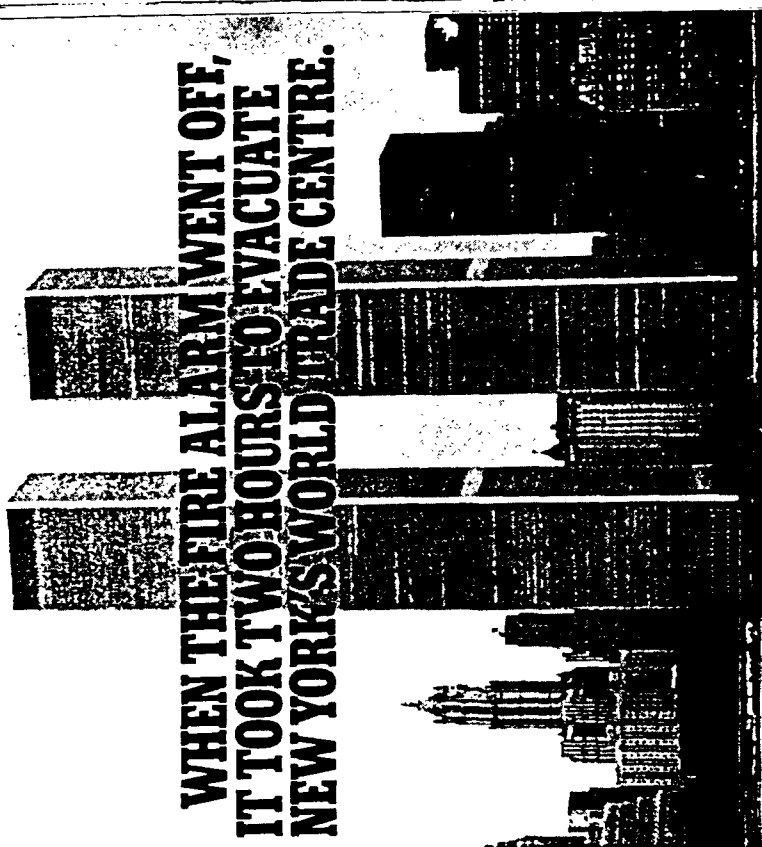
association participants from antitrust challenges by the Federal Trade Commission (FTC) or the Department of Justice. The Bill would not only expand existing antitrust exemption but would also transfer responsibility for administering the Act from the FTC and the Justice Department to the U.S. Department of Commerce. Under the Act as it is now written, export trade associations are exempt from antitrust laws only to the extent they engage in the marketing of goods, wares or merchandise. The pending legislation would extend the exemption to include services, an important item for those manufacturers whose sales may depend on their ability to organize manufacturing operations, set up equipment and train personnel. Similar legislation (HR 3190 and HR 5061) has been introduced in the U.S. House of Representatives and is pending before the Judiciary and Foreign Affairs Committees. Those interested in these matters are urged to contact their Senators and Representatives [ATMA Executive Report], a publication of the American Textile Machinery Association; excerpts from comments by William W. Scott, Esq., of Collier, Shannon, Rill, Edwards & Scott]

EXPORT COUNCIL TAKES STAND

The President's Export Council (his top advisory group on international trade) has recommended the opening of trade doors with China, the Soviet Union and other Communist countries. Also under discussion and study are new export incentives for small and medium-sized businesses, i.e., permitting them to pool resources in selling abroad through government-assisted foreign trading companies. One of the Council's subcommittees supports a different export incentive—the tax deferral program called Domestic International Sales Corporation (DISC)—and encourages amendments to increase benefits for small exporters. In other actions, the President's Export Council voted to ask Congress for continued confidentiality for sensitive business data on export license applications; opposed Internal Revenue Service proposed changes in rules allowing foreign taxes to be credited against U.S. taxes; backed a substantial increase in Eximbank lending authority; supported the Carter Administration's trade reorganization plan; and urged an increase in Commodity Credit Corporation lending authority. [ATMA Executive Report]

U.S. SUSPENDS SHIPMENTS TO THE USSR

At the direction of the President, the U.S. Department of Commerce is undertaking a prompt review of exports to the USSR in light of the Soviet intervention in Afghanistan and changed national security circumstances. Consequently, a General Order has been announced by the Commerce Department, suspending, effective January 11, 1980, all outstanding validated export licenses and other specific authorizations heretofore issued for exports and re-exports to the USSR. Furthermore, the interim rule provides notice that, with the exception of licenses for certain agricultural commodities, no new licenses or other authorizations for export to the USSR will be issued by the Commerce Department, pending the cur-



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rent review. Comments should be submitted to the Commerce Department by March 11, 1980. [FR of 1/16/80, pages 3027-29]

RHODESIAN EMBARGO LIFTED

A final ruling, effective December 17, 1979, was published by the U.S. Department of Commerce, terminating the embargo on U.S. exports to Rhodesia (Zimbabwe). The pertinent Executive Orders which had imposed the embargo have been revoked by the President under Executive Order 12183. The revision does not affect any compliance, enforcement or sanction actions which are based on violations of any rules, regulations, orders, licenses or other forms of administrative action. [FR of 12/20/79, page 75382]

Rhodesia unilaterally declared its independence from the United Kingdom on November 11, 1965, a move which was denounced by the British Government and the United Nations, which isolated the nation from most of the rest of the world, and which resulted in seven years of bloody guerrilla warfare. This chapter in Rhodesia's history has now ended as new elections are pending which will lead to an internationally recognized state of independence for the country, once again a British colony.

CANADIAN PRODUCT IMPORTS

Our calculations indicate a continuing rise in the value of asbestos-containing materials imported by Canada. In the year ended June 1979, the total value reached C\$28,959,000, up 18.3% over 1978, 34.5% over 1977, 38.3% over 1976, 10.3% over 1975 and 58.7% over 1974. Principal sources, by product category, were as follows:

Vinyl Asbestos Floor & Wall Tiles—
all from the United States;
Asbestos Cloth, Dryer Felts & Sheets—
59.7% from the United Kingdom, 25.9% from the United States,
Asbestos Packing—
62.5% from the United States, 36.7% from the United Kingdom,
Asbestos Brake Linings—
90% from the United States, 9.2% from the United Kingdom,
Asbestos Clutch Facings—
51.3% from the United States, 44.6% from Australia,
Asbestos-Cement Shingles & Siding—
77.3% from the United States, 22.7% from Belgium-Luxembourg,
Asbestos-Cement Boards & Sheets—
41.7% from Belgium-Luxembourg, 40.5% from the United States,
Other Asbestos Building Materials—
69.0% from the United States, 29.7% from the United Kingdom,
Other Basic Asbestos Products—
72.3% from the United States, 22.2% from the United Kingdom

VALUE OF CANADIAN IMPORTS OF MANUFACTURED ASBESTOS PRODUCTS (C\$ '000)							
PRODUCT CATEGORY	YEAR TO JUNE 1979	YEAR TO JUNE 1978	YEAR TO JUNE 1977	YEAR TO JUNE 1976	YEAR TO JUNE 1975	YEAR TO JUNE 1974	
Vinyl Asbestos Floor & Wall Tiles	\$ 372	\$ 288	\$ 120	\$ 94	\$ 299	\$ 75	
Asbestos Cloth, Dryer Felts & Sheets	4,178	3,530	3,629	3,399	3,519	2,193	
Asbestos Packing	2,670	2,151	1,810	1,626	1,968	1,600	
Asbestos Brake Linings	7,839	5,620	4,215	5,768	5,510	4,794	
Asbestos Clutch Facings	1,616	1,486	987	642	1,070	1,300	
A-C Shingles & Siding	58	78	86	209	123	113	
A-C Boards & Sheets	611	609	385	455	962	765	
Other Asbestos Building Materials	6,502	6,627	7,246	5,692	10,214	4,920	
Other Asbestos Basic Products	5,113	4,094	3,075	3,051	2,586	2,587	
	\$28,959	\$24,483	\$21,533	\$20,936	\$26,251	\$18,247	

CANADIAN PRODUCT EXPORTS

The value of asbestos-based products exported from Canada reached a record C\$31,922,000 in the year to August 1979, 15.8% higher than the \$27,562,000 reported for 1978. Values for prior years totaled \$19,550,000 in 1977, \$15,107,000 in 1976, \$14,631,000 in 1975 and \$10,541,000 in 1974.

CANADIAN EXPORTS, BY PRODUCT CATEGORY

Asbestos Cloth, Dryer Felts & Sheets—\$5,454,000 in 1979 compared with \$2,832,000 in 1978, \$1,646,000 in 1977, \$2,093,000 in 1976, \$2,881,000 in 1975 and \$2,710,000 in 1974. Primary destinations were the United States (84.8%) and the United Kingdom (9.1%).
Asbestos Brake Linings & Facings—\$3,733,000 in 1979 compared with \$3,369,000 in 1978, \$2,715,000 in 1977, \$1,457,000 in 1976, \$1,964,000 in 1975 and \$1,112,000 in 1974. Primary destinations were the United States (75.7%), Australia (9.2%), France (4.5%) and Hong Kong (4.3%).
Asbestos Cement Building Materials—\$15,532,000 in 1979 compared with \$15,476,000 in 1978, \$10,763,000 in 1977, \$8,514,000 in 1976, \$6,437,000 in 1975 and \$3,381,000 in 1974. Primary destinations were the United States (80.4%), the United Kingdom (7.6%), Jamaica (5.8%) and Singapore (2.4%).

Other Basic Asbestos Products—\$7,203,000 in 1979 compared with \$5,885,000 in 1978, \$4,426,000 in 1977, \$3,043,000 in 1976, \$3,349,000 in 1975 and \$3,338,000 in 1974. The United States accounted for 94.9%, Switzerland, 1.7%.

A-C SHEET MARKET STUDY FOR QUEBEC

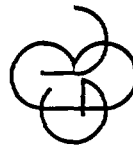
The Quebec Regional Office of Canada's Department of Regional Economic Expansion recently supplied to this Magazine an English summary of a study by Sores Inc. on the asbestos-cement finished sheet market in North America. It is noted the market may be significant, particularly in Canada and most especially in the Province of Quebec. Eternit-Belgium produces a high-quality asbestos-cement finished sheet and ships the product around the world. Several other companies produce a high-quality product, including Eternit-Switzerland, Eternit-Germany and Pont-a-Mousson, in France. Johns-Manville Corporation is the only North American firm which produces and sells a similar product on a large scale. In Montreal, Quebec, Atlas Turner Inc. has developed a textured a-c sheet called Agedroc. For three years, Eternit has distributed its product in the United States through its subsidiary, Glassweld International Corporation, and in Canada through Canadian Pittsburgh Industries Ltd.

The North American market for a-c finished sheets was briefly investigated in 1978 under a joint study by Sores Inc. and Arthur D. Little for the Quebec Asbestos Mining Association. In that study, the total potential market was estimated between 700 and 800-million square feet per year. Given that a production unit of 10-15 million square feet can be profitable and that transportation is not a major cost factor, there could be an opportunity for a new producer in North America, provided the product is well suited for U.S. needs and that it is backed with an appropriate marketing strategy. Total sales in North America presently amount to some 6-million square feet, about 0.8% of the total potential market.

Among the major findings in the latest study is that architects are eagerly seeking new cladding materials because of the interest in energy conservation and the steep rise in the cost of traditional building materials. A-C finished sheets have several major advantages over competitive products, including esthetic appearance, light weight, lower cost and fire resistance. Major competing products for the thicker a-c sheets (½" or more) are concrete, steel and upgraded aluminum, brick, masonry, stucco and glass-fiber-reinforced concrete. Total net wall area (excluding glass) for new construction in North America is projected at some 837-million square feet by 1983 (707-million square feet in the U.S.; 130-million square feet in Canada). Given that a 10-to-15-million-square-foot production unit can make an asbestos-cement finished sheet plant profitable, 1.5% of the total potential market could justify the implementation of a new producer.

Montreal and other cities in Quebec Province constitute excellent testing areas for a new asbestos-cement finished sheet plant. First, this is the region where the most enthusiasm for the product was noted. Secondly, the Quebec Government is most interested in building up an asbestos manufacturing industry in the Province and could supply incentives for

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- Auxiliary machines for special sheet profiles.
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potential producers. Other regions where marketing efforts should be particularly dynamic are: the West Coasts of Canada and the United States, and the Southern and Northeast-Central areas of the U.S. Of serious concern, however, is the severe governmental restraint on the U.S. asbestos industry because of asbestos/health issues.

QUEBEC PAPER PLANT OPERATING

Lupel-Amiante, a new asbestos papermaking plant, was officially opened May 4, 1979, by the Quebec Minister of Natural Resources, Yves Berube. The factory, a division of the provincial government agency, Societe Nationale de l'Amiante (SNA), is situated at Cap-de-la-Madeleine, near Trois Rivières on the north shore of the St. Lawrence River. This is the first of several enterprises planned by the government in its campaign to increase the amount of Quebec asbestos used in the manufacturing industry of the Province. The first material for the new plant is 12-foot-wide asbestos flooring felt, which, combined with latex, serves as a backing for vinyl floor coverings. The manufacture of asbestos roofing paper is planned at a later date. Lupel-Amiante is a three-way partnership between SNA, Papiers Cascades and Domco Industries Ltd. When in full production the plant will have the capacity to annually produce 40,000 tons of material, containing 85% asbestos.

NEW R&D CENTER IN QUEBEC

In September 1978 the Quebec Minister of Natural Resources and the Directors of the Quebec Asbestos Mining Association (QAMA) signed an agreement which laid the ground work for the establishment, operation and financing of a new research center for the development of asbestos in the Province of Quebec. Shortly thereafter, QAMA submitted to the provincial government valuable recommendations based on several sound studies, including those by Sores Inc. and the Center for Technological Development, Ecole Polytechnique de Montreal. Subsequently, an Order-in-Council was signed June 29, 1979, which forms the basis of the agreement for the creation of the Institute for Research and Development of Asbestos (IRDA). The incorporation and organization of the new Institute will be handled by QAMA. That association will also provide the necessary \$500,000 starting capital.

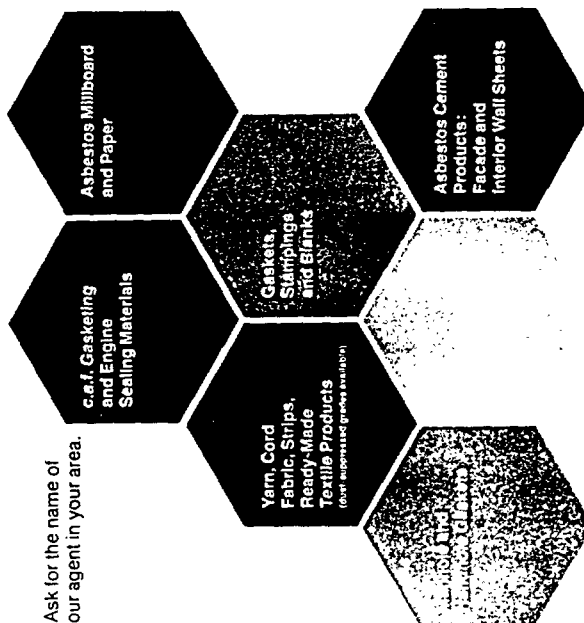
The members of the Institute held their first special general meeting in mid-October 1979 and adopted bylaws and elected the first Board of Directors, the latter of which is comprised of three representatives designated by the provincial government and one representative of each of the QAMA member companies. Michael Prus, Chairman and President of Carey Canada Inc., was elected Chairman of IRDA. In accepting the post, Mr. Prus re-emphasized that the basic objective of the Institute is "to promote the growth of the asbestos industry by means of research and development activities which aim at ensuring the safety of asbestos-based products, in terms of both manufacturing and use, to improve the perfor-

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mance of existing products and to develop new products and new applications."

One of the first considerations for the Directors of IRDA was the selection of a site for the new Institute. The University of Sherbrooke was chosen, not only because it offers the usual range of resources associated with academic centers but because it has shown a strong willingness to promote research into asbestos. In fact, Sherbrooke University is already engaged in a major asbestos research program in the areas of health and technology. In addition to the possibilities for exchange and the pooling of material resources between IRDA and the University, thereby avoiding duplication of costly equipment, the University offers IRDA the opportunity to benefit from its inter-university exchanges on the international level, facilitating communication among specialists and researchers around the world. The University's asbestos research budget for 1979-80 is some \$1.5-million.

ASBESTOS DATA SERVICE

Informa-thèque, the data service formed in 1977 at the University of Sherbrooke, currently has an inventory of some 14,000 documents, 8000 of which are off-prints deriving from various sources, particularly of articles published in scientific and medical journals. It also houses some 3000 copies of patents registered all over the world for products based on asbestos or incorporating asbestos and for manufacturing techniques. The remainder of the documentation falls into various categories, i.e., brochures, books, reports, monographs, manufacturers' catalogs, etc. Judging by the search work carried out thus far, a complete and exhaustive documentation bank on all general and scientific matters relating to asbestos should contain about 25,000 documents. According to Director Roger Bernier, such a volume reflects the intensity of the research work of all kinds that has been undertaken in the asbestos sector over the last 30 years. Identification of information is carried out mainly by direct interrogation, by means of a cathode screen terminal, of about 50 documentary data banks grouped in three major information systems, namely the DIALOG system of Lockheed Corporation, the ORBIT system of the System Development Corporation, and the MEDLARS system of the National Library of Medicine in Washington, D.C. According to their particular specialties, these banks provide the Informa-thèque with reference list printouts concerning asbestos-related documentation in the sectors of chemistry, biology, physics, technology, economics, environment, pollution and health. It is projected that two more years are needed before a complete inventory of all identified documentation on asbestos is acquired. [QAMA Bulletin]

A-C SIDING FOR HEALTH CLINIC

Convinced of the exceptional qualities and characteristics of asbestos, a group of doctors and health professionals have elected to incor-

porate an asbestos product into the structure of a health clinic recently inaugurated in the heart of Quebec's asbestos region. The Clinique Familiale d'Asbestos is located in a brand new building, specially planned to take into account the variety of services to be provided and designed with three basic requirements in mind: comfort, efficiency and energy conservation. The outside of the building is covered with red brick and asbestos-cement sheets. In choosing the a-c material, the partners of the clinic wished to express their confidence in the safety of asbestos and in its future. As Dr. Pierre Boux, President of the clinic, explained: "We made knowledge that the symbolic value of such a decision was bound to be considerable in the present context, particularly since the material is being used in a health center." He added: "As we see it, the outstanding qualities and characteristics of this mineral are undeniable." John-Manville Canada Inc. donated to the clinic an enormous, 9-ton block of raw asbestos which has been positioned in front of the building to serve as a symbolic piece of sculpture. [QAMA Bulletin]

ASBESTOS MANUFACTURERS

Albion AAP Inc. is the new name of the former Albion Asbestos Packings Ltd., effective May 1, 1979. The company reports this name change is a natural transition to modernize its communications with customers. Albion has operations in Canada at Burnaby, Edmonton, Toronto, Montreal and Halifax.

Atlas Turner Inc., Montreal, Quebec, (formerly Atlas Asbestos Co. Ltd.), was awarded a five-year, \$23-million contract to supply asbestos-cement panels to Research-Cottrell, Inc., for large cooling towers to be built at various locations in the United States. . . . Three major projects within the Building Materials Department are well under way at Atlas Turner. The first involves complete conversion of the No. 2 Sheeting Machine for the production of the asbestos-cement fill sheets for use inside the afore-mentioned cooling towers. Considerable study and development work has also been carried out on the second project which will alter the No. 1 Sheeting Machine so it can produce asbestos-cement construction materials other than fill sheets. Total investment for the two projects is estimated at \$2-million. The third project, valued at \$270,000, is at the pipe plant for the crushing and recycling of dry waste and dust. . . . A new Distribution Center at Surrey, British Columbia, was officially opened on March 30, 1979. The \$675,000 facility will permit Atlas Turner and its affiliate, Turners Building Products Ltd., Mission, B.C., to better supply distributors and applicators in Western Canada and the United States.

BBA Group Ltd. — A special centenary brochure was distributed by BBA Group Ltd., Cleckheaton, Yorkshire, England, to commemorate the founding of the enterprise in 1879. The origin of the company lies in the chance meeting of two men in Sweden, i.e., William Fenton, a Scotsman who was employed as weaving manager at a textile mill, and Walter

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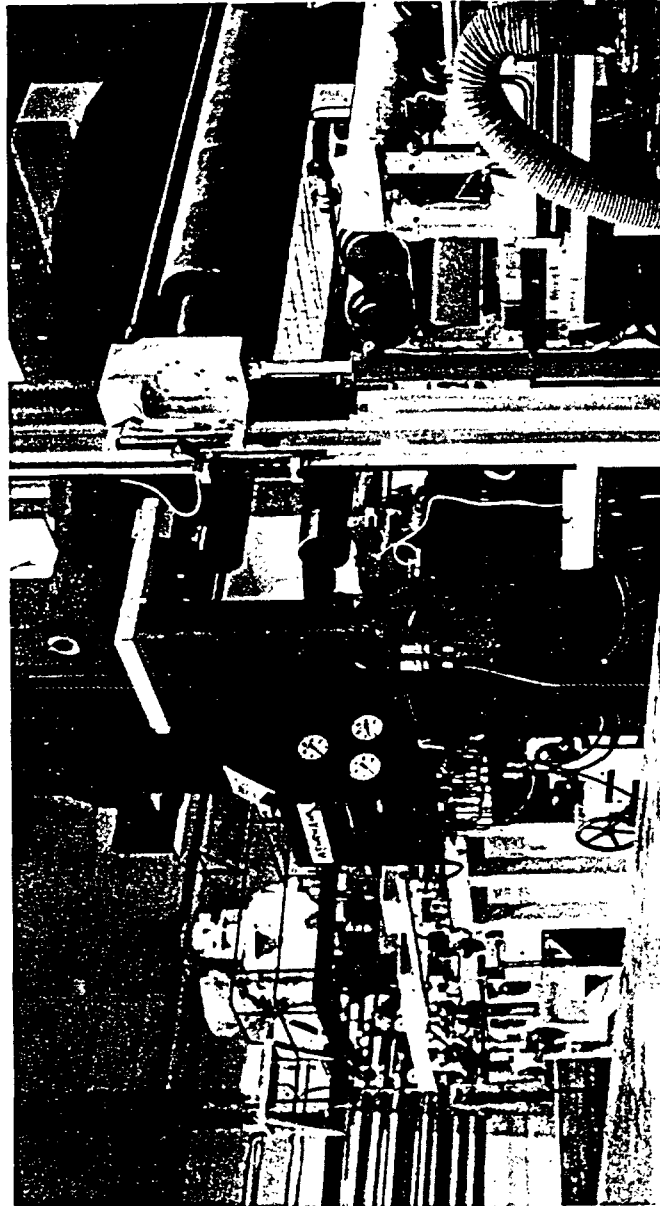
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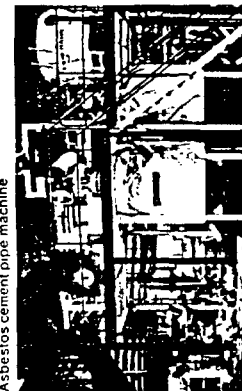
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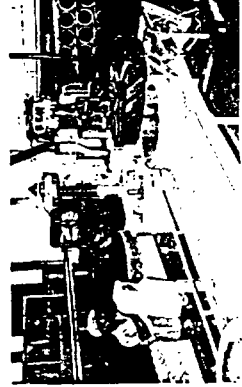
Asbestos cement pipe machine



Slurry preparation



ac-sheet corrugation section



automatic coupling lathe

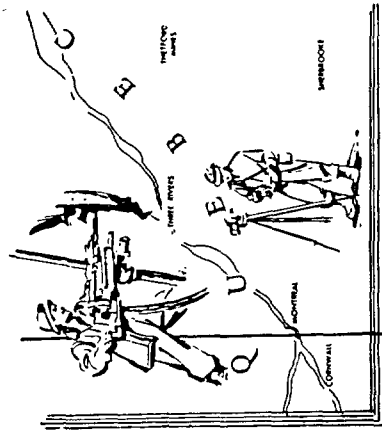
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Wilson Cobbett, a merchant of industrial supplies, who was on holiday. The manufacture of 'Scandinavia' belting began in 1879. New premises were acquired at Cleckheaton and in 1901 the name of the facility became Scandinavia Mills. The company's name was changed in 1911 to 'Scandinavia' Belting Ltd. In 1925, five years after 'Scandinavia' Belting took over the British Asbestos Company, the two firms merged under the new name of British Belting and Asbestos Ltd. A complete reorganization took place in 1967 when a holding company—BBA Group Ltd.—was formed to administer and develop the Group companies in the United Kingdom and abroad. Two new wholly-owned subsidiaries—Mintex Ltd and Scandura Ltd—were created to carry out the manufacturing and selling activities of the former company. More recently, BBA Automotive Ltd. was formed to coordinate the Group's friction and anti-friction material interests. Today, BBA manufactures in Australia, Canada, the Republic of South Africa, Spain, the United States and West Germany.

Bell Engineering Works Ltd., Kriens, Switzerland, a member of the Suizer Group, recently received an order from the Siam Fibre Cement Company, Bangkok, Thailand, for the delivery, assembly and start-up of three plants for the manufacture of corrugated asbestos-cement facade and roofing sheets. The fully-automated production units permit a total annual output of 12,000 metric tonnes. . . . Among the many a-c plants supplied around the world by Bell Engineering is the facility of Berounske Eternitove Zavody n.p., at Beroun, Czechoslovakia, provided in early 1977.

Cape Industries Ltd., London, England—A £1-million modernization program is nearly completed at the Uxbridge Works of *Cape Boards and Panels Ltd.* As part of the project, all existing boardmaking machines have been adapted to produce a range of asbestos-free products. . . . Under a reorganization of the *Cape Distribution Group*, the network of U.K. branch companies involved in the wholesaling of automotive parts will trade "under the name of Cape Automotive Ltd. and the warehouse distribution operation under the name of Cape Automotive Services Ltd. . . . After a year of negotiating, *Cape Universal Claddings Ltd.* was successful in obtaining a contract worth over £600,000 for cladding a large industrial complex in the Middle East with asbestos-cement sheets and Unilux g.r.p. This represents the largest single order ever placed with CUC. One of the difficulties was properly crating some 4,000 tonnes of asbestos-cement products for shipment, all within a tight delivery schedule. . . . CUC successfully added a new dimension to its asbestos-cement product range with two canoes competing, and winning, in the Concrete Society Canoe Race in July 1979. The two lightweight and ruggedly designed a-c canoes were dubbed "Capability" and "Incapable." By hand molding the wet laminate into the shape of a canoe, the material resembled wet cardboard in the fresh state but hydrated to a sufficiently solid condition for de-molding after 12-24 hours. . . . *Don International Ltd.*, entered into a £500,000 licensing agreement with Fraxle S.A., Caxias do Sul, a leading friction materials manufacturer in Brazil. Fraxle employs some 900 people and produces a full range of original equipment and replacement products for

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passenger cars and commercial vehicles. This is Don's first such pact negotiated in South America. . . . *Don International* signed two ten-year overseas licensing agreements valued at over £75-million, thus bringing to 20 the number of Don licensing or manufacturing agreements throughout the world. One of the pacts was reached with Fiaz Industrija Azbestnih Proizvoda, one of the largest manufacturers of friction materials in Yugoslavia. Based at Prokuplje, in southeast Yugoslavia, Fiaz produces a wide range of friction materials and asbestos textiles. The other licensing agreement, which covers the production of clutch facings, was signed with Jukaluma S.A., of San Luis Potosi S.L.P., Mexico, maker of a range of automotive components.

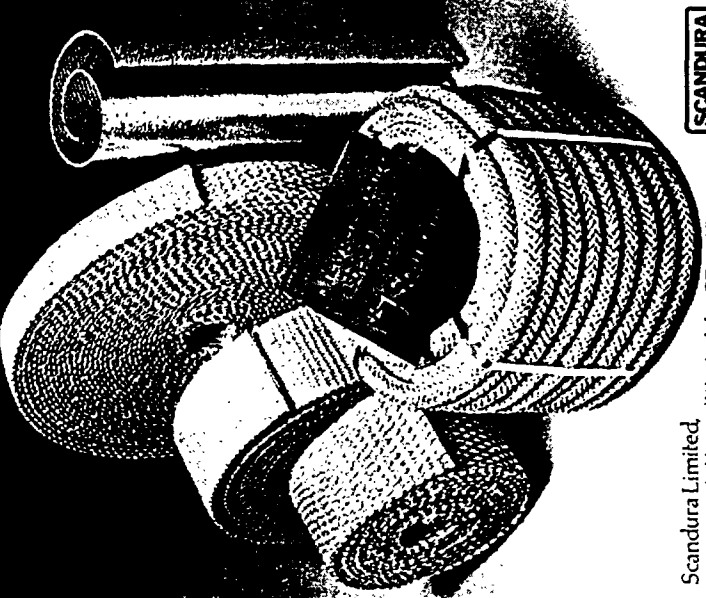
Deutsche Kap-Asbestwerke, A.G.—The woven asbestos textile factory of Deutsche Kap-Asbestwerke, Hamburg, Germany, a subsidiary of Saint-Gobain-Pont-A-Mousson, has been dismantled and shipped to Cape Town, Republic of South Africa. The move represents a R4-million German investment in South Africa and reportedly was necessary because of high operating costs, the restricting influence of trade unions and less-expensive imports from Spain, Yugoslavia and South Korea.

Everite Ltd., Johannesburg, Republic of South Africa, an asbestos miner and product manufacturer, announced increases of 24.7% in operating profit, to \$11.3-million, and 21.7% in turnover, to R92.9-million, for the year ended June 30, 1979. According to the company, a slight rise in building industry activity in the latter six months is reflected in higher sales volume. The increase in operating income was to an extent held down by lower dividend income from the unconsolidated Cape Blue (Crocidolite) asbestos mining interests. Everite is controlled by the Swiss Eternit Group of Companies.

Farben Industrial Development, Torino, Italy, announced the signing of a formal contract for a second asbestos-cement pressure pipe plant at Kuwait Asbestos Industries. The first such Farben plant was received by Kuwait between 1962 and 1978 and included four lines. This second facility includes two lines for the production, according to ISO standards, of asbestos-cement pipes with nominal diameters from 100 mm to 2000 mm. Each line can produce up to 120 tons per day. The finishing department has 12 machines, including a lathe for large pipes and asbestos-cement mandrels. Other Farben plants in the Middle East are at Aleppo, Syria; Mashad, Douroud and Ahwaz, Iran; and Umm-Al-Qaiwain, in the Arab Emirates.

The Flinlkote Company, Stamford, Connecticut, made several announcements during the year concerning tender offers and possible mergers. At mid-year it had agreed in principle for a New York investor group, organized by Kohlberg, Kravis, Roberts & Co., to acquire Flinlkote for \$52.00 per share. Based on the 7.2-million common shares outstanding, the transaction would have had a value of some \$374.4-million. Also announced was a merger agreement between Flinlkote and Louisiana-Pacific Corporation, a forest products company headquartered

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at Portland, Oregon. Meanwhile, hearings were being held in federal court on Flintkote's suit to enjoin Genstar Ltd' from acquiring additional Flintkote shares. Genstar is a diversified Canadian firm and is Flintkote's largest single shareholder, with 21.5% of the outstanding common stock. Flintkote is a major producer of basic materials and products for the building and construction industries in the United States and Canada. On November 27, 1979, Flintkote and Genstar jointly announced that they had entered into an agreement providing for the acquisition of Flintkote by Genstar. The agreement provides for a cash tender offer by a unit of Genstar for any and all common shares of Flintkote at \$55.00 per share, net. Among the several other provisions of the agreement is the dismissal without prejudice of the litigation commenced by Flintkote against Genstar and certain other parties. On January 28, 1980, The First Boston Corporation, dealer manager in the transaction, announced that Genstar had acquired approximately 94% of the outstanding common stock of Flintkote. Genstar intends to operate Flintkote as a separate subsidiary under its present management and has agreed to invite James D. Moran, Chairman and Chief Executive Officer of Flintkote, to become a member of the Genstar Board of Directors.

James Hardie Industries Ltd., Sydney, New South Wales, (formerly James Hardie Asbestos Ltd.) announced the acquisition, in October 1978, of Reed Consolidated Industries Ltd., thereby creating one of the largest diversified groups in Australia. Both companies have been in the building and pipeline businesses for several years and Reed's offshore activities fit in well with Hardie's overseas development plans. Areas of diverse interests include friction materials, paper and packaging, brake service and leisure and pleasure products and services.

Jim Walter Corporation, Tampa, Florida, has amalgamated two Canadian Divisions—Carey-Canadian Mines and Jim Walter Building Products—under the new corporate name of Carey Canada Inc. Carey has been mining its present asbestos orebody at East Broughton, Quebec, since 1958. It produces some 200,000 tons of asbestos fiber each year, exporting 50% of the production to the United States. The remainder of the output is sold in over 45 countries around the world. The building products facility operates at Barrie, Ontario, and makes accessories and decorative fittings for the home. Michael Prus, who was President of Carey-Canadian Mines, has been appointed Chairman of the Board of Directors and President of Carey Canada Inc. Gordon Scowcroft, who was President of Jim Walter Building Products, retains his former duties regarding the management of the division and has been named a Director of Carey Canada. . . . The Celotex Roofing Products Division of Jim Walter and Marley Ltd., a major producer in the United Kingdom of products for the construction industry, have entered into a joint venture agreement to make and market concrete roof tiles in the United States. The two firms will have equal ownership in the newly-formed Celotex-Marley, Inc., which plans to construct a \$3.5-million, 20,000-square-foot plant in Southern California. The facility is scheduled to begin production by early 1980.

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Johns-Manville Corporation, Denver, Colorado, reported at mid-year that demand for pipe products was fairly strong, residential and built-up roofing for commercial and industrial buildings had improved, non-fiber glass insulation for roofing had showed gains and excellent six month results for asbestos fiber were due primarily to strength in overseas construction markets. In November, the company stated it expected to post 1979 earnings equal to or slightly better than the record 1978 profit of \$121.6-million, or \$5.62 per share. Earnings in 1979 were hurt by rising raw material costs and inadequate price relief but profit was aided by the acquisition in January 1979 of Olin-Kraft Inc., a maker of wood and paper products, headquartered at West Monroe, Louisiana. According to John A. McKinney, Chairman and Chief Executive Officer, operating earnings fell from a year earlier, despite higher revenue in all the company's major businesses. Two exceptions, he said, were J-M's asbestos fiber and industrial and specialty products divisions. Mr. McKinney expects 1980 to be significantly better than 1979, if the company can cover cost increases with higher prices for its products. In January 1980 the company reported it was in the final stages of selling its irrigation and sprinkler business in Fresno, California, and would close its irrigation and sprinkler concern's brass foundry. The disposition of the businesses is part of J-M's program to eliminate operations which do not fit into long-range plans.

National Gypsum Company, Dallas, Texas, has agreed in principle to sell its cement division to General Dynamics Corporation, St. Louis, Missouri, a transaction valued at some \$100-million. National's cement division includes mills at Alpena, Michigan, and Evansville, Pennsylvania, and related storage and distribution facilities. The mill at Alpena has annual production capacity of 2.5-million tons of Portland and masonry cement. Annual capacity at Evansville is 935,000 tons of cement.

Nicollet Inc., Ambler, Pennsylvania, consolidated the manufacturing operations at two of its plants. The company advises the move should elicit economies and should improve product quality and service by transferring production to the most modern and efficient manufacturing equipment available within the corporation.

Nippon Asbestos Co. Ltd., Tokyo, Japan, and TDK Electronics Co., also of Tokyo, are marketing a new high-rise building walling material which absorbs around 90% of a radio wave hitting it and thereby eliminates the "ghost phenomenon" on urban television screens. Ferrite is the secret ingredient in the Electric Wave Absorption Panel. A square-shaped piece of the ferrite sheeling, designed to absorb radio waves of about 100 megahertz in frequency, is sandwiched between two thin, fireproof boards of calcium silicate. When tested in Tokyo, the new material had absorbed 87% to 95% of different telecast radio waves [Japan Economic Journal].

Ontario Research Foundation—The Fire and Flammability Center of ORF at Sheridan Park, Mississauga, Ontario, is now equipped to test the thermal resistance and insulation capability of protective clothing such as that worn by steel and refractory workers and firefighters. Following a

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modification of a proposed ASTM procedure, single or multilayer clothing systems can be evaluated. A sample of the clothing is mounted horizontally over a calibrated gas burner and the heat transfer through the specimen is measured using a heat flux meter. These data are translated to indicate when second degree burn would occur.

H. K. Porter Co., Inc., Pittsburgh, Pennsylvania, said in a Schedule 13D filed in March 1979 with the Securities and Exchange Commission that it had acquired 906,700 shares, or 7.3% valued at approximately \$11-million, of the outstanding common stock of Macmillan Inc. Porter said it acquired the shares of the New York-based diversified publishing concern as an investment and that it did not intend to seek control, attempt a merger or request representation on Macmillan's board. . . . A major plant expansion which will add 35% to existing production capacity began in March 1979 at Klazienaveen Works, the largest producer of clutch facings in the Netherlands—operated by Porter Netherlands, a subsidiary of H. K. Porter. The firm reports that demand for Porter products continues to increase and the newly-developed facing materials called TH846FT and TH109 have opened new markets for Thermoid clutch facings. . . . Southern Textile Corporation, Charlotte, North Carolina, a Porter subsidiary, now offers the CLEANGARD treatment in both its asbestos and non-asbestos textile materials. Southern incorporates CLEANGARD and WELDGARD processing in all its products to lock in the fibers and to create superior abrasion resistance. The company changed its name in early 1979 from Southern Asbestos Company to more accurately describe its business as a producer of all kinds of textiles, including synthetics, glass, asbestos and combinations of all of these, plus metallic fibers. The Quality Control and Research Laboratories were both modernized and expanded during the year and a contract has been awarded for construction of a new office building to house the sales, accounting, data processing and purchasing departments.

Raybestos-Manhattan, Inc., Trumbull, Connecticut, reported net sales for the 39 weeks ended September 30, 1979, of \$230,262,000, an increase of 8.3% over the comparable period of 1978. Net income was \$6,997,000 or \$3.34 per share, below the prior year's \$8,294,000 or \$4.04 per share. The costs of complying with government regulations and legal costs sustained to wage an aggressive defense against the product liability suits related to asbestos have been and will continue to be a substantial cost factor. In addition, R/M continues to absorb increasing insurance and environmentally-related costs. . . . In October, AVC Corporation, Radnor, Pennsylvania, said it had reported to the SEC its intent to increase its holdings of R/M from 7.1% to 8.6%, and that it has the right to acquire an additional 14.2% of R/M stock, under a purchase and option agreement. News reports quoted an R/M spokesman as saying there is no agreement with AVC involving any current or potential merger of the two companies. . . . R/M announced the key corporate objective of reducing its dependence on asbestos-based products through development of alternative materials wherever appropriate. The extensive and continuing com-

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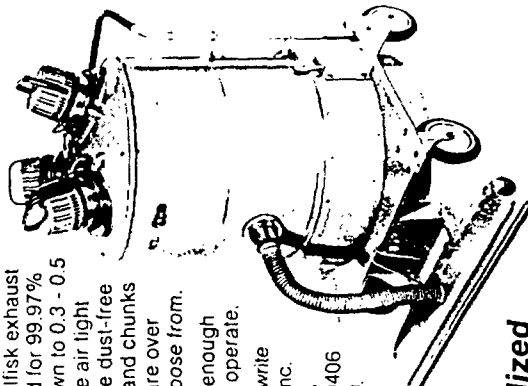
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ment of research and development resources to this aim has resulted in original equipment and aftermarket approvals and production releases for passenger car and industrial wet friction products and dry clutch facings. In addition, R/M is currently completing field tests of asbestos-free brake blocks and disc brake pads, with initial production scheduled within the next twelve months. . . . *Raybestos Manhattan Industrial Products Company*, North Charleston, South Carolina, initiated a program in 1979 committed to the fight against inflation. Consequently, the R/M division company is concentrating its efforts on cost reduction programs, not on passing through the next price increase, and it is saying "no" to suppliers whose services and products contribute to higher costs but do not provide an increase in value. RMIPCo believes its NOVATEX process, which is the only one of its kind domestically and which operates well below OSHA standards, will ultimately be the most economical method of producing asbestos yarn. The conversion program from conventional to NOVATEX processed yarns for most market applications, where there is no substitute for asbestos, is in its final stage of completion. The company plans to expand its market share of commodity products such as packings, seals, gaskets and insulating materials. In all its products, asbestos and non-asbestos materials will be used as determined by the performance requirements of the application and the environmental effects in the marketplace. . . . The year 1979 marked the 50th anniversary of the merger of the Raybestos Company with the General Asbestos & Rubber Company, the Manhattan Rubber Manufacturing Company and the United States Asbestos Company—to form Raybestos-Manhattan, Inc.

Robco Inc., Montreal, Quebec, is the new name of the former Joseph Robb & Co. Ltd., effective May 1, 1979, it was announced by Robert B. Plimer, President. Also on that date, The Anchor Packing Co., Ltd., became *Anchor Packing—Division Robco Inc.* Since the early 1900's, Joseph Robb and its affiliate, Anchor Packing, have steadily grown in expertise as manufacturers and suppliers of quality mechanical packings, rubber and plastic products, gaskets and other sealing components.

Supradur Manufacturing Corporation, New York City, recently issued new product literature to describe the characteristics and applications of its roofing shingles and siding. The company reports that because of the unique "dry process" production method, its materials do not warp, dent, rot, expand or contract. They also do not require electrical grounding and are fireproof and maintenance-free. . . . In January 1980 Supradur announced that one of its European subsidiaries agreed to acquire, through a Canadian affiliate, the assets of *Terry Burners Inc.*, Montreal, Quebec, subject to approval by the Canadian Foreign Investment Review Agency. Terry Burners manufactures and distributes heating equipment and accessories.

Turner & Newall Ltd., London, England, is a leader in most of its manufacturing operations and is one of the United Kingdom's larger exporters of manufactured industrial products. Among its products are plastics and industrial materials, automotive components, construction

materials and chemicals. New PVC and glass insulation plants were planned for completion in the latter half of 1979. . . . *Nuturn Corporation* opened a \$10-million manufacturing and warehousing operation in May 1979 at Smithville, near Nashville, Tennessee. The intent is to exploit Ferodo's European experience in the development of friction materials to enter the U.S. original equipment market. Up to now, Nuturn had been selling mainly to the replacement market under the trade names "Leland" and "Grizzly". . . . *TAC Construction Materials Ltd.* developed a dust suppressant treatment which is being applied to all Sindanyo CS51 cut parts and machined components. Based on a cellulosic compound and applied by dip coating, the treatment minimizes dust problems when handling or assembling components machined from Sindanyo electric arc and heat-resisting, asbestos-cement boards. . . . *TBA Industrial Products Ltd.*, via its Sealing Materials Division, was awarded contracts worth \$650,000 by Ferriimport, the state purchasing organization of Cuba. The contracts cover a wide range of TBA products including compressed asbestos fiber jointing, plaited and proofed packings, oilproof paper jointing, milboard and PTFE products. . . . A new \$2-million automotive components factory for *Turners Engineering Products (Nigeria) Ltd.* was officially opened in May 1979 by the Nigeria Federal Commissioner for Industries. The facility, situated at Ibadan, is producing brake linings from sheet material supplied by Ferodo Ltd., U.K., and will soon be making Ferodo disc brake pads. In addition, the company hopes to extend the range of components to include automotive gaskets. The Nigerian government has a 40% interest in the T&N subsidiary.

Vermont Industrial Products, Inc., a subsidiary of Vermont Asbestos Group, Inc., is producing non-asbestos wallboard at its new plant at Morrisville, Vermont. The facility is capable of annually producing 32-million square feet of the fireproof product. Magnesium, calcium oxide and silicate tailings from the parent company's asbestos mine at Lowell are used in the manufacturing process.

NEXT ISSUE: GREETINGS FROM INDUSTRY LEADERS

MARCH ISSUE: 1979 ENVIRONMENTAL REVIEW

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IMPORTS INTO THE UNITED STATES

From: U.S. Bureau of the Census

UNMANUFACTURED ASBESTOS:

	SEPTEMBER 1979
Amosite	263
Crocidolite (Blue), South Africa	166,622
Chrysotile Crudes, Canada	50
Chrysotile Spinning Fibers, Canada	371,380
Chrysotile, Other, Canada	437
South Africa	40,602
Other Crudes & Fibers, Canada	96
	59,508
	132,551
	42,018
	\$ 10,739,835

MANUFACTURED ASBESTOS PRODUCTS:

	SEPTEMBER 1979
Asbestos yarn, cloth, tape, etc.	786,393
A-C pipes, tubes & fittings	347,389
Other asbestos-cement articles	4,113,455
Other asbestos articles	541,805
	\$ 2,365,816

UNMANUFACTURED ASBESTOS:

	JANUARY-SEPTEMBER 1979
Amosite, Canada	81
South Africa	348
Crocidolite (Blue), Canada	26,155
Namibia	230
South Africa	13,383
Switzerland	173
Chrysotile Crudes, Canada	152
Italy	18
South Africa	403
Chrysotile Spinning Fibers, Canada	6,873
Chrysotile, Other, Australia	40
Canada	406,866
Germany, Fed. Rep.	12
Mexico	12
Norway	22
Romania	22
South Africa	1,820
United Kingdom	22
Yemen	22
Other Crudes & Fibers, Canada	8,379
Germany, Fed. Rep.	11
India	213
Italy	17
Mexico	1
Norway	26
South Africa	108
	439,353
	\$106,217,792

U.S. IMPORTS—CONTINUED

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos yarn, cloth, tape, etc.	Lb	7,215,915	\$ 11,296,710
A-C pipes, tubes & fittings	Lb	19,697,933	2,993,782
Other asbestos-cement articles	Lb	25,057,720	4,630,613
Other asbestos articles			4,583,101
			\$ 23,504,206

January-September 1978. U.S. imports of unmanufactured asbestos totaled 442,013 short tons, valued at \$115,001,409; imports of manufactured asbestos products were valued at \$23,893,778

EXPORTS FROM THE UNITED STATES

From: U.S. Bureau of the Census

UNMANUFACTURED ASBESTOS:

	SEPTEMBER 1979
Asbestos crudes, fibers & stucco	4,982
Asbestos sand & refuse	1,219
	6,201
	\$ 1,970,591

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos yarn, cloth, tape, etc.	Lb	235,457	\$ 382,468
Asbestos-Cement shingles & clapboard	Lb	768,143	223,747
Other asbestos-cement articles	Lb	809,503	480,654
Asbestos gaskets	Lb	172,034	384,273
Asbestos packings & seals	Lb	365,764	1,309,250
Asbestos insulation			277,175
Brake linings & disc brake pads			5,664,429
Clutch facings & linings			639,672
Other asbestos articles			1,870,707
			\$11,232,375

UNMANUFACTURED ASBESTOS:

	JANUARY-SEPTEMBER 1979
Asbestos crudes, fibers & stucco	24,311
Asbestos sand & refuse	8,378
	32,689
	\$ 11,507,015

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos yarn, cloth, tape, etc.	Lb	4,681,483	\$ 5,178,902
Asbestos-Cement shingles & clapboard	Lb	14,117,408	3,316,779
Other asbestos-cement articles	Lb	28,644,882	10,186,763
Asbestos gaskets	Lb	8,835,439	3,677,587
Asbestos packings & seals	Lb	4,117,823	10,080,373
Asbestos insulation			3,496,811
Brake linings & disc brake pads			44,853,038
Clutch facings & linings			7,052,125
Other asbestos articles			17,085,656
			\$104,928,034

January-September 1978. U.S. exports of unmanufactured asbestos reached 35,885 short tons, valued at \$9,867,128; exports of manufactured asbestos products were valued at \$88,376,568

EXPORTS FROM CANADA

From: Statistics Canada

	SEPTEMBER 1979		
	Crude	Milled Gp 3	Short tons Milled Gp 4.5 Shorts Gp 6.9
UNMANUFACTURED ASBESTOS:			
Western Europe	884	62,210	11,781
Eastern Europe	216	7,230	140
Middle East	30	4,531	65
Africa		80	165
Asia	645	18,853	14,382
Oceania		2,273	58
So. & Cen. America & Antilles	303	8,497	5,848
United States	587	4,468	30,252
	2,665	108,142	62,691

The total amount of unmanufactured asbestos exported in September 1979 was 173,498 short tons, valued at C\$82,476,000

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos cloth, dryer felts & sheets	C\$ 614,000
Asbestos brake linings & facings	302,000
Asbestos-Cement building materials	1,584,000
Other basic asbestos products	1,024,000
	C\$ 3,524,000

	JANUARY-SEPTEMBER 1979		
	Crude	Milled Gp 3	Short tons Milled Gp 4.5 Shorts Gp 6.9
UNMANUFACTURED ASBESTOS:			
Western Europe	8,404	223,827	130,331
Eastern Europe	2,689	34,834	1,492
Middle East	118	12,824	1,026
Africa	7	7,999	2,146
Asia	3,873	105,678	99,054
Oceania	5	19,842	1,378
So. & Cen. America & Antilles	2,016	69,095	48,607
United States	22	5,928	89,334
	22	23,040	563,433
			624,765

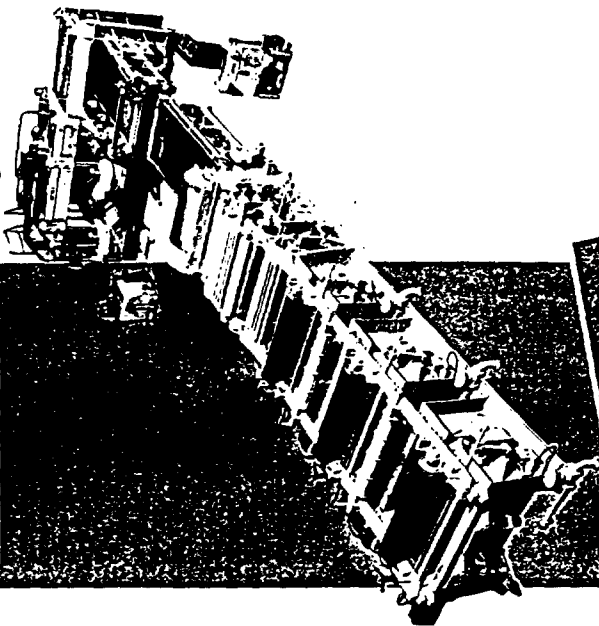
The total amount of unmanufactured asbestos exported in January-September 1979 was 1,211,260 short tons, valued at C\$483,148,000.

MANUFACTURED ASBESTOS PRODUCTS:

Asbestos cloth, dryer felts & sheets	C\$ 4,553,000
Asbestos brake linings & facings	2,660,000
Asbestos-Cement building materials	11,769,000
Other basic asbestos products	6,446,000
	C\$25,428,000

January-September 1978: Canadian exports of unmanufactured asbestos totaled 1,079,207 short tons (979,057 metric tonnes), valued at C\$394,321,000; exports of manufactured asbestos products were valued at C\$19,495,000

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BIRTHDAY GREETINGS to . . .

R. L. Schult, National Sales Manager, Union Carbide Corporation, Metals Division, Niagara Falls, New York, February 17.
 Dan Wayne Gimmitt, Secretary-Treasurer, Southern Textile Corporation, Charlotte, North Carolina, February 18.
 C. R. Pattison, Managing Director, Cape Insulation Services Ltd., Welwyn Garden City, Essex, England, February 18.
 E. R. E. Carier, Chairman of the Board and President, Advocate Mines Ltd., Toronto, Ontario, February 20.
 John F. Knoch, Vice President and Controller, Johns-Manville Corporation, Denver, Colorado, February 21.
 Michael J. Messel, President, Lac d'Amiante du Quebec Lee, and Vice President (Asbestos), Asarco Inc., Black Lake, Quebec, February 22.
 Dr. R. J. Bishop, Joint Managing Director, TAC Construction Materials Ltd., Manchester, England, February 23.
 K. H. Davenport, a Director, James Hardie Industries Ltd., Sydney, New South Wales, Australia, February 24.
 Charles M. Fenlon, Vice Chairman and Group Managing Director, BBA Group Ltd., Cleckheaton, Yorkshire, England, February 24.
 D. J. Barbour, Managing Director, Turnall Ltd., Jacobs, Durban, Natal, Republic of South Africa, February 26.
 John L. Rainey, President, Amatex Corporation, Norristown, Pennsylvania, March 1.
 R. W. Whittell, Managing Director, Scandura Ltd., a subsidiary of BBA Group Ltd., Cleckheaton, Yorkshire, England, March 1.
 James E. Sullivan, President, Pacor, Inc., Philadelphia, Pennsylvania, March 3.
 B. G. Hill, Chief Executive, Automotive Components Division, and a Director, Turner & Newall Ltd., Manchester, England, March 5.
 Joseph C. Harkness, Vice President and General Manager, Building Materials Mfg. Div., The Flintkote Co., Irving, Texas, March 6.
 A. E. Murray, Managing Director, Cape Insulation (Ireland) Ltd., Dublin, Ireland, March 6.
 H. B. Rhodes, Marketing Services Manager-Asbestos, Union Carbide Corporation, Metals Division, Niagara Falls, New York, March 6.
 D. W. Hills, Chief Executive, Plastics and Industrial Materials Div., and a Director, Turner & Newall Ltd., Manchester, England, March 9.
 M. P. Carson, Executive Vice President, Asbestos Corporation Ltd., Montreal, Quebec, March 10.
 M. C. Preforius, Chairman of several Automotive Components and Construction Materials subsidiaries, Turner & Newall Ltd., Republic of South Africa, March 10.
 John Fear, Plant Industrial Engineer, Cement Asbestos Products Company, Van Buren, Arkansas, March 12.
 Paul A. Ffireau, Executive Vice President, Quebec Asbestos Mining Association, Quebec City, Quebec, March 12.
 Roger Mercier, Production Superintendent, Asbestos Plant, Johns-Manville Canada Inc., Asbestos, Quebec, March 12.
 G. P. Loubert, President, Johns-Manville Canada Inc., Asbestos, Quebec, March 13.

ASBESTOS STOCK QUOTATIONS

CLOSE—DECEMBER 18, 1979	
Abitibi Asbestos	85 1/2
G&W (pid 3.87)	66 1/2
Advocate Mines	24 1/2
IC Ind (pid 3.50)	38 1/2
Armstrong Cork	24 1/2
Armst. Cork (pid 3.75)	30 1/2
Asarco	30 1/2
Asbestos Corporation	30 1/2
Bendix	21 1/2
Bendix (pid 3)	78 1/2
Carlisle	22 1/2
Cassiar Asbestos	19 1/2
CertainTeed	14 1/2
Charter Conso.	128 pence
Coit Industries	45
Coit Ind. (pid 1.60)	38 1/2
Coit Ind. (pid 4.25)	103
Conwest	36 1/2
Flintkote	54 1/2
F-kote (pid-B 2.25)	58 1/2
GAF Corporation	11
GAF (pid 1.20)	14 1/2
Gulf & Western	17 1/2
G&W (pid 2.50)	36 1/2
G&W (pid 5.75)	85 1/2
IC Industries	24 1/2
Johns-Manville	38 1/2
Johns-Manville (pid 5.40)	55 1/2
Kennecott Copper	30 1/2
Lear Siegler	21 1/2
Lear Siegler (pid 2.25)	54
McAdam Mining	C\$ 28
National Gypsum	19 1/2
Pathfinder	C\$ 33
Porter (pid 5.50)	76 1/2
Raybestos-Manhattan	21 1/2
Rio Algom	C\$30.375
Rio Algom (pid 5.80)	C\$67.50
Supradur	Bid 5; Asked 5 1/2
Union Carbide	42
United Asbestos	C\$5.125
Walter, Jim	31 1/2
Walter, Jim (pid 1)	10
Walter, Jim (pid 1.60)	33 1/2
Woodsreef Minerals	C\$ 40

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CALENDAR OF EVENTS

TOXIC SUBSTANCES LITIGATION—Seminar of the Practising Law Institute: New York City, February 8-9; San Francisco, California, March 21-22.

FLUID SEALING ASSOCIATION—1980 Winter Meeting: Boca Raton, Florida, February 13-15.

EXPO/CONVENTION 80—Seminars and exhibits sponsored by the National Home Improvement Council: Miami Beach, Florida, February 14-16.

CORROSION—Continuing corrosion education seminars scheduled by the National Association of Corrosion Engineers: Tuscaloosa, Alabama, February 17-22; Minneapolis, Minnesota, February 17-22; San Diego, California, February 24-29; Chicago, Illinois, March 2-7 (concurrently with NACE's annual conference, CORROSION/80).

HAZARDOUS WASTE MANAGEMENT—Seminar sponsored by Vanderbilt University: Nashville, Tennessee, February 18-22.

MINERAL ECONOMICS—Professional Seminars at McGill University, Montreal, Quebec: Mineral Investment Decision Techniques, February 18-29; Organizing for Results in Resource-Based Industries, March 3-7; The Financing and Implementation of Mineral Projects, March 10-14; The Planning and Execution of Mineral Development Strategies, March 17-21; Mineral Processing Systems, March 24-April 3.

SOCIETY OF MINING ENGINEERS OF AIME—Three short courses and a symposium during the AIME Annual Meeting at Las Vegas, Nevada, February 24-28: Mining Law (23-24); Project Financing in the Development of Mineral Resources (23-24); Surface and Underground Blasting Techniques (23-24).

INDUSTRIAL VENTILATION CONFERENCE—29th annual conference at The Kellogg Center, Michigan State University, East Lansing, Michigan, February 24-29.

CLEOS/ICF '80—Third Conference on Laser and Electro-Optical Systems and second meeting on Inertial Confinement Fusion, organized by the Quantum Electronics and Applications Society of IEEE and the Optical Society of America: San Diego, California, February 26-28.

INDUSTRIAL EXHAUST VENTILATION: ENGINEERING CONTROLS—Short course at The George Washington University: Washington, D.C., March 3-5.

STACK SAMPLING OF AIR POLLUTANTS—Short course at The George Washington University: Washington, D.C., March 5-7.

SOCIETY OF TOXICOLOGY—19th Annual Conference: Washington, D.C., March 9-13.

ANALYTICAL CHEMISTRY AND APPLIED SPECTROSCOPY—1980 Pittsburgh Conference: Atlantic City, New Jersey, March 10-14.

IDENTIFICATION OF ASBESTOS—Course of McCrone Research Institute Ltd.: London, England, April 14-15.

MONITORING & COUNTING OF ASBESTOS FIBERS—Course of McCrone Research Institute Ltd.: London, England, April 16.

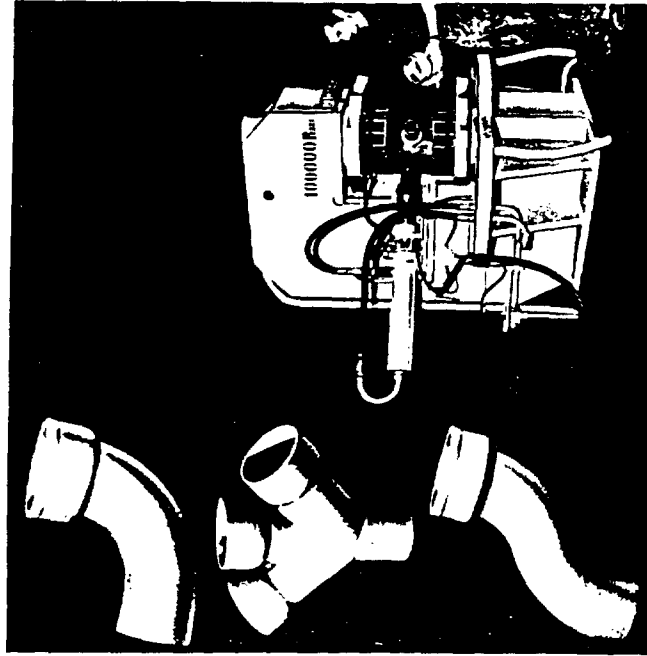
ASBESTOS—4th International Conference, will cover economic geology, geology and mineralogy, chemistry and physics, mining, recovery and refining, industrial uses, quality control and environmental aspects: Torino, Italy, May 26-30.

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ASBESTOS—January 1980

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"P 8" Plant for the production of asbestos-cement fittings for pipes, gutters and similar articles



Automatic INJECTION Plants

Remember When?

(DECEMBER 1929 ASBESTOS)

Johns-Manville Corporation announced its acquisition of a number of operations on sections of land located between the two large company holdings at Asbestos, Quebec, as part of the 20-year program for development of its asbestos mining properties in that area.

Thermoid Rubber Company placed in operation a new \$150,000 unit at its plant in Trenton, New Jersey, for the manufacture of brake linings, clutch rings and clutch facings.

Egnep Asbestos Company, controlled by Cape Asbestos Co. Ltd., increased its capital from £12,000 to £100,000 by private subscription for the purpose of purchasing additional acreage in the Pietersburg-Lydenburg District of the Transvaal, Union of South Africa, and expanding its existing mining and milling facilities for the production of Amosite asbestos.

Turner & Newall Ltd. called a meeting of its shareholders and those of The Rhodesia & General Asbestos Corporation to vote on T&N's proposed acquisition of the latter company. Combined assets of the two concerns amounted to some £6.5-million.

Emsco Asbestos Company reported completion of its new mill at Globe, Arizona, and received the first carload of fiber from the operation in early December 1929.

A study of wage rates for pipecovering mechanics in the United States as of December 1929 showed New York City in the lead at \$1.65 per hour, while the Navy's shipyards at Mare Island, California, and Bremerton, Washington, were paying the lowest rates at 93¢ and 91¢ per hour, respectively. The average rate in the mid-Atlantic area was approximately \$1.25 per hour.

(JANUARY 1930 ASBESTOS)

This issue contained comments on business prospects for the year just beginning, from executives of the Asbestos Industry and leaders of several of the nation's largest manufacturers and financial institutions. It was interesting to note that, despite the stock market crash of the preceding October (1929) and subsequent contractions in several industries, practically every prognosis was unqualifiedly optimistic for the immediate future.

An article in this issue described in words and pictures the new aerial ropeway connecting the New Amianthus Asbestos Mine at Kaapspite Hoop, Eastern Transvaal, with the Delagoa Bay Railway at Elandshoek, 5.9 miles distant. Traveling at four miles per hour and with a load capacity of 7½ tons per hour, the ropeway was expected to save about 85% of the previous cost of transporting asbestos from the mine to the railway. The mine was controlled by Turner & Newall Ltd.

Also described was the Bear Canyon Asbestos Mine in Gila County, Arizona. The property was controlled by the Keadby & Mattison Company and was producing relatively large quantities of high-grade, nonferrous asbestos, of particular value as a component of electrical insulation materials.

A feeling for felt

At Scapa Textiles Limited, we deal exclusively in felts for the asbestos-cement industry. We pride ourselves in our quality — and our service! Nothing is too much trouble, no customer too demanding. We build up a special relationship with each of our clients, with our team dealing specifically with his requirements.

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We're helping industry appreciate the "locked in" benefits of asbestos with ads like this one.

We want our customers to continue taking advantage of the unique properties of asbestos. Too often, their ability to do so is hindered by decisions based on emotion rather than factual information. So we're calmly and repeatedly explaining the facts about asbestos-containing products in a series of full page, four-color ads, appearing regularly in the industrial edition of *Business Week*.

The advertising program is designed to let industry management know that in an extensive range of finished products, such as asbestos/cement sheets and pipe, gasketing materials, asphalt-based coatings, latex and resin-bound papers, and friction materials, the asbestos is "locked in" by various binders to form environmentally safe materials. And once "locked in," the release of asbestos into the environment will not be significant during normal product use.

Our investment in advertising is not nearly as large as that directed toward developing safer ways to ship, handle, and use asbestos. But in many ways, it's equally important. We think it's part of our job as the world's leading producer of asbestos. And part of our continuing commitment to the future of asbestos.



When our asbestos is used in the manufacture of built-up roofing felts, it becomes "locked in." So our customers can keep on using it.

Asbestos used in the felts of this built-up roofing system contributes to the dimensional stability of the system under changing atmospheric conditions, resists weathering, lowers maintenance costs, and prolongs roof life. In this application and in an extensive range of other finished products containing asbestos, the asbestos is "locked in" with asphalt, rubber, cement, latex, or other binders, to form environmentally safe materials. Once "locked in," the release of asbestos into the environment will not be significant during normal product use.

As a result, our customers can continue taking advantage of the unique properties of asbestos. In thousands of asbestos-containing products, asbestos serves an essential function that has not been duplicated on a cost performance basis.

While EPA and OSHA have established standards that limit the amount of

airborne asbestos generated during production or fabrication of asbestos in a factory or on site, these are virtually no hazards associated with the proper use of finished products where the asbestos is "locked in."

As one of the world's leading suppliers of asbestos, we at Johns-Manville are vitally concerned with helping our customers meet these standards. On any problem anywhere, we're ready to help.

We have years of experience in creating systems that effectively and economically control asbestos dust generated in the handling of asbestos fiber and in the machining and fabricating of products containing asbestos. Our experience can help you to eliminate or substantially reduce employee exposure to asbestos.

For example, we package asbestos in pulpable bags that are added directly to the mix where they disperse along with

the asbestos. Other bags can be opened and handled with dust-controlled equipment.

In shipping, we utilize damage-free bulkhead rail cars and shrink-wrapped palletized units to help prevent damage during shipment and storage. We're also developing new methods of shipping such as high-density floor blocks and other innovations that will help maintain dust-free environments and make it easier to handle asbestos safely.

We'd like to help. For more information on safe handling of asbestos, write on your company letterhead to Denis Kelleher, Asbestos Fiber Division, Johns-Manville, Ken-Caryl Ranch, Denver, CO 80217.



Johns-Manville

Carey Canadian started to mine its own business in 1918.



Carey Canadian started in the Asbestos Business back in 1918 when Philip Carey came to Quebec to mine Chrysotile Asbestos. Since then, we've become one of the largest, most trusted producers of quality asbestos.

Since 1918, we haven't lost sight of the three principles that Philip Carey set down so many years ago. He stressed economy in mining and milling, endless research to assure quality and uniformity and customer service...which brings us to you. We promise the right grade of asbestos for your

product, give good service and the maximum savings possible.

Give your Carey Canadian man a call today. He'll stand by you from drawing board to delivery date. He has to. Tradition demands it.

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