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THE CANADIAN ASBESTOS INDUSTRY

E.J. Bonkoff

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E. J. BONKOFF, B.A.
ECONOMIC GEOLOGIST

ED BY GENERAL RESEARCH ASSOCIATES TORONTO CANADA

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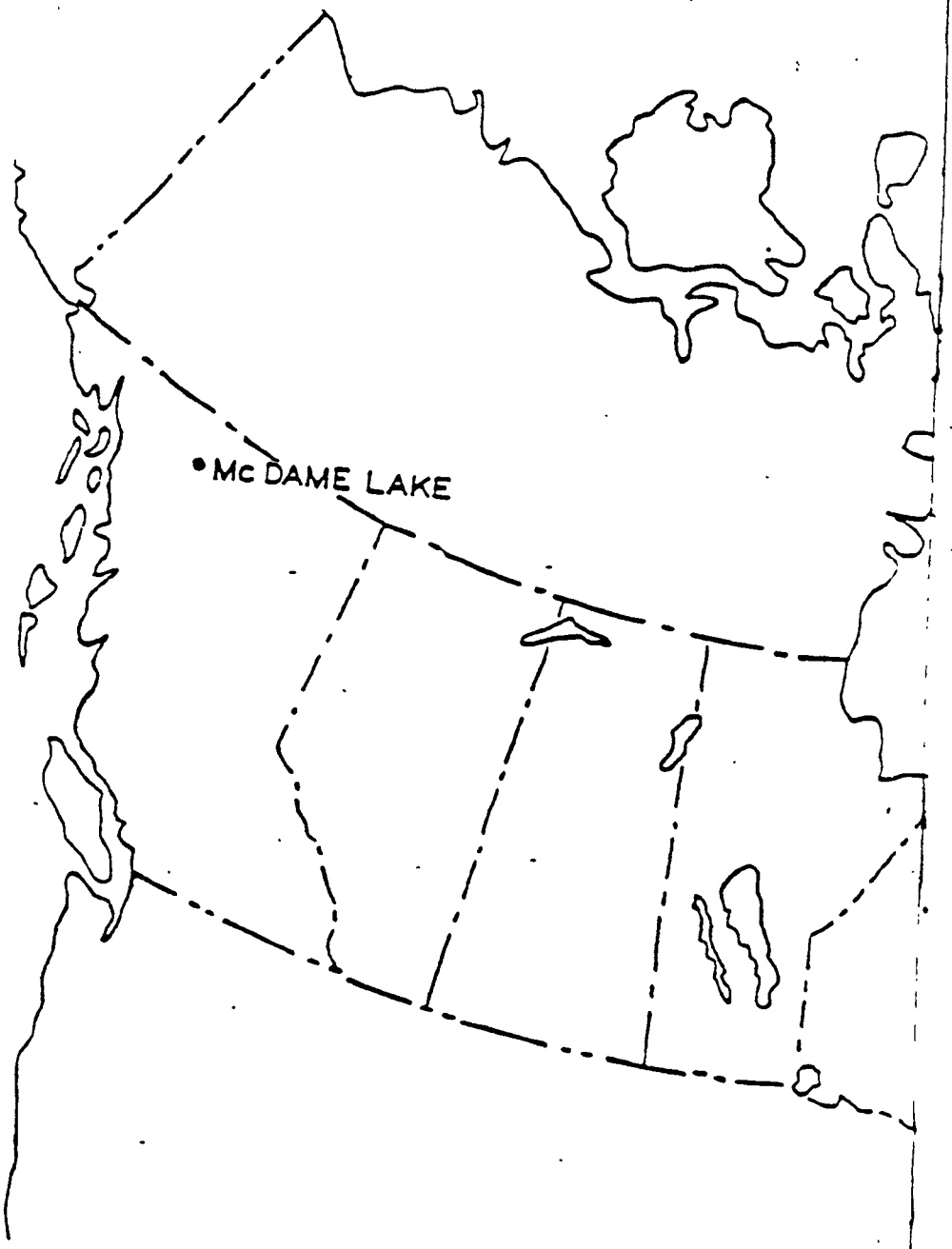

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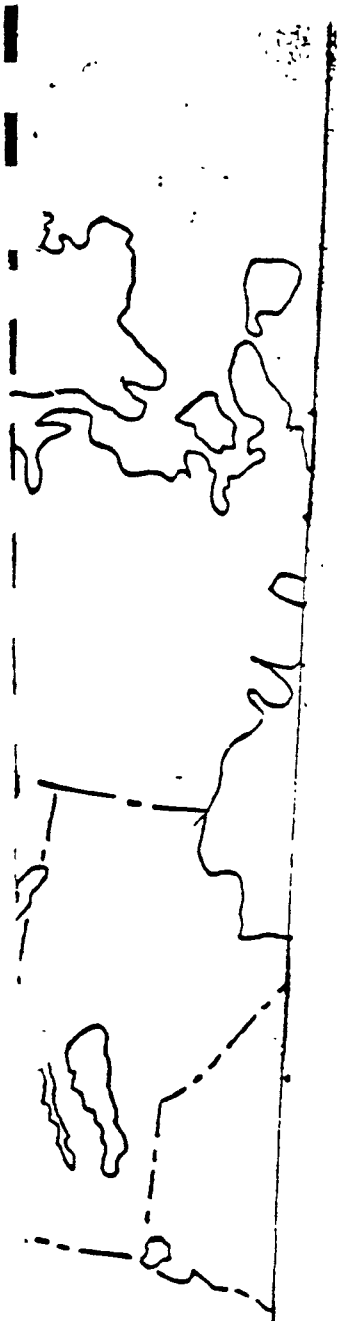

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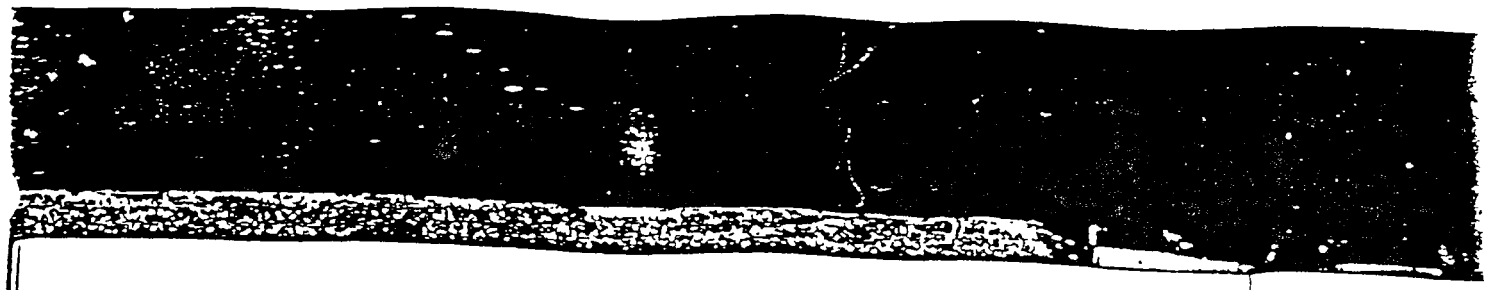
SUITE 105, 4 RICHMOND STREET, EAST
TORONTO 1, CANADA



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CONTENTS

1.

INTRODUCTION

Asbestos, in common with most other industrial materials, is at present being faced with complex marketing problems for the first time since the end of the Second World War, although as early as 1954 there was evidence to suggest that the supply of spinning fibre was beginning to outstrip the growth in demand.

Today, Canada's foreign markets for general bulk shipments of mine asbestos, and the much smaller domestic market are in a state of flux which is not wholly due to the current recession in the North American economy, but is partly a consequence of the historical development and the inherent structural characteristics of the industry itself.

It is the purpose of this General Research Associates study to provide a concise account of the Asbestos Industry in Canada and to assess how current developments may influence its future.

While the industry is in a much better and sounder financial and operating condition today than at any time in the past, having enjoyed a growth in volume over the past decade at an average rate of nine per cent per annum, new difficulties and uncertainties are beginning to emerge.

Mr. E.J. Bonkoff, B.A., Economic Geologist - formerly Commodity Officer, Industrial Minerals (Asbestos), Canadian Department of Trade and Commerce, Ottawa - was commissioned by General Research Associates to outline the development of the Industry and delineate its present structure, as a basic step towards appraising the short term outlook and the medium term future of the Asbestos Industry in Canada.

2. TECHNICAL CLASSIFICATION AND UTILISATION OF ASBESTOS

Asbestos is a mineral. Its fundamental quality is, while it possesses the well-known characteristics of fibrous materials such as silk and cotton, its incombustibility. This singular attribute makes asbestos unique among industrial materials.

Asbestos is produced ~~today~~ in two physical forms:

1. "Crude Asbestos" which consists of pieces of hand-selected and hand-cobbed crossvein material, essentially in its native or unfiberized form; and
2. "Milled Asbestos" which consists of all other grades produced by mechanical treatment of asbestos ore into fibre.

Basically, Canadian asbestos is graded according to fibre length - the higher the grade, the longer the fibre - and falls into nine major groups, ranging from the longest (Crude No. 1) to the very short fibres classified as "sand and gravel". Most of these nine major groups are divided into several subgroups.

Crudes 1 and 2 and Group 3: "spinning fibres" used to make white asbestos textile goods.

Group 4: "shingle fibre" and Group 5: "paper stock" used to make asbestos-magnesia pipe covering, paper and fibre board; and asbestos cement products, such as pipe, shingles siding and sheets.

Groups 6 and 7: "waste, stucco, plaster, refuse or shorts" used in asbestos cements, protective coatings, moulded articles, as a filler in asphalt tile, greases, etc.

Groups 8 and 9: "sand and gravel" are the shortest and lowest grades and their production is not significant. They are used in some of the applications listed in Groups 6 and 7.

For purposes of this report Crudes 1 and 2 are designated as "crudes"; Groups 3, 4, and 5 as "milled fibres"; and Groups 6, 7, 8, and 9 as "shorts".

All asbestos produced in Canada is of the chrysotile variety, the principal commercial form.

3. THE STRUCTURE OF THE CANADIAN ASBESTOS INDUSTRY

The present day structure of the asbestos industry in Canada has two main characteristics - vertical integration and foreign control. Several of the more important mining companies are under the same ownership as companies engaged in the manufacture of asbestos products. Canadian companies control approximately 30 per cent of the asbestos mining industry; United States companies 65 per cent and the United Kingdom about 5 per cent.

There are at present eight producing companies operating in the asbestos mining industry. Of these only two - Asbestos Corporation Limited, formed by merger in 1925 and Johnson's Company Limited - are not captive mines and both are under Canadian ownership. Cassiar Asbestos Corporation Limited is also, in large part, under Canadian ownership, but as a result of stock purchases, is closely associated with Turner-Newall Limited (U.K.) and Raybestos-Manhattan Company (U.S.). Sales for Cassiar Asbestos Corporation Limited are almost all handled by the Bell Asbestos Company Limited, a subsidiary of Turner-Newall Limited.

The remaining five firms are all vertical type companies, and fibre produced from their Canadian mines is shipped to company plants in Canada, the United States and abroad. Any surplus fibre together with grades not required for their own operations, is sold in the open market.

Bell Asbestos Mines Limited is owned by an English company, Turner-Newall Limited, which also has a manufacturing subsidiary in Canada, Atlas Asbestos Company Limited. The remaining companies - Canadian Johns-Manville Company; Flintkote Mines Limited, Quebec; Nicolet Asbestos Mines Limited; and Quebec Asbestos Corporation Limited - are all wholly-owned subsidiaries of U.S. manufacturing companies.

The Canadian Johns-Manville Company, a subsidiary of Johns-Manville Corporation (U.S.), is engaged both in asbestos mining and in the manufacture of asbestos products in Canada. The parent companies of Flintkote Mines Limited and the Quebec Asbestos Corporation (the Flintkote Company (U.S.) and Phillip Carey Manufacturing Company (U.S.) respectively), have separate subsidiaries for the manufacture of asbestos products in Canada, that of Nicolet Asbestos Mines (Norristown Asbestos

and Magnesia Company (U.S.), has no manufacturing operations in Canada.

A number of other companies have engaged in exploration and development work, and presently the United Asbestos Corporation controlled by the American Smelting and Refining Company (U.S.), and National Asbestos (Canada) Limited, a wholly owned subsidiary of National Gypsum Company (U.S.), are preparing for production this year. Advocate Mines Limited, a Canadian controlled Company, has a proven deposit in Newfoundland. At the present time this company is negotiating to conclude arrangements to bring their deposit into production.

4.

PRODUCING COMPANIES

There are at present eight companies mining and producing asbestos fibre in Canada:

1. Canadian Johns-Manville Company
   Asbestos, Quebec.
   Mines at--Asbestos, Quebec; Matheson, Ontario.
   — Canadian subsidiary of Johns-Manville Corporation, (U.S.).

2. Asbestos Corporation Limited
   Thetford Mines, Quebec.
   Mines at--Thetford Mines and Black Lake, Quebec.
   — Public company, believed to be largely Canadian ownership.

3. Johnson's Company Limited
   Thetford Mines, Quebec.
   Mines at--Thetford Mines and Black Lake, Quebec.
   — Canadian family-owned company.

4. Quebec Asbestos Corporation Limited
   East Broughton Station, Quebec.
   Mine at-- East Broughton Station, Quebec.
   — Canadian subsidiary of Phillip Carey Manufacturing Company (U.S.).

5. Bell Asbestos Mines Limited
   Thetford Mines, Quebec.
   Mine at-- Thetford Mines, Quebec.
   — Canadian subsidiary of Turner-Newall Limited, (U.K.).

6. Flintkote Mines Limited, Quebec
   Thetford Mines, Quebec.
   Mine at-- Thetford Mines, Quebec.
   — Canadian subsidiary of the Flintkote Company, (U.S.).

7. Nicolet Asbestos Mines Limited
   St. Remi de Tingwick, Quebec.
   Mine at--St. Remi de Tingwick, Quebec.
   — Canadian subsidiary of Norristown Magnesia and Asbestos Company, (U.S.).

8. Cassiar Asbestos Corporation Limited
   Toronto, Ontario
   Mine at--McDame Lake, British Columbia.
   — Canadian controlled by Conwest Exploration Limited, although stock interest held by Turner-Newall Limited (U.K.), and Raybestos-Manhattan Incorporated (U.S.).

(COMPANY DETAILS ARE TO BE FOUND IN APPENDIX "B", PAGE 23)

There are at present three companies under development in Canada which are expected to come into production:

1. United Asbestos Company Limited Montreal, Quebec Mine at—Black Lake, Quebec.	Control and management by the American Smelting and Refining Company, (U.S.) through a subsidiary, Lake Asbestos of Quebec Limited. The United Asbestos Company Limited who originally developed the mine, hold a substantial interest.
2. National Asbestos (Canada) Limited Thetford Mines, Quebec. Mine at— Thetford Mines, Quebec.	Canadian subsidiary of the National Gypsum Company Limited (U.S.).
3. Advocate Mines Limited Toronto, Ontario. Mine at—Baie Verte, Newfoundland	Public company, Canadian controlled by the M.J. Boylen interests.

• • •

The most significant firms, volumewise, in the industry are the Canadian Johns-Manville Company Limited, the Asbestos Corporation Limited and the Johnson's Company Limited, in that order.

The Canadian Johns-Manville Company presently produces well over 50 per cent of the total Canadian output. In 1957 this company produced approximately 568,000 tons of fibre, of which, it is estimated, close to 75 per cent would be classified as "shorts". Due to the high yield of "shorts", this company has devoted considerable time and money in research to develop new uses and to expand the known uses, and quite successfully. Although a captive mine, the company's production is much too large to be consumed within their organization and consequently their sales to fibre consumers throughout the world make up an important part of their business.

The Asbestos Corporation Limited and the Johnson's Company Limited are both independent producers and it is estimated that these firms would account for about 20 per cent and 10 per cent of Canadian output, respectively. Their fibre production is understood to be more balanced than in the case of Johns-Manville, in that production of "shorts" should about equal or be slightly higher than "milled fibre" output, as compared to the probable 75/25 ratio for the Johns-Manville Company as mentioned above.

Neither the Asbestos Corporation nor the Johnson's Company are as highly dependent on sales in the United States market as are the other producers, since a large percentage, probably well over half of their fibre would be exported to the United Kingdom, Europe, Japan, Central and South America, Australia and the Middle East.

The Bell Asbestos Mine is captive and normally would ship its entire production, estimated at about 5 per cent of Canadian output, to companies in the Turner-Newall Group. This is considered to be a relatively high grade operation, that is, production of "shorts" would probably be under 30 per cent of output. (In terms of Asbestos mining, the lower percentage of recovery and production of short to long fibres, the higher the grade of the operation).

The Cassiar Asbestos Company Limited is truly a high grade operation. Due to location of their mine in Northern British Columbia, it is not as yet profitable for the company to recover fibre below Group 4, because of the high cost of shipping. Cassiar would account for slightly under 1 per cent of the total Canadian output. Although not a captive mine, it is closely associated with the Turner-Newall Group (U.K.) and the Raybestos-Manhattan Company (U.S.) who are large fibre consumers.

The remaining companies - Quebec Asbestos Corporation Limited, Flintkote Mines Limited and Nicolet Asbestos Mines Limited - are believed to be low grade operations and are captive mines. Their share of the total Canadian output is estimated at about 5 per cent each, of which over 75 per cent would probably be as "shorts". These mines offer from time to time small tonnages of fibre beyond company requirements for sale outside their organization.

5. PRODUCTION AND DEMAND TRENDS

The production record of Canadian asbestos mines since 1900 is shown on the CHART, Page 20. There was a steady growth in Canadian output until the disruption of the European markets in the early years of the 1914-18 war. But it was not long before the war requirements once again stimulated demand - mainly for long fibred material - to new heights.

The post-war slump of 1920-21 again reduced effective demand but the decline in asbestos production was short-lived and by 1922 it was close to the hitherto peak level of 1920.

Low prices, however, created serious problems for the producers which were in part aggravated by a shifting demand from long-fibred to short-fibred asbestos. This resulted largely from a technological change in the automotive industry which replaced woven brake linings made from the long fibres to moulded brake linings which utilized shorter fibres.

The result was a surplus of long fibres and spinning grades on which the companies had formerly depended for the major part of their gross income.

Rhodesian asbestos also began to offer serious competition at this time.

One result of these difficult years for the Canadian asbestos industry was the merger in 1925 of all Canadian controlled companies in existence at that time - with the exception of Johnson's Company Limited - into Asbestos Corporation Limited, ending the period of continuous organisational changes in the structure of the industry. (See Section 3).

The shift of demand away from the long fibres continued in the 1930's, the main demand strength during this period being for asbestos-cement pipe, shingles, siding and other asbestos cement products (using Groups 4 and 5). The industry techniques of mining and recovery were not prepared for this shift. The problem it created was aggravated by the depression of the 1930's and the result was the elimination of some marginal properties, consolidations, scrapping of some obsolete mills and their replacement by new, more specialized mills designed to produce fewer grades. It was not until 1936 that production climbed back again to the 1929 peak.

The CHART, Page 20 illustrates these production and consumption trends resulting from new demand patterns, and the resulting shifts in the grades of asbestos fibre produced. The proportion of "crude", "milled fibre" and "shorts" to "total production" since 1900 is shown. Relatively, "crude" which once brought in the whole of the industry's revenue has declined as a commercial product; "milled fibres" have however continually been in demand; whereas "shorts" have almost consistently been expanding.

The lack of sufficient fibre production to meet world-wide postwar II demand was overcome by continuous additions to milling capacity by expansion and the building of new mills, accompanied by extended mining operations.

The surplus position of "shorts" fifteen years ago was progressively disposed of by the opening of new markets and intensive industrial research into new applications for this product (largely by the Johns-Manville Company). Moreover the very lack of "milled Fibres" prompted consumers themselves to substitute "shorts" whenever practical and economic, and this practice tended to continue once it was established.

From a position of surplus, demand for "shorts" grew so rapidly that the industry had to improve its mining and milling techniques and was successful enough to raise the extraction rate of short fibres by over 40 per cent. (See TABLE 1, Page 10)

For the past three years total asbestos production in Canada has been slightly greater than one million tons and in 1957 the peak value of production - $106.4 millions - was reached.

Roughly 65 per cent of volume is made up by "shorts", and 35 per cent by "milled fibres". Production of "crude" is quite small, less than 1000 tons. (See CHART, Page 20). In terms of value, however, producers receive about two thirds of their revenue from "crude and milled fibres" and only one third from "shorts".

TABLE 1

CANADIAN ASBESTOS INDUSTRY - PER CENT FIBRE RECOVERED PER TON OF ROCK MILLED

TABLE 1

CANADIAN ASBESTOS INDUSTRY - PER CENT FIBRE RECOVERED PER TON OF ROCK MILLED

YEAR	1 ROCK MILLED (000 tons)	2 PRODUCTION "CRUDE AND MILLED FIBRES" (000 tons)	3 PER CENT CRUDE & MILLED TO ROCK MILLED	4 PRODUCTION "SHORTS" (000 tons)	5 PER CENT SHORTS TO ROCK MILLED	6 TOTAL PERCENTAGE
1943	7,929.5	220.0	2.80	247.3	3.12	5.92
1944	6,587.7	191.8	2.91	227.5	3.45	6.36
1945	6,459.8	220.7	3.42	246.1	3.81	7.23
1946	7,027.5	228.9	3.26	329.2	4.68	7.94
1947	7,740.8	223.2	2.88	438.7	5.67	8.55
1948	7,894.5	243.1	3.08	473.6	6.00	9.08
1949	5,671.1	198.3	3.50	372.5	6.57	10.07
1950	8,635.0	302.1	3.50	568.7	6.59	10.09
1951	10,219.7	333.6	3.26	658.2	6.44	9.70
1952	10,915.9	361.9	3.32	576.0	5.28	8.60
1953	11,189.0	329.5	2.94	590.7	5.28	8.22
1954	11,394.6	342.7	3.01	594.2	5.21	8.22
1955	12,427.0	402.8	3.24	661.2	5.32	8.56
1956	13,740.3	418.5	3.04	624.6	4.56	7.69

Production Data:— Dominion Bureau of Statistics

6.

PRICES

The price of asbestos per ton is defined by the grade of the product. In the early days of the Canadian industry there was considerable confusion in the grading of asbestos fibre. A number of standard grades were established by the producers before 1900, but these were applied differently by each mine, leading to considerable variation in quality and in price within each grade.

The present grading system is based on the Canadian Chrysotile Asbestos Classification and Grading of Asbestos Mine Products, determined by a Committee formed in 1931 on the initiative of the Quebec Minister of Mines.

The price history of asbestos based on the average price per ton received by producers is shown on the CHART, Page 20. This average price is affected not only by changes in price, but also by changes in the proportion of the various grades produced and sold.

Of particular significance in the historical pattern is the rapid increase in the average price during World War I to $75 per ton, followed by the post-war I price slump to $30 after 1920. Thereafter the average price per ton continued at the $30 – $40 level, interrupted only by the 1930-32 period during the depression, when it dropped to $25. During World War II prices increased and became generally settled at $40 – $45 per ton average. It was not until 1950 that the average price again reached the 1920 high of $75.

The post-war II average price for raw or unmanufactured asbestos has risen almost every year and has increased over 100 per cent since 1946. Since the removal of price controls in 1946 there have been eight price increases, the last became effective on October 1, 1957. Also at this time, price quotations were changed to Canadian funds. (See CHART, Page 20).

The "shorts" however, increased in price more rapidly percentagewise than did the other grades, reflecting their now broad range of uses and importance to industry. It should also be noted, that the increasing

recovery and therefore production of "shorts" added considerable tonnage but little revenue to asbestos production and shipments. The relatively small return on "shorts" plus increased output, contributed somewhat to the rapid decline in the average price received per ton, beginning in 1920 and similarly slowed the recovery of the average price following. (See CHART, Page 20)

As Canada is the leading world producer, the price of Canadian asbestos influences the general price structure of all asbestos. TABLE 2, see below, shows the current range of prices for the principal grades of Canadian asbestos.

TABLE 2

ASBESTOS-CARLOAD PRICES PER SHORT TON
F.O.B. MINE CANADA - 1958

STANDARD GRADE DESIGNATION	PRICE RANGE PER TON $CDN	MINIMUM CARLOAD QUANTITY TONS	FREIGHT CLASSIFICATION
NO. 1 AND NO. 2. (Crude)	790. to 1850.	20	Crude
GROUP NO. 3 (Spinning Fibre) 3F-3K-3R-3T-3Z	370. to 650.	20	Fibre
GROUP NO. 4 (Shingle Fibre) 4H-4K-4M-4R-4T-4Z	180. to 245.	20	Fibre
GROUP NO. 5 (Paper Stock) 5D-5K-5M-5R	120. to 150.	20	Fibre
GROUP NO. 6 (Waste, Stucco or Plaster) 6D	86.	30	Waste
GROUP NO. 7 (Shorts or Refuse) 7D-7F-7H-7K-7M-7R-7T-7RF-7TF	40. to 80.	30	Shorts
GROUP NO. 8 (Sand) 8S-8T	29.	30	Shorts
GROUP NO. 9 (Gravel)	-	30	Shorts

7. THE FOREIGN MARKET

Apart from the Soviet Union the large asbestos producing countries, Canada, South Africa and Southern Rhodesia consume relatively small quantities of the mineral. On the other hand the large consumers - the United States, the United Kingdom, France, Italy, Germany and Japan produce either no asbestos or only small quantities. This situation leads to a vigorous international flow of asbestos in which Canada by far dominates the supplying countries and the United States the consuming countries.

While asbestos products manufacturing is growing in Canada only 3 to 5 per cent of domestic fibre production is required for domestic use.

Consequently the foreign market for asbestos is overwhelmingly the most important for the Canadian industry. In 1957 the gross value of Canadian asbestos fibre exports was close to $110 millions. TABLE 3 analyzes the types and destination of Canadian foreign sales of asbestos.

CANADIAN ASBESTOS EXPORTS 1957

TABLE 3

	VOLUME (Short Tons)	VALUE ($000 Cdn.)	PER CENT SHARE
CRUDE			
United States	233	197.	34.8
United Kingdom	146	174.	30.6
South America	--	--	--
Central America & Mexico	--	--	--
European Countries	177	126.	22.2
Other Countries	82	70.	12.4
	683	$ 568.	100.0
MILLED			
United States	139,200	25,703.	34.8
United Kingdom	28,262	6,191.	8.4
South America	20,859	3,770.	5.1
Central America & Mexico	6,825	1,231.	1.7
European Countries	131,720	26,062.	35.2
Other Countries	66,445	10,984.	14.8
	393,311	$ 73,941.	100.0

Source: – Dominion Bureau of Statistics

Table 3 (Continued)

Table 3 (Continued)

SHORTS	VOLUME (Short Tons)	VALUE ($000 Cdn.)	PER CENT SHARE
United States	505,124	25,123.	77.2
United Kingdom	37,809	1,645.	5.1
South America	4,661	338.	1.0
Central America & Mexico	2,268	144.	.4
European Countries	69,332	3,933	12.1
Other Countries	17,417	1,359	4.2
	636,611	$ 32,542.	100.0

As may be seen the United States is Canada's most important market for "shorts". It is significant, however, that in recent years an increasing proportion of "milled fibres" have been shipped to Western Europe. With the addition of the United Kingdom, the European market for "milled fibres" in 1957 was appreciably larger than the American market.

The development of this geographical diversification for Canadian asbestos exports is a healthy sign in an industry so dependent on foreign markets. The CHART, page 20, shows the production of asbestos since 1900 and Canadian production and exports are virtually equal. (The proportion of Canadian exports to production has been almost consistently well over 80 per cent and in the post-war II years has been approximately 95 per cent).

Notwithstanding the generally lower level of world industrial activity today, the dollar barrier or shortage of dollars in many countries continues to restrict the expansion of sales of asbestos. Quite a number of asbestos grades result from the production of fibre from a deposit; and the producer has only limited control over the proportions of the various grades of his final product. It is therefore necessary that producers develop a balanced market that will consume all their grades, in the proportion in which they are produced. This characteristic, then, intensifies the importance of those export markets currently not fully available because of currency restrictions.

8.

THE DOMESTIC MARKET

With about 95 per cent of Canadian asbestos mining and milling production being sold to foreign markets it is apparent that the Canadian asbestos products manufacturing industry is by no means comparable in importance to the primary industry.

This does not imply however, that the domestic market is insignificant. Export markets are very responsive to economic conditions in general and are vulnerable to artificial restrictions which may be involved by customer countries on politico-economic grounds.

A strong domestic manufacturing industry creates both employment and usually a more stable demand for the raw material than do foreign markets.

In recent years Canada's asbestos products industry has been growing. Since 1950 the value of asbestos products manufactured in Canada has risen from $14 millions to $34 millions in 1956, an increase of close to 150 per cent. This growth has not been sufficient to meet total domestic demand however; both the United States and the United Kingdom supply considerable quantities of asbestos products to Canada. The bulk of American sales is in the form of siding, roofing, shingles and tiles (valued at 2.2 millions in 1957). On the other hand most of the British asbestos sales to Canada are pipes and board and appear to be an initial marketing penetration (asbestos-cement pipe has been marketed over the past few years by Atlas Asbestos and board by Cape Asbestos Corporations) undoubtedly preceding the establishment of productive facilities by both companies.

While therefore expansion of the domestic manufacturing industry is proceeding, it is clear that a sizable increase could only arise from the establishment of foreign markets for asbestos products. This is restricted on the one hand by high American tariffs and on the other by the concentration of commercial control of the industry in the United States and the United Kingdom.

9. CURRENT POSITION AND FUTURE PROSPECTS

Excluding gold, asbestos is Canada's seventh largest mineral export. In common with nickel, aluminum and copper, iron ore and crude petroleum (uranium ore is a special case which need not be discussed in this context) asbestos is very highly dependent on foreign markets for its industrial health. This means a high degree of sensitivity to world economic conditions in general.

In common with these other basic industrial materials as well, asbestos for the first time since the end of the Second World War is faced with a real shrinkage in the international commodity market. The general economic re-adjustments of 1949-50 and 1953-54 had only very limited effects on world demand for industrial materials. Partly because of artificial market supports and partly because of genuine under-supply, most of these materials found ready markets up till 1955 and some, such as nickel and aluminum until well into 1956.

World demand for asbestos also continued strong throughout 1956 and for part of 1957. While it is difficult to pinpoint the exact point of weakening, it seems from available data that foreign demand for Canadian asbestos did not show signs of abating until the last few months of 1957. (1)

It seems fairly certain, however, that asbestos was probably the last of Canada's important mineral exports to feel the effects of the current economic recession. These effects became marked in the early months of 1958, as may be seen in TABLE 4. See next page.

(1) Seasonally adjusted series on asbestos movements are being processed by General Research Associates, when these become available greater accuracy in dating the business downturn will be possible (see Appendix "C", page 40).

The immediate future of the industry will therefore be determined by the ultimate severity and protractedness of the cyclical readjustment through which the North American economy is now passing. The conflicting opinions regarding this is well known, but there are few indications of an upswing in the near future of a dimension likely to absorb capacity production of any major industrial material, including asbestos. It appears then fairly certain that sufficient demand to take up the million or so tons of Canadian asbestos production - the rate of the past three years - is unlikely to be forthcoming in 1958.

Another important aspect of the situation of Canadian asbestos is the significant additions to productive capacity recently completed or nearing completion in Canada.

The Canadian Johns-Manville Company, Limited is now able to produce at least 10 per cent more fibre per year from their new modern mill. The new Normandie Mine of the Asbestos Corporation is now able to produce at full capacity. Flintkote Mines Limited have recently completed doubling their mill capacity. The Cassiar Asbestos Corporation have increased their mill capacity to improve the economics of their operation.

The American Smelting and Refining Company who control and operate the asbestos deposit of the United Asbestos Corporation plan to be in production in 1958 with a 5000 ton per day mill. The National Gypsum (Canada) Limited have acquired a 500 acre proven asbestos property, east of Thetford Mines, from the Bell Asbestos Mines Limited. They expect to have a 3000 ton per day mill in operation this year.

The Quebec Asbestos Corporation, which located a new asbestos deposit nearby their original mine, are building a new and larger mill with a capacity of 2500 tons per day. On completion this year they plan to scrap their old mill. The name Quebec Asbestos Corporation is also being changed to Carey-Canadian Mines Limited. The Asbestos Corporation is building a new mill to be completed in 1958 with a daily capacity of 5000 tons, to be known as the King-Beaver Mill. On completion, the existing and operating King-Mill is to be closed. Advocate Mines Limited should get their property into production by 1960, at the initial rate of 2000 tons per day.

In total, the increase in productive capacity recently completed and to be completed (not to be confused with production) should permit the industry to produce theoretically at least 25 per cent more fibre per year by 1960. (The effect of these increases in productive capacity should be felt by 1959.)

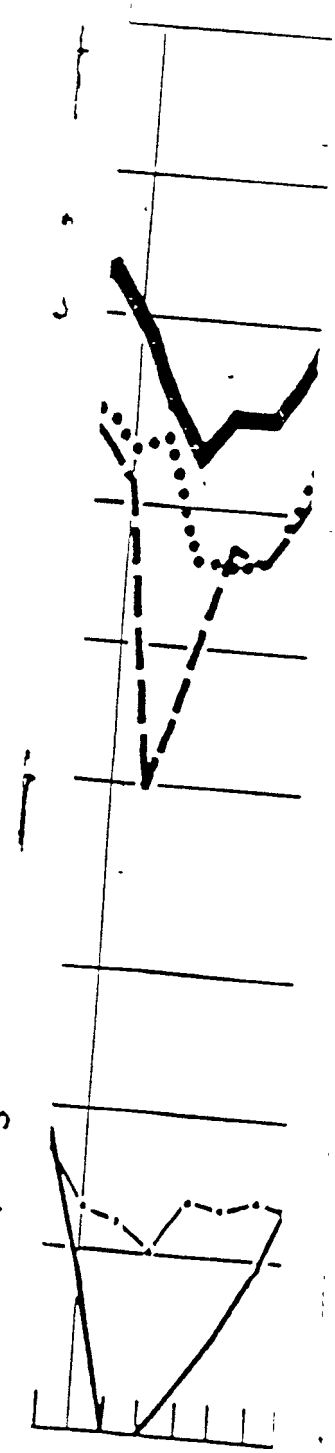
With this increase, probably about 250,000 tons of fibre annually, the Canadian asbestos industry seems likely, at least for the next year or two, to have to operate at a level of 80 to 90 per cent of capacity rather than the 100 to 105 per cent rate of the past decade. This lower level however can be quite profitable and more healthy in the long run.

A further important factor, but unfortunately an imponderable, is the growing strength of Russian competition particularly in the industrial complex of Western Europe.

While the Canadian asbestos industry may have entered a period of levelling out, compared with a decade of rapid expansion since 1945, this does not indicate a serious setback. The industry is highly efficient, dealing in a relatively new product undoubtedly capable of many new applications which will emerge from the intensive scientific research being conducted.

When the next period of expansion in the industrialised countries of the world begins, the Canadian industry will be well fitted to keep pace with renewed demands. The North American population bulge alone, which will begin to be felt within two years, assures a strong market for many goods in which asbestos is an important and growing essential - particularly housing and automobiles. Defence needs in the "missile economy", the uses for asbestos in the development of atomic energy should open up limitless fields for present and future applications of asbestos products.

In the long view the present doldrums of the Canadian asbestos industry can only be regarded at worst, as a period of marking time before a new period of great prosperity.



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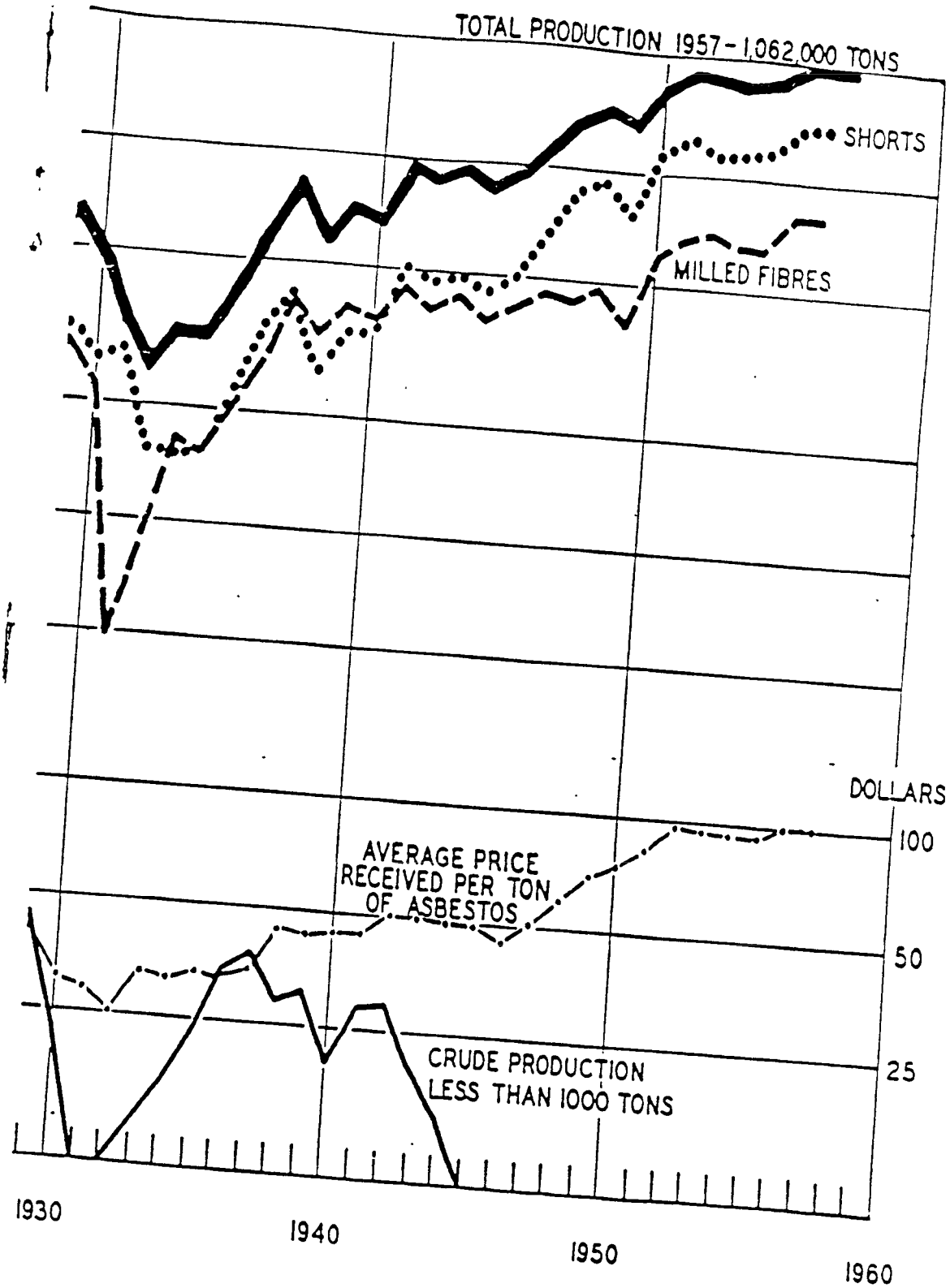

APPENDIX "A"

HISTORY

(1) EARLY LOCAL DEVELOPMENT

1876-1877 First important asbestos deposits discovered. Thetford Coleraine hills, Province of Quebec. Development along Quebec Central R.R. line.

1876 Quarrying begun by Andrew Johnson. (1885 incorporated as a private company-now Johnson's Company Limited.

1885 Seven operating quarries producing about 2,400 tons annually.

1890 Firm British market established superceding Italian supply, but the bulk of Canadian asbestos already being shipped to the United States.

1890-1892 Depression reduced asbestos production by one third.

1892 ff. Revival and replacement of hand-dressing extraction by mechanical dressing. First shipments of milled fibre.

1905 Milling and fiberising plants installed at all operating quarries.
Development of marketable by-products - asbestic now "asbestos shorts".

(2) DEVELOPMENT OF FOREIGN CONTROL

1900 ff. United States interests (later Johns-Manville Company (U.S.) buying up Asbestos and Asbestic Company properties near Asbestos, Province of Quebec. Keasbey and Mattison Company (U.S.) purchased Bell Asbestos Mines Limited properties - Thetford Mines, Province of Quebec. In 1934 Keasbey and Mattison purchased by Turner-Newall Limited and Bell Asbestos therefore returned to British control.

1924

1930-

1945

1952

1954

1955

1924 Philip Carey Manufacturing Company (U.S.) set up wholly owned subsidiary Quebec Asbestos Corporation, East Broughton Station, Province of Quebec.

1930 Norristown Magnesia and Asbestos Company (U.S.) established a wholly owned subsidiary, Nicolet Asbestos Mines Limited, St. Remi de Tingwick, Province of Quebec.

1945 Flintkote Company (U.S.) open up Flintkote Mines Limited, Quebec, Thetford Mines, Province of Quebec.

1952 American Smelting & Refining Company (U.S.) form Lake Asbestos Quebec Limited to take over United Asbestos Company Limited operations - Black Lake, Province of Quebec.

1954 Cassiar Asbestos Corporation Limited open up properties in Northern British Columbia. Large stock purchases by Turner-Newall Limited (U.K.) and Raybestos-Manhattan Incorporated (U.S.)

1955 National Gypsum Company (U.S.) purchase proven property, Thetford Mines, Province of Quebec, from Bell Asbestos Mines Limited.

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APPENDIX "B"

PRODUCING COMPANIES IN DETAIL

Asbestos Corporation Limited, Montreal, Quebec

Asbestos Corporation Limited was incorporated as a result of a merger agreement under Dominion laws in 1925. The most important of the firms in the merger was Asbestos Corporation of Canada Limited, itself a result of an earlier amalgamation of several companies. The company record is a prototype of asbestos mining in Canada. After the discovery of asbestos in commercial quantities, the reorganization and amalgamation of the companies engaged in the field was both involved and protracted and Asbestos Corporation Limited developed as a result of these complex negotiations.

The Asbestos Corporation Limited is now the largest independent asbestos producer in the world. Its principal properties comprise approximately 33,000 acres located at Thetford Mines, Black Lake, Coleraine and East Broughton, all in the Province of Quebec.

During the post-war years all mills have been improved; the British Canadian Mill revamped and enlarged in 1948 and the Normandie Mill, which is an entirely new mine and mill, completed during 1955.

The company's operations do not extend beyond the milling stage, the product being delivered to manufacturers in the crude and fibre state. Over 95 per cent of their business is in the export market.

The present capital stock of the company consists solely of 3,600,000 authorized and 1,800,000 outstanding common shares. The company has no funded debt.

MINES	MILLING CAPACITY TONS PER DAY	ORE RESERVES TONS
King	3,200	6,550,000
Beaver - (Closing 1958)	3,600	6,535,000
British Canadian	6,000	56,865,000
Normandie	5,000	33,345,000
Other Properties	--	15,400,000
	17,800	118,695,000
* King - Beaver	5,000	

* The King-Beaver Mill should be completed this year, at which time the existing King Mill is expected to close down.

A twelve year financial review of operations is shown on page 25, TABLE 5.

MANAGEMENT

A.L. Penhale, Thetford Mines, Quebec.	President & Managing Director
K.T. Dawes, Montreal, Quebec.	Vice President & Director
G.F. Jenkins, Thetford Mines, Quebec.	General Manager & Director
J.A.D. Marcotte, Thetford Mines, Quebec.	General Sales Manager & Director
J.E.L. Duquet, Montreal, Quebec.	Director
F.E. Notebaert, Montreal, Quebec.	Director
W.A. Arbuckle, Montreal, Quebec.	Director
H.P. Thornhill, Montreal, Quebec.	Director
Lt.-Col.J.G. Ross, Montreal, Quebec.	Director
Paul Bienvenu, Montreal, Quebec.	Director

TABLE 5

TWELVE - YEAR REVIEW OF OPERATIONS - ASBESTOS CORPORATION LIMITED

YEAR	INVESTMENT	OPERATING PROFIT	TAXES	EARNINGS	EARNINGS PER SHARE	DIVIDENDS * PER SHARE	RANGE OF * STOCK PRICE
	(In thousands of Dollars)						
1946	9,792.7	1,937.9	568.0	953.2	0.53	0.47	12 – 8
1947	10,273.5	2,254.5	491.1	1,249.7	0.69	0.53	10 – 8
1948	10,624.1	2,221.6	586.0	1,159.9	0.64	0.53	10 – 8
1949	11,185.9	2,383.8	454.0	1,138.2	0.63	0.53	9 – 7
1950	12,123.7	6,203.2	1,557.0	3,488.2	1.94	0.73	13 – 8
1951	13,263.8	7,328.9	2,190.0	3,901.1	2.17	0.67	25 – 13
1952	14,739.7	7,777.7	2,500.0	4,247.7	2.36	1.25	27 – 22
1953	18,100.9	8,341.5	2,520.0	4,810.7	2.67	1.25	28 – 24
1954	26,268.8	7,398.2	2,175.0	4,366.9	2.43	1.25	35 – 24
1955	28,955.4	7,832.8	1,717.0	5,039.2	2.80	1.60	46 – 32
1956	30,500.6	7,961.9	695.0	5,063.1	2.81	1.60	45 – 32
1957	32,955.1	9,579.0	1,393.0	5,223.2	2.90	1.75	35 – 25

Source: – Annual Reports

* Adjusted for 1951 Stock Split 3 for 1.

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* Adjusted for 1951 Stock Split 3 for 1.

Cassiar Asbestos Corporation Limited, Toronto, Ontario.

Cassiar Asbestos Corporation Limited was incorporated under Dominion laws in 1951 with a capitalization of 2,500,000 common, no par value shares, which was increased to 4,000,000 shares by Supplementary Letters Patent dated July 17, 1953. 3. There are 3,800,000 shares outstanding.

Conwest Exploration Company holds 920,000 shares and directs the company operations. Central Patricia Gold Mines Ltd., an associate company, also owns 320,000 shares. Sales are handled largely by the Bell Asbestos Mines Ltd.

Turner Newall Company Ltd:, (U.K.) own 600,000 shares of the company. They also own the Bell Asbestos Mine Ltd. Raybestos-Manhattan Inc. (U.S.) have also purchased stock in the company amounting to 600,000 shares. The Newmont Mining Corporation have purchased 200,000 shares.

The Cassiar Asbestos Corporation owns a high-grade low-iron asbestos deposit and mill in the McDame Lake Area of Northern British Columbia. Mining operations are carried on from June to October-November, to supply mill feed for the full year.

A 500 ton per day mill came into production in July, 1954, which has been increased to 1,000 tons per day. However, on commencing production, the mill operated above capacity, which indicates that a lower grade ore than the mill was designed for (6,000 tons group 3 per year), was originally handled.

Ore reserves in the main ore section only were shown at 6,776,000 tons in 1955, and estimated at 9,000,000 tons today, believed to grade 5 per cent 3K (Spinning fibre) and 4 per cent 4K (Shingle fibre).

In 1955 the company added two new grades of fibre to the grades produced - "AAA" a super spinning fibre and "AC" a high grade asbestos-cement fibre.

A review of financial operations since inception is shown on Page 28 TABLE 6.

MANAGEMENT

F.M. Connell, Toronto, Ontario	President & Director
W.H. Connell, Spencerville, Ontario.	Vice-President & Director
C.R. Elliott, Toronto, Ontario.	Secretary-Treasurer & Director
J.E. Kennedy, Toronto, Ontario.	Director
K.A. Creery, Montreal, Quebec.	Director
C.S.M. Mortimer, Toronto, Ontario.	Director
G.W. Smith, Thetford Mines, Quebec	Director
John Drybrough, Winnipeg, Manitoba.	Director
S.R. Zimmerman, Jr., Manheim, Pennsylvania	Director

TABLE 6

SEVEN - YEAR REVIEW OF OPERATIONS, CASSIAR ASBESTOS CORPORATION LIMITED

TABLE 6

SEVEN - YEAR REVIEW OF OPERATIONS - CASSIAR ASBESTOS CORPORATION LIMITED

YEAR	INVESTMENT (In thousands of dollars)	SALES (In thousands of dollars)	TAXES * (In thousands of dollars)	EARNINGS * (In thousands of dollars)	EARNINGS PER SHARE	DIVIDENDS PER SHARE	PRICE RANGE
1951	--	--	--	--	--	--	4.20 – 1.90
1952	2,055.0	--	--	--	--	--	7.10 – 3.00
1953	6,456.0	--	--	--	--	--	9.50 – 5.75
1954	7,648.2	1,242.0 (3 Months to Sept. 30)	--	513.6	0.14		7.00 – 5.50
1955	10,233.6	4,749.5	--	686.1	0.18	--	12.25 – 9.25
1956	11,291.4	6,854.3	--	2,225.1	0.59	--	9.10 – 6.60
1957	14,270.4	8,314.6	--	2,811.3	0.74	--	8.50 – 5.00

Source:- Annual Reports

* Exempt from income tax for three years, from July 1st, 1955.

Canadian Johns-Manville Company Limited, Asbestos, Quebec

Canadian Johns-Manville Company Ltd., is a wholly owned subsidiary of the Johns-Manville Corporation, New York.

Authorized capital of Canadian Johns-Manville Company Ltd. is $2,500,000, consisting of 25,000 shares of $100 each, all owned by the Johns-Manville Corporation of New York.

The predecessor of the parent company, H.W. Johns-Manville (U.S.), entered the Canadian field sometime in the early 1900's, assuming the holdings of the Asbestos and Asbestic Company, Limited, at Asbestos, Quebec. In 1918 the Canadian subsidiary was incorporated under Federal laws.

The Jeffery Mine, Asbestos, Quebec, is the largest in the world, and output from this operation alone now accounts for over 50 per cent of the Canadian output, and in 1957 produced 568,000 tons. A five year expansion plan to convert and expand the mine to underground operations, and construct a new mill was completed in 1957. Current daily capacity of the mill is approximately 22,000 tons of ore. The new mill is able to produce in excess of 625,000 tons of fibre.

Although volume is large their production is believed to be heavy in "shorts", particularly Group 6D. The company therefore developed a process by which this fibre could be used in the manufacture of asbestos-cement board, shingles and siding, which normally uses the longer, Group 4 and 5 fibre. The large research division of this company also developed many of the new applications for "shorts".

In addition to the Jeffrey Mine at Asbestos, the world's largest, the company has the Munro Mine near Matheson, Ontario, and other nearby properties are being explored. At present the Munro Mill is operating at 2,500 tons per day, and can be easily doubled as markets expand. This mine produces a harsh fibre, heavy in the shingle Group 4 range, which is well suited to the manufacture of asbestos-cement products. Output runs around 30,000 tons per year.

Asbestos product manufacturing operations are carried on at two plants, Asbestos, Quebec, adjacent to the mine, and Port Union, Ontario, just east of Toronto. Major products of the Asbestos, Quebec plant include asbestos textiles, papers and packings, insulation materials, roofing paper and shingles, and rock wool. The Port Union plant produces asbestos cement pipe (transite), mineral wool insulation and other products. The two plants cover nearly half a million square feet of floor space with the Asbestos plant slightly the larger of the two.

It may be pointed out that the important raw material used in the manufacturing plants of this company is asbestos. However, because of their wide coverage of North America, their merchandising position and their interest in diversifying, they have added new basic raw material production as: diatomite, rock wool insulation, and in recent years, timber rights for insulating board and gypsum for gypsum products.

The capital stock of the Johns-Manville Corporation on December 31st, 1957, consisted of 25,000,000 authorized and 7,148,723 issued common $5 par shares.

Financial statements are not available separately for Canadian Johns-Manville Company Limited. However, the accounts of Johns-Manville Corporation (U.S.) would reflect the success of their Canadian subsidiaries, and in particular their asbestos mining operations. A twelve year review of operations is shown on page 32, TABLE 7.

MANAGEMENT

L.M. Cassidy, New York City, New York	Chairman & Director
A.R. Fisher, New York City, New York.	President & Director
C.F. Rassweiler, New York City, New York.	Vice-Chairman, Vice-President & Director
Alvin-Brown, New York City, New York.	Vice-President & Director
H.C. Alexander, New York City, New York.	Director

TABLE 7

MANAGEMENT (continued)

H.E. Manville, Jr., Gloucester, Massachusetts.	Director
J.W. Hanes, New York City, New York	Director
W.C. Stolk, New York City, New York.	Director
E.M. Voorhees, New York City, New York.	Director
E.G. Burton, Toronto, Ontario	Director
J.A. Grazier, New York City, New York.	Director

TABLE 7

TWELVE YEAR REVIEW OF OPERATIONS – JOHNS-MANVILLE CORPORATION

YEAR	INVESTMENT	SALES	TAXES	EARNINGS	EARNINGS PER SHARE	* COMMON DIVIDENDS PER SHARE	* RANGE OF STOCK PRICE
	(In millions of dollars)						
1946	73.3	92.0	1.8	5.8	2.01	1.17	55 – 38
1947	96.0	133.9	6.1	9.5	3.23	1.40	46½ – 37
1948	110.8	173.5	11.1	15.4	5.22	2.00	42 – 33
1949	118.4	162.6	10.0	14.4	4.85	2.50	50 – 30½
1950	121.2	203.3	16.7	22.8	7.29	3.50	51½ – 36½
1951	131.8	238.0	24.8	24.5	7.76	4.25	70½ – 47
1952	144.4	244.7	21.3	22.6	7.14	4.25	79 – 63
1953	160.9	252.6	22.5	19.7	6.20	4.25	75 – 58
1954	177.5	253.2	21.5	16.7	5.24	4.25	91½ – 62
1955	193.7	284.7	27.2	23.5	7.34	4.25	97 – 77½
1956	216.6	310.4	26.6	25.0	3.50	2.75	58½ – 43
1957	257.6	308.3	20.3	17.8	2.48	2.00	52 – 34

Source: – Annual Reports

*Adjusted for stock splits

Johnson's Company Limited, Thetford Mines, Quebec

Johnson's Company antecedents were perhaps the earliest producers of asbestos in Canada since Asbestos is reported to have been first mined in the Thetford area in 1878 by Andrew Johnson, and in 1855 the Johnson Asbestos Company was formed to handle about 100 tons of rock per day. When Asbestos Corporation Limited was formed the Johnson's Company was the one Canadian-controlled company to stay out of the merger. The present company was incorporated under Quebec laws in 1946. The company has two mining properties, one at Thetford Mines, Quebec, and one at Black Lake, Quebec.

The Thetford Mine is a block-caving operation with a capacity of approximately 2,400 tons of rock per day. The Black Lake Mine is an open-pit operation and the mill for this mine began producing in 1954 at a capacity of 4,000 tons per day. The Johnson's Company has also developed the specialised plant, built to treat asbestos tailings.

Since this is a private company no information is available on profits. The company has paid up capital of $4,900,000 consisting of 480,000 6 per cent cumulative redeemable preferred shares and 500,000 common shares, all of a par value of $5.

MANAGEMENT

A.S. Johnson, Thetford Mines, Quebec.	President & Director
J.H. Mooney, Quebec City, Quebec.	Vice-President & Director
E.A. Mackenzie, Montreal, Quebec.	Director
J.E. Johnston, Montreal, Quebec.	Director
T.H. Best, Toronto, Ontario.	Director

Bell Asbestos Mines Limited, Thetford Mines, Quebec

Bell Asbestos Mines Limited was incorporated under Quebec laws in 1936 with a capitalization of $1,000,000 representing 10,000 common shares of $100 par value. The company is a wholly-owned subsidiary of Turner and Newall Limited (U.K.), a holding company. The Turner and Newall group has very large interests, engaging in mining asbestos in Africia and Canada, in manufacturing asbestos goods, magnesia, pharmaceutical products and asbestos automotive products at plants in Canada, the United Kingdom, the United States and India.

The property now operated by Bell Asbestos Mines Limited with a daily capacity of about 2,000 tons, was originally developed in the late 19th century. In 1888 Bell's Asbestos Company Limited was incorporated in London, England. The English company was later taken over by Keasbey and Mattison Company (U.S.). Keasbey and Mattison was absorbed by Turner and Newall Ltd. in 1934. In April 1947, Turner and Newall (Overseas) Ltd., was organized in Canada as a holding company controlling the parent company's three Canadian subsidiaries: Bell Asbestos Mines Ltd., Atlas Asbestos Co. Ltd., Turner and Newall (Canada) Ltd.

The Bell Asbestos Mines Ltd. is working completely underground. Their ore reserves could conceivably support a much larger operation than 2,000 tons per day, but the owners (Turner-Newall Ltd.) apparently regard the mine as assuring a supply of raw material for their much bigger investment in asbestos manufacturing plants, and are content to see the production rate remain at this level. It is understood that this mine contains some of the highest grade ore in the Thetford area.

Financial statements are not available for Bell Asbestos Mines Ltd., and accounts of the parent company, Turner-Newall Limited, give no information on its subsidiaries.

MANAGEMENT

W.W.F. Shepherd, Rochdale, England.	Chairman
G.W. Smith, Thetford Mines, Quebec.	President & Managing Director
H.A. Smith, Thetford Mines, Quebec.	Vice-President & Director
F.P. Smith, Thetford Mines, Quebec.	Secretary & Director
J.E. Lemay, Thetford Mines, Quebec.	Treasurer & Director
G.B. Brown, Montreal, Quebec.	Director

Quebec Asbestos Corporation Limited, East Broughton Station, Quebec

Quebec Asbestos Corporation Limited is a wholly-owned subsidiary of Philip Carey Manufacturing Company, (U.S.). The Philip Carey Manufacturing Company also owns the Philip Carey Company Limited, which operates a plant for the manufacture of asbestos products at Lennoxville, Quebec.

Quebec Asbestos Corporation Limited was incorporated under Quebec laws in 1924, taking over the properties of the following companies:– The Ling Asbestos Company, The Frontenac Asbestos Mining Company, and the Eastern Townships Asbestos Company. The mill at East Broughton, Quebec, has a daily capacity of 1,200 tons. Production is believed to be heavy in "shorts".

This year (1958) the company will bring into production a new and larger mill on a nearby property, with a daily capacity of 2,500 tons. At this time the existing mill will cease operations. The company name is also being changed to Carey - Canadian Mines Limited, which is more in keeping with the name of the parent.

No information on profits is available. The company has a paid up capital of $800,000 consisting of 8,000 shares of common stock of no par value.

MANAGEMENT

R.S. King, Cincinnati, Ohio.	Chairman & Director
H.R. Barrett, Glendale, Ohio.	Vice-President, Controller & Director
C.B. Pooler, Cincinnati, Ohio.	Vice-President & Director
J.W. Humphrey, Glendale, Ohio.	President & Director
E.A. Boadway, East Broughton, Quebec.	Director & General Manager

Flintkote Mines Limited, Quebec. Thetford Mines, Quebec

Flintkote Mines Limited was incorporated under Quebec laws in 1945 and is a wholly-owned subsidiary of the Flintkote Company, (U.S.). The United States parent concern engages in the mining and manufacturing of a wide variety of asphalt, asbestos, petroleum, timber and allied products.

The Flintkote Company also has two manufacturing subsidiaries in Canada: The Flintkote Company of Canada Limited, Toronto, Ontario, which manufactures asphalt road and industrial emulsions and composition tile products in Toronto and a plant at Ville St. Pierre, Quebec, for the manufacture of asphalt road and industrial emulsions; and the Flintkote Company (Newfoundland) Limited, which operates a plant for the manufacture of asphalt road materials and for creosoting lumber products.

The Mining property operated by Flintkote Mines Limited, is 2½ miles east of Thetford Mines, Quebec. The mill has been gradually expanded to 2,000 tons per day. Production started in 1946 and is believed to be heavy in "shorts".

Flintkote Mines Limited has authorized capital of $1,500,000 consisting of 15,000 shares of common stock of $100 par value, authorized and issued. No separate financial reports are available for the Canadian subsidiaries. The parent company's accounts for any given year include profits from foreign operations, which includes in addition to the three Canadian subsidiaries, the Industrial Asphalts Company Limited, England, a relatively small company.

MANAGEMENT

I.J. Harvey, Jr., New York City, New York.	President & Director
P.C. Rowe, New York City, New York.	Vice-President & Director
R.G. Wace, Oakville, Ontario.	Vice-President & Director

MANAGEMENT (continued)

J.A. Main, New York City, New York.	Assistant Secretary & Director
G.W. Gregg, New York City, New York.	Treasurer & Director
George K. McKenzie, Old Greenwich, Connecticut.	Secretary & Director
F.H. Neher, Greenwich, Connecticut.	Director

Nicolet Asbestos Mines Limited, Norbestos, Quebec

Nicolet Asbestos Mines Limited is owned by Norristown Magnesia and Asbestos Company, Norristown, Pennsylvania, and was incorporated under Quebec laws in 1930. It owns mining properties in Tingwick and Wolton townships in the Province of Quebec. The mill at St. Remi de Tingwick has a daily capacity of around 3,500 tons, and production is believed to be heavy in "shorts".

No information is available on profits. The Canadian company has paid-up capital of $505,000 consisting of 5,000 preference shares of $100 par value and 1,000 common shares of no par value.

MANAGEMENT

Guy G. Gabrielson, Bernardsville, New Jersey.	Chairman
Philip A. Meyer, Short Hills, New Jersey.	President & Director
A.A. Lofquist, Norristown, Pennsylvania.	Vice-President & Director
C.G. Greenshields, Montreal, Quebec.	Vice-President & Director
E.T. Deacon, East Orange, New Jersey.	Vice-President, Treasurer & Director

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APPENDIX "C"

SEASONALLY ADJUSTED ASBESTOS STATISTICS

As mentioned on page 17 G.R.A. have had monthly series of asbestos exports in both value and volume terms processed by Univac method 2 for seasonal adjustment. This provides a clearer view of growth trends and a readier and more accurate comparison of monthly developments. The results which may be seen in the accompanying tables confirm in general the remarks made in the main body of the text - asbestos exports peaked out in the last quarter of 1957, considerably later than almost all other basic industrial materials exports. The series also suggest that there has to be an economic readjustment of relatively severe proportions before the asbestos industry is affected at all - reflecting a great underlying strength. G.R.A. will be maintaining these series up to date and any significant developments in asbestos exports as business recovery progresses could be reported to subscribers to this report.

TABLE 8

CANADIAN ASBESTOS EXPORTS PER THOUSAND TONS
(Seasonally adjusted)

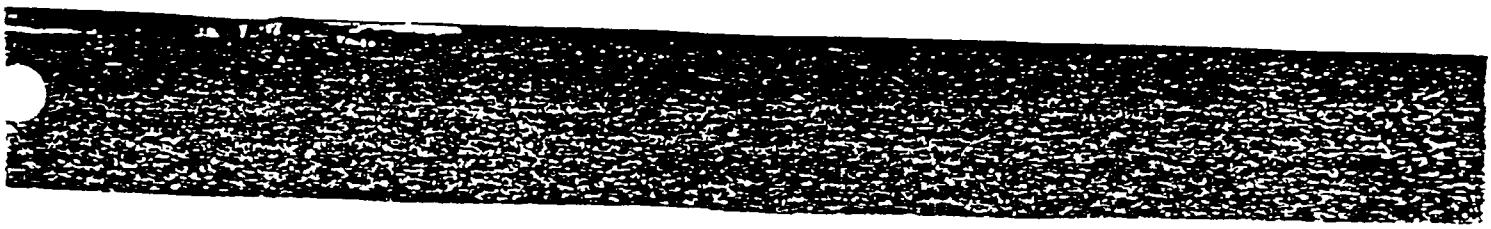
YEAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1948	4943	5113	6473	6830	6413	6251	5709	5550	5469	5340	5514	5517
1949	4676	3902	3330	1586	2054	2443	4290	6432	5794	5991	5750	5516
1950	5986	7130	6697	6201	7267	7258	5924	6558	7098	7781	7898	6716
1951	8332	6521	9901	9658	7835	7915	8416	7583	7469	7097	6212	7315
1952	7940	7180	7149	8252	7523	7164	7374	7861	7586	6809	6993	7941
1953	7278	8024	7740	7138	7147	7887	7510	7154	6875	7242	7445	6961
1954	6545	7359	7206	6673	7584	7405	7034	7428	7779	8291	7390	7482
1955	7512	8087	7613	8599	8113	8568	8217	7932	8043	7994	8765	9391
1956	8580	7738	8207	7844	7735	7753	8438	8546	7721	7423	7820	8537
1957	7978	8173	8046	8340	9171	8498	8400	8202	9338	9389	8958	7626
1958	6426	7009	6469	6472	5801							

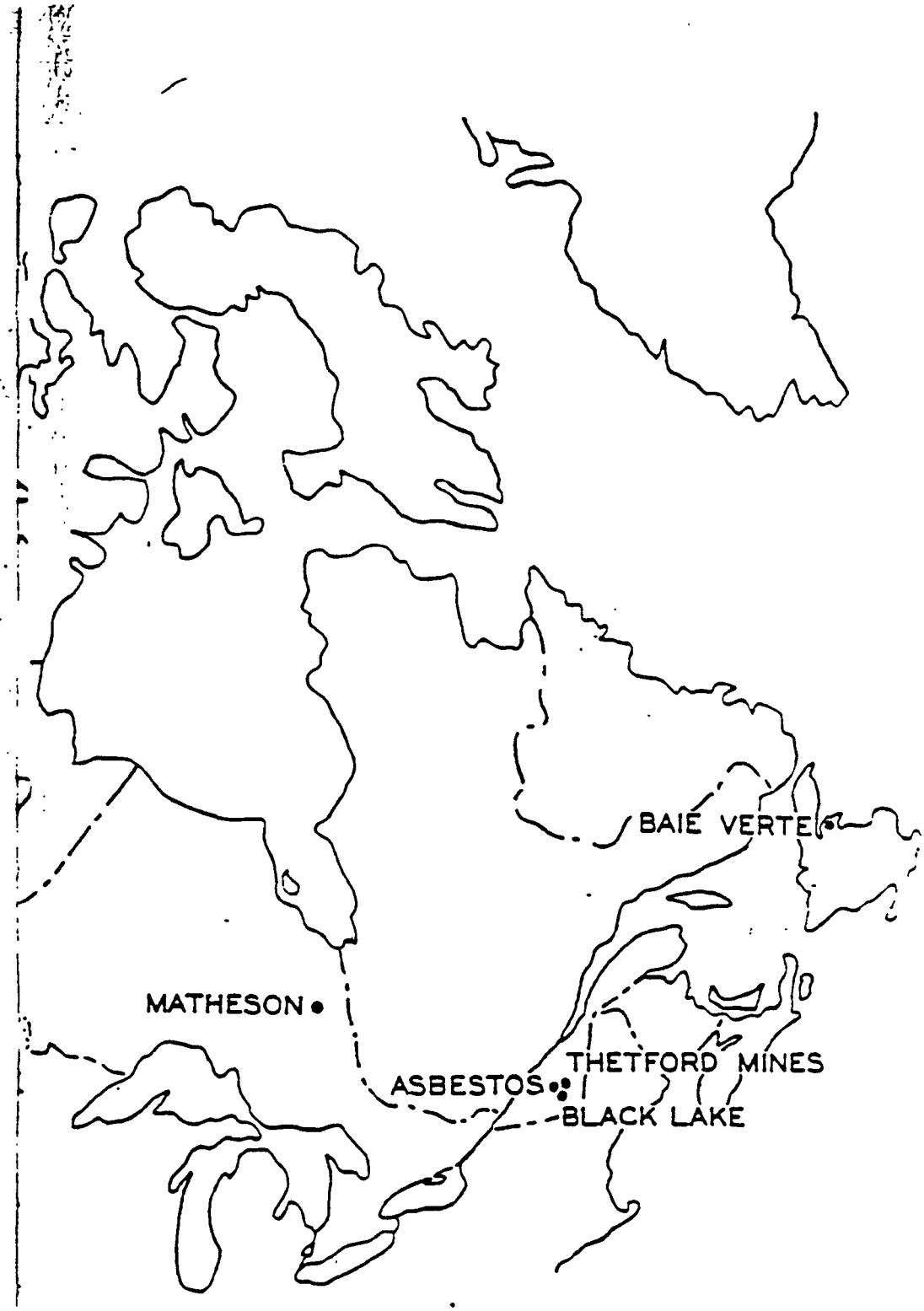
TABLE 9

CANADIAN ASBESTOS EXPORTS PER THOUSAND DOLLARS
(Seasonally adjusted)

YEAR	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1948	2885	2843	3456	3844	3724	3858	3441	3307	3413	3217	3316	3427
1949	3113	2463	872	911	1265	1484	4008	4577	3830	4375	4243	4150
1950	4644	5207	5181	4678	5458	5324	4415	4675	5449	5786	6157	4968
1951	6927	5230	6103	8185	6363	6341	7567	6866	6372	6218	5128	6282
1952	6585	6779	6920	8127	7267	7402	6966	7480	7189	6203	6588	7726
1953	7310	7328	7288	6618	6883	7409	7017	6742	6383	6988	6983	6490
1954	5740	6823	6782	5989	6998	6654	6579	6633	7310	7922	6830	7103
1955	6996	7651	6624	8277	7639	7708	7611	8328	7809	7276	8427	9353
1956	9033	7791	8581	7671	8369	7920	8797	8747	8042	7156	8312	8770
1957	7781	7975	7782	8546	8707	9224	8642	8302	9945	10987	9529	7850
1958	5782	6914	6759	7108	4623							

PRINTED IN CANADA




BAIE VERTE
MATHESON
THETFORD MINES
ASBESTOS
BLACK LAKE