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IMPORT ANALYSIS

MARKET REPORT

MAGNETIC COMPUTER DISK DRIVES



Government
of Canada

Regional Industrial
Expansion

Gouvernement
du Canada

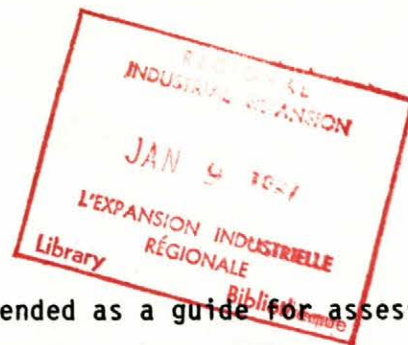
Expansion industrielle
régionale

Canada 

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MARKET REPORT

MAGNETIC COMPUTER DISK DRIVES



This report is intended as a guide for assessing potential Canadian manufacturing opportunities

Further information available from:

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MAGNETIC COMPUTER DISK DRIVES

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References: (1) Customs Tariff: Items 41417-1
 and 41417-2

(2) Canadian International Trade
Classification (Cat # 65-502-E,
Statistics Canada)

(3) Imports by Commodities
(Cat # 65-007, Statistics Canada)
Commodity Code 771-22-51

1.0 INTRODUCTION

This report was prepared as an aid to manufacturers in assessing the Canadian market for computer disk drives, a market which has had a phenomenal growth rate.

There have been definite increases in the domestic consumption (see Section 3.0). Imports from 1980 to 1984 appear to follow world-wide trends in the computer industry and its markets.

The report includes a comprehensive import analysis of floppy disk drives and hard disk drives broken down by capacity, disk size, quantity and values for October 1983 (see Section 5.0).

2.0 THE PRODUCT

Floppy Disk Drives

At their most basic level, floppy disk drives work much the same way as record players. They record and play back information on a recordable platter.

A floppy disk is a thin piece of mylar coated with metal oxide. Initially, floppy disks for personal computers were 8 inches in diameter. Today, the 5 1/4-inch floppy is more popular (see table 5.3.1, page 15). A recent entrant to the market is a 3 1/2-inch floppy disk.

The storage capacity of a floppy disk varies from 90,000 bytes to two million bytes (90 Kb to 2 Mb).

Hard Disk Drives

The great advantage of a hard disk system lies in its ability to store millions of bytes of data on a single disk - up to 5 Mb on a 5-inch, up to 12 Mb on an 8-inch system, and up to 200 Mb on a 10-inch system. Manufacturers are creating greater storage capacities to meet the demands for the bigger computers (see table 5.3.2).

Hard disk drives have more than increased capacity: they also operate at speeds up to twenty times as fast as floppy drives.

3.0 IMPORTS

From 1980 to 1984, imports of disk drives increased in value from \$176.7 million to \$457.7 million, and the number of units (consisting of varying proportions of high-priced and low-priced units) went from 39,670 to 398,534. The value of imports increased at an average 27 per cent per year for the period 1980 to 1984.

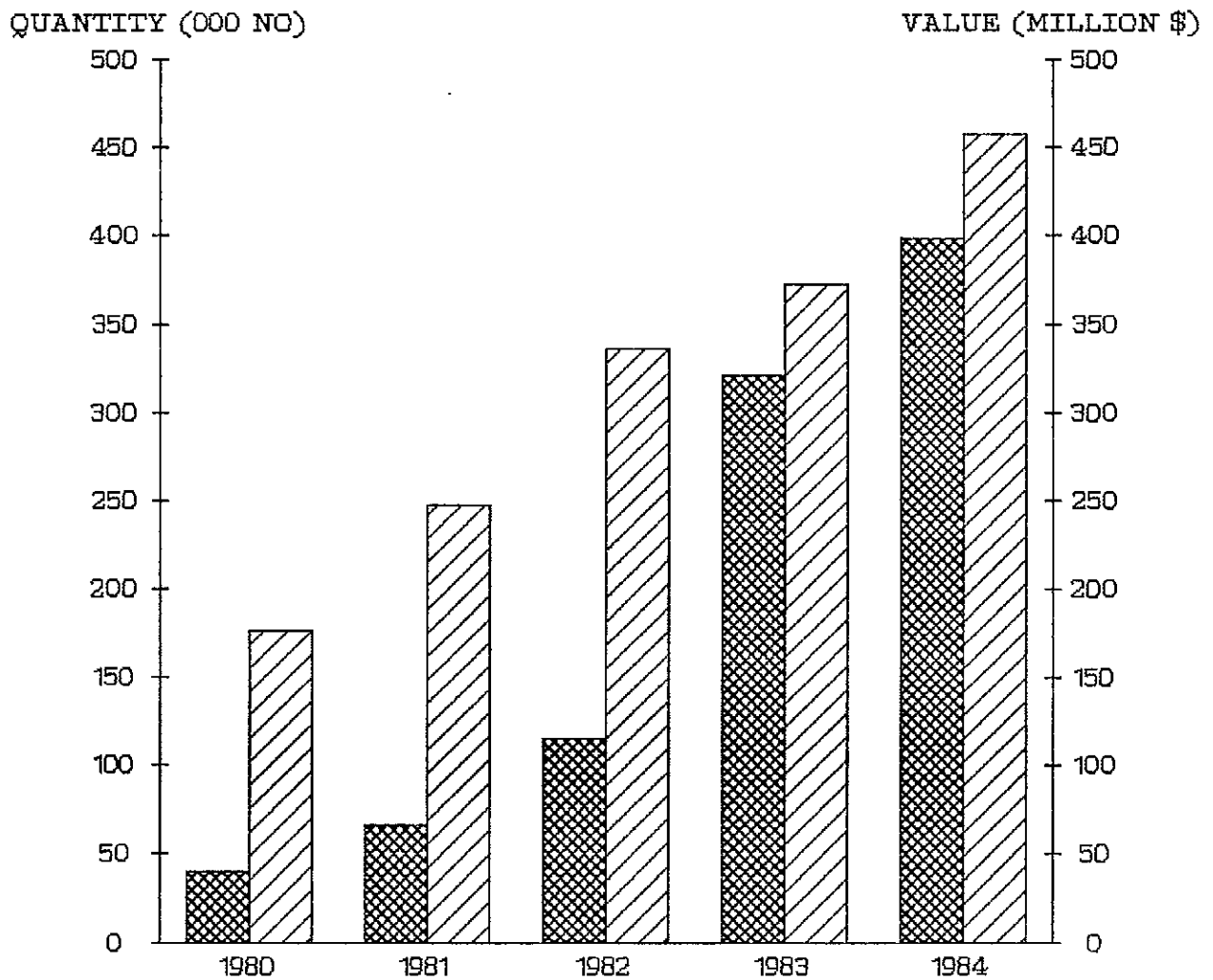
The United States has consistently been the major exporter, accounting for 66 per cent of the units and 93 per cent of the value in 1984. It should also be noted that imports from Japan have increased rapidly from 81 units in 1980 to 95,305 units in 1984 (see table 3.1).

3.1 - IMPORTS OF DISK DRIVES BY MAJOR COUNTRY OF EXPORT

<u>Foreign Country of Export</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>Unit Price 1984</u> \$	<u>Average Annual Growth Rate 1980-84</u> %	<u>Per cent Change 1983-84</u> %
United States								
Quantity (No.)	38,111	63,851	102,012	215,964	264,718		62	23
Value (\$000)	173,107	241,587	330,896	345,808	423,561	1,600	25	19
Japan								
Quantity (No.)	81	949	5,116	71,253	95,305		485	34
Value (\$000)	320	1,944	1,918	18,752	23,720	249	193	26
West Germany								
Quantity (No.)	29	808	6,075	25,042	17,828		398	(29)
Value (\$000)	87	439	1,575	4,537	3,050	171	143	(32)
Italy								
Quantity (No.)	12	56	1,194	1,666	3,119		302	87
Value (\$000)	49	45	615	606	1,459	468	133	141
Taiwan								
Quantity (No.)	-	-	42	6,240	9,623		N.A.	54
Value (\$000)	-	-	10	1,154	1,413	147	N.A.	22
<hr/>								
Other								
Quantity (No.)	1,437	444	981	1,497	7,941		53	430
Value (\$000)	3,110	3,411	1,511	1,282	4,488	565	9	250
<hr/>								
Total								
Quantity (No.)	39,670	66,108	115,420	321,662	398,534		78	24
Value (\$000)	176,673	247,426	336,525	372,139	457,691	1,148	27	23

N.A. - Not applicable

3.2 IMPORT TRENDS ALL COUNTRIES 1980-1984 COMPUTER DISK DRIVES, MAGNETIC



☒ QUANTITY	39.7	66.1	115.4	321.7	398.5
☒ VALUE	176.7	247.4	336.5	372.1	457.7

From 1980 to 1984 imports of disk drives increased at an average annual rate of 79 per cent in terms of quantity and 27 per cent in terms of value.

3.3 - IMPORT MARKET CONCENTRATION OF DISK DRIVES

(BY % OF TOTAL 1983 VALUE)

<u>Top 5 Importers</u>	<u>Top 10 Importers</u>	<u>Top 25 Importers</u>	<u>Top 60 Importers</u>
53	65	78	86

The five major importers accounted for 53 per cent of the total imports for 1983. Of these, three were identified as manufacturers. All five companies are located in Ontario.

3.4 - TYPE AND LOCATION OF MAJOR IMPORTERS - 1983

	<u>MANUFACTURERS</u>		<u>WHOLESALERS</u>		<u>RETAILERS</u>		<u>OTHER</u>		<u>TOTAL</u>	
	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>	<u>No. of Importers</u>	<u>Value (\$000)</u>
Ontario	18	211,456	20	59,835	3	3,817	6	21,121	47	296,229
Quebec	3	14,589	3	4,147	-	-	-	-	6	18,736
Western Provinces	-	-	5	4,071	-	-	2	1,232	7	5,303
Atlantic Provinces	-	-	-	-	-	-	-	-	-	-
TOTAL	21	226,045	28	68,053	3	3,817	8	22,353	60	320,268
Per cent of 1983 Total Value		61%		18%		1%		6%		86%

There were approximately 1,152 importers of disk drives during 1983. The top 60 importers accounted for \$320 million, or 86 per cent of the total imports. Of these importers, 21 were identified as manufacturers, representing 61 per cent of the import total. The majority of these firms are manufacturers of computer related equipment.

4.0 MARKET SUMMARY

The disk drive market is segmented sharply in two parts. The traditional market of hard disk drives, or Winchester drives, accounts for approximately 5 per cent by quantity or 20 per cent by value of the market. The remainder of the market is accounted for by 5 1/4 inch floppy disk drives incorporated in word processors and microcomputers, and by small numbers of 8 inch and 3 1/2 inch drives. The latter size in product is a relatively new entrant in the market.

There are no manufacturers of 5 1/4 inch and 3 1/2 inch drives in Canada. There is one manufacturer of high capacity Winchester drives.

Future trends will see an expansion in the use of 3 1/2 inch drives. Winchester drives have been falling in price and are becoming standard items in desktop computers. Drives using optical disks rather than magnetic ones will come into the market over the next two years and dominate in areas where stored data does not have to be modified, such as archival storage.

Source: Electronics and Aerospace Division, DRIE

5.0 COMPUTER DISK DRIVES
IMPORT ANALYSIS
(based on one month in-depth analysis)

5.1 SCOPE AND LIMITATIONS OF ANALYSIS

This report is based on a detailed analysis of imports of computer disk drives for October 1983, the latest month available, for full data and documentation when study commenced. Disk drives are included in Statistics Canada Import Commodity Code 771-22-51 "Disk Drives, Magnetic, Computer". This relatively small cross-section was necessary because of the large number of shipments involved with this product and the complexity of analysis. The analysis is therefore indicative only.

The documents examined were related by random sampling, and estimates were made on this basis. The shipments were divided into four groups (strata), according to shipment size. In each stratum a systematic random sample was drawn. Results in each stratum were then multiplied by weighting factors to estimate the total values for each stratum and overall strata.

The strata were defined and handled as follows:

<u>Stratum Number</u>	<u>Size of Shipment (Range of values)</u>	<u>Sampling internal in stratum</u>	<u>Weighting factor</u>
1	\$30,000 and over	All shipments	1
2	\$10,000 to \$29,999	2 in 3	1.5
3	\$3,000 to \$9,999	1 in 5	5
4	\$0 to \$2,999	1 in 20	20

Altogether, 525 documents were drawn and examined. See Section 5.5 for the accuracy of the results in view of the sampling techniques used in this study.

5.2 RECONCILIATION

The value in this analysis does not correspond to official Statistics Canada figures for various reasons.

Reconciliation of the two total figures is explained as follows:

<u>Values accounted for</u>	<u>Value</u> <u>(\$,000)</u>
Documents referring to products which should have been classified elsewhere	418
Values reported by Statistics Canada but not included in this report (e.g. missing documents, Canadian goods returned)	1,171
Difference in definition of values (Market Information & Analysis uses selling price F.O.B.; Statistics Canada values are for Customs duty purposes)	3,978
Total values analyzed in this report	<u>28,608</u>
Total values accounted for as above	34,175
Total values published by Statistics Canada	34,880

The difference of \$705,000 is 2.5 per cent of the reported analyzed value. The estimated standard deviation of the analyzed value reported herein is approximately \$410,000, so it is reasonable to attribute the remaining difference to sampling variations.

NOTE: Statistics Canada's figures are subject to revision; changes will be reflected in the normal way; i.e., "pink sheets", which are located in the front section of Catalogue #65-007

5.3 ANALYSIS OF IMPORTS

Imports of disk drives during October 1983 amounted to 51,963 units valued at \$28,608,081.

IMPORT SUMMARY

	<u>Quantity</u> (No.)	<u>% of Total</u> <u>Quantity</u>	<u>Value</u> (\$)	<u>% of Total</u> <u>Value</u>
Floppy Disk Drives	47,971	92	11,143,300	39
Hard Disk Drives	2,271	4	12,559,303	44
<u>N.F.I.*</u>	<u>1,721</u>	<u>3</u>	<u>4,905,478</u>	<u>17</u>
TOTAL	51,963	100	28,608,081	100

- a) Floppy disk drives with a capacity range of 140 to 250 Kb, and a disk size of 5 1/4 inches made up 68 per cent of the value of all floppy disk drives imported (see Table 5.3.1).
- b) The hard disk drives shown in Table 5.3.2 varied in capacity range from 5 Mb to 2,500 Mb, and in unit value between approximately \$2,000 and \$36,000. The average unit price in this group was \$5,500.
- c) Unit prices shown in Table 5.3.4 vary significantly depending on the amount of peripheral equipment included with the basic unit. Unit prices of \$500 and under represent 90 per cent of the total quantity.
- d) Imports totalling \$6,838,564 or 23 per cent of the analyzed value could not be identified according to capacity size due to inadequate document description (see Table 5.3.5).
- e) Although it is not noted in a table, Ontario was the major region of entry accounting for 81 per cent of the total value, followed by Quebec with 9 per cent.
- f) Eighty per cent of the total dollar value of imports originated in the USA, followed by Japan with 17 per cent.
- g) At least 78 per cent of the reported values are in Statistics Canada's terminology "transactions between affiliated firms."

Full details of the analysis are provided in the following four tables.

NOTES: The following notes apply to all tables of information.

N.F.I. - Not further identified.

N/S - Not shown

All percentage figures are rounded.

Kb = kilobyte denotes a thousand bytes

Mb = megabyte denotes one million bytes

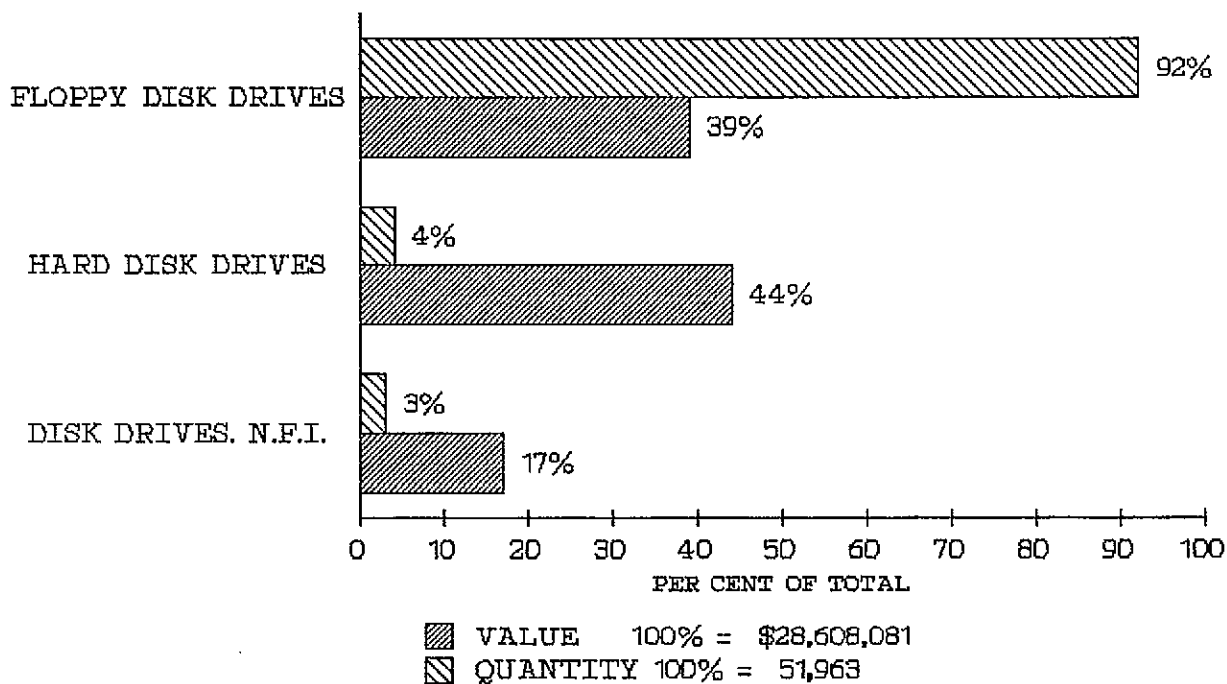
Gb = gigabyte denotes one billion bytes

Dollar values shown are based on selling price F.O.B. plant, in Canadian dollars. This selling price represents the value paid by the importer, excluding all freight, packing and insurance costs when specified. All trade discounts when applicable are also deducted from the selling price.

COMPUTER DISK DRIVES

IMPORT DISTRIBUTION BY TYPE

MONTH OF OCTOBER 1983



The floppy disk drives account for 92 per cent by quantity and 39 per cent by value of the import market. Hard disks account for only 4 per cent by quantity, but 44 per cent of the value.

N.F.I. - Not further identified
All percentage figures are rounded

5.3.1 IMPORTS OF FLOPPY DISK DRIVES

OCTOBER 1983

<u>Type</u>	<u>Capacity Range</u> (bytes)	<u>Quantity</u> (No.)	<u>Value</u> (\$)	<u>D I S K S I Z E</u>		<u>Not Specified</u>
				<u>5 1/4 inches</u> (number of units)	<u>8 inches</u>	
<u>Floppy</u>	<u>(Kb)</u>					
	140 to 250	39,615	7,549,120	39,585	c	c
	Over 250 to 500	2,426	653,351	2,396	c	-
	Over 500 to 800	58	32,904	c	c	-
	<u>(Mb)</u>					
	1 to 2	3,361	1,382,001	c	98	c
	Not Shown	2,511	1,525,924	209	-	2,302
TOTAL - FLOPPY		<u>47,971</u>	<u>11,143,300</u>	<u>45,471</u>	<u>175</u>	<u>2,325</u>

c - Confidential

5.3.2 IMPORTS OF HARD DISK DRIVES

OCTOBER 1983

<u>Type</u>	<u>Capacity Range</u> (bytes)	<u>Quantity</u> (No.)	<u>Value</u> (\$)	<u>D I S K S I Z E</u>			<u>Not Specified</u>
				<u>5 1/4 in.</u> (number of units)	<u>8 in.</u>	<u>14 in.</u>	
<u>Hard</u>	<u>(Mb)</u>						
	5 to 12	943	2,016,915	648	c	9	276
	Over 12 to 20	562	1,201,824	455	55	c	51
	Over 20 to 30	44	193,807	c	c	c	21
	Over 30 to 50	129	391,048	-	79	c	43
	Over 50 to 80	61	593,587	-	c	23	13
	Over 80 to 135	84	975,829	-	c	58	16
	Over 135 to 300	55	1,126,228	c	-	35	12
	Over 300 to 500	135	1,537,682	-	-	133	c
	Over 500 to 640	121	1,198,948	-	-	120	c
	From 820 to 2,500	80	2,916,273	-	-	80	-
	Not Shown	<u>57</u>	<u>407,162</u>	<u>c</u>	<u>c</u>	<u>-</u>	<u>40</u>
TOTAL - HARD		2,271	12,559,303	1,136	192	468	475

c - Confidential

5.3.3 IMPORTS OF DISK DRIVES NOT FURTHER IDENTIFIED

OCTOBER 1983

<u>N.F.I.</u>	<u>Price Range</u> (<u>\$</u>)	<u>Quantity</u> (<u>No.</u>)	<u>Value</u> (<u>\$</u>)
	Up to 550	991	213,992
	700 to 1,400	170	175,368
	1,500 to 3,900	291	747,099
	4,000 to 6,700	96	499,937
	7,900 to 10,000	45	375,103
	10,500 to 18,000	70	867,961
	22,000 to 25,300	17	431,510
	Over 30,000	<u>41</u>	<u>1,594,508</u>
TOTAL - N.F.I.		1,721	4,905,478

- 17 -

N.F.I. - Not further identified

5.3.4 DISK DRIVES ALL TYPES, BY PRICE RANGE AND CAPACITY: QUANTITY

OCTOBER 1983

Unit Price (\$,000)	Quantity (No.)	Value (\$,000)	K I L O B Y T E			M E G A B Y T E										Capacity	
			140-250	251-500	501-800	1-2	5-12	13-20	21-30	31-50	51-80	81-135	136-300	301-500	501-640	820 Mb- 2.5 Gb	N/S
Up to 3	50,573	13,754	39,614	2,426	c	3,348	700	469	c	72	-	-	-	-	-	-	3,874
Over 3 to 10	912	4,398	-	-	c	c	241	75	25	55	44	29	c	71	74	-	280
Over 10	478	10,457	-	-	-	-	c	17	c	c	17	54	53	63	47	80	142
TOTAL	51,963	28,608	39,614	2,426	93	3,348	941	561	25	127	61	83	53	134	121	80	4,296

5.3.5 DISK DRIVES, ALL TYPES, BY PRICE RANGE AND CAPACITY: VALUE

OCTOBER 1983

Unit Price (\$,000)	Quantity (No.)	Value (\$,000)	K I L O B Y T E			M E G A B Y T E										Capacity	
			140-250	251-500	501-800	1-2	5-12	13-20	21-30	31-50	51-80	81-135	136-300	301-500	501-640	820 Mb- 2.5 Gb	N/S
Up to 3	50,573	13,754	7,549	653	c	1,326	1,036	657	c	167	-	-	-	-	-	-	2,327
Over 3 to 10	912	4,398	-	-	c	c	970	332	124	206	291	195	c	356	409	-	1,429
Over 10	478	10,457	-	-	-	-	c	213	c	c	303	781	1,107	1,181	790	2,916	3,082
TOTAL	51,963	28,608	7,549	653	206	1,326	2,006	1,202	124	373	594	976	1,107	1,538	1,199	2,916	6,838

c - Confidential; included in total
 Figures may not add due to rounding
 N/S - Not specified

5.4 IMPORT MARKET CONCENTRATION

Invoices examined covering the month of October 1983 represented imports of disk drives by 138 importers.

<u>Value</u> (\$)	<u>MARKET SHARES</u>			
	<u>Top 3</u> <u>Importers</u> (<u>Top 5</u> <u>Importers</u> - % of Value	<u>Top 10</u> <u>Importers</u> -	<u>Top 25</u> <u>Importers</u>)
28,608,081	42	50	64	88

5.5 SAMPLING AND ESTIMATES

Accuracy of Results

Since shipments were selected using random sampling, figures in the tables do not correspond exactly to the results which would have been obtained if all shipments had been examined. The probable range of error depends on such factors as the number of shipments examined plus their similarity in content, size etc.

The following summary shows the probable range of error for various values shown in the previous Tables. Where values can be related directly to unit price, as in Tables 5.3.3 and 5.3.4, use the figures shown under the Unit Price Range columns; otherwise use the All Prices column.

<u>Value in Table</u>	<u>Typical Relative Standard Deviation (%)</u>			<u>All Prices</u>
	<u>Unit Price Range</u>			
	<u>Low</u> (\$10K & Under)	<u>High</u> (Over \$10K (to \$30K)	<u>Highest</u> (Over \$30K)	
Over \$5 Million	1.7%	1.0%	0%	1.4%
\$1 to \$5 Million	8.0%	3.0%	0%	7.0%
\$400,000 to \$1 Million	11.0%	6.0%	0%	9.0%
\$200,000 to \$400,000	23.0%	8.0%	0%	20.0%

In most cases (approximately two-thirds or more), the true result will be within plus or minus one relative standard deviation of the values shown in the tables. In rare cases (less than one in twenty), the true value will be more than two relative standard deviations from the table value.

5.6 FOREIGN EXPORTERS TO CANADA

Major exporters to Canada of products shown in Section 5.3 of this report are listed below in descending order of value. These exporters accounted for 82 per cent of the total analyzed value of \$28,608,081; all other exporters accounted for less than one per cent each of the total value.

<u>NAME</u>	<u>ADDRESS</u>	
International Business Machines Corp.	Boca Raton, FL	USA
	San Jose, CA	USA
Commodore Japan Ltd.	Tokyo	Japan
Digital Equipment Corp.	Maynard, MA	USA
Hewlett Packard	Palo Alto, CA	USA
	Colorado Springs, CO	USA
	Boise, ID	USA
Amdahl Corp.	Sunnyvale, CA	USA
Apple International	Sunnyvale, CA	USA
Wang Laboratories Inc.	Lawrence, MA	USA
Storage Technology Corp.	Broomfield, CO	USA
Data Point Disk Inc.	San Antonio, TX	USA
Micropolis Corp.	Chatsworth, CA	USA
Commodore Business Machines Inc.	Santa Clara, CA	USA
Control Data Corp.	St-Paul, MN	USA
Mai Int. Corp.	Cupertino, CA	USA
Computerland Corp.	Hayward, CA	USA
Sperry Corp.	Blue Bell, PA	USA
Philips Data Systems	Siegen	West Germany
Tallgrass Technologies Corp.	Overland Park, KS	USA
Future Electronics	Westboro, MA	USA
Magnetic Peripherals Inc.	Minneapolis, MN	USA
Micro Products Co.	Sterling, VA	USA
Data General Corp.	Westboro, MA	USA
Motorola America Inc.	Phoenix, AR	USA
Seagate Technology	Scotts Valley, CA	USA

5.7 CANADIAN PRODUCTION

There is at least one manufacturer of magnetic computer disk drives in Canada. Statistics Canada reports that 1982 shipments of digital peripherals and auxiliary equipment (including memory modules, disk and tape drives, input-output devices and terminals), were valued at \$390 million. Production of disk drives is not reported separately.

SOURCE: Statistics Canada
Catalogue 42-216

5.8 CANADIAN AND FOREIGN TARIFFS

CANADA

Disk drives included in this analysis were dutiable under the following most commonly applied tariff items.

<u>Tariff Item</u>	<u>Description</u>	(1)				
		<u>British Preferential Tariff</u>	<u>Most Favoured Nation Tariff</u>	<u>General Tariff</u>	<u>General Preferential Tariff</u>	<u>U.K. & Ireland</u>
41417-1	Electronic data processing machines and apparatus; peripheral equipment for use therewith including data entry, data preparation and data handling machines and apparatus; accessories and attachments for use therewith; part of all the foregoing; none of the foregoing to include telephone and telegraph apparatus and parts thereof:					
	Other than the following	1983	1984			
		Free	Free	5.1%	3.9%	25%
				25%	Free	3.9%
41417-2	Drum storage memories; disk packs; disk drives; disk files; disk cartridge cleaners; card readers; card punches; card readers/punches; paper tape readers and punches; badge readers and punches; documents transport mechanisms; tape to card punches; reproducing punches; line printers and page writers; card printers; matrix printers including buffered printers; card or paper tape verifiers; collators; card sorters; process control apparatus which converts analog signals from or to digital signals, the foregoing not to include sensors; cord conditioning equipment; Parts of the foregoing	Free	Free	35%	Free	Free

(1) - Excludes U.K. and Ireland

Principal foreign countries of export and their tariff arrangements:

United States - Most Favoured Nation
 Japan - Most Favoured Nation

Tariff items and rates of duty are subject to change, and need to be verified by direct reference to:

Department of National Revenue (Tel: (613) 996-9474)
Tariff Programs
Customs and Excise
Ottawa, Ontario
K1A 0L5

FOREIGN COUNTRIES

Inquiries concerning tariffs and other government trade regulations in foreign countries should be directed to:

Trade Information Centre (Tel: (613) 993-6435)
International Bureaux
Department of External Affairs
Ottawa, Ontario
K1A 0G2

